SSFL Phase 3 Chain of Custody

13013 1480926 7494361-75

CDM Smith

DateShipped: 6/10/2014
CarrierName: FedEx
AirbillNo: 770258229814

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

COC No: 20140610-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other

Special Instructions: For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Sampler: Randy Roberts Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Sandy Mupel	06/10/14	1600									
									6.11.14	915	

Final Data Gap Block 2 1 of 1

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 16982

Group Number(s): 1480926

Client: CDM

SSFL

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/11/2014 9:15
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	6
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Brandy Barclay (2299) at 09:44 on 06/11/2014

Samples Chilled Details: SSFL

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	0.8	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/12/2014
Group Number: 1481296
SDG: PH228
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
TB2-061114 Water	7496166
SVL-563-SA5B-SB-4.5-5.0 Soil	7496167
SVL-536-SA5B-SB-1.5-2.0 Soil	7496168
SVL-577-SA6-SB-1.0-2.0 Soil	7496169
SVL-569-SA5B-SB-2.5-3.0 Soil	7496170
EB1-061114 Water	7496171
EB2-061114 Water	7496172
EB3-061114 Water	7496173
EB4-061114 Water	7496174

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: TB2-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496166
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:00

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB211 SDG#: PH228-01TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	10	U	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: TB2-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496166
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:00

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB211 SDG#: PH228-01TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	3	U	3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 11:36	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y141701AA	06/19/2014 11:36	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-563-SA5B-SB-4.5-5.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496167
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:34 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56345 SDG#: PH228-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	19	U	19	7	0.91
10237	Acrolein	107-02-8	97	U	97	19	0.91
10237	Acrylonitrile	107-13-1	19	U	19	4	0.91
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	0.91
10237	Benzene	71-43-2	5	U	5	0.5	0.91
10237	Bromobenzene	108-86-1	5	U	5	1	0.91
10237	Bromochloromethane	74-97-5	5	U	5	1	0.91
10237	Bromodichloromethane	75-27-4	5	U	5	1	0.91
10237	Bromoform	75-25-2	5	U	5	1	0.91
10237	Bromomethane	74-83-9	5	U	5	2	0.91
10237	2-Butanone	78-93-3	10	U	10	4	0.91
10237	t-Butyl alcohol	75-65-0	49	U	49	19	0.91
10237	n-Butylbenzene	104-51-8	5	U	5	1	0.91
10237	sec-Butylbenzene	135-98-8	5	U	5	1	0.91
10237	tert-Butylbenzene	98-06-6	5	U	5	1	0.91
10237	Carbon Disulfide	75-15-0	5	U	5	1	0.91
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	0.91
10237	Chlorobenzene	108-90-7	5	U	5	1	0.91
10237	Chloroethane	75-00-3	5	U	5	2	0.91
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	0.91
10237	Chloroform	67-66-3	5	U	5	1	0.91
10237	1-Chlorohexane	544-10-5	5	U	5	1	0.91
10237	Chloromethane	74-87-3	5	U	5	2	0.91
10237	2-Chlorotoluene	95-49-8	5	U	5	1	0.91
10237	4-Chlorotoluene	106-43-4	5	U	5	1	0.91
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	0.91
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	0.91
10237	Dibromochloromethane	124-48-1	5	U	5	1	0.91
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	0.91
10237	Dibromomethane	74-95-3	5	U	5	1	0.91
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	0.91
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	0.91
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	0.91
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	0.91
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	0.91
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	0.91
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	0.91
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	0.91
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	0.91
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	0.91
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	0.91
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	0.91
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	0.91
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	0.91
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	0.91
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	0.91
10237	Ethylbenzene	100-41-4	5	U	5	1	0.91
10237	Freon 113	76-13-1	5	U	5	2	0.91
10237	Freon 133a	75-88-7	5	U	5	2	0.91
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	0.91
10237	2-Hexanone	591-78-6	10	U	10	3	0.91

*=This limit was used in the evaluation of the final result

Sample Description: SVL-563-SA5B-SB-4.5-5.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496167
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:34 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56345 SDG#: PH228-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	0.91
10237	Isopropylbenzene	98-82-8	5	U	5	1	0.91
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	0.91
10237	Methyl Iodide	74-88-4	5	U	5	3	0.91
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	0.91
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	0.91
10237	Methylene Chloride	75-09-2	5	U	5	2	0.91
10237	n-Propylbenzene	103-65-1	5	U	5	1	0.91
10237	Styrene	100-42-5	5	U	5	1	0.91
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	0.91
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	0.91
10237	Tetrachloroethene	127-18-4	5	U	5	1	0.91
10237	Toluene	108-88-3	5	U	5	1	0.91
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	0.91
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	0.91
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	0.91
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	0.91
10237	Trichloroethene	79-01-6	5	U	5	1	0.91
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	0.91
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	0.91
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	0.91
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	0.91
10237	Vinyl Acetate	108-05-4	10	U	10	2	0.91
10237	Vinyl Chloride	75-01-4	5	U	5	1	0.91
10237	m+p-Xylene	179601-23-1	5	U	5	1	0.91
10237	o-Xylene	95-47-6	5	U	5	1	0.91
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	6.1		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141642AA	06/14/2014 07:09	Stephanie A Selis	0.91
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-563-SA5B-SB-4.5-5.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496167
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:34 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56345 SDG#: PH228-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416334784	06/12/2014 14:31	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-536-SA5B-SB-1.5-2.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496168
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:02 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

53615 SDG#: PH228-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	20	U	20	7	0.99
10237	Acrolein	107-02-8	100	U	100	20	0.99
10237	Acrylonitrile	107-13-1	20	U	20	4	0.99
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	0.99
10237	Benzene	71-43-2	5	U	5	0.5	0.99
10237	Bromobenzene	108-86-1	5	U	5	1	0.99
10237	Bromochloromethane	74-97-5	5	U	5	1	0.99
10237	Bromodichloromethane	75-27-4	5	U	5	1	0.99
10237	Bromoform	75-25-2	5	U	5	1	0.99
10237	Bromomethane	74-83-9	5	U	5	2	0.99
10237	2-Butanone	78-93-3	10	U	10	4	0.99
10237	t-Butyl alcohol	75-65-0	51	U	51	20	0.99
10237	n-Butylbenzene	104-51-8	5	U	5	1	0.99
10237	sec-Butylbenzene	135-98-8	5	U	5	1	0.99
10237	tert-Butylbenzene	98-06-6	5	U	5	1	0.99
10237	Carbon Disulfide	75-15-0	5	U	5	1	0.99
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	0.99
10237	Chlorobenzene	108-90-7	5	U	5	1	0.99
10237	Chloroethane	75-00-3	5	U	5	2	0.99
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	0.99
10237	Chloroform	67-66-3	5	U	5	1	0.99
10237	1-Chlorohexane	544-10-5	5	U	5	1	0.99
10237	Chloromethane	74-87-3	5	U	5	2	0.99
10237	2-Chlorotoluene	95-49-8	5	U	5	1	0.99
10237	4-Chlorotoluene	106-43-4	5	U	5	1	0.99
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	0.99
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	0.99
10237	Dibromochloromethane	124-48-1	5	U	5	1	0.99
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	0.99
10237	Dibromomethane	74-95-3	5	U	5	1	0.99
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	0.99
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	0.99
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	0.99
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	0.99
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	0.99
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	0.99
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	0.99
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	0.99
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	0.99
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	0.99
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	0.99
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	0.99
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	0.99
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	0.99
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	0.99
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	0.99
10237	Ethylbenzene	100-41-4	5	U	5	1	0.99
10237	Freon 113	76-13-1	5	U	5	2	0.99
10237	Freon 133a	75-88-7	5	U	5	2	0.99
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	0.99
10237	2-Hexanone	591-78-6	10	U	10	3	0.99

*=This limit was used in the evaluation of the final result

Sample Description: SVL-536-SA5B-SB-1.5-2.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496168
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:02 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

53615 SDG#: PH228-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	0.99
10237	Isopropylbenzene	98-82-8	5	U	5	1	0.99
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	0.99
10237	Methyl Iodide	74-88-4	5	U	5	3	0.99
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	0.99
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	0.99
10237	Methylene Chloride	75-09-2	5	U	5	2	0.99
10237	n-Propylbenzene	103-65-1	5	U	5	1	0.99
10237	Styrene	100-42-5	5	U	5	1	0.99
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	0.99
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	0.99
10237	Tetrachloroethene	127-18-4	5	U	5	1	0.99
10237	Toluene	108-88-3	5	U	5	1	0.99
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	0.99
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	0.99
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	0.99
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	0.99
10237	Trichloroethene	79-01-6	5	U	5	1	0.99
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	0.99
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	0.99
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	0.99
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	0.99
10237	Vinyl Acetate	108-05-4	10	U	10	2	0.99
10237	Vinyl Chloride	75-01-4	5	U	5	1	0.99
10237	m+p-Xylene	179601-23-1	5	U	5	1	0.99
10237	o-Xylene	95-47-6	5	U	5	1	0.99
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	2.1		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141642AA	06/14/2014 07:31	Stephanie A Selis	0.99
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-536-SA5B-SB-1.5-2.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496168
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:02 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

53615 SDG#: PH228-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416334784	06/12/2014 14:33	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-577-SA6-SB-1.0-2.0 Soil
SSFL Phase 3 Subarea 6

LL Sample # SW 7496169
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:45 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57710 SDG#: PH228-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	20	U	20	7	0.96
10237	Acrolein	107-02-8	100	U	100	20	0.96
10237	Acrylonitrile	107-13-1	20	U	20	4	0.96
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	0.96
10237	Benzene	71-43-2	5	U	5	0.5	0.96
10237	Bromobenzene	108-86-1	5	U	5	1	0.96
10237	Bromochloromethane	74-97-5	5	U	5	1	0.96
10237	Bromodichloromethane	75-27-4	5	U	5	1	0.96
10237	Bromoform	75-25-2	5	U	5	1	0.96
10237	Bromomethane	74-83-9	5	U	5	2	0.96
10237	2-Butanone	78-93-3	10	U	10	4	0.96
10237	t-Butyl alcohol	75-65-0	51	U	51	20	0.96
10237	n-Butylbenzene	104-51-8	5	U	5	1	0.96
10237	sec-Butylbenzene	135-98-8	5	U	5	1	0.96
10237	tert-Butylbenzene	98-06-6	5	U	5	1	0.96
10237	Carbon Disulfide	75-15-0	5	U	5	1	0.96
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	0.96
10237	Chlorobenzene	108-90-7	5	U	5	1	0.96
10237	Chloroethane	75-00-3	5	U	5	2	0.96
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	0.96
10237	Chloroform	67-66-3	5	U	5	1	0.96
10237	1-Chlorohexane	544-10-5	5	U	5	1	0.96
10237	Chloromethane	74-87-3	5	U	5	2	0.96
10237	2-Chlorotoluene	95-49-8	5	U	5	1	0.96
10237	4-Chlorotoluene	106-43-4	5	U	5	1	0.96
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	0.96
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	0.96
10237	Dibromochloromethane	124-48-1	5	U	5	1	0.96
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	0.96
10237	Dibromomethane	74-95-3	5	U	5	1	0.96
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	0.96
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	0.96
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	0.96
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	0.96
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	0.96
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	0.96
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	0.96
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	0.96
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	0.96
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	0.96
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	0.96
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	0.96
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	0.96
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	0.96
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	0.96
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	0.96
10237	Ethylbenzene	100-41-4	5	U	5	1	0.96
10237	Freon 113	76-13-1	5	U	5	2	0.96
10237	Freon 133a	75-88-7	5	U	5	2	0.96
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	0.96
10237	2-Hexanone	591-78-6	10	U	10	3	0.96

*=This limit was used in the evaluation of the final result

Sample Description: SVL-577-SA6-SB-1.0-2.0 Soil
SSFL Phase 3 Subarea 6

LL Sample # SW 7496169
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:45 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57710 SDG#: PH228-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	0.96
10237	Isopropylbenzene	98-82-8	5	U	5	1	0.96
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	0.96
10237	Methyl Iodide	74-88-4	5	U	5	3	0.96
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	0.96
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	0.96
10237	Methylene Chloride	75-09-2	5	U	5	2	0.96
10237	n-Propylbenzene	103-65-1	5	U	5	1	0.96
10237	Styrene	100-42-5	5	U	5	1	0.96
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	0.96
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	0.96
10237	Tetrachloroethene	127-18-4	5	U	5	1	0.96
10237	Toluene	108-88-3	5	U	5	1	0.96
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	0.96
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	0.96
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	0.96
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	0.96
10237	Trichloroethene	79-01-6	5	U	5	1	0.96
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	0.96
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	0.96
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	0.96
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	0.96
10237	Vinyl Acetate	108-05-4	10	U	10	2	0.96
10237	Vinyl Chloride	75-01-4	5	U	5	1	0.96
10237	m+p-Xylene	179601-23-1	5	U	5	1	0.96
10237	o-Xylene	95-47-6	5	U	5	1	0.96
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	5.0		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141642AA	06/14/2014 09:00	Stephanie A Selis	0.96
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-577-SA6-SB-1.0-2.0 Soil
SSFL Phase 3 Subarea 6

LL Sample # SW 7496169
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:45 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57710 SDG#: PH228-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416334784	06/12/2014 14:35	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-569-SA5B-SB-2.5-3.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496170
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:54 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56925 SDG#: PH228-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	19	U	19	6	0.89
10237	Acrolein	107-02-8	93	U	93	19	0.89
10237	Acrylonitrile	107-13-1	19	U	19	4	0.89
10237	t-Amyl methyl ether	994-05-8	5	U	5	0.9	0.89
10237	Benzene	71-43-2	5	U	5	0.5	0.89
10237	Bromobenzene	108-86-1	5	U	5	0.9	0.89
10237	Bromochloromethane	74-97-5	5	U	5	0.9	0.89
10237	Bromodichloromethane	75-27-4	5	U	5	0.9	0.89
10237	Bromoform	75-25-2	5	U	5	0.9	0.89
10237	Bromomethane	74-83-9	5	U	5	2	0.89
10237	2-Butanone	78-93-3	9	U	9	4	0.89
10237	t-Butyl alcohol	75-65-0	46	U	46	19	0.89
10237	n-Butylbenzene	104-51-8	5	U	5	0.9	0.89
10237	sec-Butylbenzene	135-98-8	5	U	5	0.9	0.89
10237	tert-Butylbenzene	98-06-6	5	U	5	0.9	0.89
10237	Carbon Disulfide	75-15-0	5	U	5	0.9	0.89
10237	Carbon Tetrachloride	56-23-5	5	U	5	0.9	0.89
10237	Chlorobenzene	108-90-7	5	U	5	0.9	0.89
10237	Chloroethane	75-00-3	5	U	5	2	0.89
10237	2-Chloroethyl Vinyl Ether	110-75-8	9	U	9	2	0.89
10237	Chloroform	67-66-3	5	U	5	0.9	0.89
10237	1-Chlorohexane	544-10-5	5	U	5	0.9	0.89
10237	Chloromethane	74-87-3	5	U	5	2	0.89
10237	2-Chlorotoluene	95-49-8	5	U	5	0.9	0.89
10237	4-Chlorotoluene	106-43-4	5	U	5	0.9	0.89
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	0.89
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	0.89
10237	Dibromochloromethane	124-48-1	5	U	5	0.9	0.89
10237	1,2-Dibromoethane	106-93-4	5	U	5	0.9	0.89
10237	Dibromomethane	74-95-3	5	U	5	0.9	0.89
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	0.9	0.89
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	0.9	0.89
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	0.9	0.89
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	0.89
10237	1,1-Dichloroethane	75-34-3	5	U	5	0.9	0.89
10237	1,2-Dichloroethane	107-06-2	5	U	5	0.9	0.89
10237	1,1-Dichloroethene	75-35-4	5	U	5	0.9	0.89
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	0.9	0.89
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	0.9	0.89
10237	1,2-Dichloropropane	78-87-5	5	U	5	0.9	0.89
10237	1,3-Dichloropropane	142-28-9	5	U	5	0.9	0.89
10237	2,2-Dichloropropane	594-20-7	5	U	5	0.9	0.89
10237	1,1-Dichloropropene	563-58-6	5	U	5	0.9	0.89
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	0.9	0.89
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	0.9	0.89
10237	Ethyl t-butyl ether	637-92-3	5	U	5	0.9	0.89
10237	Ethylbenzene	100-41-4	5	U	5	0.9	0.89
10237	Freon 113	76-13-1	5	U	5	2	0.89
10237	Freon 133a	75-88-7	5	U	5	2	0.89
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	0.89
10237	2-Hexanone	591-78-6	9	U	9	3	0.89

*=This limit was used in the evaluation of the final result

Sample Description: SVL-569-SA5B-SB-2.5-3.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496170
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:54 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56925 SDG#: PH228-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	5	U	5	0.9	0.89
10237	Isopropylbenzene	98-82-8	5	U	5	0.9	0.89
10237	p-Isopropyltoluene	99-87-6	5	U	5	0.9	0.89
10237	Methyl Iodide	74-88-4	5	U	5	3	0.89
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	0.89
10237	4-Methyl-2-pentanone	108-10-1	9	U	9	3	0.89
10237	Methylene Chloride	75-09-2	5	U	5	2	0.89
10237	n-Propylbenzene	103-65-1	5	U	5	0.9	0.89
10237	Styrene	100-42-5	5	U	5	0.9	0.89
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	0.9	0.89
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	0.9	0.89
10237	Tetrachloroethene	127-18-4	5	U	5	0.9	0.89
10237	Toluene	108-88-3	5	U	5	0.9	0.89
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	0.9	0.89
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	0.9	0.89
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	0.9	0.89
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	0.9	0.89
10237	Trichloroethene	79-01-6	5	U	5	0.9	0.89
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	0.89
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	0.9	0.89
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	0.9	0.89
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	0.9	0.89
10237	Vinyl Acetate	108-05-4	9	U	9	2	0.89
10237	Vinyl Chloride	75-01-4	5	U	5	0.9	0.89
10237	m+p-Xylene	179601-23-1	5	U	5	0.9	0.89
10237	o-Xylene	95-47-6	5	U	5	0.9	0.89
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	3.9		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141642AA	06/14/2014 07:53	Stephanie A Selis	0.89
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-569-SA5B-SB-2.5-3.0 Soil
SSFL Phase 3 Subarea 5B

LL Sample # SW 7496170
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:54 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56925 SDG#: PH228-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416334784	06/12/2014 16:03	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416334784	06/12/2014 14:37	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496171
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:18 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB111 SDG#: PH228-06EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	10	U	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496171
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:18 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB111 SDG#: PH228-06EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	4		3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 11:57	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y141701AA	06/19/2014 11:57	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496172
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:20 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB211 SDG#: PH228-07EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	10	U	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496172
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:20 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB211 SDG#: PH228-07EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	4		3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 12:19	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y141701AA	06/19/2014 12:19	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Sample Description: EB3-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496173
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:22 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB311 SDG#: PH228-08EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	3	J	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: EB3-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496173
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:22 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB311 SDG#: PH228-08EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	4		3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 12:40	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y141701AA	06/19/2014 12:40	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Sample Description: EB4-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496174
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:24 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB411 SDG#: PH228-09EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	10	U	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: EB4-061114 Water
SSFL Phase 3 Subarea 5B

LL Sample # WW 7496174
LL Group # 1481296
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 07:24 by AP

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:21

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB411 SDG#: PH228-09EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	4		3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 13:02	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y141701AA	06/19/2014 13:02	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481296
Reported: 07/07/14 at 12:21 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: B141642AA	Sample number(s): 7496167-7496170								
Acetone	20 U	20.	7	ug/kg	114	103	41-149	10	30
Acrolein	100 U	100.	20	ug/kg	84	78	50-137	8	30
Acrylonitrile	20 U	20.	4	ug/kg	90	98	58-123	9	30
t-Amyl methyl ether	5 U	5.	1	ug/kg	94	99	63-130	5	30
Benzene	5 U	5.	0.5	ug/kg	102	103	80-120	1	30
Bromobenzene	5 U	5.	1	ug/kg	107	101	78-120	6	30
Bromochloromethane	5 U	5.	1	ug/kg	107	108	75-129	1	30
Bromodichloromethane	5 U	5.	1	ug/kg	100	102	75-120	2	30
Bromoform	5 U	5.	1	ug/kg	103	108	70-126	5	30
Bromomethane	5 U	5.	2	ug/kg	111	105	32-162	5	30
2-Butanone	10 U	10.	4	ug/kg	84	89	47-136	6	30
t-Butyl alcohol	50 U	50.	20	ug/kg	105	106	66-133	1	30
n-Butylbenzene	5 U	5.	1	ug/kg	102	95	72-120	8	30
sec-Butylbenzene	5 U	5.	1	ug/kg	99	92	69-120	7	30
tert-Butylbenzene	5 U	5.	1	ug/kg	105	95	75-120	9	30
Carbon Disulfide	5 U	5.	1	ug/kg	104	99	63-128	4	30
Carbon Tetrachloride	5 U	5.	1	ug/kg	109	109	69-130	0	30
Chlorobenzene	5 U	5.	1	ug/kg	106	106	80-120	0	30
Chloroethane	5 U	5.	2	ug/kg	101	99	17-171	2	30
2-Chloroethyl Vinyl Ether	10 U	10.	2	ug/kg	73	80	52-134	8	30
Chloroform	5 U	5.	1	ug/kg	108	108	80-120	0	30
1-Chlorohexane	5 U	5.	1	ug/kg	73	72	70-130	2	30
Chloromethane	5 U	5.	2	ug/kg	98	101	56-120	3	30
2-Chlorotoluene	5 U	5.	1	ug/kg	103	99	78-120	4	30
4-Chlorotoluene	5 U	5.	1	ug/kg	107	102	79-120	5	30
Chlorotrifluoroethene	5 U	5.	2	ug/kg	70	68	22-131	3	30
1,2-Dibromo-3-chloropropane	5 U	5.	2	ug/kg	94	94	50-132	0	30
Dibromochloromethane	5 U	5.	1	ug/kg	105	108	77-120	2	30
1,2-Dibromoethane	5 U	5.	1	ug/kg	102	107	80-120	5	30
Dibromomethane	5 U	5.	1	ug/kg	98	103	75-120	5	30
1,2-Dichlorobenzene	5 U	5.	1	ug/kg	109	101	80-120	8	30
1,3-Dichlorobenzene	5 U	5.	1	ug/kg	109	103	80-120	6	30
1,4-Dichlorobenzene	5 U	5.	1	ug/kg	107	101	80-120	6	30
Dichlorodifluoromethane	5 U	5.	2	ug/kg	105	100	26-137	4	30
1,1-Dichloroethane	5 U	5.	1	ug/kg	99	100	71-122	1	30
1,2-Dichloroethane	5 U	5.	1	ug/kg	108	108	66-136	0	30
1,1-Dichloroethene	5 U	5.	1	ug/kg	116	117	73-129	1	30
cis-1,2-Dichloroethene	5 U	5.	1	ug/kg	105	105	80-120	1	30
trans-1,2-Dichloroethene	5 U	5.	1	ug/kg	117	117	79-120	0	30
1,2-Dichloropropane	5 U	5.	1	ug/kg	96	97	77-120	1	30
1,3-Dichloropropane	5 U	5.	1	ug/kg	95	100	73-120	4	30
2,2-Dichloropropane	5 U	5.	1	ug/kg	104	105	72-123	1	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481296
Reported: 07/07/14 at 12:21 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloropropene	5	U	5.	1	ug/kg	106	107	77-120	0	30
cis-1,3-Dichloropropene	5	U	5.	1	ug/kg	96	99	74-120	3	30
trans-1,3-Dichloropropene	5	U	5.	1	ug/kg	96	100	69-120	4	30
Ethyl t-butyl ether	5	U	5.	1	ug/kg	93	98	59-134	5	30
Ethylbenzene	5	U	5.	1	ug/kg	105	104	80-120	1	30
Freon 113	5	U	5.	2	ug/kg	106	102	64-137	3	30
Freon 133a	5	U	5.	2	ug/kg	111	106	78-120	5	30
Hexachlorobutadiene	5	U	5.	2	ug/kg	110	104	46-130	6	30
2-Hexanone	10	U	10.	3	ug/kg	83	90	40-129	8	30
di-Isopropyl ether	5	U	5.	1	ug/kg	94	97	68-128	2	30
Isopropylbenzene	5	U	5.	1	ug/kg	106	105	76-120	1	30
p-Isopropyltoluene	5	U	5.	1	ug/kg	103	95	69-120	8	30
Methyl Iodide	5	U	5.	3	ug/kg	121	117	72-130	3	30
Methyl Tertiary Butyl Ether	5	U	5.	0.5	ug/kg	103	106	69-126	3	30
4-Methyl-2-pentanone	10	U	10.	3	ug/kg	84	93	43-133	10	30
Methylene Chloride	5	U	5.	2	ug/kg	119	116	80-124	2	30
n-Propylbenzene	5	U	5.	1	ug/kg	103	97	77-120	7	30
Styrene	5	U	5.	1	ug/kg	106	107	76-120	2	30
1,1,1,2-Tetrachloroethane	5	U	5.	1	ug/kg	110	109	80-120	1	30
1,1,2,2-Tetrachloroethane	5	U	5.	1	ug/kg	95	90	71-123	5	30
Tetrachloroethene	5	U	5.	1	ug/kg	107	109	78-120	1	30
Toluene	5	U	5.	1	ug/kg	102	103	80-120	1	30
1,2,3-Trichlorobenzene	5	U	5.	1	ug/kg	104	102	64-120	2	30
1,2,4-Trichlorobenzene	5	U	5.	1	ug/kg	107	102	68-120	4	30
1,1,1-Trichloroethane	5	U	5.	1	ug/kg	98	98	63-135	0	30
1,1,2-Trichloroethane	5	U	5.	1	ug/kg	103	104	80-120	1	30
Trichloroethene	5	U	5.	1	ug/kg	106	107	80-120	1	30
Trichlorofluoromethane	5	U	5.	2	ug/kg	107	105	58-133	2	30
1,2,3-Trichloropropane	5	U	5.	1	ug/kg	104	98	71-123	5	30
1,2,4-Trimethylbenzene	5	U	5.	1	ug/kg	107	98	79-120	9	30
1,3,5-Trimethylbenzene	5	U	5.	1	ug/kg	106	99	78-120	7	30
Vinyl Acetate	10	U	10.	2	ug/kg	103	102	40-127	1	30
Vinyl Chloride	5	U	5.	1	ug/kg	106	103	59-120	3	30
m+p-Xylene	5	U	5.	1	ug/kg	105	106	80-120	1	30
o-Xylene	5	U	5.	1	ug/kg	104	105	80-120	1	30
Batch number: Y141701AA	Sample number(s): 7496166,7496171-7496174									
Acetone	20	U	20.	6	ug/l	82	85	43-149	4	30
Acrolein	100 U		100.	40	ug/l	97	94	52-129	3	30
Acrylonitrile	20	U	20.	4	ug/l	89	94	62-120	6	30
t-Amyl methyl ether	1	U	1.	0.5	ug/l	101	102	75-120	1	30
Benzene	1	U	1.	0.5	ug/l	103	105	78-120	1	30
Bromobenzene	5	U	5.	1	ug/l	102	103	80-120	1	30
Bromochloromethane	5	U	5.	1	ug/l	101	101	80-121	0	30
Bromodichloromethane	1	U	1.	0.5	ug/l	97	97	73-120	0	30
Bromoform	4	U	4.	0.5	ug/l	91	90	61-120	1	30
Bromomethane	1	U	1.	0.5	ug/l	92	95	58-120	3	30
2-Butanone	10	U	10.	3	ug/l	95	96	54-133	1	30
t-Butyl alcohol	50	U	50.	5	ug/l	115	113	75-120	2	30
n-Butylbenzene	5	U	5.	1	ug/l	106	107	68-120	1	30
sec-Butylbenzene	5	U	5.	1	ug/l	108	109	80-120	1	30
tert-Butylbenzene	5	U	5.	1	ug/l	104	106	73-120	2	30
Carbon Disulfide	5	U	5.	1	ug/l	86	90	58-126	4	30
Carbon Tetrachloride	1	U	1.	0.5	ug/l	100	103	74-130	3	30
Chlorobenzene	1	U	1.	0.5	ug/l	102	105	80-120	2	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481296
Reported: 07/07/14 at 12:21 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chloroethane	1	U	1.	0.5	ug/l	87	87	56-120	0	30
2-Chloroethyl Vinyl Ether	10	U	10.	2	ug/l	101	103	54-126	2	30
Chloroform	1	U	1.	0.5	ug/l	103	104	80-122	1	30
1-Chlorohexane	5	U	5.	1	ug/l	104	107	80-120	3	30
Chloromethane	1	U	1.	0.5	ug/l	104	97	63-120	7	30
2-Chlorotoluene	5	U	5.	1	ug/l	102	102	80-120	1	30
4-Chlorotoluene	5	U	5.	1	ug/l	101	102	80-120	1	30
Chlorotrifluoroethene	5	U	5.	2	ug/l	85	82	47-120	4	30
1,2-Dibromo-3-chloropropane	5	U	5.	2	ug/l	98	99	56-120	0	30
Dibromochloromethane	1	U	1.	0.5	ug/l	91	92	72-120	1	30
1,2-Dibromoethane	1	U	1.	0.5	ug/l	105	107	76-120	2	30
Dibromomethane	1	U	1.	0.5	ug/l	103	102	80-120	1	30
1,2-Dichlorobenzene	5	U	5.	1	ug/l	102	102	80-120	0	30
1,3-Dichlorobenzene	5	U	5.	1	ug/l	102	102	80-120	1	30
1,4-Dichlorobenzene	5	U	5.	1	ug/l	101	103	80-120	2	30
Dichlorodifluoromethane	1	U	1.	0.5	ug/l	85	84	48-132	1	30
1,1-Dichloroethane	1	U	1.	0.5	ug/l	103	105	80-120	2	30
1,2-Dichloroethane	1	U	1.	0.5	ug/l	105	105	65-135	0	30
1,1-Dichloroethene	1	U	1.	0.5	ug/l	94	98	76-124	4	30
cis-1,2-Dichloroethene	1	U	1.	0.5	ug/l	105	107	80-120	2	30
trans-1,2-Dichloroethene	1	U	1.	0.5	ug/l	103	106	80-120	3	30
1,2-Dichloropropane	1	U	1.	0.5	ug/l	101	102	80-120	1	30
1,3-Dichloropropane	1	U	1.	0.5	ug/l	101	104	80-120	3	30
2,2-Dichloropropane	1	U	1.	0.5	ug/l	103	106	67-124	3	30
1,1-Dichloropropene	5	U	5.	1	ug/l	106	107	80-120	0	30
cis-1,3-Dichloropropene	1	U	1.	0.5	ug/l	98	99	80-120	1	30
trans-1,3-Dichloropropene	1	U	1.	0.5	ug/l	100	100	76-120	1	30
Ethyl t-butyl ether	1	U	1.	0.5	ug/l	102	102	74-120	0	30
Ethylbenzene	1	U	1.	0.5	ug/l	101	102	79-120	1	30
Freon 113	10	U	10.	2	ug/l	82	85	67-127	4	30
Freon 133a	5	U	5.	2	ug/l	115	116	46-152	1	30
Hexachlorobutadiene	5	U	5.	2	ug/l	101	100	51-125	1	30
2-Hexanone	10	U	10.	3	ug/l	96	97	44-126	1	30
di-Isopropyl ether	1	U	1.	0.5	ug/l	104	104	65-120	0	30
Isopropylbenzene	5	U	5.	1	ug/l	103	104	77-120	1	30
p-Isopropyltoluene	5	U	5.	1	ug/l	105	106	80-120	1	30
Methyl Iodide	1	U	1.	0.5	ug/l	106	106	75-128	0	30
Methyl Tertiary Butyl Ether	1	U	1.	0.5	ug/l	99	101	75-120	2	30
4-Methyl-2-pentanone	10	U	10.	3	ug/l	97	98	51-124	1	30
Methylene Chloride	3	U	3.	2	ug/l	93	95	80-120	2	30
n-Propylbenzene	5	U	5.	1	ug/l	106	107	80-120	2	30
Styrene	5	U	5.	1	ug/l	101	103	80-120	2	30
1,1,1,2-Tetrachloroethane	1	U	1.	0.5	ug/l	100	103	80-120	2	30
1,1,2,2-Tetrachloroethane	1	U	1.	0.5	ug/l	102	104	70-120	2	30
Tetrachloroethene	1	U	1.	0.5	ug/l	101	104	80-120	3	30
Toluene	1	U	1.	0.5	ug/l	104	106	80-120	2	30
1,2,3-Trichlorobenzene	5	U	5.	1	ug/l	100	100	58-126	1	30
1,2,4-Trichlorobenzene	5	U	5.	1	ug/l	103	104	65-120	2	30
1,1,1-Trichloroethane	1	U	1.	0.5	ug/l	99	99	66-126	0	30
1,1,2-Trichloroethane	1	U	1.	0.5	ug/l	103	104	80-120	0	30
Trichloroethene	1	U	1.	0.5	ug/l	105	106	80-120	1	30
Trichlorofluoromethane	1	U	1.	0.5	ug/l	86	90	65-130	4	30
1,2,3-Trichloropropane	5	U	5.	1	ug/l	102	104	76-120	2	30
1,2,4-Trimethylbenzene	5	U	5.	1	ug/l	104	106	74-120	1	30
1,3,5-Trimethylbenzene	5	U	5.	1	ug/l	106	106	74-120	0	30
Vinyl Acetate	10	U	10.	2	ug/l	81	72	56-135	11	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481296
Reported: 07/07/14 at 12:21 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Vinyl Chloride	1	U	1.	0.5	ug/l	102	95	63-120	7	30
m+p-Xylene	1	U	1.	0.5	ug/l	101	102	80-120	1	30
o-Xylene	1	U	1.	0.5	ug/l	101	103	80-120	1	30
Batch number: 14170162401A	Sample number(s): 7496167-7496170									
14a Moisture Content by 160.3						100		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14170162401A	Sample number(s): 7496167-7496170					BKG: 7496167			
14a Moisture Content by 160.3						6.1	6.8	11	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 12a Volatile Organics EPA8260B
Batch number: B141642AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7496167	107	103	96	93
7496168	106	99	98	92
7496169	108	106	99	93
7496170	107	102	100	94
Blank	107	108	98	93
LCS	105	103	100	104
LCSD	104	103	100	99
Limits:	80-120	80-120	81-117	74-121

Analysis Name: 12b Volatile Organics EPA8260B
Batch number: Y141701AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7496166	99	102	99	97
7496171	100	102	100	99
7496172	100	100	99	97
7496173	102	101	99	97
7496174	100	101	105	97
Blank	99	102	99	97
LCS	100	102	100	100
LCSD	99	102	101	100
Limits:	86-118	80-120	88-110	86-115

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481296
Reported: 07/07/14 at 12:21 PM

Surrogate Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

SSFL Phase 3 Chain of Custody

13013 1481296 7496166-74

CDM Smith

DateShipped:	6/11/2014	Contact Name:	Pam Hartman	COC No:	20140611-02
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1
AirbillNo:	770273213274			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
TB2-061114	6/11/14 08:00	WQ	HCl	3 - 40 mL Vial	10 day																		X																		
SVL-563-SA5B-SB-4.5-5.0	6/11/14 08:34	SO	None	3 - Encore	10 day																		X																		
SVL-563-SA5B-SB-4.5-5.0	6/11/14 08:34	SO	None	1 - 4 oz glass	10 day																		X																		Soil Moisture
SVL-536-SA5B-SB-1.5-2.0	6/11/14 10:02	SO	None	3 - Encore	10 day																		X																		
SVL-536-SA5B-SB-1.5-2.0	6/11/14 10:02	SO	None	1 - 4 oz glass	10 day																		X																		Soil Moisture
SVL-577-SA6-SB-1.0-2.0	6/11/14 11:45	SO	None	3 - Encore	10 day																		X																		
SVL-577-SA6-SB-1.0-2.0	6/11/14 11:45	SO	None	1 - 4 oz glass	10 day																		X																		Soil Moisture
SVL-569-SA5B-SB-2.5-3.0	6/11/14 10:54	SO	None	3 - Encore	10 day																		X																		
SVL-569-SA5B-SB-2.5-3.0	6/11/14 10:54	SO	None	1 - 4 oz glass	10 day																		X																		Soil Moisture

Special Instructions:

Sampler: Andrew Payne Rob Ellis

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Sky J Mysel	06/11/14	1600									
									[signature]	6-12-14	915

Soil Vapor 1 of 2

13013 1481296 74961166-74

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/11/2014
CarrierName: FedEx
AirbillNo: 770273213274

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

COC No: 20140611-03
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate. Nitrite. TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
EB1-061114	6/11/14 07:18	WQ	HCl	3 - 40 mL Vial	10 day																		X																		
EB2-061114	6/11/14 07:20	WQ	HCl	3 - 40 mL Vial	10 day																		X																		
EB3-061114	6/11/14 07:22	WQ	HCl	3 - 40 mL Vial	10 day																		X																		
EB4-061114	6/11/14 07:24	WQ	HCl	3 - 40 mL Vial	10 day																		X																		

Special Instructions:

Sampler: Andrew Payne Rob Ellis

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Steff Myers	6/11/14	1600									
										6-12-14	915

Soil Vapor Sampling 2 of 2

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Sample Administration Receipt Documentation Log

Doc Log ID: 17140

Group Number(s): 1481296

Client: CDM

SSFL

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/12/2014 9:15
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	6
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Brandy Barclay (2299) at 09:45 on 06/12/2014

Samples Chilled Details: SSFL

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	0.7	DT	Wet	Y	Bagged	N	N

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/12/2014
Group Number: 1481297
SDG: PH229
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
TB1-061114 Water	7496175
FDG2-SL-878-SA5A-SB-0.0-0.5 Soil	7496176
FDG2-SL-878-SA5A-SB-4.0-5.0 Soil	7496177
FDG2-SL-694-SA6-SB-0.0-0.5 Soil	7496178
FDG2-SL-695-SA6-SB-0.0-0.5 Soil	7496179
FDG2-SL-560-NBZ-SB-0.0-0.5 Soil	7496180
FDG2-SL-577-NBZ-SB-0.0-0.5 Soil	7496181
FDG2-SL-629-SA8-SB-0.0-0.5 Soil	7496182
FDG2-SL-571-NBZ-SB-0.0-0.5 Soil	7496183

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

Sample Description: TB1-061114 Water
SSFL Phase 3

LL Sample # WW 7496175
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:00

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB111 SDG#: PH229-01TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**TPH GRO SW-8015B**		ug/l		ug/l	ug/l	
08229	TPH-GRO S.CA water C5-C12	n.a.	50	U	50	20	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08229	11b TPH by EPA 8015B GRO	TPH GRO SW-8015B	1	14169A94A	06/19/2014 17:36	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	14169A94A	06/19/2014 17:36	Marie D Beamenderfer	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-878-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7496176
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:25 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87800 SDG#: PH229-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	2.3	J	5.1	2.0	1
12952	EFH (C21-C30)	n.a.	24		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	53		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	6.5		5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	4.6	J	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	1.3		0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 14:05	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-878-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7496176
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:25 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87800 SDG#: PH229-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/17/2014 12:38	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 01:41	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-878-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7496177
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:55 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87840 SDG#: PH229-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.69	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.69	1
12969	Benzo(a)pyrene	50-32-8	1.7	U	1.7	0.69	1
12969	Benzo(b)fluoranthene	205-99-2	0.88	J	1.7	0.69	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.69	1
12969	Benzo(k)fluoranthene	207-08-9	3.8		1.7	0.69	1
12969	Butylbenzylphthalate	85-68-7	19	U	19	6.2	1
12969	Di-n-butylphthalate	84-74-2	19	U	19	6.2	1
12969	Chrysene	218-01-9	1.1	J	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.69	1
12969	Diethylphthalate	84-66-2	19	U	19	6.2	1
12969	Dimethylphthalate	131-11-3	19	U	19	6.2	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	10	J	19	6.2	1
12969	Fluoranthene	206-44-0	0.95	J	1.7	0.69	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.69	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.69	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.69	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.69	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.69	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.69	1
12969	Di-n-octylphthalate	117-84-0	19	U	19	6.2	1
12969	Phenanthrene	85-01-8	0.78	J	1.7	0.69	1
12969	Pyrene	129-00-0	0.75	J	1.7	0.69	1
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	1.0	U	1.0	0.2	24.61
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.4	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C15-C20)	n.a.	5.1	U	5.1	2.1	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-878-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7496177
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:55 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87840 SDG#: PH229-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C21-C30)	n.a.	13		5.1	2.1	1
12952	EFH (C30-C40)	n.a.	28		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	2.1	J	5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
	The reverse surrogate, capric acid, is present at <1%.						
	The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,800		41.1	7.41	1
06944	Antimony	7440-36-0	4.11	U	4.11	0.761	1
06935	Arsenic	7440-38-2	7.05		4.11	0.719	1
06946	Barium	7440-39-3	92.5		1.03	0.0339	1
06947	Beryllium	7440-41-7	0.588	J	1.03	0.0689	1
07914	Boron	7440-42-8	3.90	J	10.3	0.863	1
06949	Cadmium	7440-43-9	1.03	U	1.03	0.0781	1
01650	Calcium	7440-70-2	2,340		20.6	3.43	1
06951	Chromium	7440-47-3	21.2		3.08	0.164	1
06952	Cobalt	7440-48-4	4.78		1.03	0.102	1
06953	Copper	7440-50-8	9.95		2.06	0.298	1
01654	Iron	7439-89-6	18,600		41.1	3.72	1
06955	Lead	7439-92-1	7.29		3.08	0.514	1
01656	Lithium	7439-93-2	26.4		4.1	0.35	1
01657	Magnesium	7439-95-4	4,510		10.3	1.72	1
06958	Manganese	7439-96-5	290		1.03	0.0853	1
06960	Molybdenum	7439-98-7	0.417	J	2.06	0.175	1
06961	Nickel	7440-02-0	12.8		2.06	0.134	1
10145	Phosphorus	7723-14-0	480		10.3	2.97	1
01662	Potassium	7440-09-7	3,180		103	8.57	1
01667	Sodium	7440-23-5	80.1	J	103	17.2	1
06969	Tin	7440-31-5	2.58	J	10.3	0.226	1
06970	Titanium	7440-32-6	1,070		1.03	0.175	1
06971	Vanadium	7440-62-2	33.8		1.03	0.134	1
06972	Zinc	7440-66-6	54.4		4.11	0.206	1
10146	Zirconium	7440-67-7	2.72	J	5.14	0.863	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.229	J	0.411	0.103	2
06142	Silver	7440-22-4	0.0779	J	0.206	0.0267	2
06144	Strontium	7440-24-6	19.9		0.411	0.0699	2
06145	Thallium	7440-28-0	0.241		0.206	0.0308	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0189		0.0166	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-878-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7496177
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:55 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87840 SDG#: PH229-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**SW-846 9045D modified**		Std. Units	Std. Units	Std. Units	
00394	15a pH by 9045D The pH was measured in water at 21.9 C.	n.a.	6.10	0.0100	0.0100	1
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	2.7	0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 03:21	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	3	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14164A16A	06/14/2014 03:13	Marie D Beamenderfer	24.61
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416334784	06/12/2014 14:39	Mitchell R Washel	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416334784	06/12/2014 14:39	Mitchell R Washel	n.a.
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 14:23	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/17/2014 12:59	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 02:03	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-878-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7496177
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 08:55 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87840 SDG#: PH229-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:10	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:15	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:15	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:15	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:15	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:38	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14163039401A	06/12/2014 21:30	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-694-SA6-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 6

LL Sample # SW 7496178
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:10 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

69400 SDG#: PH229-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	2.3	J	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	9.9		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	26		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	0.51		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/17/2014 13:20	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 02:25	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-695-SA6-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 6

LL Sample # SW 7496179
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 10:30 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

69500 SDG#: PH229-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	9.7		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	27		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	0.62		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/17/2014 13:42	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 02:46	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-560-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7496180
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:35 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56000 SDG#: PH229-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg		ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.69	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.69	1
12969	Benzo(a)pyrene	50-32-8	1.7	U	1.7	0.69	1
12969	Benzo(b)fluoranthene	205-99-2	1.7	U	1.7	0.69	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.69	1
12969	Benzo(k)fluoranthene	207-08-9	7.4		1.7	0.69	1
12969	Butylbenzylphthalate	85-68-7	19	U	19	6.2	1
12969	Di-n-butylphthalate	84-74-2	19	U	19	6.2	1
12969	Chrysene	218-01-9	1.1	J	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.69	1
12969	Diethylphthalate	84-66-2	19	U	19	6.2	1
12969	Dimethylphthalate	131-11-3	19	U	19	6.2	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	19	U	19	6.2	1
12969	Fluoranthene	206-44-0	0.85	J	1.7	0.69	1
12969	Fluorene	86-73-7	2.5		1.7	0.69	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.69	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.69	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.69	1
12969	Naphthalene	91-20-3	0.76	J	1.7	0.69	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.69	1
12969	Di-n-octylphthalate	117-84-0	19	U	19	6.2	1
12969	Phenanthrene	85-01-8	0.75	J	1.7	0.69	1
12969	Pyrene	129-00-0	1.7	U	1.7	0.69	1
Pesticides/PCBs	**SW-846 8082A**		ug/kg		ug/kg	ug/kg	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.4	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	8.9	J	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		mg/kg		mg/kg	mg/kg	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C15-C20)	n.a.	5.6		5.1	2.1	1
12952	EFH (C21-C30)	n.a.	59		5.1	2.1	1
12952	EFH (C30-C40)	n.a.	96		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-560-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7496180
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:35 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56000 SDG#: PH229-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13197	EFH C21-C30 w/ SiGel	n.a.	12		5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	5.0	J	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
	The reverse surrogate, capric acid, is present at <1%.						
	The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	13,300		39.2	7.06	1
06944	Antimony	7440-36-0	3.92	U	3.92	0.724	1
06935	Arsenic	7440-38-2	7.53		3.92	0.685	1
06946	Barium	7440-39-3	60.2		0.979	0.0323	1
06947	Beryllium	7440-41-7	0.567	J	0.979	0.0656	1
07914	Boron	7440-42-8	5.38	J	9.79	0.822	1
06949	Cadmium	7440-43-9	0.979	U	0.979	0.0744	1
01650	Calcium	7440-70-2	4,480		19.6	3.27	1
06951	Chromium	7440-47-3	19.5		2.94	0.157	1
06952	Cobalt	7440-48-4	5.45		0.979	0.0969	1
06953	Copper	7440-50-8	11.4		1.96	0.284	1
01654	Iron	7439-89-6	20,700		39.2	3.54	1
06955	Lead	7439-92-1	9.06		2.94	0.489	1
01656	Lithium	7439-93-2	28.3		3.9	0.33	1
01657	Magnesium	7439-95-4	5,010		9.79	1.63	1
06958	Manganese	7439-96-5	262		0.979	0.0812	1
06960	Molybdenum	7439-98-7	1.96	U	1.96	0.166	1
06961	Nickel	7440-02-0	12.3		1.96	0.127	1
10145	Phosphorus	7723-14-0	445		9.79	2.83	1
01662	Potassium	7440-09-7	3,700		97.9	8.16	1
01667	Sodium	7440-23-5	132		97.9	16.3	1
06969	Tin	7440-31-5	2.64	J	9.79	0.215	1
06970	Titanium	7440-32-6	943		0.979	0.166	1
06971	Vanadium	7440-62-2	34.3		0.979	0.127	1
06972	Zinc	7440-66-6	63.4		3.92	0.196	1
10146	Zirconium	7440-67-7	4.25	J	4.89	0.822	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.368	J	0.392	0.0979	2
06142	Silver	7440-22-4	0.0581	J	0.196	0.0254	2
06144	Strontium	7440-24-6	29.0		0.392	0.0666	2
06145	Thallium	7440-28-0	0.282		0.196	0.0294	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0263		0.0163	0.0098	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	7.92		0.0100	0.0100	1
	The pH was measured in water at 22.4 C.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-560-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7496180
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:35 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56000 SDG#: PH229-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3	n.a.	2.7	0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 03:54	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	3	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 14:42	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/18/2014 00:31	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 03:08	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-560-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7496180
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 11:35 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56000 SDG#: PH229-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:14	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:18	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:18	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:18	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:18	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:40	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14163039401A	06/12/2014 21:30	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-577-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7496181
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 13:45 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57700 SDG#: PH229-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	3.0	J	5.1	2.0	1
12952	EFH (C21-C30)	n.a.	18		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	40		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	2.1	J	5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.0	1

The reverse surrogate, capric acid, is present at <1%.
The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.

Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	1.5		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/17/2014 14:24	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 03:29	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-629-SA8-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7496182
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 14:05 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

62900 SDG#: PH229-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	2.8	J	5.1	2.0	1
12952	EFH (C21-C30)	n.a.	24		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	46		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	3.8	J	5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.0	1

The reverse surrogate, capric acid, is present at <1%.
The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.

Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	1.1		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/17/2014 14:46	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 03:51	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-571-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7496183
LL Group # 1481297
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/11/2014 14:40 by RR

Submitted: 06/12/2014 09:15
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57100 SDG#: PH229-09*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	11	U	11	4.2	2
12952	EFH (C15-C20)	n.a.	11	J	11	4.2	2
12952	EFH (C21-C30)	n.a.	71		11	4.2	2
12952	EFH (C30-C40)	n.a.	140		21	8.4	2
12952	EFH (C8-C11)	n.a.	11	U	11	4.2	2
13197	EFH C12-C14 w/ SiGel	n.a.	5.3	U	5.3	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.3	U	5.3	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	12		5.3	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	J	11	4.2	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.3	U	5.3	2.1	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	5.3		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141640001A	06/18/2014 18:58	Heather E Williams	2
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141680008A	06/24/2014 04:13	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141680008A	06/17/2014 16:45	JoElla L Rice	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141640001A	06/13/2014 18:00	Sally L Appleyard	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401A	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481297
Reported: 07/07/14 at 12:24 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14174SLA026	Sample number(s): 7496177,7496180									
Acenaphthene	1.7	U	1.7	0.67	ug/kg	111		84-118		
Acenaphthylene	1.7	U	1.7	0.33	ug/kg	105		78-120		
Anthracene	1.7	U	1.7	0.33	ug/kg	103		85-118		
Benzo(a)anthracene	1.7	U	1.7	0.67	ug/kg	110		83-119		
Benzo(a)pyrene	1.7	U	1.7	0.67	ug/kg	101		80-122		
Benzo(b)fluoranthene	1.7	U	1.7	0.67	ug/kg	110		82-135		
Benzo(e)pyrene	17	U	17.	3.3	ug/kg	96		81-110		
Benzo(g,h,i)perylene	1.7	U	1.7	0.67	ug/kg	98		79-121		
Benzo(k)fluoranthene	1.7	U	1.7	0.67	ug/kg	105		79-123		
Butylbenzylphthalate	18	U	18.	6.0	ug/kg	100		75-144		
Di-n-butylphthalate	18	U	18.	6.0	ug/kg	98		75-148		
Chrysene	1.7	U	1.7	0.33	ug/kg	112		84-113		
Dibenz(a,h)anthracene	1.7	U	1.7	0.67	ug/kg	101		83-123		
Diethylphthalate	18	U	18.	6.0	ug/kg	105		73-147		
Dimethylphthalate	18	U	18.	6.0	ug/kg	105		85-122		
Bis(2-Ethylhexyl)phthalate	18	U	18.	6.0	ug/kg	102		68-146		
Fluoranthene	1.7	U	1.7	0.67	ug/kg	110		85-116		
Fluorene	1.7	U	1.7	0.67	ug/kg	113		84-120		
Indeno(1,2,3-cd)pyrene	1.7	U	1.7	0.67	ug/kg	98		82-123		
1-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	105		78-119		
2-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	107		78-121		
Naphthalene	1.7	U	1.7	0.67	ug/kg	103		79-113		
N-Nitrosodimethylamine	1.7	U	1.7	0.67	ug/kg	108		71-124		
Di-n-octylphthalate	18	U	18.	6.0	ug/kg	99		71-148		
Phenanthrene	1.7	U	1.7	0.67	ug/kg	102		83-113		
Pyrene	1.7	U	1.7	0.67	ug/kg	101		80-119		
Batch number: 14164A16A	Sample number(s): 7496177									
11a TPH by EPA 8015B GRO	1.0	U	1.0	0.2	mg/kg	77		67-120		
Batch number: 14169A94A	Sample number(s): 7496175									
TPH-GRO S.CA water C5-C12	50	U	50.	20	ug/l	98	96	80-133	2	30
Batch number: 141690028A	Sample number(s): 7496176-7496177,7496180									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	82	83	36-106	0	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	100		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481297
Reported: 07/07/14 at 12:24 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
PCB-1260	17	U	17.	3.9	ug/kg	105		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141640001A	Sample number(s): 7496176-7496183									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	93		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	96		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	98		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	86		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	76		60-115		
Batch number: 141680008A	Sample number(s): 7496176-7496183									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	71*		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	75*		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	76*		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	62		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	53*		60-115		
Batch number: 141680637002	Sample number(s): 7496177,7496180									
Aluminum	10.0	J	40.0	7.21	mg/kg	107		80-120		
Antimony	4.00	U	4.00	0.740	mg/kg	105		80-120		
Arsenic	4.00	U	4.00	0.700	mg/kg	105		80-120		
Barium	1.00	U	1.00	0.0330	mg/kg	102		80-120		
Beryllium	1.00	U	1.00	0.0670	mg/kg	102		80-120		
Boron	1.76	J	10.0	0.840	mg/kg	99		80-120		
Cadmium	1.00	U	1.00	0.0760	mg/kg	103		80-120		
Calcium	24.6		20.0	3.34	mg/kg	105		80-120		
Chromium	3.00	U	3.00	0.160	mg/kg	103		80-120		
Cobalt	1.00	U	1.00	0.0990	mg/kg	105		80-120		
Copper	2.00	U	2.00	0.290	mg/kg	103		80-120		
Iron	40.0	U	40.0	3.62	mg/kg	104		80-120		
Lead	3.00	U	3.00	0.500	mg/kg	108		80-120		
Lithium	4.0	U	4.0	0.34	mg/kg	101		80-120		
Magnesium	10.0	U	10.0	1.67	mg/kg	103		80-120		
Manganese	1.00	U	1.00	0.0830	mg/kg	102		80-120		
Molybdenum	2.00	U	2.00	0.170	mg/kg	102		80-120		
Nickel	2.00	U	2.00	0.130	mg/kg	108		80-120		
Phosphorus	10.0	U	10.0	2.89	mg/kg	104		80-120		
Potassium	100 U		100.	8.34	mg/kg	99		80-120		
Sodium	100 U		100.	16.7	mg/kg	101		80-120		
Tin	1.46	J	10.0	0.220	mg/kg	101		80-120		
Titanium	1.00	U	1.00	0.170	mg/kg	104		80-120		
Vanadium	1.00	U	1.00	0.130	mg/kg	104		80-120		
Zinc	0.386	J	4.00	0.200	mg/kg	103		80-120		
Zirconium	5.00	U	5.00	0.840	mg/kg	102		80-120		
Batch number: 141680637002A	Sample number(s): 7496177,7496180									
Silver	0.200	U	0.200	0.0260	mg/kg	103		80-120		
Strontium	0.134	J	0.400	0.0680	mg/kg	100		80-120		
Thallium	0.200	U	0.200	0.0300	mg/kg	102		80-120		
Batch number: 141680637002B	Sample number(s): 7496177,7496180									
Selenium	0.400	U	0.400	0.100	mg/kg	103		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481297
Reported: 07/07/14 at 12:24 PM

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 141680638002	Sample number(s): 7496177,7496180								
3a Mercury 7471A	0.0167 U	0.0167	0.0100	mg/kg	85		85-120		
Batch number: 14163039401A	Sample number(s): 7496177,7496180								
15a pH by 9045D					100		95-105		
Batch number: 14170162401A	Sample number(s): 7496176-7496183								
14a Moisture Content by 160.3					100		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14174SLA026	Sample number(s): 7496177,7496180 UNSPK: P502707								
Acenaphthene	104	104	48-127	1	30				
Acenaphthylene	103	103	60-128	0	30				
Anthracene	103	102	52-126	0	30				
Benzo(a)anthracene	110	107	44-143	2	30				
Benzo(a)pyrene	95	95	49-137	0	30				
Benzo(b)fluoranthene	123	123	26-142	0	30				
Benzo(e)pyrene	98	98	63-111	0	30				
Benzo(g,h,i)perylene	48	45	33-141	5	30				
Benzo(k)fluoranthene	106	107	49-144	0	30				
Butylbenzylphthalate	115	119	64-156	4	30				
Di-n-butylphthalate	107	105	52-147	1	30				
Chrysene	106	103	43-141	3	30				
Dibenz(a,h)anthracene	59	57	25-145	4	30				
Diethylphthalate	101	101	66-140	0	30				
Dimethylphthalate	98	101	70-123	2	30				
Bis(2-Ethylhexyl)phthalate	107	110	48-164	3	30				
Fluoranthene	108	109	38-153	1	30				
Fluorene	108	108	57-130	0	30				
Indeno(1,2,3-cd)pyrene	55	53	26-139	5	30				
1-Methylnaphthalene	104	104	59-139	0	30				
2-Methylnaphthalene	107	107	46-147	1	30				
Naphthalene	103	103	52-136	0	30				
N-Nitrosodimethylamine	105	105	39-134	1	30				
Di-n-octylphthalate	172*	178*	52-162	3	30				
Phenanthrene	100	101	50-137	0	30				
Pyrene	102	103	26-143	0	30				
Batch number: 14164A16A	Sample number(s): 7496177 UNSPK: P494363								
11a TPH by EPA 8015B GRO	80	80	69-123	6	30				
Batch number: 141690028A	Sample number(s): 7496176-7496177,7496180 UNSPK: P494369								
PCB-1016	96	78	41-135	22	50				
PCB-1260	102	83	40-134	22	50				
Batch number: 141640001A	Sample number(s): 7496176-7496183 UNSPK: P494363								
EFH (C12-C14)	103	89	49-123	15	20				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481297
Reported: 07/07/14 at 12:24 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
EFH (C15-C20)	105	126*	49-123	13	20				
EFH (C21-C30)	118	217*	49-123	28*	20				
EFH (C30-C40)	109	218*	49-123	26*	20				
EFH (C8-C11)	100	84	49-123	18	20				
Batch number: 141680008A	Sample number(s): 7496176-7496183 UNSPK: P494363								
EFH C12-C14 w/ SiGel	75	72	49-123	3	20				
EFH C15-C20 w/ SiGel	82	89	49-123	8	20				
EFH C21-C30 w/ SiGel	46*	110	49-123	36*	20				
EFH C30-C40 w/ SiGel	47*	106	49-123	36*	20				
EFH C8-C11 w/ SiGel	59	56	49-123	4	20				
Batch number: 141680637002	Sample number(s): 7496177,7496180 UNSPK: P501188 BKG: P501188								
Aluminum	1032 (2)	806 (2)	75-125	3	20	15,000	15,000	0	20
Antimony	47*	49*	75-125	3	20	3.92 U	3.96 U	0 (1)	20
Arsenic	98	98	75-125	1	20	5.68	5.34	6 (1)	20
Barium	94	88	75-125	5	20	104	107	3	20
Beryllium	102	102	75-125	2	20	0.566 J	0.570 J	1 (1)	20
Boron	98	97	75-125	2	20	4.31 J	4.09 J	5 (1)	20
Cadmium	93	93	75-125	2	20	0.980 U	0.990 U	0 (1)	20
Calcium	150 (2)	103 (2)	75-125	7	20	2,210	2,360	7	20
Chromium	112	94	75-125	10	20	19.0	20.0	5	20
Cobalt	95	95	75-125	2	20	4.78	4.98	4 (1)	20
Copper	102	95	75-125	7	20	11.5	11.7	1	20
Iron	-493 (2)	-449 (2)	75-125	0	20	18,800	18,800	0	20
Lead	132*	84	75-125	28*	20	10.4	7.96	26* (1)	20
Lithium	103	108	75-125	2	20	20.1	18.9	6 (1)	20
Magnesium	95 (2)	21 (2)	75-125	4	20	4,030	4,040	0	20
Manganese	73 (2)	41 (2)	75-125	5	20	313	332	6	20
Molybdenum	95	95	75-125	2	20	0.404 J	0.410 J	1 (1)	20
Nickel	97	94	75-125	4	20	12.8	12.4	3	20
Phosphorus	92 (2)	151 (2)	75-125	10	20	424	434	2	20
Potassium	124	122	75-125	1	20	3,560	3,680	3	20
Sodium	103	105	75-125	0	20	76.0 J	72.5 J	5 (1)	20
Tin	89	89	75-125	2	20	2.54 J	2.52 J	1 (1)	20
Titanium	244 (2)	196 (2)	75-125	4	20	1,040	1,040	0	20
Vanadium	102	96	75-125	4	20	35.0	33.9	3	20
Zinc	95	93	75-125	2	20	57.1	56.0	2	20
Zirconium	97	99	75-125	0	20	2.95 J	3.36 J	13 (1)	20
Batch number: 141680637002A	Sample number(s): 7496177,7496180 UNSPK: P501188 BKG: P501188								
Silver	128*	128*	75-125	2	20	0.0414 J	0.0323 J	25* (1)	20
Strontium	148*	71*	75-125	21*	20	22.0	23.1	5	20
Thallium	125	115	75-125	6	20	0.266	0.255	4 (1)	20
Batch number: 141680637002B	Sample number(s): 7496177,7496180 UNSPK: P501188 BKG: P501188								
Selenium	116	116	75-125	1	20	0.265 J	0.259 J	2 (1)	20
Batch number: 141680638002	Sample number(s): 7496177,7496180 UNSPK: P501188 BKG: P501188								
3a Mercury 7471A	89	86	65-135	1	20	0.0200	0.0182	10 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481297
Reported: 07/07/14 at 12:24 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14163039401A	Sample number(s): 7496177,7496180					BKG: 7496177			
15a pH by 9045D						6.10	6.13	0	3
Batch number: 14170162401A	Sample number(s): 7496176-7496183					BKG: P496167			
14a Moisture Content by 160.3						6.1	6.8	11	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 7a SVOC SIM EPA 8270D
Batch number: 14174SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7496177	100	102	89
7496180	105	109	94
Blank	111	114	100
LCS	110	115	99
MS	112	110	99
MSD	112	109	98
Limits:	59-115	61-118	70-127

Analysis Name: 11a TPH by EPA 8015B GRO
Batch number: 14164A16A

	Trifluorotoluene-F
7496177	84
Blank	101
LCS	94
MS	81
MSD	75
Limits:	50-142

Analysis Name: 11b TPH by EPA 8015B GRO
Batch number: 14169A94A

	Trifluorotoluene-F
7496175	79
Blank	80
LCS	91
LCSD	92
Limits:	63-135

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481297
Reported: 07/07/14 at 12:24 PM

Surrogate Quality Control

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141690028A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7496176	94	83
7496177	93	83
7496180	87	80
Blank	66	62
LCS	104	95
LCSD	99	91
MS	107	101
MSD	81	75
Limits:	45-120	45-120

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141640001A

	Chlorobenzene	Orthoterphenyl
7496176	85	93
7496177	81	85
7496178	102	107
7496179	92	94
7496180	83	94
7496181	104	103
7496182	83	90
7496183	110	114
Blank	95	101
LCS	92	91
MS	97	95
MSD	92	84
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141680008A

	Chlorobenzene	Orthoterphenyl
7496176	58	75
7496177	57	79
7496178	62	78
7496179	57	83
7496180	63	78
7496181	57	72
7496182	64	80
7496183	69	81
Blank	39	75
LCS	62	73
MS	65	76
MSD	64	74
Limits:	37-125	66-123

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

SSFL Phase 3 Chain of Custody

13013 1481297 7496175-83

CDM Smith

DateShipped: 6/11/2014
CarrierName: FedEx
AirbillNo: 770273213274

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

COC No: 20140611-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
TB1-061114	6/11/14 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X																
FDG2-SL-878-SA5A-SB-0.0-0.5	6/11/14 08:25	SO	None	1 - SS-Sleeve	10 day										X											X															
FDG2-SL-878-SA5A-SB-4.0-5.0	6/11/14 08:55	SO	None	2 - SS-Sleeve	10 day	X	X					X			X											X															
FDG2-SL-878-SA5A-SB-4.0-5.0	6/11/14 08:55	SO	None	1 - 16 oz glass	10 day													X																							
FDG2-SL-878-SA5A-SB-4.0-5.0	6/11/14 08:55	SO	None	2 - Encore	10 day																				X																
FDG2-SL-694-SA6-SB-0.0-0.5	6/11/14 11:10	SO	None	1 - SS-Sleeve	10 day																					X															
FDG2-SL-695-SA6-SB-0.0-0.5	6/11/14 10:30	SO	None	1 - SS-Sleeve	10 day																					X															
FDG2-SL-560-NBZ-SB-0.0-0.5	6/11/14 11:35	SO	None	2 - SS-Sleeve	10 day	X	X					X			X											X															
FDG2-SL-560-NBZ-SB-0.0-0.5	6/11/14 11:35	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-577-NBZ-SB-0.0-0.5	6/11/14 13:45	SO	None	1 - SS-Sleeve	10 day																					X															
FDG2-SL-629-SA8-SB-0.0-0.5	6/11/14 14:05	SO	None	1 - SS-Sleeve	10 day																					X															
FDG2-SL-571-NBZ-SB-0.0-0.5	6/11/14 14:40	SO	None	1 - SS-Sleeve	10 day																					X															

Special Instructions: For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Sampler: Randy Roberts Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Steg Myers	06/11/14	1600									
									[signature]	6-12-14	915

Final Data Gap Block 2 1 of 1

COC Rev 4

COC: 20140611-01, Page 1 of 1

1 of 1

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 17140

Group Number(s): 1481297

Client: CDM

SSFL

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/12/2014 9:15
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	6
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Brandy Barclay (2299) at 09:45 on 06/12/2014

Samples Chilled Details: SSFL

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	0.7	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/13/2014
Group Number: 1481663
SDG: PH230
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
SVL-532-SA8-SB-3.5-4.0 Soil	7497906
TB-061214 Water	7497907
SVL-546-SA8-SB-4.4-4.9 Soil	7497908
SVL-546-SA8-SB-4.4-4.9MS Soil	7497909
SVL-546-SA8-SB-4.4-4.9MSD Soil	7497910
SVL-846-SA8-SB-4.4-4.9 Soil	7497911

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

Sample Description: SVL-532-SA8-SB-3.5-4.0 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497906
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 12:30 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

53235 SDG#: PH230-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	23	U	23	8	1.02
10237	Acrolein	107-02-8	110	U	110	23	1.02
10237	Acrylonitrile	107-13-1	23	U	23	5	1.02
10237	t-Amyl methyl ether	994-05-8	6	U	6	1	1.02
10237	Benzene	71-43-2	6	U	6	0.6	1.02
10237	Bromobenzene	108-86-1	6	U	6	1	1.02
10237	Bromochloromethane	74-97-5	6	U	6	1	1.02
10237	Bromodichloromethane	75-27-4	6	U	6	1	1.02
10237	Bromoform	75-25-2	6	U	6	1	1.02
10237	Bromomethane	74-83-9	6	U	6	2	1.02
10237	2-Butanone	78-93-3	11	U	11	5	1.02
10237	t-Butyl alcohol	75-65-0	56	U	56	23	1.02
10237	n-Butylbenzene	104-51-8	6	U	6	1	1.02
10237	sec-Butylbenzene	135-98-8	6	U	6	1	1.02
10237	tert-Butylbenzene	98-06-6	6	U	6	1	1.02
10237	Carbon Disulfide	75-15-0	6	U	6	1	1.02
10237	Carbon Tetrachloride	56-23-5	6	U	6	1	1.02
10237	Chlorobenzene	108-90-7	6	U	6	1	1.02
10237	Chloroethane	75-00-3	6	U	6	2	1.02
10237	2-Chloroethyl Vinyl Ether	110-75-8	11	U	11	2	1.02
10237	Chloroform	67-66-3	6	U	6	1	1.02
10237	1-Chlorohexane	544-10-5	6	U	6	1	1.02
10237	Chloromethane	74-87-3	6	U	6	2	1.02
10237	2-Chlorotoluene	95-49-8	6	U	6	1	1.02
10237	4-Chlorotoluene	106-43-4	6	U	6	1	1.02
10237	Chlorotrifluoroethene	79-38-9	6	U	6	2	1.02
10237	1,2-Dibromo-3-chloropropane	96-12-8	6	U	6	2	1.02
10237	Dibromochloromethane	124-48-1	6	U	6	1	1.02
10237	1,2-Dibromoethane	106-93-4	6	U	6	1	1.02
10237	Dibromomethane	74-95-3	6	U	6	1	1.02
10237	1,2-Dichlorobenzene	95-50-1	6	U	6	1	1.02
10237	1,3-Dichlorobenzene	541-73-1	6	U	6	1	1.02
10237	1,4-Dichlorobenzene	106-46-7	6	U	6	1	1.02
10237	Dichlorodifluoromethane	75-71-8	6	U	6	2	1.02
10237	1,1-Dichloroethane	75-34-3	6	U	6	1	1.02
10237	1,2-Dichloroethane	107-06-2	6	U	6	1	1.02
10237	1,1-Dichloroethene	75-35-4	6	U	6	1	1.02
10237	cis-1,2-Dichloroethene	156-59-2	6	U	6	1	1.02
10237	trans-1,2-Dichloroethene	156-60-5	6	U	6	1	1.02
10237	1,2-Dichloropropane	78-87-5	6	U	6	1	1.02
10237	1,3-Dichloropropane	142-28-9	6	U	6	1	1.02
10237	2,2-Dichloropropane	594-20-7	6	U	6	1	1.02
10237	1,1-Dichloropropene	563-58-6	6	U	6	1	1.02
10237	cis-1,3-Dichloropropene	10061-01-5	6	U	6	1	1.02
10237	trans-1,3-Dichloropropene	10061-02-6	6	U	6	1	1.02
10237	Ethyl t-butyl ether	637-92-3	6	U	6	1	1.02
10237	Ethylbenzene	100-41-4	6	U	6	1	1.02
10237	Freon 113	76-13-1	6	U	6	2	1.02
10237	Freon 133a	75-88-7	6	U	6	2	1.02
10237	Hexachlorobutadiene	87-68-3	6	U	6	2	1.02
10237	2-Hexanone	591-78-6	11	U	11	3	1.02

*=This limit was used in the evaluation of the final result

Sample Description: SVL-532-SA8-SB-3.5-4.0 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497906
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 12:30 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

53235 SDG#: PH230-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	6	U	6	1	1.02
10237	Isopropylbenzene	98-82-8	6	U	6	1	1.02
10237	p-Isopropyltoluene	99-87-6	6	U	6	1	1.02
10237	Methyl Iodide	74-88-4	6	U	6	3	1.02
10237	Methyl Tertiary Butyl Ether	1634-04-4	6	U	6	0.6	1.02
10237	4-Methyl-2-pentanone	108-10-1	11	U	11	3	1.02
10237	Methylene Chloride	75-09-2	6	U	6	2	1.02
10237	n-Propylbenzene	103-65-1	6	U	6	1	1.02
10237	Styrene	100-42-5	6	U	6	1	1.02
10237	1,1,1,2-Tetrachloroethane	630-20-6	6	U	6	1	1.02
10237	1,1,2,2-Tetrachloroethane	79-34-5	6	U	6	1	1.02
10237	Tetrachloroethene	127-18-4	6	U	6	1	1.02
10237	Toluene	108-88-3	6	U	6	1	1.02
10237	1,2,3-Trichlorobenzene	87-61-6	6	U	6	1	1.02
10237	1,2,4-Trichlorobenzene	120-82-1	6	U	6	1	1.02
10237	1,1,1-Trichloroethane	71-55-6	6	U	6	1	1.02
10237	1,1,2-Trichloroethane	79-00-5	6	U	6	1	1.02
10237	Trichloroethene	79-01-6	6	U	6	1	1.02
10237	Trichlorofluoromethane	75-69-4	6	U	6	2	1.02
10237	1,2,3-Trichloropropane	96-18-4	6	U	6	1	1.02
10237	1,2,4-Trimethylbenzene	95-63-6	6	U	6	1	1.02
10237	1,3,5-Trimethylbenzene	108-67-8	6	U	6	1	1.02
10237	Vinyl Acetate	108-05-4	11	U	11	2	1.02
10237	Vinyl Chloride	75-01-4	6	U	6	1	1.02
10237	m+p-Xylene	179601-23-1	6	U	6	1	1.02
10237	o-Xylene	95-47-6	6	U	6	1	1.02
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	9.8		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 13:22	Angela D Sneeringer	1.02
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-532-SA8-SB-3.5-4.0 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497906
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 12:30 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

53235 SDG#: PH230-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416434795	06/13/2014 15:11	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: TB-061214 Water
SSFL Phase 3 Subarea 8

LL Sample # WW 7497907
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:00

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB230 SDG#: PH230-02TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	10	U	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: TB-061214 Water
SSFL Phase 3 Subarea 8

LL Sample # WW 7497907
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:00

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB230 SDG#: PH230-02TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	3	U	3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 13:23	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y141701AA	06/19/2014 13:23	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497908
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	21	U	21	7	0.98
10237	Acrolein	107-02-8	100	U	100	21	0.98
10237	Acrylonitrile	107-13-1	21	U	21	4	0.98
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	0.98
10237	Benzene	71-43-2	5	U	5	0.5	0.98
10237	Bromobenzene	108-86-1	5	U	5	1	0.98
10237	Bromochloromethane	74-97-5	5	U	5	1	0.98
10237	Bromodichloromethane	75-27-4	5	U	5	1	0.98
10237	Bromoform	75-25-2	5	U	5	1	0.98
10237	Bromomethane	74-83-9	5	U	5	2	0.98
10237	2-Butanone	78-93-3	10	U	10	4	0.98
10237	t-Butyl alcohol	75-65-0	51	U	51	21	0.98
10237	n-Butylbenzene	104-51-8	5	U	5	1	0.98
10237	sec-Butylbenzene	135-98-8	5	U	5	1	0.98
10237	tert-Butylbenzene	98-06-6	5	U	5	1	0.98
10237	Carbon Disulfide	75-15-0	5	U	5	1	0.98
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	0.98
10237	Chlorobenzene	108-90-7	5	U	5	1	0.98
10237	Chloroethane	75-00-3	5	U	5	2	0.98
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	0.98
10237	Chloroform	67-66-3	5	U	5	1	0.98
10237	1-Chlorohexane	544-10-5	5	U	5	1	0.98
10237	Chloromethane	74-87-3	5	U	5	2	0.98
10237	2-Chlorotoluene	95-49-8	5	U	5	1	0.98
10237	4-Chlorotoluene	106-43-4	5	U	5	1	0.98
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	0.98
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	0.98
10237	Dibromochloromethane	124-48-1	5	U	5	1	0.98
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	0.98
10237	Dibromomethane	74-95-3	5	U	5	1	0.98
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	0.98
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	0.98
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	0.98
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	0.98
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	0.98
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	0.98
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	0.98
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	0.98
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	0.98
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	0.98
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	0.98
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	0.98
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	0.98
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	0.98
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	0.98
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	0.98
10237	Ethylbenzene	100-41-4	5	U	5	1	0.98
10237	Freon 113	76-13-1	5	U	5	2	0.98
10237	Freon 133a	75-88-7	5	U	5	2	0.98
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	0.98
10237	2-Hexanone	591-78-6	10	U	10	3	0.98

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497908
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	0.98
10237	Isopropylbenzene	98-82-8	5	U	5	1	0.98
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	0.98
10237	Methyl Iodide	74-88-4	5	U	5	3	0.98
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	0.98
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	0.98
10237	Methylene Chloride	75-09-2	5	U	5	2	0.98
10237	n-Propylbenzene	103-65-1	5	U	5	1	0.98
10237	Styrene	100-42-5	5	U	5	1	0.98
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	0.98
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	0.98
10237	Tetrachloroethene	127-18-4	5	U	5	1	0.98
10237	Toluene	108-88-3	5	U	5	1	0.98
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	0.98
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	0.98
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	0.98
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	0.98
10237	Trichloroethene	79-01-6	5	U	5	1	0.98
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	0.98
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	0.98
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	0.98
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	0.98
10237	Vinyl Acetate	108-05-4	10	U	10	2	0.98
10237	Vinyl Chloride	75-01-4	5	U	5	1	0.98
10237	m+p-Xylene	179601-23-1	5	U	5	1	0.98
10237	o-Xylene	95-47-6	5	U	5	1	0.98
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	4.5		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 13:45	Angela D Sneeringer	0.98
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497908
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03BKG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416434795	06/13/2014 15:13	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9MS Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497909
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03MS

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	150		21	7	1
10237	Acrolein	107-02-8	53	J	100	21	1
10237	Acrylonitrile	107-13-1	94		21	4	1
10237	t-Amyl methyl ether	994-05-8	21		5	1	1
10237	Benzene	71-43-2	23		5	0.5	1
10237	Bromobenzene	108-86-1	22		5	1	1
10237	Bromochloromethane	74-97-5	22		5	1	1
10237	Bromodichloromethane	75-27-4	20		5	1	1
10237	Bromoform	75-25-2	15		5	1	1
10237	Bromomethane	74-83-9	16		5	2	1
10237	2-Butanone	78-93-3	130		10	4	1
10237	t-Butyl alcohol	75-65-0	280		52	21	1
10237	n-Butylbenzene	104-51-8	22		5	1	1
10237	sec-Butylbenzene	135-98-8	26		5	1	1
10237	tert-Butylbenzene	98-06-6	26		5	1	1
10237	Carbon Disulfide	75-15-0	20		5	1	1
10237	Carbon Tetrachloride	56-23-5	22		5	1	1
10237	Chlorobenzene	108-90-7	22		5	1	1
10237	Chloroethane	75-00-3	15		5	2	1
10237	2-Chloroethyl Vinyl Ether	110-75-8	18		10	2	1
10237	Chloroform	67-66-3	24		5	1	1
10237	1-Chlorohexane	544-10-5	24		5	1	1
10237	Chloromethane	74-87-3	23		5	2	1
10237	2-Chlorotoluene	95-49-8	24		5	1	1
10237	4-Chlorotoluene	106-43-4	23		5	1	1
10237	Chlorotrifluoroethene	79-38-9	22		5	2	0.96
10237	1,2-Dibromo-3-chloropropane	96-12-8	16		5	2	1
10237	Dibromochloromethane	124-48-1	19		5	1	1
10237	1,2-Dibromoethane	106-93-4	22		5	1	1
10237	Dibromomethane	74-95-3	21		5	1	1
10237	1,2-Dichlorobenzene	95-50-1	18		5	1	1
10237	1,3-Dichlorobenzene	541-73-1	19		5	1	1
10237	1,4-Dichlorobenzene	106-46-7	19		5	1	1
10237	Dichlorodifluoromethane	75-71-8	24		5	2	1
10237	1,1-Dichloroethane	75-34-3	24		5	1	1
10237	1,2-Dichloroethane	107-06-2	22		5	1	1
10237	1,1-Dichloroethene	75-35-4	25		5	1	1
10237	cis-1,2-Dichloroethene	156-59-2	24		5	1	1
10237	trans-1,2-Dichloroethene	156-60-5	26		5	1	1
10237	1,2-Dichloropropane	78-87-5	23		5	1	1
10237	1,3-Dichloropropane	142-28-9	23		5	1	1
10237	2,2-Dichloropropane	594-20-7	23		5	1	1
10237	1,1-Dichloropropene	563-58-6	23		5	1	1
10237	cis-1,3-Dichloropropene	10061-01-5	20		5	1	1
10237	trans-1,3-Dichloropropene	10061-02-6	21		5	1	1
10237	Ethyl t-butyl ether	637-92-3	22		5	1	1
10237	Ethylbenzene	100-41-4	24		5	1	1
10237	Freon 113	76-13-1	23		5	2	1
10237	Freon 133a	75-88-7	25		5	2	0.96
10237	Hexachlorobutadiene	87-68-3	17		5	2	1
10237	2-Hexanone	591-78-6	92		10	3	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9MS Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497909
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03MS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg	ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	24	5	1	1
10237	Isopropylbenzene	98-82-8	24	5	1	1
10237	p-Isopropyltoluene	99-87-6	24	5	1	1
10237	Methyl Iodide	74-88-4	23	5	3	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	22	5	0.5	1
10237	4-Methyl-2-pentanone	108-10-1	92	10	3	1
10237	Methylene Chloride	75-09-2	24	5	2	1
10237	n-Propylbenzene	103-65-1	26	5	1	1
10237	Styrene	100-42-5	21	5	1	1
10237	1,1,1,2-Tetrachloroethane	630-20-6	21	5	1	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	21	5	1	1
10237	Tetrachloroethene	127-18-4	25	5	1	1
10237	Toluene	108-88-3	25	5	1	1
10237	1,2,3-Trichlorobenzene	87-61-6	9	5	1	1
10237	1,2,4-Trichlorobenzene	120-82-1	11	5	1	1
10237	1,1,1-Trichloroethane	71-55-6	21	5	1	1
10237	1,1,2-Trichloroethane	79-00-5	23	5	1	1
10237	Trichloroethene	79-01-6	23	5	1	1
10237	Trichlorofluoromethane	75-69-4	23	5	2	1
10237	1,2,3-Trichloropropane	96-18-4	23	5	1	1
10237	1,2,4-Trimethylbenzene	95-63-6	24	5	1	1
10237	1,3,5-Trimethylbenzene	108-67-8	26	5	1	1
10237	Vinyl Acetate	108-05-4	19	10	2	0.96
10237	Vinyl Chloride	75-01-4	24	5	1	1
10237	m+p-Xylene	179601-23-1	48	5	1	1
10237	o-Xylene	95-47-6	23	5	1	1
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11625	14a Moisture Content by 160.3	n.a.	4.5	0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 14:08	Angela D Sneeringer	1
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 14:53	Angela D Sneeringer	0.96
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9MS Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497909
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03MS

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416434795	06/13/2014 15:15	Mitchell R Washel	n.a.
11625	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9MSD Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497910
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	130		21	7	0.99
10237	Acrolein	107-02-8	55	J	100	21	0.99
10237	Acrylonitrile	107-13-1	74		21	4	0.99
10237	t-Amyl methyl ether	994-05-8	18		5	1	0.99
10237	Benzene	71-43-2	20		5	0.5	0.99
10237	Bromobenzene	108-86-1	15		5	1	0.99
10237	Bromochloromethane	74-97-5	19		5	1	0.99
10237	Bromodichloromethane	75-27-4	16		5	1	0.99
10237	Bromoform	75-25-2	13		5	1	0.99
10237	Bromomethane	74-83-9	14		5	2	0.99
10237	2-Butanone	78-93-3	120		10	4	0.99
10237	t-Butyl alcohol	75-65-0	190		52	21	0.99
10237	n-Butylbenzene	104-51-8	16		5	1	0.99
10237	sec-Butylbenzene	135-98-8	18		5	1	0.99
10237	tert-Butylbenzene	98-06-6	19		5	1	0.99
10237	Carbon Disulfide	75-15-0	19		5	1	0.99
10237	Carbon Tetrachloride	56-23-5	20		5	1	0.99
10237	Chlorobenzene	108-90-7	17		5	1	0.99
10237	Chloroethane	75-00-3	13		5	2	0.99
10237	2-Chloroethyl Vinyl Ether	110-75-8	15		10	2	0.99
10237	Chloroform	67-66-3	20		5	1	0.99
10237	1-Chlorohexane	544-10-5	18		5	1	0.99
10237	Chloromethane	74-87-3	20		5	2	0.99
10237	2-Chlorotoluene	95-49-8	16		5	1	0.99
10237	4-Chlorotoluene	106-43-4	16		5	1	0.99
10237	Chlorotrifluoroethene	79-38-9	22		5	2	0.97
10237	1,2-Dibromo-3-chloropropane	96-12-8	12		5	2	0.99
10237	Dibromochloromethane	124-48-1	15		5	1	0.99
10237	1,2-Dibromoethane	106-93-4	18		5	1	0.99
10237	Dibromomethane	74-95-3	17		5	1	0.99
10237	1,2-Dichlorobenzene	95-50-1	12		5	1	0.99
10237	1,3-Dichlorobenzene	541-73-1	13		5	1	0.99
10237	1,4-Dichlorobenzene	106-46-7	13		5	1	0.99
10237	Dichlorodifluoromethane	75-71-8	21		5	2	0.99
10237	1,1-Dichloroethane	75-34-3	21		5	1	0.99
10237	1,2-Dichloroethane	107-06-2	19		5	1	0.99
10237	1,1-Dichloroethene	75-35-4	22		5	1	0.99
10237	cis-1,2-Dichloroethene	156-59-2	20		5	1	0.99
10237	trans-1,2-Dichloroethene	156-60-5	22		5	1	0.99
10237	1,2-Dichloropropane	78-87-5	19		5	1	0.99
10237	1,3-Dichloropropane	142-28-9	18		5	1	0.99
10237	2,2-Dichloropropane	594-20-7	21		5	1	0.99
10237	1,1-Dichloropropene	563-58-6	22		5	1	0.99
10237	cis-1,3-Dichloropropene	10061-01-5	17		5	1	0.99
10237	trans-1,3-Dichloropropene	10061-02-6	17		5	1	0.99
10237	Ethyl t-butyl ether	637-92-3	19		5	1	0.99
10237	Ethylbenzene	100-41-4	19		5	1	0.99
10237	Freon 113	76-13-1	20		5	2	0.99
10237	Freon 133a	75-88-7	25		5	2	0.97
10237	Hexachlorobutadiene	87-68-3	11		5	2	0.99
10237	2-Hexanone	591-78-6	78		10	3	0.99

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9MSD Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497910
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg	ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	20	5	1	0.99
10237	Isopropylbenzene	98-82-8	19	5	1	0.99
10237	p-Isopropyltoluene	99-87-6	17	5	1	0.99
10237	Methyl Iodide	74-88-4	20	5	3	0.99
10237	Methyl Tertiary Butyl Ether	1634-04-4	18	5	0.5	0.99
10237	4-Methyl-2-pentanone	108-10-1	79	10	3	0.99
10237	Methylene Chloride	75-09-2	20	5	2	0.99
10237	n-Propylbenzene	103-65-1	19	5	1	0.99
10237	Styrene	100-42-5	16	5	1	0.99
10237	1,1,1,2-Tetrachloroethane	630-20-6	16	5	1	0.99
10237	1,1,2,2-Tetrachloroethane	79-34-5	15	5	1	0.99
10237	Tetrachloroethene	127-18-4	20	5	1	0.99
10237	Toluene	108-88-3	20	5	1	0.99
10237	1,2,3-Trichlorobenzene	87-61-6	6	5	1	0.99
10237	1,2,4-Trichlorobenzene	120-82-1	7	5	1	0.99
10237	1,1,1-Trichloroethane	71-55-6	19	5	1	0.99
10237	1,1,2-Trichloroethane	79-00-5	18	5	1	0.99
10237	Trichloroethene	79-01-6	20	5	1	0.99
10237	Trichlorofluoromethane	75-69-4	20	5	2	0.99
10237	1,2,3-Trichloropropane	96-18-4	17	5	1	0.99
10237	1,2,4-Trimethylbenzene	95-63-6	16	5	1	0.99
10237	1,3,5-Trimethylbenzene	108-67-8	18	5	1	0.99
10237	Vinyl Acetate	108-05-4	30	10	2	0.97
10237	Vinyl Chloride	75-01-4	21	5	1	0.99
10237	m+p-Xylene	179601-23-1	38	5	1	0.99
10237	o-Xylene	95-47-6	18	5	1	0.99
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11625	14a Moisture Content by 160.3	n.a.	4.5	0.10	0.10	1
11626	14a Moisture Content by 160.3	n.a.	4.4	0.10	0.10	1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 14:30	Angela D Sneeringer	0.99
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 15:16	Angela D Sneeringer	0.97

*=This limit was used in the evaluation of the final result

Sample Description: SVL-546-SA8-SB-4.4-4.9MSD Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497910
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:25 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

54644 SDG#: PH230-03MSD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416434795	06/13/2014 15:20	Mitchell R Washel	n.a.
11625	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1
11626	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: SVL-846-SA8-SB-4.4-4.9 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497911
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:30 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

84644 SDG#: PH230-04*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	20	U	20	7	0.95
10237	Acrolein	107-02-8	100	U	100	20	0.95
10237	Acrylonitrile	107-13-1	20	U	20	4	0.95
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	0.95
10237	Benzene	71-43-2	5	U	5	0.5	0.95
10237	Bromobenzene	108-86-1	5	U	5	1	0.95
10237	Bromochloromethane	74-97-5	5	U	5	1	0.95
10237	Bromodichloromethane	75-27-4	5	U	5	1	0.95
10237	Bromoform	75-25-2	5	U	5	1	0.95
10237	Bromomethane	74-83-9	5	U	5	2	0.95
10237	2-Butanone	78-93-3	10	U	10	4	0.95
10237	t-Butyl alcohol	75-65-0	50	U	50	20	0.95
10237	n-Butylbenzene	104-51-8	5	U	5	1	0.95
10237	sec-Butylbenzene	135-98-8	5	U	5	1	0.95
10237	tert-Butylbenzene	98-06-6	5	U	5	1	0.95
10237	Carbon Disulfide	75-15-0	5	U	5	1	0.95
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	0.95
10237	Chlorobenzene	108-90-7	5	U	5	1	0.95
10237	Chloroethane	75-00-3	5	U	5	2	0.95
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	0.95
10237	Chloroform	67-66-3	5	U	5	1	0.95
10237	1-Chlorohexane	544-10-5	5	U	5	1	0.95
10237	Chloromethane	74-87-3	5	U	5	2	0.95
10237	2-Chlorotoluene	95-49-8	5	U	5	1	0.95
10237	4-Chlorotoluene	106-43-4	5	U	5	1	0.95
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	0.95
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	0.95
10237	Dibromochloromethane	124-48-1	5	U	5	1	0.95
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	0.95
10237	Dibromomethane	74-95-3	5	U	5	1	0.95
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	0.95
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	0.95
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	0.95
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	0.95
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	0.95
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	0.95
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	0.95
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	0.95
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	0.95
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	0.95
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	0.95
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	0.95
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	0.95
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	0.95
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	0.95
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	0.95
10237	Ethylbenzene	100-41-4	5	U	5	1	0.95
10237	Freon 113	76-13-1	5	U	5	2	0.95
10237	Freon 133a	75-88-7	5	U	5	2	0.95
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	0.95
10237	2-Hexanone	591-78-6	10	U	10	3	0.95

*=This limit was used in the evaluation of the final result

Sample Description: SVL-846-SA8-SB-4.4-4.9 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497911
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:30 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

84644 SDG#: PH230-04*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	0.95
10237	Isopropylbenzene	98-82-8	5	U	5	1	0.95
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	0.95
10237	Methyl Iodide	74-88-4	5	U	5	3	0.95
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	0.95
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	0.95
10237	Methylene Chloride	75-09-2	5	U	5	2	0.95
10237	n-Propylbenzene	103-65-1	5	U	5	1	0.95
10237	Styrene	100-42-5	5	U	5	1	0.95
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	0.95
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	0.95
10237	Tetrachloroethene	127-18-4	5	U	5	1	0.95
10237	Toluene	108-88-3	5	U	5	1	0.95
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	0.95
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	0.95
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	0.95
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	0.95
10237	Trichloroethene	79-01-6	5	U	5	1	0.95
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	0.95
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	0.95
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	0.95
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	0.95
10237	Vinyl Acetate	108-05-4	10	U	10	2	0.95
10237	Vinyl Chloride	75-01-4	5	U	5	1	0.95
10237	m+p-Xylene	179601-23-1	5	U	5	1	0.95
10237	o-Xylene	95-47-6	5	U	5	1	0.95
Wet Chemistry	**EPA 160.3 modified**		%		%	%	
11624	14a Moisture Content by 160.3	n.a.	4.5		0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141751AB	06/25/2014 15:39	Angela D Sneeringer	0.95
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	1	201416434795	06/13/2014 15:26	Mitchell R Washel	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: SVL-846-SA8-SB-4.4-4.9 Soil
SSFL Phase 3 Subarea 8

LL Sample # SW 7497911
LL Group # 1481663
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 10:30 by VV

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:24

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

84644 SDG#: PH230-04*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035A	2	201416434795	06/13/2014 15:25	Mitchell R Washel	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035A	1	201416434795	06/13/2014 15:22	Mitchell R Washel	n.a.
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481663
Reported: 07/07/14 at 12:24 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: B141751AB	Sample number(s): 7497906,7497908-7497911								
Acetone	20 U	20.	7	ug/kg	85		41-149		
Acrolein	100 U	100.	20	ug/kg	92		50-137		
Acrylonitrile	20 U	20.	4	ug/kg	90		58-123		
t-Amyl methyl ether	5 U	5.	1	ug/kg	98		63-130		
Benzene	5 U	5.	0.5	ug/kg	100		80-120		
Bromobenzene	5 U	5.	1	ug/kg	103		78-120		
Bromochloromethane	5 U	5.	1	ug/kg	97		75-129		
Bromodichloromethane	5 U	5.	1	ug/kg	90		75-120		
Bromoform	5 U	5.	1	ug/kg	81		70-126		
Bromomethane	5 U	5.	2	ug/kg	69		32-162		
2-Butanone	10 U	10.	4	ug/kg	91		47-136		
t-Butyl alcohol	50 U	50.	20	ug/kg	98		66-133		
n-Butylbenzene	5 U	5.	1	ug/kg	106		72-120		
sec-Butylbenzene	5 U	5.	1	ug/kg	106		69-120		
tert-Butylbenzene	5 U	5.	1	ug/kg	106		75-120		
Carbon Disulfide	5 U	5.	1	ug/kg	87		63-128		
Carbon Tetrachloride	5 U	5.	1	ug/kg	89		69-130		
Chlorobenzene	5 U	5.	1	ug/kg	105		80-120		
Chloroethane	5 U	5.	2	ug/kg	64		17-171		
2-Chloroethyl Vinyl Ether	10 U	10.	2	ug/kg	92		52-134		
Chloroform	5 U	5.	1	ug/kg	101		80-120		
1-Chlorohexane	5 U	5.	1	ug/kg	102		70-130		
Chloromethane	5 U	5.	2	ug/kg	91		56-120		
2-Chlorotoluene	5 U	5.	1	ug/kg	104		78-120		
4-Chlorotoluene	5 U	5.	1	ug/kg	105		79-120		
Chlorotrifluoroethene	5 U	5.	2	ug/kg	91		22-131		
1,2-Dibromo-3-chloropropane	5 U	5.	2	ug/kg	90		50-132		
Dibromochloromethane	5 U	5.	1	ug/kg	89		77-120		
1,2-Dibromoethane	5 U	5.	1	ug/kg	104		80-120		
Dibromomethane	5 U	5.	1	ug/kg	96		75-120		
1,2-Dichlorobenzene	5 U	5.	1	ug/kg	107		80-120		
1,3-Dichlorobenzene	5 U	5.	1	ug/kg	102		80-120		
1,4-Dichlorobenzene	5 U	5.	1	ug/kg	104		80-120		
Dichlorodifluoromethane	5 U	5.	2	ug/kg	89		26-137		
1,1-Dichloroethane	5 U	5.	1	ug/kg	101		71-122		
1,2-Dichloroethane	5 U	5.	1	ug/kg	102		66-136		
1,1-Dichloroethene	5 U	5.	1	ug/kg	102		73-129		
cis-1,2-Dichloroethene	5 U	5.	1	ug/kg	102		80-120		
trans-1,2-Dichloroethene	5 U	5.	1	ug/kg	108		79-120		
1,2-Dichloropropane	5 U	5.	1	ug/kg	100		77-120		
1,3-Dichloropropane	5 U	5.	1	ug/kg	103		73-120		
2,2-Dichloropropane	5 U	5.	1	ug/kg	97		72-123		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481663
Reported: 07/07/14 at 12:24 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloropropene	5	U	5.	1	ug/kg	105		77-120		
cis-1,3-Dichloropropene	5	U	5.	1	ug/kg	96		74-120		
trans-1,3-Dichloropropene	5	U	5.	1	ug/kg	100		69-120		
Ethyl t-butyl ether	5	U	5.	1	ug/kg	99		59-134		
Ethylbenzene	5	U	5.	1	ug/kg	106		80-120		
Freon 113	5	U	5.	2	ug/kg	92		64-137		
Freon 133a	5	U	5.	2	ug/kg	100		78-120		
Hexachlorobutadiene	5	U	5.	2	ug/kg	100		46-130		
2-Hexanone	10	U	10.	3	ug/kg	98		40-129		
di-Isopropyl ether	5	U	5.	1	ug/kg	104		68-128		
Isopropylbenzene	5	U	5.	1	ug/kg	108		76-120		
p-Isopropyltoluene	5	U	5.	1	ug/kg	104		69-120		
Methyl Iodide	5	U	5.	3	ug/kg	97		72-130		
Methyl Tertiary Butyl Ether	5	U	5.	0.5	ug/kg	101		69-126		
4-Methyl-2-pentanone	10	U	10.	3	ug/kg	95		43-133		
Methylene Chloride	5	U	5.	2	ug/kg	102		80-124		
n-Propylbenzene	5	U	5.	1	ug/kg	106		77-120		
Styrene	5	U	5.	1	ug/kg	107		76-120		
1,1,1,2-Tetrachloroethane	5	U	5.	1	ug/kg	95		80-120		
1,1,2,2-Tetrachloroethane	5	U	5.	1	ug/kg	100		71-123		
Tetrachloroethene	5	U	5.	1	ug/kg	104		78-120		
Toluene	5	U	5.	1	ug/kg	105		80-120		
1,2,3-Trichlorobenzene	5	U	5.	1	ug/kg	101		64-120		
1,2,4-Trichlorobenzene	5	U	5.	1	ug/kg	102		68-120		
1,1,1-Trichloroethane	5	U	5.	1	ug/kg	86		63-135		
1,1,2-Trichloroethane	5	U	5.	1	ug/kg	104		80-120		
Trichloroethene	5	U	5.	1	ug/kg	101		80-120		
Trichlorofluoromethane	5	U	5.	2	ug/kg	87		58-133		
1,2,3-Trichloropropane	5	U	5.	1	ug/kg	104		71-123		
1,2,4-Trimethylbenzene	5	U	5.	1	ug/kg	105		79-120		
1,3,5-Trimethylbenzene	5	U	5.	1	ug/kg	106		78-120		
Vinyl Acetate	10	U	10.	2	ug/kg	101		40-127		
Vinyl Chloride	5	U	5.	1	ug/kg	94		59-120		
m+p-Xylene	5	U	5.	1	ug/kg	107		80-120		
o-Xylene	5	U	5.	1	ug/kg	107		80-120		
Batch number: Y141701AA	Sample number(s): 7497907									
Acetone	20	U	20.	6	ug/l	82	85	43-149	4	30
Acrolein	100	U	100.	40	ug/l	97	94	52-129	3	30
Acrylonitrile	20	U	20.	4	ug/l	89	94	62-120	6	30
t-Amyl methyl ether	1	U	1.	0.5	ug/l	101	102	75-120	1	30
Benzene	1	U	1.	0.5	ug/l	103	105	78-120	1	30
Bromobenzene	5	U	5.	1	ug/l	102	103	80-120	1	30
Bromochloromethane	5	U	5.	1	ug/l	101	101	80-121	0	30
Bromodichloromethane	1	U	1.	0.5	ug/l	97	97	73-120	0	30
Bromoform	4	U	4.	0.5	ug/l	91	90	61-120	1	30
Bromomethane	1	U	1.	0.5	ug/l	92	95	58-120	3	30
2-Butanone	10	U	10.	3	ug/l	95	96	54-133	1	30
t-Butyl alcohol	50	U	50.	5	ug/l	115	113	75-120	2	30
n-Butylbenzene	5	U	5.	1	ug/l	106	107	68-120	1	30
sec-Butylbenzene	5	U	5.	1	ug/l	108	109	80-120	1	30
tert-Butylbenzene	5	U	5.	1	ug/l	104	106	73-120	2	30
Carbon Disulfide	5	U	5.	1	ug/l	86	90	58-126	4	30
Carbon Tetrachloride	1	U	1.	0.5	ug/l	100	103	74-130	3	30
Chlorobenzene	1	U	1.	0.5	ug/l	102	105	80-120	2	30

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481663
Reported: 07/07/14 at 12:24 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chloroethane	1	U	1.	0.5	ug/l	87	87	56-120	0	30
2-Chloroethyl Vinyl Ether	10	U	10.	2	ug/l	101	103	54-126	2	30
Chloroform	1	U	1.	0.5	ug/l	103	104	80-122	1	30
1-Chlorohexane	5	U	5.	1	ug/l	104	107	80-120	3	30
Chloromethane	1	U	1.	0.5	ug/l	104	97	63-120	7	30
2-Chlorotoluene	5	U	5.	1	ug/l	102	102	80-120	1	30
4-Chlorotoluene	5	U	5.	1	ug/l	101	102	80-120	1	30
Chlorotrifluoroethene	5	U	5.	2	ug/l	85	82	47-120	4	30
1,2-Dibromo-3-chloropropane	5	U	5.	2	ug/l	98	99	56-120	0	30
Dibromochloromethane	1	U	1.	0.5	ug/l	91	92	72-120	1	30
1,2-Dibromoethane	1	U	1.	0.5	ug/l	105	107	76-120	2	30
Dibromomethane	1	U	1.	0.5	ug/l	103	102	80-120	1	30
1,2-Dichlorobenzene	5	U	5.	1	ug/l	102	102	80-120	0	30
1,3-Dichlorobenzene	5	U	5.	1	ug/l	102	102	80-120	1	30
1,4-Dichlorobenzene	5	U	5.	1	ug/l	101	103	80-120	2	30
Dichlorodifluoromethane	1	U	1.	0.5	ug/l	85	84	48-132	1	30
1,1-Dichloroethane	1	U	1.	0.5	ug/l	103	105	80-120	2	30
1,2-Dichloroethane	1	U	1.	0.5	ug/l	105	105	65-135	0	30
1,1-Dichloroethene	1	U	1.	0.5	ug/l	94	98	76-124	4	30
cis-1,2-Dichloroethene	1	U	1.	0.5	ug/l	105	107	80-120	2	30
trans-1,2-Dichloroethene	1	U	1.	0.5	ug/l	103	106	80-120	3	30
1,2-Dichloropropane	1	U	1.	0.5	ug/l	101	102	80-120	1	30
1,3-Dichloropropane	1	U	1.	0.5	ug/l	101	104	80-120	3	30
2,2-Dichloropropane	1	U	1.	0.5	ug/l	103	106	67-124	3	30
1,1-Dichloropropene	5	U	5.	1	ug/l	106	107	80-120	0	30
cis-1,3-Dichloropropene	1	U	1.	0.5	ug/l	98	99	80-120	1	30
trans-1,3-Dichloropropene	1	U	1.	0.5	ug/l	100	100	76-120	1	30
Ethyl t-butyl ether	1	U	1.	0.5	ug/l	102	102	74-120	0	30
Ethylbenzene	1	U	1.	0.5	ug/l	101	102	79-120	1	30
Freon 113	10	U	10.	2	ug/l	82	85	67-127	4	30
Freon 133a	5	U	5.	2	ug/l	115	116	46-152	1	30
Hexachlorobutadiene	5	U	5.	2	ug/l	101	100	51-125	1	30
2-Hexanone	10	U	10.	3	ug/l	96	97	44-126	1	30
di-Isopropyl ether	1	U	1.	0.5	ug/l	104	104	65-120	0	30
Isopropylbenzene	5	U	5.	1	ug/l	103	104	77-120	1	30
p-Isopropyltoluene	5	U	5.	1	ug/l	105	106	80-120	1	30
Methyl Iodide	1	U	1.	0.5	ug/l	106	106	75-128	0	30
Methyl Tertiary Butyl Ether	1	U	1.	0.5	ug/l	99	101	75-120	2	30
4-Methyl-2-pentanone	10	U	10.	3	ug/l	97	98	51-124	1	30
Methylene Chloride	3	U	3.	2	ug/l	93	95	80-120	2	30
n-Propylbenzene	5	U	5.	1	ug/l	106	107	80-120	2	30
Styrene	5	U	5.	1	ug/l	101	103	80-120	2	30
1,1,1,2-Tetrachloroethane	1	U	1.	0.5	ug/l	100	103	80-120	2	30
1,1,2,2-Tetrachloroethane	1	U	1.	0.5	ug/l	102	104	70-120	2	30
Tetrachloroethene	1	U	1.	0.5	ug/l	101	104	80-120	3	30
Toluene	1	U	1.	0.5	ug/l	104	106	80-120	2	30
1,2,3-Trichlorobenzene	5	U	5.	1	ug/l	100	100	58-126	1	30
1,2,4-Trichlorobenzene	5	U	5.	1	ug/l	103	104	65-120	2	30
1,1,1-Trichloroethane	1	U	1.	0.5	ug/l	99	99	66-126	0	30
1,1,2-Trichloroethane	1	U	1.	0.5	ug/l	103	104	80-120	0	30
Trichloroethene	1	U	1.	0.5	ug/l	105	106	80-120	1	30
Trichlorofluoromethane	1	U	1.	0.5	ug/l	86	90	65-130	4	30
1,2,3-Trichloropropane	5	U	5.	1	ug/l	102	104	76-120	2	30
1,2,4-Trimethylbenzene	5	U	5.	1	ug/l	104	106	74-120	1	30
1,3,5-Trimethylbenzene	5	U	5.	1	ug/l	106	106	74-120	0	30
Vinyl Acetate	10	U	10.	2	ug/l	81	72	56-135	11	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481663
Reported: 07/07/14 at 12:24 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Vinyl Chloride	1	U	1.	0.5	ug/l	102	95	63-120	7	30
m+p-Xylene	1	U	1.	0.5	ug/l	101	102	80-120	1	30
o-Xylene	1	U	1.	0.5	ug/l	101	103	80-120	1	30
Batch number: 14170162401B	Sample number(s): 7497906,7497908-7497911									
14a Moisture Content by 160.3						100		80-120		
14a Moisture Content by 160.3						100		80-120		
14a Moisture Content by 160.3						100		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: B141751AB	Sample number(s): 7497906,7497908-7497911 UNSPK: 7497908								
Acetone	99	82	31-195	19	30				
Acrolein	34	35	10-165	3	30				
Acrylonitrile	90	72	48-139	24	30				
t-Amyl methyl ether	101	86	50-132	17	30				
Benzene	112	97	55-143	15	30				
Bromobenzene	104	73	43-139	35*	30				
Bromochloromethane	104	90	60-137	15	30				
Bromodichloromethane	94	79	53-136	18	30				
Bromoform	74	60	50-144	21	30				
Bromomethane	75	67	42-168	13	30				
2-Butanone	84	74	37-163	13	30				
t-Butyl alcohol	134	90	47-153	41*	30				
n-Butylbenzene	107	76	30-146	35*	30				
sec-Butylbenzene	124	88	33-157	35*	30				
tert-Butylbenzene	126	90	41-152	34*	30				
Carbon Disulfide	98	91	48-146	9	30				
Carbon Tetrachloride	103	94	51-165	10	30				
Chlorobenzene	107	84	49-135	25	30				
Chloroethane	71	64	39-152	11	30				
2-Chloroethyl Vinyl Ether	85	72	32-139	18	30				
Chloroform	113	98	61-142	15	30				
1-Chlorohexane	114	88	70-130	27	30				
Chloromethane	109	96	36-143	14	30				
2-Chlorotoluene	113	80	42-146	36*	30				
4-Chlorotoluene	108	76	39-145	36*	30				
Chlorotrifluoroethene	108	106	70-130	1	30				
1,2-Dibromo-3-chloropropane	75	56	34-165	30	30				
Dibromochloromethane	90	71	51-128	24	30				
1,2-Dibromoethane	106	85	54-129	23	30				
Dibromomethane	98	84	57-130	16	30				
1,2-Dichlorobenzene	87	60	36-133	39*	30				
1,3-Dichlorobenzene	91	61	34-134	40*	30				
1,4-Dichlorobenzene	89	61	35-136	39*	30				
Dichlorodifluoromethane	114	99	26-151	14	30				
1,1-Dichloroethane	114	100	63-142	14	30				
1,2-Dichloroethane	107	91	54-143	17	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481663
Reported: 07/07/14 at 12:24 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1-Dichloroethene	118	108	61-149	10	30				
cis-1,2-Dichloroethene	113	99	67-135	15	30				
trans-1,2-Dichloroethene	125	107	64-144	17	30				
1,2-Dichloropropane	110	93	54-144	17	30				
1,3-Dichloropropane	108	87	51-140	22	30				
2,2-Dichloropropane	111	101	53-147	11	30				
1,1-Dichloropropene	112	108	54-145	5	30				
cis-1,3-Dichloropropene	96	82	45-137	17	30				
trans-1,3-Dichloropropene	99	80	51-134	22	30				
Ethyl t-butyl ether	106	90	58-124	17	30				
Ethylbenzene	116	93	44-141	23	30				
Freon 113	110	98	56-156	13	30				
Freon 133a	123	123	61-131	2	30				
Hexachlorobutadiene	80	55	10-155	38*	30				
2-Hexanone	88	75	32-160	17	30				
di-Isopropyl ether	114	97	59-133	17	30				
Isopropylbenzene	114	91	38-144	23	30				
p-Isopropyltoluene	116	82	29-152	35*	30				
Methyl Iodide	109	98	52-139	12	30				
Methyl Tertiary Butyl Ether	107	87	55-129	21	30				
4-Methyl-2-pentanone	88	77	46-139	15	30				
Methylene Chloride	113	97	60-149	16	30				
n-Propylbenzene	125	90	39-157	33*	30				
Styrene	99	77	35-134	26	30				
1,1,1,2-Tetrachloroethane	100	79	55-139	25	30				
1,1,2,2-Tetrachloroethane	102	75	29-182	32*	30				
Tetrachloroethene	118	97	42-149	21	30				
Toluene	120	98	50-146	20	30				
1,2,3-Trichlorobenzene	45	30	10-140	43*	30				
1,2,4-Trichlorobenzene	51	34	10-136	42*	30				
1,1,1-Trichloroethane	99	91	52-146	9	30				
1,1,2-Trichloroethane	109	87	58-152	23	30				
Trichloroethene	112	98	53-144	14	30				
Trichlorofluoromethane	108	96	47-163	12	30				
1,2,3-Trichloropropane	109	81	36-180	30	30				
1,2,4-Trimethylbenzene	113	79	37-149	37*	30				
1,3,5-Trimethylbenzene	122	86	38-150	36*	30				
Vinyl Acetate	18*	29	21-139	46*	30				
Vinyl Chloride	115	102	50-154	13	30				
m+p-Xylene	115	92	44-137	23	30				
o-Xylene	110	87	42-137	25	30				
Batch number: 14170162401B	Sample number(s): 7497906,7497908-7497911					BKG: 7497908			
14a Moisture Content by 160.3						4.5	4.4	2	20
14a Moisture Content by 160.3						4.5	4.4	2	20
14a Moisture Content by 160.3						4.5	4.4	2	20

Surrogate Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481663
Reported: 07/07/14 at 12:24 PM

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 12a Volatile Organics EPA8260B
Batch number: B141751AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7497906	99	100	103	96
7497908	102	107	100	96
7497909	101	104	107	91
7497910	102	106	103	96
7497911	99	101	103	94
Blank	100	106	100	97
LCS	99	103	100	96
MS	101	104	107	91
MSD	102	106	103	96
Limits:	80-120	80-120	81-117	74-121

Analysis Name: 12b Volatile Organics EPA8260B
Batch number: Y141701AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7497907	100	102	99	97
Blank	99	102	99	97
LCS	100	102	100	100
LCSD	99	102	101	100
Limits:	86-118	80-120	88-110	86-115

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

13013 1481663 7497906-11

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped:	6/12/2014	Contact Name:	Pam Hartman	COC No:	20140612-04
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1
AirbillNo:	770288260743			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
SVL-532-SA8-SB-3.5-4.0	6/12/14 12:30	SO	None	3 - Encore	10 day																		X																		
SVL-532-SA8-SB-3.5-4.0	6/12/14 12:30	SO	None	1 - 4 oz glass	10 day																		X																		Soil Moisture
TB-061214	6/12/14 08:00	WQ	HCl	3 - 40 mL Vial	10 day																		X																		
SVL-546-SA8-SB-4.4-4.9MS	6/12/14 10:25	SO	None	9 - Encore	10 day																		X																		MS/MSD
SVL-546-SA8-SB-4.4-4.9MS	6/12/14 10:25	SO	None	1 - 8 oz glass	10 day																		X																		Soil Moisture. MS/MSD
SVL-846-SA8-SB-4.4-4.9	6/12/14 10:30	SO	None	3 - Encore	10 day																		X																		
SVL-846-SA8-SB-4.4-4.9	6/12/14 10:30	SO	None	1 - 4 oz glass	10 day																		X																		Soil Moisture

Special Instructions:

Sampler: Van Vathasin Rob Ellis

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Sley J Mysel	06/12/14	1600									
									[signature]	6-13-14	930

Soil Vapor 1 of 1

COC Rev 4

COC: 20140612-04, Page 1 of 1

1 of 1

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 17287

Group Number(s): 1481663

Client: CDM

SSFL

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/13/2014 9:30
Number of Packages:	2	Number of Projects:	1
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	3
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Brandy Barclay (2299) at 10:02 on 06/13/2014

Samples Chilled Details: SSFL

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	0.5	DT	Wet	Y	Bagged	N	N
2	DT121	1.7	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/13/2014
Group Number: 1481665
SDG: PH231
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
FDG2-SL-562-NBZ-SB-0.0-0.5 Soil	7497920
FDG2-SL-563-NBZ-SB-0.0-0.5 Soil	7497921
FDG2-SL-569-NBZ-SB-0.0-0.5 Soil	7497922
FDG2-SL-570-NBZ-SB-0.0-0.5 Soil	7497923
FDG2-SL-583-NBZ-SB-0.0-0.5 Soil	7497924
EB1-061214 Water	7497925
EB2-061214 Water	7497926

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg		ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	2.1	U	2.1	0.83	1
12969	Acenaphthylene	208-96-8	0.48	J	2.1	0.41	1
12969	Anthracene	120-12-7	0.55	J	2.1	0.41	1
12969	Benzo(a)anthracene	56-55-3	2.1	U	2.1	0.83	1
12969	Benzo(a)pyrene	50-32-8	2.1	U	2.1	0.83	1
12969	Benzo(b)fluoranthene	205-99-2	0.91	J	2.1	0.83	1
12969	Benzo(e)pyrene	192-97-2	21	U	21	4.1	1
12969	Benzo(g,h,i)perylene	191-24-2	2.1	U	2.1	0.83	1
12969	Benzo(k)fluoranthene	207-08-9	11		2.1	0.83	1
12969	Butylbenzylphthalate	85-68-7	22	U	22	7.4	1
12969	Di-n-butylphthalate	84-74-2	22	U	22	7.4	1
12969	Chrysene	218-01-9	1.4	J	2.1	0.41	1
12969	Dibenz(a,h)anthracene	53-70-3	2.1	U	2.1	0.83	1
12969	Diethylphthalate	84-66-2	22	U	22	7.4	1
12969	Dimethylphthalate	131-11-3	22	U	22	7.4	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	22	U	22	7.4	1
12969	Fluoranthene	206-44-0	1.8	J	2.1	0.83	1
12969	Fluorene	86-73-7	8.7		2.1	0.83	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	2.1	U	2.1	0.83	1
12969	1-Methylnaphthalene	90-12-0	2.0	J	2.1	0.83	1
12969	2-Methylnaphthalene	91-57-6	2.7		2.1	0.83	1
12969	Naphthalene	91-20-3	4.9		2.1	0.83	1
12969	N-Nitrosodimethylamine	62-75-9	2.1	U	2.1	0.83	1
12969	Di-n-octylphthalate	117-84-0	22	U	22	7.4	1
12969	Phenanthrene	85-01-8	3.3		2.1	0.83	1
12969	Pyrene	129-00-0	1.5	J	2.1	0.83	1
Pesticides/PCBs	**SW-846 8081B**		ug/kg		ug/kg	ug/kg	
10590	Aldrin	309-00-2	1.0	U	1.0	0.21	1
10590	Alpha BHC	319-84-6	1.0	U	1.0	0.22	1
10590	Beta BHC	319-85-7	2.4	U	2.4	1.2	1
10590	Gamma BHC - Lindane	58-89-9	0.34	J	1.0	0.21	1
10590	Chlordane	57-74-9	21	U	21	5.0	1
10590	p,p-DDD	72-54-8	2.1	U	2.1	0.41	1
10590	p,p-DDE	72-55-9	0.53	J	2.1	0.41	1
10590	p,p-DDT	50-29-3	2.1	U	2.1	0.43	1
10590	Delta BHC	319-86-8	1.0	U	1.0	0.56	1
10590	Dieldrin	60-57-1	2.1	U	2.1	0.41	1
10590	Endosulfan I	959-98-8	1.0	U	1.0	0.27	1
10590	Endosulfan II	33213-65-9	2.1	U	2.1	0.41	1
10590	Endosulfan Sulfate	1031-07-8	2.1	U	2.1	0.41	1
10590	Endrin	72-20-8	2.1	U	2.1	0.41	1
10590	Endrin Aldehyde	7421-93-4	2.1	U	2.1	0.41	1
10590	Endrin Ketone	53494-70-5	2.2	U	2.2	0.74	1
10590	Heptachlor	76-44-8	1.0	U	1.0	0.21	1
10590	Heptachlor Epoxide	1024-57-3	0.24	J	1.0	0.21	1
10590	Methoxychlor	72-43-5	8.3	U	8.3	2.1	1
10590	Mirex	2385-85-5	2.1	U	2.1	0.43	1
10590	Toxaphene	8001-35-2	41	U	41	17	1

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	41	U	41	12	1
13099	Aroclor 5442	12642-23-8	41	U	41	12	1
13099	Aroclor 5460	11126-42-4	41	U	41	12	1
13099	PCB-1016	12674-11-2	21	U	21	4.1	1
13099	PCB-1221	11104-28-2	21	U	21	6.3	1
13099	PCB-1232	11141-16-5	21	U	21	5.0	1
13099	PCB-1242	53469-21-9	21	U	21	5.0	1
13099	PCB-1248	12672-29-6	21	U	21	4.1	1
13099	PCB-1254	11097-69-1	21	U	21	5.4	1
13099	PCB-1260	11096-82-5	21	U	21	4.8	1
13099	PCB-1262	37324-23-5	21	U	21	4.1	1
13099	PCB-1268	11100-14-4	21	U	21	4.1	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	6.2	U	6.2	2.5	1
12952	EFH (C15-C20)	n.a.	3.3	J	6.2	2.5	1
12952	EFH (C21-C30)	n.a.	14		6.2	2.5	1
12952	EFH (C30-C40)	n.a.	32		12	5.0	1
12952	EFH (C8-C11)	n.a.	6.2	U	6.2	2.5	1
13197	EFH C12-C14 w/ SiGel	n.a.	6.2	U	6.2	2.5	1
13197	EFH C15-C20 w/ SiGel	n.a.	6.2	U	6.2	2.5	1
13197	EFH C21-C30 w/ SiGel	n.a.	2.6	J	6.2	2.5	1
13197	EFH C30-C40 w/ SiGel	n.a.	12	U	12	5.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	6.2	U	6.2	2.5	1

The reverse surrogate, capric acid, is present at <1%.
The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.
A target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. The following corrective action was taken:
The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits. All results are reported from the second trial per client request.
The first trial results are:
EFH (C8-C11) non-detect
EFH (C12-C14) non-detect
EFH (C15-C20) 3.1 mg/kg
EFH (C21-C30) 14 mg/kg
EFH (C30-C40) 28 mg/kg

Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	6,530		49.1	8.85	1
06944	Antimony	7440-36-0	4.91	U	4.91	0.908	1
06935	Arsenic	7440-38-2	28.9		4.91	0.859	1
06946	Barium	7440-39-3	39.2		1.23	0.0405	1
06947	Beryllium	7440-41-7	0.453	J	1.23	0.0822	1
07914	Boron	7440-42-8	2.89	J	12.3	1.03	1
06949	Cadmium	7440-43-9	1.23	U	1.23	0.0932	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01650	Calcium	7440-70-2	3,970		24.5	4.10	1
06951	Chromium	7440-47-3	8.11		3.68	0.196	1
06952	Cobalt	7440-48-4	2.44		1.23	0.121	1
06953	Copper	7440-50-8	10.1		2.45	0.356	1
01654	Iron	7439-89-6	30,300		49.1	4.44	1
06955	Lead	7439-92-1	9.95		3.68	0.613	1
01656	Lithium	7439-93-2	15.4		4.9	0.42	1
01657	Magnesium	7439-95-4	2,670		12.3	2.05	1
06958	Manganese	7439-96-5	146		1.23	0.102	1
06960	Molybdenum	7439-98-7	10.7		2.45	0.209	1
06961	Nickel	7440-02-0	5.17		2.45	0.159	1
10145	Phosphorus	7723-14-0	353		12.3	3.55	1
01662	Potassium	7440-09-7	1,740		123	10.2	1
01667	Sodium	7440-23-5	119	J	123	20.5	1
06969	Tin	7440-31-5	2.76	J	12.3	0.270	1
06970	Titanium	7440-32-6	591		1.23	0.209	1
06971	Vanadium	7440-62-2	33.9		1.23	0.159	1
06972	Zinc	7440-66-6	55.1		4.91	0.245	1
10146	Zirconium	7440-67-7	1.84	J	6.13	1.03	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	1.04		0.491	0.123	2
06142	Silver	7440-22-4	0.245	U	0.245	0.0319	2
06144	Strontium	7440-24-6	20.9		0.491	0.0834	2
06145	Thallium	7440-28-0	0.151	J	0.245	0.0368	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0138	J	0.0202	0.0121	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	7.83		0.0100	0.0100	1
	The pH was measured in water at 21.9 C.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	19.3		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	1.20	U	1.20	0.0943	1
11031	12378-PeCDD	40321-76-4	6.00	U	6.00	0.0755	1
11031	123478-HxCDD	39227-28-6	0.129	J	6.00	0.0585	1
11031	123678-HxCDD	57653-85-7	0.399	J	6.00	0.0579	1
11031	123789-HxCDD	19408-74-3	0.149	JQ	6.00	0.0595	1
11031	1234678-HpCDD	35822-46-9	8.17	B	6.00	0.0676	1
11031	OCDD	3268-87-9	71.3	B	12.0	0.0453	1
11031	2378-TCDF	51207-31-9	0.102	JBQ	1.20	0.0785	1
11031	12378-PeCDF	57117-41-6	0.0931	JBQ	6.00	0.0286	1
11031	23478-PeCDF	57117-31-4	0.0559	JBQ	6.00	0.0283	1
11031	123478-HxCDF	70648-26-9	0.100	JQ	6.00	0.0596	1
11031	123678-HxCDF	57117-44-9	0.167	J	6.00	0.0495	1
11031	123789-HxCDF	72918-21-9	0.0682	JQ	6.00	0.0619	1
11031	234678-HxCDF	60851-34-5	0.146	JBQ	6.00	0.0517	1
11031	1234678-HpCDF	67562-39-4	1.86	JB	6.00	0.0228	1
11031	1234789-HpCDF	55673-89-7	0.193	JBQ	6.00	0.0466	1
11031	OCDF	39001-02-0	4.50	JB	12.0	0.0701	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	0.193				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	81	25 - 164
13C12-12378-PeCDD	85	25 - 181
13C12-123478-HxCDD	90	32 - 141
13C12-123678-HxCDD	95	28 - 130
13C12-123789-HxCDD	91	28 - 130
13C12-1234678-HpCDD	97	23 - 140
13C12-OCDD	106	17 - 157
13C12-2378-TCDF	84	24 - 169
13C12-12378-PeCDF	104	24 - 185
13C12-23478-PeCDF	91	21 - 178
13C12-123478-HxCDF	91	26 - 152
13C12-123678-HxCDF	105	26 - 123
13C12-234678-HxCDF	96	28 - 136
13C12-123789-HxCDF	91	29 - 147
13C12-1234678-HpCDF	143	28 - 143
13C12-1234789-HpCDF	82	26 - 138
13C12-OCDF	80	17 - 157

Dioxins/Furans Data Qualifiers:

B *Detected in Method Blank*
U *Undetected*
J *Estimated concentration between Estimated Detection Limit and Minimum Level*
E *Exceeds calibration range*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 07:44	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	3	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
10590	20a Pesticides by EPA 8081B	SW-846 8081B	1	141700007A	06/23/2014 16:47	Jamie L Brillhart	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 15:00	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
10496	PPL Pest. Microwave Extraction	SW-846 3546	1	141700007A	06/19/2014 20:00	Sally L Appleyard	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/18/2014 02:19	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/19/2014 21:52	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14167007	06/19/2014 00:06	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14167007	06/16/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-562-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497920
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:50 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56200 SDG#: PH231-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:18	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:20	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:20	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:20	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:20	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:42	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14164039402A	06/13/2014 20:00	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg		ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.68	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.68	1
12969	Benzo(a)pyrene	50-32-8	1.7	U	1.7	0.68	1
12969	Benzo(b)fluoranthene	205-99-2	0.95	J	1.7	0.68	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.68	1
12969	Benzo(k)fluoranthene	207-08-9	3.9		1.7	0.68	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.2	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.2	1
12969	Chrysene	218-01-9	0.94	J	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.68	1
12969	Diethylphthalate	84-66-2	18	U	18	6.2	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.2	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	18	U	18	6.2	1
12969	Fluoranthene	206-44-0	0.93	J	1.7	0.68	1
12969	Fluorene	86-73-7	1.0	J	1.7	0.68	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.68	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.68	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.68	1
12969	Naphthalene	91-20-3	0.75	J	1.7	0.68	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.68	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.2	1
12969	Phenanthrene	85-01-8	0.69	J	1.7	0.68	1
12969	Pyrene	129-00-0	0.86	J	1.7	0.68	1
Pesticides/PCBs	**SW-846 8081B**		ug/kg		ug/kg	ug/kg	
10590	Aldrin	309-00-2	0.85	U	0.85	0.17	1
10590	Alpha BHC	319-84-6	0.85	U	0.85	0.17	1
10590	Beta BHC	319-85-7	1.3	J	2.0	0.99	1
10590	Gamma BHC - Lindane	58-89-9	0.85	U	0.85	0.17	1
10590	Chlordane	57-74-9	17	U	17	4.1	1
10590	p,p-DDD	72-54-8	1.7	U	1.7	0.34	1
10590	p,p-DDE	72-55-9	0.44	J	1.7	0.34	1
10590	p,p-DDT	50-29-3	0.39	J	1.7	0.36	1
10590	Delta BHC	319-86-8	0.85	U	0.85	0.46	1
10590	Dieldrin	60-57-1	1.7	U	1.7	0.34	1
10590	Endosulfan I	959-98-8	0.85	U	0.85	0.23	1
10590	Endosulfan II	33213-65-9	1.7	U	1.7	0.34	1
10590	Endosulfan Sulfate	1031-07-8	1.7	U	1.7	0.34	1
10590	Endrin	72-20-8	1.7	U	1.7	0.34	1
10590	Endrin Aldehyde	7421-93-4	1.7	U	1.7	0.34	1
10590	Endrin Ketone	53494-70-5	1.8	U	1.8	0.62	1
10590	Heptachlor	76-44-8	0.85	U	0.85	0.17	1
10590	Heptachlor Epoxide	1024-57-3	0.85	U	0.85	0.17	1
10590	Methoxychlor	72-43-5	6.9	U	6.9	1.7	1
10590	Mirex	2385-85-5	1.7	U	1.7	0.36	1
10590	Toxaphene	8001-35-2	34	U	34	14	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	8.2	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	10	1
13099	PCB-1242	53469-21-9	17	U	17	10	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
Reporting limits were raised due to interference from the sample matrix.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C15-C20)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C21-C30)	n.a.	7.2		5.1	2.1	1
12952	EFH (C30-C40)	n.a.	16		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.							
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	6,760		39.5	7.12	1
06944	Antimony	7440-36-0	3.95	U	3.95	0.731	1
06935	Arsenic	7440-38-2	3.74	J	3.95	0.691	1
06946	Barium	7440-39-3	44.8		0.987	0.0326	1
06947	Beryllium	7440-41-7	0.281	J	0.987	0.0661	1
07914	Boron	7440-42-8	4.70	J	9.87	0.829	1
06949	Cadmium	7440-43-9	0.987	U	0.987	0.0750	1
01650	Calcium	7440-70-2	3,030		19.7	3.30	1
06951	Chromium	7440-47-3	13.2		2.96	0.158	1
06952	Cobalt	7440-48-4	2.74		0.987	0.0977	1
06953	Copper	7440-50-8	5.23		1.97	0.286	1
01654	Iron	7439-89-6	12,000		39.5	3.57	1
06955	Lead	7439-92-1	4.97		2.96	0.494	1
01656	Lithium	7439-93-2	15.4		3.9	0.34	1
01657	Magnesium	7439-95-4	2,920		9.87	1.65	1
06958	Manganese	7439-96-5	141		0.987	0.0819	1
06960	Molybdenum	7439-98-7	0.184	J	1.97	0.168	1
06961	Nickel	7440-02-0	4.86		1.97	0.128	1
10145	Phosphorus	7723-14-0	255		9.87	2.85	1
01662	Potassium	7440-09-7	1,970		98.7	8.23	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01667	Sodium	7440-23-5	121		98.7	16.5	1
06969	Tin	7440-31-5	2.02	J	9.87	0.217	1
06970	Titanium	7440-32-6	585		0.987	0.168	1
06971	Vanadium	7440-62-2	20.1		0.987	0.128	1
06972	Zinc	7440-66-6	32.4		3.95	0.197	1
10146	Zirconium	7440-67-7	1.77	J	4.94	0.829	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.171	J	0.395	0.0987	2
06142	Silver	7440-22-4	0.197	U	0.197	0.0257	2
06144	Strontium	7440-24-6	21.4		0.395	0.0671	2
06145	Thallium	7440-28-0	0.167	J	0.197	0.0296	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0152	J	0.0161	0.0097	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	8.08		0.0100	0.0100	1
	The pH was measured in water at 22.5 C.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	2.6		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	1.01	U	1.01	0.0756	1
11031	12378-PeCDD	40321-76-4	0.128	JQ	5.07	0.0529	1
11031	123478-HxCDD	39227-28-6	0.147	JQ	5.07	0.0457	1
11031	123678-HxCDD	57653-85-7	0.747	J	5.07	0.0442	1
11031	123789-HxCDD	19408-74-3	0.305	J	5.07	0.0435	1
11031	1234678-HpCDD	35822-46-9	17.9	B	5.07	0.0383	1
11031	OCDD	3268-87-9	150	B	10.1	0.0302	1
11031	2378-TCDF	51207-31-9	0.111	JBQ	1.01	0.0553	1
11031	12378-PeCDF	57117-41-6	0.121	JBQ	5.07	0.0263	1
11031	23478-PeCDF	57117-31-4	0.0682	JB	5.07	0.0280	1
11031	123478-HxCDF	70648-26-9	0.143	J	5.07	0.0411	1
11031	123678-HxCDF	57117-44-9	0.194	J	5.07	0.0336	1
11031	123789-HxCDF	72918-21-9	0.0742	JQ	5.07	0.0405	1
11031	234678-HxCDF	60851-34-5	0.225	JBQ	5.07	0.0360	1
11031	1234678-HpCDF	67562-39-4	3.47	JB	5.07	0.0147	1
11031	1234789-HpCDF	55673-89-7	0.393	JBQ	5.07	0.0336	1
11031	OCDF	39001-02-0	8.22	JB	10.1	0.0579	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	0.420				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	80	25 - 164
13C12-12378-PeCDD	87	25 - 181
13C12-123478-HxCDD	85	32 - 141
13C12-123678-HxCDD	87	28 - 130
13C12-123789-HxCDD	86	28 - 130
13C12-1234678-HpCDD	89	23 - 140
13C12-OCDD	89	17 - 157
13C12-2378-TCDF	71	24 - 169
13C12-12378-PeCDF	89	24 - 185
13C12-23478-PeCDF	77	21 - 178
13C12-123478-HxCDF	68	26 - 152
13C12-123678-HxCDF	80	26 - 123
13C12-234678-HxCDF	73	28 - 136
13C12-123789-HxCDF	71	29 - 147
13C12-1234678-HpCDF	117	28 - 143
13C12-1234789-HpCDF	60	26 - 138
13C12-OCDF	54	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 08:18	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	3	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
10590	20a Pesticides by EPA 8081B	SW-846 8081B	1	141700007A	06/23/2014 17:24	Jamie L Brillhart	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 15:19	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
10496	PPL Pest. Microwave Extraction	SW-846 3546	1	141700007A	06/19/2014 20:00	Sally L Appleyard	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 19:44	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/19/2014 22:14	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14167007	06/19/2014 20:43	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14167007	06/16/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-563-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497921
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 09:25 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56300 SDG#: PH231-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:22	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:22	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:22	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:22	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:22	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:44	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14164039402A	06/13/2014 20:00	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-569-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497922
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:55 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56900 SDG#: PH231-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.67	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.3	J	1.7	0.67	1
12969	Benzo(a)pyrene	50-32-8	1.4	J	1.7	0.67	1
12969	Benzo(b)fluoranthene	205-99-2	2.9		1.7	0.67	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	0.75	J	1.7	0.67	1
12969	Benzo(k)fluoranthene	207-08-9	9.5		1.7	0.67	1
12969	Butylbenzylphthalate	85-68-7	17	J	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.1	1
12969	Chrysene	218-01-9	2.7		1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.67	1
12969	Diethylphthalate	84-66-2	18	U	18	6.1	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	25		18	6.1	1
12969	Fluoranthene	206-44-0	3.0		1.7	0.67	1
12969	Fluorene	86-73-7	1.1	J	1.7	0.67	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	0.67	J	1.7	0.67	1
12969	1-Methylnaphthalene	90-12-0	0.89	J	1.7	0.67	1
12969	2-Methylnaphthalene	91-57-6	1.2	J	1.7	0.67	1
12969	Naphthalene	91-20-3	2.2		1.7	0.67	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.67	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.1	1
12969	Phenanthrene	85-01-8	1.9		1.7	0.67	1
12969	Pyrene	129-00-0	2.9		1.7	0.67	1
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	9.5	J	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	18		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	37		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-569-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497922
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:55 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56900 SDG#: PH231-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13197	EFH C21-C30 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%.						
	The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	11,700		39.2	7.07	1
06944	Antimony	7440-36-0	3.92	U	3.92	0.726	1
06935	Arsenic	7440-38-2	11.6		3.92	0.686	1
06946	Barium	7440-39-3	68.7		0.980	0.0324	1
06947	Beryllium	7440-41-7	0.505	J	0.980	0.0657	1
07914	Boron	7440-42-8	3.06	J	9.80	0.824	1
06949	Cadmium	7440-43-9	0.980	U	0.980	0.0745	1
01650	Calcium	7440-70-2	2,670		19.6	3.27	1
06951	Chromium	7440-47-3	15.5		2.94	0.157	1
06952	Cobalt	7440-48-4	4.33		0.980	0.0971	1
06953	Copper	7440-50-8	7.50		1.96	0.284	1
01654	Iron	7439-89-6	18,400		39.2	3.55	1
06955	Lead	7439-92-1	13.2		2.94	0.490	1
01656	Lithium	7439-93-2	24.4		3.9	0.33	1
01657	Magnesium	7439-95-4	4,570		9.80	1.64	1
06958	Manganese	7439-96-5	269		0.980	0.0814	1
06960	Molybdenum	7439-98-7	0.180	J	1.96	0.167	1
06961	Nickel	7440-02-0	9.84		1.96	0.127	1
10145	Phosphorus	7723-14-0	354		9.80	2.83	1
01662	Potassium	7440-09-7	2,990		98.0	8.18	1
01667	Sodium	7440-23-5	51.8	J	98.0	16.4	1
06969	Tin	7440-31-5	2.50	J	9.80	0.216	1
06970	Titanium	7440-32-6	947		0.980	0.167	1
06971	Vanadium	7440-62-2	30.3		0.980	0.127	1
06972	Zinc	7440-66-6	52.6		3.92	0.196	1
10146	Zirconium	7440-67-7	1.94	J	4.90	0.824	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.337	J	0.392	0.0980	2
06142	Silver	7440-22-4	0.0306	J	0.196	0.0255	2
06144	Strontium	7440-24-6	16.3		0.392	0.0667	2
06145	Thallium	7440-28-0	0.258		0.196	0.0294	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0286		0.0160	0.0096	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	6.35		0.0100	0.0100	1
	The pH was measured in water at 22.7 C.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-569-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497922
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:55 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56900 SDG#: PH231-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3	n.a.	0.98	0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 08:51	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	3	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 15:37	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 23:04	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/19/2014 22:35	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-569-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497922
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:55 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

56900 SDG#: PH231-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:26	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:25	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:25	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:25	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:25	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:46	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14164039402A	06/13/2014 20:00	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-570-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497923
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:10 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57000 SDG#: PH231-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg		ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.67	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.67	1
12969	Benzo(a)pyrene	50-32-8	1.7	U	1.7	0.67	1
12969	Benzo(b)fluoranthene	205-99-2	0.88	J	1.7	0.67	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.67	1
12969	Benzo(k)fluoranthene	207-08-9	1.3	J	1.7	0.67	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.1	1
12969	Chrysene	218-01-9	0.80	J	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.67	1
12969	Diethylphthalate	84-66-2	18	U	18	6.1	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	15	J	18	6.1	1
12969	Fluoranthene	206-44-0	0.78	J	1.7	0.67	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.67	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.67	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.67	1
12969	2-Methylnaphthalene	91-57-6	0.88	J	1.7	0.67	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.67	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.67	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.1	1
12969	Phenanthrene	85-01-8	0.68	J	1.7	0.67	1
12969	Pyrene	129-00-0	0.70	J	1.7	0.67	1
Pesticides/PCBs	**SW-846 8082A**		ug/kg		ug/kg	ug/kg	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		mg/kg		mg/kg	mg/kg	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	5.6		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	12		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-570-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497923
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:10 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57000 SDG#: PH231-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
13197	EFH C21-C30 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	19,800		39.6	7.13	1
06944	Antimony	7440-36-0	3.96	U	3.96	0.732	1
06935	Arsenic	7440-38-2	9.17		3.96	0.692	1
06946	Barium	7440-39-3	94.0		0.989	0.0326	1
06947	Beryllium	7440-41-7	0.795	J	0.989	0.0663	1
07914	Boron	7440-42-8	4.24	J	9.89	0.831	1
06949	Cadmium	7440-43-9	0.989	U	0.989	0.0752	1
01650	Calcium	7440-70-2	2,170		19.8	3.30	1
06951	Chromium	7440-47-3	16.8		2.97	0.158	1
06952	Cobalt	7440-48-4	4.76		0.989	0.0979	1
06953	Copper	7440-50-8	8.37		1.98	0.287	1
01654	Iron	7439-89-6	21,100		39.6	3.58	1
06955	Lead	7439-92-1	8.27		2.97	0.495	1
01656	Lithium	7439-93-2	23.7		4.0	0.34	1
01657	Magnesium	7439-95-4	3,930		9.89	1.65	1
06958	Manganese	7439-96-5	291		0.989	0.0821	1
06960	Molybdenum	7439-98-7	0.387	J	1.98	0.168	1
06961	Nickel	7440-02-0	10.8		1.98	0.129	1
10145	Phosphorus	7723-14-0	243		9.89	2.86	1
01662	Potassium	7440-09-7	3,410		98.9	8.25	1
01667	Sodium	7440-23-5	93.0	J	98.9	16.5	1
06969	Tin	7440-31-5	2.70	J	9.89	0.218	1
06970	Titanium	7440-32-6	1,010		0.989	0.168	1
06971	Vanadium	7440-62-2	35.6		0.989	0.129	1
06972	Zinc	7440-66-6	48.3		3.96	0.198	1
10146	Zirconium	7440-67-7	3.29	J	4.95	0.831	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.451		0.396	0.0989	2
06142	Silver	7440-22-4	0.0382	J	0.198	0.0257	2
06144	Strontium	7440-24-6	26.2		0.396	0.0673	2
06145	Thallium	7440-28-0	0.347		0.198	0.0297	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0263		0.0164	0.0098	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	5.90		0.0100	0.0100	1
	The pH was measured in water at 22.5 C.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-570-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497923
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:10 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57000 SDG#: PH231-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	0.89	0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 09:25	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	3	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 15:56	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 20:06	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/19/2014 22:56	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-570-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497923
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 08:10 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

57000 SDG#: PH231-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:30	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:27	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:27	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:27	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:27	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:52	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14164039402A	06/13/2014 20:00	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-583-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497924
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 13:35 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

58300 SDG#: PH231-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	15	J	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
	For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.						
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	9.5		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	23		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	0.89		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-583-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7497924
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 13:35 by RR

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

58300 SDG#: PH231-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141750017A	06/25/2014 15:25	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	2	141750017A	06/25/2014 08:15	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 22:21	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/19/2014 23:17	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14170162401B	06/19/2014 20:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.056	U	0.056	0.011	1
12971	Acenaphthylene	208-96-8	0.056	U	0.056	0.011	1
12971	Anthracene	120-12-7	0.056	U	0.056	0.011	1
12971	Benzo(a)anthracene	56-55-3	0.056	U	0.056	0.011	1
12971	Benzo(a)pyrene	50-32-8	0.056	U	0.056	0.011	1
12971	Benzo(b)fluoranthene	205-99-2	0.056	U	0.056	0.011	1
12971	Benzo(e)pyrene	192-97-2	0.056	U	0.056	0.011	1
12971	Benzo(g,h,i)perylene	191-24-2	0.056	U	0.056	0.011	1
12971	Benzo(k)fluoranthene	207-08-9	0.056	U	0.056	0.011	1
12971	Butylbenzylphthalate	85-68-7	1.1	U	1.1	0.056	1
12971	Di-n-butylphthalate	84-74-2	0.11	J	1.1	0.056	1
12971	Chrysene	218-01-9	0.056	U	0.056	0.011	1
12971	Dibenz(a,h)anthracene	53-70-3	0.056	U	0.056	0.011	1
12971	Diethylphthalate	84-66-2	0.069	J	1.1	0.056	1
12971	Dimethylphthalate	131-11-3	1.1	U	1.1	0.056	1
12971	Bis(2-Ethylhexyl)phthalate	117-81-7	0.12	J	1.1	0.056	1
12971	Fluoranthene	206-44-0	0.056	U	0.056	0.011	1
12971	Fluorene	86-73-7	0.056	U	0.056	0.011	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.056	U	0.056	0.011	1
12971	1-Methylnaphthalene	90-12-0	0.020	J	0.056	0.011	1
12971	2-Methylnaphthalene	91-57-6	0.027	J	0.056	0.011	1
12971	Naphthalene	91-20-3	0.058		0.056	0.033	1
12971	N-Nitrosodimethylamine	62-75-9	0.056	U	0.056	0.011	1
12971	Di-n-octylphthalate	117-84-0	1.1	U	1.1	0.056	1
12971	Phenanthrene	85-01-8	0.056	U	0.056	0.033	1
12971	Pyrene	129-00-0	0.056	U	0.056	0.011	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Target analytes were detected in the method blank associated with the samples as noted on the QC Summary. Since the result is within the acceptance range allowed by the method, the data is reported.

GC Volatiles	**TPH GRO SW-8015B**		**ug/l**		**ug/l**	**ug/l**	
08229	TPH-GRO S.CA water C5-C12	n.a.	50	U	50	20	1
Herbicides	**SW-846 8151A**		**ug/l**		**ug/l**	**ug/l**	
10407	2,4-D	94-75-7	0.48	U	0.48	0.15	1
10407	Dalapon	75-99-0	1.2	U	1.2	0.24	1
10407	2,4-DB	94-82-6	0.59	J	0.97	0.29	1
10407	Dicamba	1918-00-9	0.29	U	0.29	0.077	1
10407	Dinoseb	88-85-7	0.48	U	0.48	0.12	1
	The QC window for dinoseb is advisory due to the erratic performance of the analyte using this method.						
10407	2,4-DP (Dichlorprop)	120-36-5	0.48	U	0.48	0.15	1
10407	MCPA	94-74-6	190	U	190	48	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Herbicides	**SW-846 8151A**		**ug/l**		**ug/l**	**ug/l**	
10407	MCPP	93-65-2	190	U	190	48	1
10407	2,4,5-T	93-76-5	0.048	U	0.048	0.014	1
10407	2,4,5-TP	93-72-1	0.048	U	0.048	0.0097	1
Pesticides/PCBs	**SW-846 8081B**		**ug/l**		**ug/l**	**ug/l**	
10589	Aldrin	309-00-2	0.0085	U	0.0085	0.0017	1
10589	Alpha BHC	319-84-6	0.0085	U	0.0085	0.0026	1
10589	Beta BHC	319-85-7	0.017		0.0090	0.0090	1
10589	Gamma BHC - Lindane	58-89-9	0.0085	U	0.0085	0.0017	1
10589	Chlordane	57-74-9	0.43	U	0.43	0.14	1
10589	p,p-DDD	72-54-8	0.017	U	0.017	0.0043	1
10589	p,p-DDE	72-55-9	0.017	U	0.017	0.0043	1
10589	p,p-DDT	50-29-3	0.017	U	0.017	0.0044	1
10589	Delta BHC	319-86-8	0.0085	U	0.0085	0.0029	1
10589	Dieldrin	60-57-1	0.017	U	0.017	0.0045	1
10589	Endosulfan I	959-98-8	0.0085	U	0.0085	0.0037	1
10589	Endosulfan II	33213-65-9	0.017	U	0.017	0.013	1
10589	Endosulfan Sulfate	1031-07-8	0.017	U	0.017	0.0049	1
10589	Endrin	72-20-8	0.017	U	0.017	0.0069	1
10589	Endrin Aldehyde	7421-93-4	0.085	U	0.085	0.017	1
10589	Endrin Ketone	53494-70-5	0.017	U	0.017	0.0043	1
10589	Heptachlor	76-44-8	0.0085	U	0.0085	0.0017	1
10589	Heptachlor Epoxide	1024-57-3	0.0085	U	0.0085	0.0020	1
10589	Methoxychlor	72-43-5	0.085	U	0.085	0.026	1
10589	Mirex	2385-85-5	0.043	U	0.043	0.0085	1
10589	Toxaphene	8001-35-2	0.85	U	0.85	0.26	1

An interferent near the retention time of Beta-BHC was detected in the method blank associated with the sample. The reporting limit was raised to .009 ug/L. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Beta-BHC was not detected in the second trial.

Pesticides/PCBs	**SW-846 8082A**		**ug/l**		**ug/l**	**ug/l**	
13092	Aroclor 5432	63496-31-1	0.43	U	0.43	0.085	1
13092	Aroclor 5442	12642-23-8	0.43	U	0.43	0.085	1
13092	Aroclor 5460	11126-42-4	0.43	U	0.43	0.094	1
13092	PCB-1016	12674-11-2	0.43	U	0.43	0.085	1
13092	PCB-1221	11104-28-2	0.43	U	0.43	0.085	1
13092	PCB-1232	11141-16-5	0.43	U	0.43	0.17	1
13092	PCB-1242	53469-21-9	0.43	U	0.43	0.085	1
13092	PCB-1248	12672-29-6	0.43	U	0.43	0.085	1
13092	PCB-1254	11097-69-1	0.43	U	0.43	0.085	1
13092	PCB-1260	11096-82-5	0.43	U	0.43	0.13	1
13092	PCB-1262	37324-23-5	0.43	U	0.43	0.17	1
13092	PCB-1268	11100-14-4	0.43	U	0.43	0.14	1

The recovery for a target analyte(s) and the surrogates in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
first trial. Similar results were obtained in both trials.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/l**		**mg/l**	**mg/l**	
10365	EFH (C12-C14)	n.a.	0.10	U	0.10	0.051	1
10365	EFH (C15-C20)	n.a.	0.10	U	0.10	0.051	1
10365	EFH (C21-C30)	n.a.	0.10	U	0.10	0.051	1
10365	EFH (C30 - C40)	n.a.	0.51	U	0.51	0.10	1
10365	EFH (C8-C11)	n.a.	0.10	U	0.10	0.051	1
13205	EFH C12-C14 w/ SiGel	n.a.	0.10	U	0.10	0.051	1
13205	EFH C15-C20 w/ SiGel	n.a.	0.10	U	0.10	0.051	1
13205	EFH C21-C30 w/ SiGel	n.a.	0.10	U	0.10	0.051	1
13205	EFH C30-C40 w/ SiGel	n.a.	0.51	U	0.51	0.10	1
13205	EFH C8-C11 w/ SiGel	n.a.	0.10	U	0.10	0.051	1
The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.							
Metals	**SW-846 6010C**		**mg/l**		**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	0.400	U	0.400	0.0828	1
07044	Antimony	7440-36-0	0.0400	U	0.0400	0.0053	1
07035	Arsenic	7440-38-2	0.0400	U	0.0400	0.0068	1
07046	Barium	7440-39-3	0.0100	U	0.0100	0.00033	1
07047	Beryllium	7440-41-7	0.0100	U	0.0100	0.00067	1
08014	Boron	7440-42-8	0.100	U	0.100	0.0084	1
07049	Cadmium	7440-43-9	0.0100	U	0.0100	0.00076	1
01750	Calcium	7440-70-2	0.400	U	0.400	0.0334	1
07051	Chromium	7440-47-3	0.0300	U	0.0300	0.0016	1
07052	Cobalt	7440-48-4	0.0100	U	0.0100	0.0013	1
07053	Copper	7440-50-8	0.0200	U	0.0200	0.0027	1
01754	Iron	7439-89-6	0.400	U	0.400	0.0430	1
07055	Lead	7439-92-1	0.0300	U	0.0300	0.0047	1
01756	Lithium	7439-93-2	0.0400	U	0.0400	0.0047	1
01757	Magnesium	7439-95-4	0.200	U	0.200	0.0167	1
07058	Manganese	7439-96-5	0.0013	J	0.0100	0.00083	1
07060	Molybdenum	7439-98-7	0.0200	U	0.0200	0.0017	1
07061	Nickel	7440-02-0	0.0200	U	0.0200	0.0015	1
10143	Phosphorus	7723-14-0	0.200	U	0.200	0.0418	1
01762	Potassium	7440-09-7	1.00	U	1.00	0.0980	1
01767	Sodium	7440-23-5	2.00	U	2.00	0.167	1
07069	Tin	7440-31-5	0.0400	U	0.0400	0.0029	1
07070	Titanium	7440-32-6	0.0200	U	0.0200	0.0017	1
07071	Vanadium	7440-62-2	0.0100	U	0.0100	0.0020	1
07072	Zinc	7440-66-6	0.0400	U	0.0400	0.0020	1
10144	Zirconium	7440-67-7	0.0099	J	0.100	0.0084	1
	SW-846 6020A		**mg/l**		**mg/l**	**mg/l**	
06041	Selenium	7782-49-2	0.0040	U	0.0040	0.00050	1
06042	Silver	7440-22-4	0.0010	U	0.0010	0.00011	1
06044	Strontium	7440-24-6	0.0020	U	0.0020	0.00034	1
06045	Thallium	7440-28-0	0.0010	U	0.0010	0.00015	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Metals	**SW-846 7470A**		mg/l	mg/l	mg/l	
00259	3b Mercury 7470A	7439-97-6	0.00020 U	0.00020	0.000060	1
Wet Chemistry	**SW-846 9040C**		Std. Units	Std. Units	Std. Units	
12152	28b pH (9040B and 9040C)	n.a.	5.6	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received MRL*	As Received EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**pg/l**		**pg/l**	**pg/l**	
10915	2378-TCDD	1746-01-6	2.04	U	2.04	0.118	1
10915	12378-PeCDD	40321-76-4	10.2	U	10.2	0.145	1
10915	123478-HxCDD	39227-28-6	10.2	U	10.2	0.112	1
10915	123678-HxCDD	57653-85-7	10.2	U	10.2	0.116	1
10915	123789-HxCDD	19408-74-3	10.2	U	10.2	0.110	1
10915	1234678-HpCDD	35822-46-9	1.41	JBQ	10.2	0.137	1
10915	OCDD	3268-87-9	21.3	BQ	20.4	0.146	1
10915	2378-TCDF	51207-31-9	0.0871	JQ	2.04	0.0709	1
10915	12378-PeCDF	57117-41-6	0.0952	JBQ	10.2	0.0549	1
10915	23478-PeCDF	57117-31-4	0.0938	JQ	10.2	0.0565	1
10915	123478-HxCDF	70648-26-9	0.107	JB	10.2	0.0664	1
10915	123678-HxCDF	57117-44-9	0.175	JBQ	10.2	0.0606	1
10915	123789-HxCDF	72918-21-9	10.2	U	10.2	0.0644	1
10915	234678-HxCDF	60851-34-5	10.2	U	10.2	0.0602	1
10915	1234678-HpCDF	67562-39-4	0.414	JBQ	10.2	0.0413	1
10915	1234789-HpCDF	55673-89-7	10.2	U	10.2	0.0442	1
10915	OCDF	39001-02-0	0.740	JQ	20.4	0.102	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**pg/l**		**pg/l**	**pg/l**	
10915	TEQ WHO 2005 - EDLx0.0	n.a.	0.0107				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	81	25 - 164
13C12-12378-PeCDD	83	25 - 181
13C12-123478-HxCDD	84	32 - 141
13C12-123678-HxCDD	86	28 - 130
13C12-123789-HxCDD	85	28 - 130
13C12-1234678-HpCDD	90	23 - 140
13C12-OCDD	92	17 - 157
13C12-2378-TCDF	80	24 - 169
13C12-12378-PeCDF	89	24 - 185
13C12-23478-PeCDF	82	21 - 178
13C12-123478-HxCDF	79	26 - 152
13C12-123678-HxCDF	83	26 - 123
13C12-234678-HxCDF	81	28 - 136
13C12-123789-HxCDF	84	29 - 147
13C12-1234678-HpCDF	81	28 - 143
13C12-1234789-HpCDF	85	26 - 138
13C12-OCDF	82	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received MRL*	As Received EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12971	7b SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169WAD026	06/20/2014 06:43	Brian K Graham	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14169WAD026	06/18/2014 19:00	Nicholas W Shroyer	1
08229	11b TPH by EPA 8015B GRO	TPH GRO SW-8015B	1	14170B94A	06/20/2014 14:05	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	14170B94A	06/20/2014 14:05	Laura M Krieger	1
10407	24b Herbicides by EPA 8151A	SW-846 8151A	1	141680013A	06/20/2014 16:31	Lisa A Reinert	1
10589	22b Pesticides by EPA 8081B	SW-846 8081B	1	141680017A	06/18/2014 15:43	Jamie L Brillhart	1
13092	21b PCBs and PCTs 8082A	SW-846 8082A	1	141680016A	06/19/2014 02:17	Monica M Souders	1
13093	PCB/PCT Waters Update IV	SW-846 3510C	1	141680016A	06/17/2014 20:00	David V Hershey Jr	1
11120	Pesticide Waters Update IV Ext	SW-846 3510C	1	141680017A	06/17/2014 20:00	David V Hershey Jr	1
00816	Water Sample Herbicide Extract	SW-846 8151A	1	141680013A	06/17/2014 14:15	Kelli M Barto	1
10365	10b TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141690022A	06/20/2014 02:51	Heather E Williams	1
13205	10b TPH-DRO (w/Si Gel)	SW-846 8015B modified	1	141690021A	06/24/2014 03:29	Heather E Williams	1
13212	EFH Water Ext. w/SiGel	SW-846 3510C	1	141690021A	06/18/2014 21:00	Karen L Beyer	1
11203	EFH Waters Extraction	SW-846 3510C	1	141690022A	06/18/2014 21:00	Karen L Beyer	1
10915	17b Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14171001	06/24/2014 21:42	Joseph D Anderson	1
10914	Dioxins/Furans in Water - SepF	EPA 1613B October 1994	1	14171001	06/21/2014 07:05	Ginelle L McQuaid	1
01743	Aluminum	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07044	Antimony	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07035	Arsenic	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07046	Barium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07047	Beryllium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
08014	Boron	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07049	Cadmium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
01750	Calcium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07051	Chromium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07052	Cobalt	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07053	Copper	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
01754	Iron	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07055	Lead	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
01756	Lithium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
01757	Magnesium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07058	Manganese	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061214 Water
SSFL Phase 3

LL Sample # WW 7497925
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:00 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB112 SDG#: PH231-06EB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07060	Molybdenum	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07061	Nickel	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
10143	Phosphorus	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
01762	Potassium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
01767	Sodium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07069	Tin	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07070	Titanium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07071	Vanadium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
07072	Zinc	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
10144	Zirconium	SW-846 6010C	1	141640635001	06/16/2014 22:53	John P Hook	1
06041	Selenium	SW-846 6020A	1	141640639001B	06/17/2014 04:33	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	141640639001A	06/17/2014 04:33	Choon Y Tian	1
06044	Strontium	SW-846 6020A	1	141640639001A	06/17/2014 04:33	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	141640639001A	06/17/2014 04:33	Choon Y Tian	1
00259	3b Mercury 7470A	SW-846 7470A	1	141645713003	06/17/2014 07:42	Damary Valentin	1
10635	WW SW846(IV) ICP Dig (tot rec)	SW-846 3005A	1	141640635001	06/16/2014 09:40	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	141640639001	06/16/2014 09:05	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	141645713003	06/16/2014 11:46	Micaela L Dishong	1
12152	28b pH (9040B and 9040C)	SW-846 9040C	1	14164121521A	06/13/2014 19:20	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/l		ug/l	ug/l	
12971	Acenaphthene	83-32-9	0.057	U	0.057	0.011	1
12971	Acenaphthylene	208-96-8	0.057	U	0.057	0.011	1
12971	Anthracene	120-12-7	0.057	U	0.057	0.011	1
12971	Benzo(a)anthracene	56-55-3	0.057	U	0.057	0.011	1
12971	Benzo(a)pyrene	50-32-8	0.057	U	0.057	0.011	1
12971	Benzo(b)fluoranthene	205-99-2	0.057	U	0.057	0.011	1
12971	Benzo(e)pyrene	192-97-2	0.057	U	0.057	0.011	1
12971	Benzo(g,h,i)perylene	191-24-2	0.057	U	0.057	0.011	1
12971	Benzo(k)fluoranthene	207-08-9	0.057	U	0.057	0.011	1
12971	Butylbenzylphthalate	85-68-7	1.1	U	1.1	0.057	1
12971	Di-n-butylphthalate	84-74-2	0.094	J	1.1	0.057	1
12971	Chrysene	218-01-9	0.057	U	0.057	0.011	1
12971	Dibenz(a,h)anthracene	53-70-3	0.057	U	0.057	0.011	1
12971	Diethylphthalate	84-66-2	0.080	J	1.1	0.057	1
12971	Dimethylphthalate	131-11-3	1.1	U	1.1	0.057	1
12971	Bis(2-Ethylhexyl)phthalate	117-81-7	0.15	J	1.1	0.057	1
12971	Fluoranthene	206-44-0	0.057	U	0.057	0.011	1
12971	Fluorene	86-73-7	0.057	U	0.057	0.011	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.057	U	0.057	0.011	1
12971	1-Methylnaphthalene	90-12-0	0.020	J	0.057	0.011	1
12971	2-Methylnaphthalene	91-57-6	0.028	J	0.057	0.011	1
12971	Naphthalene	91-20-3	0.058		0.057	0.034	1
12971	N-Nitrosodimethylamine	62-75-9	0.057	U	0.057	0.011	1
12971	Di-n-octylphthalate	117-84-0	1.1	U	1.1	0.057	1
12971	Phenanthrene	85-01-8	0.057	U	0.057	0.034	1
12971	Pyrene	129-00-0	0.057	U	0.057	0.011	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Target analytes were detected in the method blank associated with the samples as noted on the QC Summary. Since the result is within the acceptance range allowed by the method, the data is reported.

GC Volatiles	**TPH GRO SW-8015B**		ug/l		ug/l	ug/l	
08229	TPH-GRO S.CA water C5-C12	n.a.	50	U	50	20	1
Pesticides/PCBs	**SW-846 8081B**		ug/l		ug/l	ug/l	
10589	Aldrin	309-00-2	0.0084	U	0.0084	0.0017	1
10589	Alpha BHC	319-84-6	0.0084	U	0.0084	0.0025	1
10589	Beta BHC	319-85-7	0.0090	U	0.0090	0.0090	1
10589	Gamma BHC - Lindane	58-89-9	0.0084	U	0.0084	0.0017	1
10589	Chlordane	57-74-9	0.42	U	0.42	0.14	1
10589	p,p-DDD	72-54-8	0.017	U	0.017	0.0042	1
10589	p,p-DDE	72-55-9	0.017	U	0.017	0.0042	1
10589	p,p-DDT	50-29-3	0.017	U	0.017	0.0044	1
10589	Delta BHC	319-86-8	0.0084	U	0.0084	0.0029	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8081B**		**ug/l**		**ug/l**	**ug/l**	
10589	Dieldrin	60-57-1	0.017	U	0.017	0.0045	1
10589	Endosulfan I	959-98-8	0.0084	U	0.0084	0.0036	1
10589	Endosulfan II	33213-65-9	0.017	U	0.017	0.013	1
10589	Endosulfan Sulfate	1031-07-8	0.017	U	0.017	0.0049	1
10589	Endrin	72-20-8	0.017	U	0.017	0.0068	1
10589	Endrin Aldehyde	7421-93-4	0.084	U	0.084	0.017	1
10589	Endrin Ketone	53494-70-5	0.017	U	0.017	0.0042	1
10589	Heptachlor	76-44-8	0.0084	U	0.0084	0.0017	1
10589	Heptachlor Epoxide	1024-57-3	0.0084	U	0.0084	0.0019	1
10589	Methoxychlor	72-43-5	0.084	U	0.084	0.025	1
10589	Mirex	2385-85-5	0.042	U	0.042	0.0084	1
10589	Toxaphene	8001-35-2	0.84	U	0.84	0.25	1

An interferent near the retention time of Beta-BHC was detected in the method blank associated with the sample. The reporting limit was raised to .009 ug/L.
The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Beta-BHC was not detected in the second trial.

Pesticides/PCBs	**SW-846 8082A**		**ug/l**		**ug/l**	**ug/l**	
13092	Aroclor 5432	63496-31-1	0.42	U	0.42	0.084	1
13092	Aroclor 5442	12642-23-8	0.42	U	0.42	0.084	1
13092	Aroclor 5460	11126-42-4	0.42	U	0.42	0.093	1
13092	PCB-1016	12674-11-2	0.42	U	0.42	0.084	1
13092	PCB-1221	11104-28-2	0.42	U	0.42	0.084	1
13092	PCB-1232	11141-16-5	0.42	U	0.42	0.17	1
13092	PCB-1242	53469-21-9	0.42	U	0.42	0.084	1
13092	PCB-1248	12672-29-6	0.42	U	0.42	0.084	1
13092	PCB-1254	11097-69-1	0.42	U	0.42	0.084	1
13092	PCB-1260	11096-82-5	0.42	U	0.42	0.13	1
13092	PCB-1262	37324-23-5	0.42	U	0.42	0.17	1
13092	PCB-1268	11100-14-4	0.42	U	0.42	0.14	1

The recovery for a target analyte(s) and the surrogates in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/l**		**mg/l**	**mg/l**	
10365	EFH (C12-C14)	n.a.	0.099	U	0.099	0.049	1
10365	EFH (C15-C20)	n.a.	0.099	U	0.099	0.049	1
10365	EFH (C21-C30)	n.a.	0.099	U	0.099	0.049	1
10365	EFH (C30 - C40)	n.a.	0.49	U	0.49	0.099	1
10365	EFH (C8-C11)	n.a.	0.099	U	0.099	0.049	1
13205	EFH C12-C14 w/ SiGel	n.a.	0.099	U	0.099	0.049	1
13205	EFH C15-C20 w/ SiGel	n.a.	0.099	U	0.099	0.049	1
13205	EFH C21-C30 w/ SiGel	n.a.	0.099	U	0.099	0.049	1
13205	EFH C30-C40 w/ SiGel	n.a.	0.49	U	0.49	0.099	1
13205	EFH C8-C11 w/ SiGel	n.a.	0.099	U	0.099	0.049	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.					
Metals		**SW-846 6010C**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	0.400 U	0.400	0.0828	1
07044	Antimony	7440-36-0	0.0400 U	0.0400	0.0053	1
07035	Arsenic	7440-38-2	0.0400 U	0.0400	0.0068	1
07046	Barium	7440-39-3	0.0100 U	0.0100	0.00033	1
07047	Beryllium	7440-41-7	0.0100 U	0.0100	0.00067	1
08014	Boron	7440-42-8	0.100 U	0.100	0.0084	1
07049	Cadmium	7440-43-9	0.0100 U	0.0100	0.00076	1
01750	Calcium	7440-70-2	0.400 U	0.400	0.0334	1
07051	Chromium	7440-47-3	0.0300 U	0.0300	0.0016	1
07052	Cobalt	7440-48-4	0.0100 U	0.0100	0.0013	1
07053	Copper	7440-50-8	0.0200 U	0.0200	0.0027	1
01754	Iron	7439-89-6	0.400 U	0.400	0.0430	1
07055	Lead	7439-92-1	0.0300 U	0.0300	0.0047	1
01756	Lithium	7439-93-2	0.0400 U	0.0400	0.0047	1
01757	Magnesium	7439-95-4	0.200 U	0.200	0.0167	1
07058	Manganese	7439-96-5	0.0013 J	0.0100	0.00083	1
07060	Molybdenum	7439-98-7	0.0200 U	0.0200	0.0017	1
07061	Nickel	7440-02-0	0.0200 U	0.0200	0.0015	1
10143	Phosphorus	7723-14-0	0.200 U	0.200	0.0418	1
01762	Potassium	7440-09-7	1.00 U	1.00	0.0980	1
01767	Sodium	7440-23-5	2.00 U	2.00	0.167	1
07069	Tin	7440-31-5	0.0400 U	0.0400	0.0029	1
07070	Titanium	7440-32-6	0.0200 U	0.0200	0.0017	1
07071	Vanadium	7440-62-2	0.0100 U	0.0100	0.0020	1
07072	Zinc	7440-66-6	0.0400 U	0.0400	0.0020	1
10144	Zirconium	7440-67-7	0.0097 J	0.100	0.0084	1
		SW-846 6020A	**mg/l**	**mg/l**	**mg/l**	
06041	Selenium	7782-49-2	0.0040 U	0.0040	0.00050	1
06042	Silver	7440-22-4	0.0010 U	0.0010	0.00011	1
06044	Strontium	7440-24-6	0.0020 U	0.0020	0.00034	1
06045	Thallium	7440-28-0	0.0010 U	0.0010	0.00015	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	3b Mercury 7470A	7439-97-6	0.00020 U	0.00020	0.000060	1
Wet Chemistry		**SW-846 9040C**	**Std. Units**	**Std. Units**	**Std. Units**	
12152	28b pH (9040B and 9040C)	n.a.	5.3	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received MRL*	As Received EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**pg/l**		**pg/l**	**pg/l**	
10915	2378-TCDD	1746-01-6	1.97	U	1.97	0.197	1
10915	12378-PeCDD	40321-76-4	0.251	JQ	9.86	0.171	1
10915	123478-HxCDD	39227-28-6	9.86	U	9.86	0.133	1
10915	123678-HxCDD	57653-85-7	9.86	U	9.86	0.145	1
10915	123789-HxCDD	19408-74-3	0.244	JBQ	9.86	0.132	1
10915	1234678-HpCDD	35822-46-9	1.68	JB	9.86	0.140	1
10915	OCDD	3268-87-9	13.9	JB	19.7	0.136	1
10915	2378-TCDF	51207-31-9	1.97	U	1.97	0.0942	1
10915	12378-PeCDF	57117-41-6	9.86	U	9.86	0.0654	1
10915	23478-PeCDF	57117-31-4	0.234	JQ	9.86	0.0682	1
10915	123478-HxCDF	70648-26-9	0.207	JBQ	9.86	0.0719	1
10915	123678-HxCDF	57117-44-9	9.86	U	9.86	0.0706	1
10915	123789-HxCDF	72918-21-9	0.190	JBQ	9.86	0.0721	1
10915	234678-HxCDF	60851-34-5	0.257	JBQ	9.86	0.0660	1
10915	1234678-HpCDF	67562-39-4	0.365	JB	9.86	0.0601	1
10915	1234789-HpCDF	55673-89-7	0.367	JQ	9.86	0.0701	1
10915	OCDF	39001-02-0	1.06	JQ	19.7	0.103	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**pg/l**		**pg/l**	**pg/l**	
10915	TEQ WHO 2005 - EDLx0.0	n.a.	0.0247				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	75	25 - 164
13C12-12378-PeCDD	79	25 - 181
13C12-123478-HxCDD	82	32 - 141
13C12-123678-HxCDD	80	28 - 130
13C12-123789-HxCDD	82	28 - 130
13C12-1234678-HpCDD	80	23 - 140
13C12-OCDD	77	17 - 157
13C12-2378-TCDF	73	24 - 169
13C12-12378-PeCDF	81	24 - 185
13C12-23478-PeCDF	75	21 - 178
13C12-123478-HxCDF	74	26 - 152
13C12-123678-HxCDF	79	26 - 123
13C12-234678-HxCDF	76	28 - 136
13C12-123789-HxCDF	82	29 - 147
13C12-1234678-HpCDF	78	28 - 143
13C12-1234789-HpCDF	76	26 - 138
13C12-OCDF	73	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received MRL*	As Received EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12971	7b SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169WAD026	06/20/2014 07:10	Brian K Graham	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14169WAD026	06/18/2014 19:00	Nicholas W Shroyer	1
08229	11b TPH by EPA 8015B GRO	TPH GRO SW-8015B	1	14170B94A	06/20/2014 14:31	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	14170B94A	06/20/2014 14:31	Laura M Krieger	1
10589	22b Pesticides by EPA 8081B	SW-846 8081B	1	141680017A	06/18/2014 15:57	Jamie L Brillhart	1
13092	21b PCBs and PCTs 8082A	SW-846 8082A	1	141680016A	06/19/2014 02:35	Monica M Souders	1
13093	PCB/PCT Waters Update IV	SW-846 3510C	1	141680016A	06/17/2014 20:00	David V Hershey Jr	1
11120	Pesticide Waters Update IV Ext	SW-846 3510C	1	141680017A	06/17/2014 20:00	David V Hershey Jr	1
10365	10b TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141690022A	06/20/2014 03:12	Heather E Williams	1
13205	10b TPH-DRO (w/Si Gel)	SW-846 8015B modified	1	141690021A	06/24/2014 03:51	Heather E Williams	1
13212	EFH Water Ext. w/SiGel	SW-846 3510C	1	141690021A	06/18/2014 21:00	Karen L Beyer	1
11203	EFH Waters Extraction	SW-846 3510C	1	141690022A	06/18/2014 21:00	Karen L Beyer	1
10915	17b Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14171001	06/25/2014 03:37	Joseph D Anderson	1
10914	Dioxins/Furans in Water - SepF	EPA 1613B October 1994	1	14171001	06/21/2014 07:05	Ginelle L McQuaid	1
01743	Aluminum	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07044	Antimony	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07035	Arsenic	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07046	Barium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07047	Beryllium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
08014	Boron	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07049	Cadmium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
01750	Calcium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07051	Chromium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07052	Cobalt	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07053	Copper	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
01754	Iron	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07055	Lead	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
01756	Lithium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
01757	Magnesium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07058	Manganese	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07060	Molybdenum	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07061	Nickel	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
10143	Phosphorus	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
01762	Potassium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: EB2-061214 Water
SSFL Phase 3

LL Sample # WW 7497926
LL Group # 1481665
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/12/2014 15:30 by PH

Submitted: 06/13/2014 09:30
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB212 SDG#: PH231-07EB*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01767	Sodium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07069	Tin	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07070	Titanium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07071	Vanadium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
07072	Zinc	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
10144	Zirconium	SW-846 6010C	1	141640635001	06/16/2014 22:57	John P Hook	1
06041	Selenium	SW-846 6020A	1	141640639001B	06/17/2014 04:35	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	141640639001A	06/17/2014 04:35	Choon Y Tian	1
06044	Strontium	SW-846 6020A	1	141640639001A	06/17/2014 04:35	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	141640639001A	06/17/2014 04:35	Choon Y Tian	1
00259	3b Mercury 7470A	SW-846 7470A	1	141645713003	06/17/2014 07:48	Damary Valentin	1
10635	WW SW846(IV) ICP Dig (tot rec)	SW-846 3005A	1	141640635001	06/16/2014 09:40	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	141640639001	06/16/2014 09:05	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	141645713003	06/16/2014 11:46	Micaela L Dishong	1
12152	28b pH (9040B and 9040C)	SW-846 9040C	1	14164121521A	06/13/2014 19:20	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14169WAD026	Sample number(s): 7497925-7497926									
Acenaphthene	0.013	U	0.013	0.0025	ug/l	108	108	83-119	0	30
Acenaphthylene	0.013	U	0.013	0.0025	ug/l	99	100	81-130	1	30
Anthracene	0.013	U	0.013	0.0025	ug/l	101	104	83-125	3	30
Benzo(a)anthracene	0.013	U	0.013	0.0025	ug/l	99	100	79-122	1	30
Benzo(a)pyrene	0.013	U	0.013	0.0025	ug/l	100	105	80-121	5	30
Benzo(b)fluoranthene	0.013	U	0.013	0.0025	ug/l	102	107	79-136	5	30
Benzo(e)pyrene	0.013	U	0.013	0.0025	ug/l	99	103	67-118	4	30
Benzo(g,h,i)perylene	0.013	U	0.013	0.0025	ug/l	93	102	72-132	9	30
Benzo(k)fluoranthene	0.013	U	0.013	0.0025	ug/l	101	107	81-131	6	30
Butylbenzylphthalate	0.25	U	0.25	0.013	ug/l	87	87	40-138	0	30
Di-n-butylphthalate	0.024	J	0.25	0.013	ug/l	92	99	64-141	7	30
Chrysene	0.013	U	0.013	0.0025	ug/l	104	106	84-118	2	30
Dibenz(a,h)anthracene	0.013	U	0.013	0.0025	ug/l	85	89	66-133	5	30
Diethylphthalate	0.013	J	0.25	0.013	ug/l	95	96	64-137	1	30
Dimethylphthalate	0.25	U	0.25	0.013	ug/l	89	88	23-139	1	30
Bis(2-Ethylhexyl)phthalate	0.16	J	0.25	0.013	ug/l	60*	72	70-143	18	30
Fluoranthene	0.013	U	0.013	0.0025	ug/l	96	99	84-124	2	30
Fluorene	0.013	U	0.013	0.0025	ug/l	100	102	82-119	2	30
Indeno(1,2,3-cd)pyrene	0.013	U	0.013	0.0025	ug/l	88	94	68-132	7	30
1-Methylnaphthalene	0.013	U	0.013	0.0025	ug/l	92	94	86-130	2	30
2-Methylnaphthalene	0.013	U	0.013	0.0025	ug/l	87	89	81-131	2	30
Naphthalene	0.013	U	0.013	0.0075	ug/l	94	96	82-122	1	30
N-Nitrosodimethylamine	0.013	U	0.013	0.0025	ug/l	55*	55*	56-96	1	30
Di-n-octylphthalate	0.25	U	0.25	0.013	ug/l	49*	59	57-145	19	30
Phenanthrene	0.013	U	0.013	0.0075	ug/l	99	101	83-116	2	30
Pyrene	0.013	U	0.013	0.0025	ug/l	99	99	78-125	1	30
Batch number: 14174SLA026	Sample number(s): 7497920-7497923									
Acenaphthene	1.7	U	1.7	0.67	ug/kg	111		84-118		
Acenaphthylene	1.7	U	1.7	0.33	ug/kg	105		78-120		
Anthracene	1.7	U	1.7	0.33	ug/kg	103		85-118		
Benzo(a)anthracene	1.7	U	1.7	0.67	ug/kg	110		83-119		
Benzo(a)pyrene	1.7	U	1.7	0.67	ug/kg	101		80-122		
Benzo(b)fluoranthene	1.7	U	1.7	0.67	ug/kg	110		82-135		
Benzo(e)pyrene	17	U	17.	3.3	ug/kg	96		81-110		
Benzo(g,h,i)perylene	1.7	U	1.7	0.67	ug/kg	98		79-121		
Benzo(k)fluoranthene	1.7	U	1.7	0.67	ug/kg	105		79-123		
Butylbenzylphthalate	18	U	18.	6.0	ug/kg	100		75-144		
Di-n-butylphthalate	18	U	18.	6.0	ug/kg	98		75-148		
Chrysene	1.7	U	1.7	0.33	ug/kg	112		84-113		
Dibenz(a,h)anthracene	1.7	U	1.7	0.67	ug/kg	101		83-123		
Diethylphthalate	18	U	18.	6.0	ug/kg	105		73-147		
Dimethylphthalate	18	U	18.	6.0	ug/kg	105		85-122		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Bis(2-Ethylhexyl)phthalate	18	U	18.	6.0	ug/kg	102		68-146		
Fluoranthene	1.7	U	1.7	0.67	ug/kg	110		85-116		
Fluorene	1.7	U	1.7	0.67	ug/kg	113		84-120		
Indeno(1,2,3-cd)pyrene	1.7	U	1.7	0.67	ug/kg	98		82-123		
1-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	105		78-119		
2-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	107		78-121		
Naphthalene	1.7	U	1.7	0.67	ug/kg	103		79-113		
N-Nitrosodimethylamine	1.7	U	1.7	0.67	ug/kg	108		71-124		
Di-n-octylphthalate	18	U	18.	6.0	ug/kg	99		71-148		
Phenanthrene	1.7	U	1.7	0.67	ug/kg	102		83-113		
Pyrene	1.7	U	1.7	0.67	ug/kg	101		80-119		
Batch number: 14170B94A	Sample number(s): 7497925-7497926									
TPH-GRO S.CA water C5-C12	50	U	50.	20	ug/l	94	93	80-133	1	30
Batch number: 141680013A	Sample number(s): 7497925									
2,4-D	0.50	U	0.50	0.16	ug/l	110	112	68-155	1	30
Dalapon	1.3	U	1.3	0.25	ug/l	64	66	27-127	3	30
2,4-DB	1.0	U	1.0	0.30	ug/l	107	113	60-172	5	30
Dicamba	0.30	U	0.30	0.080	ug/l	96	97	65-142	1	30
Dinoseb	0.50	U	0.50	0.12	ug/l	118	123	16-163	4	30
2,4-DP (Dichlorprop)	0.50	U	0.50	0.16	ug/l	120	123	91-181	2	30
MCPA	200	U	200.	50	ug/l	86	88	65-128	2	30
MCPP	200	U	200.	50	ug/l	91	96	61-145	6	30
2,4,5-T	0.050	U	0.050	0.015	ug/l	119	120	67-163	1	30
2,4,5-TP	0.012	J	0.050	0.010	ug/l	105	110	71-162	5	30
Batch number: 141680016A	Sample number(s): 7497925-7497926									
Aroclor 5432	0.40	U	0.40	0.080	ug/l					
Aroclor 5442	0.40	U	0.40	0.080	ug/l	68	75	34-115	9	30
Aroclor 5460	0.40	U	0.40	0.088	ug/l					
PCB-1016	0.40	U	0.40	0.080	ug/l	41*	86	60-117	71*	30
PCB-1221	0.40	U	0.40	0.080	ug/l					
PCB-1232	0.40	U	0.40	0.16	ug/l					
PCB-1242	0.40	U	0.40	0.080	ug/l					
PCB-1248	0.40	U	0.40	0.080	ug/l					
PCB-1254	0.40	U	0.40	0.080	ug/l					
PCB-1260	0.40	U	0.40	0.12	ug/l	44*	91	67-128	70*	30
PCB-1262	0.40	U	0.40	0.16	ug/l					
PCB-1268	0.40	U	0.40	0.13	ug/l					
Batch number: 141680017A	Sample number(s): 7497925-7497926									
Aldrin	0.0080	U	0.0080	0.0016	ug/l	77	85	37-137	9	30
Alpha BHC	0.0080	U	0.0080	0.0024	ug/l	111	117	44-148	6	30
Beta BHC	0.0090	U	0.0090	0.0090	ug/l	104	109	48-147	5	30
Gamma BHC - Lindane	0.0080	U	0.0080	0.0016	ug/l	112	119	44-146	5	30
Chlordane	0.40	U	0.40	0.13	ug/l					
p,p-DDD	0.016	U	0.016	0.0040	ug/l	110	118	44-152	7	30
p,p-DDE	0.016	U	0.016	0.0040	ug/l	108	114	44-146	6	30
p,p-DDT	0.016	U	0.016	0.0042	ug/l	112	119	44-146	7	30
Delta BHC	0.0080	U	0.0080	0.0027	ug/l	115	121	47-146	5	30
Dieldrin	0.016	U	0.016	0.0042	ug/l	109	115	45-146	5	30
Endosulfan I	0.0080	U	0.0080	0.0034	ug/l	98	102	39-140	4	30
Endosulfan II	0.016	U	0.016	0.012	ug/l	106	113	45-139	6	30

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Endosulfan Sulfate	0.016	U	0.016	0.0046	ug/l	112	120	48-139	7	30
Endrin	0.016	U	0.016	0.0065	ug/l	94	109	43-139	14	30
Endrin Aldehyde	0.080	U	0.080	0.016	ug/l	106	109	43-144	4	20
Endrin Ketone	0.016	U	0.016	0.0040	ug/l	113	115	42-152	2	30
Heptachlor	0.0080	U	0.0080	0.0016	ug/l	91	99	36-146	8	30
Heptachlor Epoxide	0.0080	U	0.0080	0.0018	ug/l	104	108	49-142	4	30
Methoxychlor	0.080	U	0.080	0.024	ug/l	107	114	40-150	6	30
Mirex	0.040	U	0.040	0.0080	ug/l					
Toxaphene	0.80	U	0.80	0.24	ug/l					
Batch number: 141690028A	Sample number(s): 7497920-7497923									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	82	83	36-106	0	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	100		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	105		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141700007A	Sample number(s): 7497920-7497921									
Aldrin	0.83	U	0.83	0.17	ug/kg	108		60-118		
Alpha BHC	0.83	U	0.83	0.17	ug/kg	114		55-135		
Beta BHC	1.9	U	1.9	0.96	ug/kg	116		67-129		
Gamma BHC - Lindane	0.83	U	0.83	0.17	ug/kg	109		56-138		
Chlordane	17	U	17.	4.0	ug/kg					
p,p-DDD	1.7	U	1.7	0.33	ug/kg	110		69-141		
p,p-DDE	1.7	U	1.7	0.33	ug/kg	102		69-130		
p,p-DDT	1.7	U	1.7	0.35	ug/kg	108		64-139		
Delta BHC	0.83	U	0.83	0.45	ug/kg	114		59-137		
Dieldrin	1.7	U	1.7	0.33	ug/kg	100		68-134		
Endosulfan I	0.83	U	0.83	0.22	ug/kg	84		56-128		
Endosulfan II	1.7	U	1.7	0.33	ug/kg	96		68-128		
Endosulfan Sulfate	1.7	U	1.7	0.33	ug/kg	105		71-132		
Endrin	1.7	U	1.7	0.33	ug/kg	102		70-132		
Endrin Aldehyde	1.7	U	1.7	0.33	ug/kg	98		61-125		
Endrin Ketone	1.8	U	1.8	0.60	ug/kg	102		69-126		
Heptachlor	0.83	U	0.83	0.17	ug/kg	108		57-130		
Heptachlor Epoxide	0.83	U	0.83	0.17	ug/kg	99		69-125		
Methoxychlor	6.7	U	6.7	1.7	ug/kg	109		67-136		
Mirex	1.7	U	1.7	0.35	ug/kg					
Toxaphene	33	U	33.	14	ug/kg					
Batch number: 141750017A	Sample number(s): 7497924									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	93	94	36-106	1	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	107		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	110		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141670004A	Sample number(s): 7497920-7497924									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	94		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	96		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	94		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	91		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	77		60-115		
Batch number: 141670005A	Sample number(s): 7497920-7497924									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	68*		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	71*		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	70*		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	72		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	52*		60-115		
Batch number: 141690021A	Sample number(s): 7497925-7497926									
EFH C12-C14 w/ SiGel	0.10	U	0.10	0.050	mg/l	65*	70	67-109	8	30
EFH C15-C20 w/ SiGel	0.10	U	0.10	0.050	mg/l	71	75	71-119	6	30
EFH C21-C30 w/ SiGel	0.10	U	0.10	0.050	mg/l	70*	75	75-117	7	30
EFH C30-C40 w/ SiGel	0.50	U	0.50	0.10	mg/l	72	74	44-134	2	30
EFH C8-C11 w/ SiGel	0.10	U	0.10	0.050	mg/l	42*	49*	55-86	14	30
Batch number: 141690022A	Sample number(s): 7497925-7497926									
EFH (C12-C14)	0.10	U	0.10	0.050	mg/l	96	91	67-109	5	30
EFH (C15-C20)	0.10	U	0.10	0.050	mg/l	104	96	71-119	8	30
EFH (C21-C30)	0.10	U	0.10	0.050	mg/l	103	96	75-117	7	30
EFH (C30 - C40)	0.50	U	0.50	0.10	mg/l	88	85	44-134	4	30
EFH (C8-C11)	0.10	U	0.10	0.050	mg/l	63	64	55-86	2	30
Batch number: 141640635001	Sample number(s): 7497925-7497926									
Aluminum	0.400	U	0.400	0.0828	mg/l	109	106	90-112	3	20
Antimony	0.0400	U	0.0400	0.0053	mg/l	100	98	88-111	1	20
Arsenic	0.0400	U	0.0400	0.0068	mg/l	110	108	90-113	1	20
Barium	0.0100	U	0.0100	0.00033	mg/l	108	107	90-110	1	20
Beryllium	0.0100	U	0.0100	0.00067	mg/l	108	106	90-111	2	20
Boron	0.100	U	0.100	0.0084	mg/l	100	99	90-110	2	20
Cadmium	0.0100	U	0.0100	0.00076	mg/l	110	108	90-112	2	20
Calcium	0.400	U	0.400	0.0334	mg/l	109	106	90-112	2	20
Chromium	0.0300	U	0.0300	0.0016	mg/l	106	103	90-110	3	20
Cobalt	0.0100	U	0.0100	0.0013	mg/l	111	109	90-114	2	20
Copper	0.0200	U	0.0200	0.0027	mg/l	107	104	90-112	2	20
Iron	0.400	U	0.400	0.0430	mg/l	109	107	90-112	2	20
Lead	0.0300	U	0.0300	0.0047	mg/l	110	108	88-116	2	20
Lithium	0.0400	U	0.0400	0.0047	mg/l	108	105	90-110	3	20
Magnesium	0.200	U	0.200	0.0167	mg/l	108	106	89-110	2	20
Manganese	0.0014	J	0.0100	0.00083	mg/l	105	107	90-110	2	20
Molybdenum	0.0200	U	0.0200	0.0017	mg/l	108	106	90-110	2	20
Nickel	0.0016	J	0.0200	0.0015	mg/l	113	111	90-117	2	20
Phosphorus	0.200	U	0.200	0.0418	mg/l	107	104	90-110	3	20
Potassium	1.00	U	1.00	0.0980	mg/l	105	102	90-110	3	20
Sodium	2.00	U	2.00	0.167	mg/l	105	102	87-114	3	20
Tin	0.0400	U	0.0400	0.0029	mg/l	106	103	90-110	2	20

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Titanium	0.0200 U	0.0200	0.0017	mg/l	108	106	90-113	2	20
Vanadium	0.0100 U	0.0100	0.0020	mg/l	110	108	90-110	2	20
Zinc	0.0047 J	0.0400	0.0020	mg/l	107	106	90-110	2	20
Zirconium	0.0094 J	0.100	0.0084	mg/l	107	104	90-110	3	20
Batch number: 141640639001A	Sample number(s): 7497925-7497926								
Silver	0.0010 U	0.0010	0.00011	mg/l	103	103	90-115	1	20
Strontium	0.0020 U	0.0020	0.00034	mg/l	103	102	90-110	1	20
Thallium	0.0010 U	0.0010	0.00015	mg/l	105	101	90-115	3	20
Batch number: 141640639001B	Sample number(s): 7497925-7497926								
Selenium	0.0040 U	0.0040	0.00050	mg/l	101	101	90-114	0	20
Batch number: 141645713003	Sample number(s): 7497925-7497926								
3b Mercury 7470A	0.00020 U	0.00020	0.00006 0	mg/l	98	94	90-115	4	20
Batch number: 141680637002	Sample number(s): 7497920-7497923								
Aluminum	10.0 J	40.0	7.21	mg/kg	107		80-120		
Antimony	4.00 U	4.00	0.740	mg/kg	105		80-120		
Arsenic	4.00 U	4.00	0.700	mg/kg	105		80-120		
Barium	1.00 U	1.00	0.0330	mg/kg	102		80-120		
Beryllium	1.00 U	1.00	0.0670	mg/kg	102		80-120		
Boron	1.76 J	10.0	0.840	mg/kg	99		80-120		
Cadmium	1.00 U	1.00	0.0760	mg/kg	103		80-120		
Calcium	24.6	20.0	3.34	mg/kg	105		80-120		
Chromium	3.00 U	3.00	0.160	mg/kg	103		80-120		
Cobalt	1.00 U	1.00	0.0990	mg/kg	105		80-120		
Copper	2.00 U	2.00	0.290	mg/kg	103		80-120		
Iron	40.0 U	40.0	3.62	mg/kg	104		80-120		
Lead	3.00 U	3.00	0.500	mg/kg	108		80-120		
Lithium	4.0 U	4.0	0.34	mg/kg	101		80-120		
Magnesium	10.0 U	10.0	1.67	mg/kg	103		80-120		
Manganese	1.00 U	1.00	0.0830	mg/kg	102		80-120		
Molybdenum	2.00 U	2.00	0.170	mg/kg	102		80-120		
Nickel	2.00 U	2.00	0.130	mg/kg	108		80-120		
Phosphorus	10.0 U	10.0	2.89	mg/kg	104		80-120		
Potassium	100 U	100.	8.34	mg/kg	99		80-120		
Sodium	100 U	100.	16.7	mg/kg	101		80-120		
Tin	1.46 J	10.0	0.220	mg/kg	101		80-120		
Titanium	1.00 U	1.00	0.170	mg/kg	104		80-120		
Vanadium	1.00 U	1.00	0.130	mg/kg	104		80-120		
Zinc	0.386 J	4.00	0.200	mg/kg	103		80-120		
Zirconium	5.00 U	5.00	0.840	mg/kg	102		80-120		
Batch number: 141680637002A	Sample number(s): 7497920-7497923								
Silver	0.200 U	0.200	0.0260	mg/kg	103		80-120		
Strontium	0.134 J	0.400	0.0680	mg/kg	100		80-120		
Thallium	0.200 U	0.200	0.0300	mg/kg	102		80-120		
Batch number: 141680637002B	Sample number(s): 7497920-7497923								
Selenium	0.400 U	0.400	0.100	mg/kg	103		80-120		
Batch number: 141680638002	Sample number(s): 7497920-7497923								

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
3a Mercury 7471A	0.0167 U	0.0167	0.0100	mg/kg	85		85-120		
Batch number: 14164039402A	Sample number(s): 7497920-7497923								
15a pH by 9045D					100		95-105		
Batch number: 14164121521A	Sample number(s): 7497925-7497926								
28b pH (9040B and 9040C)					100	100	90-110	0	3
Batch number: 14170162401B	Sample number(s): 7497920-7497924								
14a Moisture Content by 160.3					100		80-120		

Analysis Name	Blank Result	Blank MRL**	Blank EDL	Report Units	OPR %REC	OPRD %REC	OPR/OPRD Limits	RPD	RPD Max
Batch number: 14167007	Sample number(s): 7497920-7497921								
2378-TCDD	1.00 U	1.00	0.122	ng/kg	97		67-158		
12378-PeCDD	5.00 U	5.00	0.0777	ng/kg	106		70-142		
123478-HxCDD	5.00 U	5.00	0.0407	ng/kg	103		70-164		
123678-HxCDD	5.00 U	5.00	0.0437	ng/kg	103		76-134		
123789-HxCDD	5.00 U	5.00	0.0420	ng/kg	105		64-162		
1234678-HpCDD	0.114 J	5.00	0.0370	ng/kg	100		70-140		
OCDD	0.525 J	10.0	0.0298	ng/kg	100		78-144		
2378-TCDF	0.0972 J	1.00	0.0957	ng/kg	116		75-158		
12378-PeCDF	0.0617 J	5.00	0.0335	ng/kg	101		80-134		
23478-PeCDF	0.0610 J	5.00	0.0348	ng/kg	104		68-160		
123478-HxCDF	5.00 U	5.00	0.0416	ng/kg	104		72-134		
123678-HxCDF	5.00 U	5.00	0.0354	ng/kg	108		84-130		
123789-HxCDF	5.00 U	5.00	0.0501	ng/kg	109		78-130		
234678-HxCDF	0.0544 J	5.00	0.0373	ng/kg	105		70-156		
1234678-HpCDF	0.0502 J	5.00	0.0103	ng/kg	97		82-122		
1234789-HpCDF	0.0604 J	5.00	0.0226	ng/kg	101		78-138		
OCDF	0.298 J	10.0	0.0841	ng/kg	105		63-170		
Batch number: 14171001	Sample number(s): 7497925-7497926								
2378-TCDD	2.00 U	2.00	0.366	pg/l	93		60-150		
12378-PeCDD	10.0 U	10.0	0.427	pg/l	92		60-150		
123478-HxCDD	10.0 U	10.0	0.238	pg/l	93		60-150		
123678-HxCDD	10.0 U	10.0	0.242	pg/l	92		60-150		
123789-HxCDD	0.332 J	10.0	0.244	pg/l	94		60-150		
1234678-HpCDD	1.63 J	10.0	0.205	pg/l	91		60-150		
OCDD	6.91 J	20.0	0.434	pg/l	89		60-150		
2378-TCDF	2.00 U	2.00	0.323	pg/l	88		60-150		
12378-PeCDF	0.375 J	10.0	0.162	pg/l	93		60-150		
23478-PeCDF	10.0 U	10.0	0.181	pg/l	94		60-150		
123478-HxCDF	0.271 J	10.0	0.170	pg/l	98		60-150		
123678-HxCDF	0.341 J	10.0	0.144	pg/l	100		60-150		
123789-HxCDF	0.269 J	10.0	0.172	pg/l	97		60-150		
234678-HxCDF	0.297 J	10.0	0.162	pg/l	94		60-150		
1234678-HpCDF	0.324 J	10.0	0.129	pg/l	96		60-150		
1234789-HpCDF	10.0 U	10.0	0.148	pg/l	93		60-150		
OCDF	20.0 U	20.0	0.342	pg/l	92		60-150		
Batch number: 14167007	Sample number(s): 7497920-7497921								
TEQ WHO 2005 - EDLx0.0	0.000502			ng/kg					

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
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Analysis Name	Blank Result	Blank MRL**	Blank EDL	Report Units	OPR %REC	OPRD %REC	OPR/OPRD Limits	RPD	RPD Max
Batch number: 14171001	Sample number(s): 7497925-7497926								
TEQ WHO 2005 - EDLx0.0	U			pg/l					

Sample Matrix Quality Control

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Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14174SLA026	Sample number(s): 7497920-7497923 UNSPK: P502707								
Acenaphthene	104	104	48-127	1	30				
Acenaphthylene	103	103	60-128	0	30				
Anthracene	103	102	52-126	0	30				
Benzo(a)anthracene	110	107	44-143	2	30				
Benzo(a)pyrene	95	95	49-137	0	30				
Benzo(b)fluoranthene	123	123	26-142	0	30				
Benzo(e)pyrene	98	98	63-111	0	30				
Benzo(g,h,i)perylene	48	45	33-141	5	30				
Benzo(k)fluoranthene	106	107	49-144	0	30				
Butylbenzylphthalate	115	119	64-156	4	30				
Di-n-butylphthalate	107	105	52-147	1	30				
Chrysene	106	103	43-141	3	30				
Dibenz(a,h)anthracene	59	57	25-145	4	30				
Diethylphthalate	101	101	66-140	0	30				
Dimethylphthalate	98	101	70-123	2	30				
Bis(2-Ethylhexyl)phthalate	107	110	48-164	3	30				
Fluoranthene	108	109	38-153	1	30				
Fluorene	108	108	57-130	0	30				
Indeno(1,2,3-cd)pyrene	55	53	26-139	5	30				
1-Methylnaphthalene	104	104	59-139	0	30				
2-Methylnaphthalene	107	107	46-147	1	30				
Naphthalene	103	103	52-136	0	30				
N-Nitrosodimethylamine	105	105	39-134	1	30				
Di-n-octylphthalate	172*	178*	52-162	3	30				
Phenanthrene	100	101	50-137	0	30				
Pyrene	102	103	26-143	0	30				
Batch number: 141690028A	Sample number(s): 7497920-7497923 UNSPK: P494369								
PCB-1016	96	78	41-135	22	50				
PCB-1260	102	83	40-134	22	50				
Batch number: 141700007A	Sample number(s): 7497920-7497921 UNSPK: 7497920								
Aldrin	110	95	16-126	14	50				
Alpha BHC	121	114	14-140	6	50				
Beta BHC	153*	99	42-133	43	50				
Gamma BHC - Lindane	101	95	30-137	6	50				
p,p-DDD	117	107	43-149	9	50				
p,p-DDE	111	98	35-152	12	50				

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Quality Control Summary

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Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
p,p-DDT	149	137	12-193	9	50				
Delta BHC	93	85	13-153	9	50				
Dieldrin	103	94	41-153	10	50				
Endosulfan I	92	84	26-146	9	50				
Endosulfan II	98	90	34-141	9	50				
Endosulfan Sulfate	121	113	10-181	7	50				
Endrin	103	94	30-152	8	50				
Endrin Aldehyde	102	99	23-138	3	50				
Endrin Ketone	112	103	30-148	8	50				
Heptachlor	112	107	16-152	4	50				
Heptachlor Epoxide	98	93	33-144	5	50				
Methoxychlor	149	138	41-161	8	50				
Batch number: 141750017A	Sample number(s): 7497924 UNSPK: P501187								
PCB-1016	86	100	41-135	15	50				
PCB-1260	88	109	40-134	20	50				
Batch number: 141670004A	Sample number(s): 7497920-7497924 UNSPK: P492863								
EFH (C12-C14)	146*	135*	49-123	8	20				
EFH (C15-C20)	118	107	49-123	7	20				
EFH (C21-C30)	137*	130*	49-123	2	20				
EFH (C30-C40)	163*	195*	49-123	6	20				
EFH (C8-C11)	91	95	49-123	5	20				
Batch number: 141670005A	Sample number(s): 7497920-7497924 UNSPK: P492863								
EFH C12-C14 w/ SiGel	100	81	49-123	21*	20				
EFH C15-C20 w/ SiGel	77	66	49-123	15	20				
EFH C21-C30 w/ SiGel	60	55	49-123	6	20				
EFH C30-C40 w/ SiGel	89	83	49-123	7	20				
EFH C8-C11 w/ SiGel	52	47*	49-123	11	20				
Batch number: 141680637002	Sample number(s): 7497920-7497923 UNSPK: P501188 BKG: P501188								
Aluminum	1032 (2)	806 (2)	75-125	3	20	15,000	15,000	0	20
Antimony	47*	49*	75-125	3	20	3.92 U	3.96 U	0 (1)	20
Arsenic	98	98	75-125	1	20	5.68	5.34	6 (1)	20
Barium	94	88	75-125	5	20	104	107	3	20
Beryllium	102	102	75-125	2	20	0.566 J	0.570 J	1 (1)	20
Boron	98	97	75-125	2	20	4.31 J	4.09 J	5 (1)	20
Cadmium	93	93	75-125	2	20	0.980 U	0.990 U	0 (1)	20
Calcium	150 (2)	103 (2)	75-125	7	20	2,210	2,360	7	20
Chromium	112	94	75-125	10	20	19.0	20.0	5	20
Cobalt	95	95	75-125	2	20	4.78	4.98	4 (1)	20
Copper	102	95	75-125	7	20	11.5	11.7	1	20
Iron	-493 (2)	-449 (2)	75-125	0	20	18,800	18,800	0	20
Lead	132*	84	75-125	28*	20	10.4	7.96	26* (1)	20
Lithium	103	108	75-125	2	20	20.1	18.9	6 (1)	20
Magnesium	95 (2)	21 (2)	75-125	4	20	4,030	4,040	0	20
Manganese	73 (2)	41 (2)	75-125	5	20	313	332	6	20
Molybdenum	95	95	75-125	2	20	0.404 J	0.410 J	1 (1)	20
Nickel	97	94	75-125	4	20	12.8	12.4	3	20

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Quality Control Summary

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Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Phosphorus	92 (2)	151 (2)	75-125	10	20	424	434	2	20
Potassium	124	122	75-125	1	20	3,560	3,680	3	20
Sodium	103	105	75-125	0	20	76.0 J	72.5 J	5 (1)	20
Tin	89	89	75-125	2	20	2.54 J	2.52 J	1 (1)	20
Titanium	244 (2)	196 (2)	75-125	4	20	1,040	1,040	0	20
Vanadium	102	96	75-125	4	20	35.0	33.9	3	20
Zinc	95	93	75-125	2	20	57.1	56.0	2	20
Zirconium	97	99	75-125	0	20	2.95 J	3.36 J	13 (1)	20
Batch number: 141680637002A	Sample number(s): 7497920-7497923 UNSPK: P501188 BKG: P501188								
Silver	128*	128*	75-125	2	20	0.0414 J	0.0323 J	25* (1)	20
Strontium	148*	71*	75-125	21*	20	22.0	23.1	5	20
Thallium	125	115	75-125	6	20	0.266	0.255	4 (1)	20
Batch number: 141680637002B	Sample number(s): 7497920-7497923 UNSPK: P501188 BKG: P501188								
Selenium	116	116	75-125	1	20	0.265 J	0.259 J	2 (1)	20
Batch number: 141680638002	Sample number(s): 7497920-7497923 UNSPK: P501188 BKG: P501188								
3a Mercury 7471A	89	86	65-135	1	20	0.0200	0.0182	10 (1)	20
Batch number: 14164039402A	Sample number(s): 7497920-7497923 BKG: 7497921								
15a pH by 9045D						8.08	8.11	0	3
Batch number: 14170162401B	Sample number(s): 7497920-7497924 BKG: P497908								
14a Moisture Content by 160.3						4.5	4.4	2	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 7b SVOC SIM EPA 8270D
Batch number: 14169WAD026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7497925	96	106	87
7497926	97	105	89
Blank	103	113	91
LCS	97	110	90
LCSD	98	114	90
Limits:	59-128	62-141	70-134

Analysis Name: 7a SVOC SIM EPA 8270D
Batch number: 14174SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Surrogate Quality Control

7497920	109	115	93
7497921	112	117	98
7497922	103	105	92
7497923	99	103	87
Blank	111	114	100
LCS	110	115	99
MS	112	110	99
MSD	112	109	98
Limits:	59-115	61-118	70-127

Analysis Name: 11b TPH by EPA 8015B GRO
Batch number: 14170B94A

	Trifluorotoluene-F
7497925	90
7497926	93
Blank	82
LCS	93
LCSD	91
Limits:	63-135

Analysis Name: 24b Herbicides by EPA 8151A
Batch number: 141680013A

	2,4-Dichlorophenylacetic acid
7497925	71
Blank	67
LCS	99
LCSD	98
Limits:	50-150

Analysis Name: 21b PCBs and PCTs 8082A
Batch number: 141680016A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7497925	100	100
7497926	91	78
Blank	90	89
LCS	43*	39*
LCSD	90	81
Limits:	45-120	45-120

Analysis Name: 22b Pesticides by EPA 8081B
Batch number: 141680017A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7497925	105	114
7497926	91	88
Blank	86	96
LCS	94	100

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Surrogate Quality Control

LCSD	95	105
Limits:	60-140	20-120

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141690028A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7497920	92	87
7497921	81	74
7497922	110	98
7497923	109	100
Blank	66	62
LCS	104	95
LCSD	99	91
MS	107	101
MSD	81	75
Limits:	45-120	45-120

Analysis Name: 20a Pesticides by EPA 8081B
Batch number: 141700007A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7497920	104	105
7497921	99	111
Blank	102	111
LCS	112	118
MS	109	109
MSD	122	103
Limits:	50-130	20-120

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141750017A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7497924	118	112
Blank	125*	106
LCS	122*	110
LCSD	121*	112
MS	100	93
MSD	118	107
Limits:	45-120	45-120

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141670004A

	Chlorobenzene	Orthoterphenyl
7497920	92	96
7497921	90	92
7497922	77	99
7497923	92	97
7497924	91	96
Blank	97	101

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Surrogate Quality Control

LCS	74	96
MS	76	97
MSD	74	95
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141670005A

	Chlorobenzene	Orthoterphenyl
7497920	56	68
7497921	55	66
7497922	52	60*
7497923	58	68
7497924	57	70
Blank	57	66
LCS	57	68
MS	59	69
MSD	52	61*
Limits:	37-125	66-123

Analysis Name: 10b TPH-DRO (w/Si Gel)
Batch number: 141690021A

	Chlorobenzene	Orthoterphenyl
7497925	69	72
7497926	69	70
Blank	56	66*
LCS	60	63*
LCSD	65	76
Limits:	45-126	69-119

Analysis Name: 10b TPH by EPA 8015B (DRO)
Batch number: 141690022A

	Chlorobenzene	Orthoterphenyl
7497925	101	88
7497926	99	92
Blank	93	95
LCS	95	100
LCSD	89	90
Limits:	45-126	69-119

Analysis Name: 23a Dioxin/Furan by EPA 1613B
Batch number: 14167007

	13C12-2378-TCDD	13C12-12378-PeCDD	13C12-123478-HxCDD	13C12-123678-HxCDD	13C12-123789-HxCDD	13C12-1234678-HpCDD
7497920	81	85	90	95	91	97
7497921	80	87	85	87	86	89
Blank	71	82	82	83	81	90
OPR	76	76	82	85	83	88
Limits:	25-164	25-181	32-141	28-130	28-130	23-140

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481665
Reported: 07/07/14 at 12:26 PM

Surrogate Quality Control

	13C12-OCDD	13C12-2378-TCDF	13C12-12378-PeCDF	13C12-23478-PeCDF	13C12-123478-HxCDF	13C12-123678-HxCDF
7497920	106	84	104	91	91	105
7497921	89	71	89	77	68	80
Blank	97	69	91	82	71	86
OPR	88	73	94	77	74	88
Limits:	17-157	24-169	24-185	21-178	26-152	26-123

	13C12-234678-HxCDF	13C12-123789-HxCDF	13C12-1234678-HpCDF	13C12-1234789-HpCDF	13C12-OCDF
7497920	96	91	143	82	80
7497921	73	71	117	60	54
Blank	78	63	130	65	60
OPR	80	64	132	68	59
Limits:	28-136	29-147	28-143	26-138	17-157

Analysis Name: 17b Dioxin/Furan by EPA 1613B
Batch number: 14171001

	13C12-2378-TCDD	13C12-12378-PeCDD	13C12-123478-HxCDD	13C12-123678-HxCDD	13C12-123789-HxCDD	13C12-1234678-HpCDD
7497925	81	83	84	86	85	90
7497926	75	79	82	80	82	80
Blank	77	75	79	83	80	84
OPR	80	77	84	87	84	88
Limits:	25-164	25-181	32-141	28-130	28-130	23-140

	13C12-OCDD	13C12-2378-TCDF	13C12-12378-PeCDF	13C12-23478-PeCDF	13C12-123478-HxCDF	13C12-123678-HxCDF
7497925	92	80	89	82	79	83
7497926	77	73	81	75	74	79
Blank	84	75	87	76	74	84
OPR	87	72	74	68	77	80
Limits:	17-157	24-169	24-185	21-178	26-152	26-123

	13C12-234678-HxCDF	13C12-123789-HxCDF	13C12-1234678-HpCDF	13C12-1234789-HpCDF	13C12-OCDF
7497925	81	84	81	85	82
7497926	76	82	78	76	73
Blank	76	75	80	79	76
OPR	74	83	80	79	79
Limits:	28-136	29-147	28-143	26-138	17-157

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

13013 1481665 7497920-26

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped:	6/12/2014	Contact Name:	Pam Hartman	COC No:	20140612-01
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1
AirbillNo:	770288260743			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
FDG2-SL-562-NBZ-SB-0.0-0.5	6/12/14 08:50	SO	None	2 - 16 oz glass	10 day	X	X					X		X	X			X				X				X															sample is wet
FDG2-SL-563-NBZ-SB-0.0-0.5	6/12/14 09:25	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X							X				X															sample is wet
FDG2-SL-563-NBZ-SB-0.0-0.5	6/12/14 09:25	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-569-NBZ-SB-0.0-0.5	6/12/14 08:55	SO	None	2 - SS-Sleeve	10 day	X	X					X			X											X															
FDG2-SL-569-NBZ-SB-0.0-0.5	6/12/14 08:55	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-570-NBZ-SB-0.0-0.5	6/12/14 08:10	SO	None	2 - SS-Sleeve	10 day	X	X					X			X											X															
FDG2-SL-570-NBZ-SB-0.0-0.5	6/12/14 08:10	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-583-NBZ-SB-0.0-0.5	6/12/14 13:35	SO	None	1 - SS-Sleeve	10 day										X											X															

Special Instructions: For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Sampler: Randy Roberts Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Steg Myse	06/12/14	1600									
									[signature]	6/13/14	930

Final Data Gap Block 2 1 of 3

COC Rev 4

COC: 20140612-01, Page 1 of 1

SSFL Phase 3 Chain of Custody

13013 1481665 7497920-26

CDM Smith

DateShipped:	6/12/2014	Contact Name:	Pam Hartman	COC No:	20140612-02
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	2
AirbillNo:	770288260743			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
EB1-061214	6/12/14 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																	
EB1-061214	6/12/14 15:00	WQ	None	4 - 1 L Amber	10 day									X							X																				
EB1-061214	6/12/14 15:00	WQ	None	1 - 250 mL Poly	10 day														X																						
EB1-061214	6/12/14 15:00	WQ	HCl	2 - 1 L Amber	10 day																					X															
EB1-061214	6/12/14 15:00	WQ	HCl	3 - 40 mL Vial	10 day																				X																
EB2-061214	6/12/14 15:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																	
EB2-061214	6/12/14 15:30	WQ	None	1 - 250 mL Poly	10 day														X																						
EB2-061214	6/12/14 15:30	WQ	HCl	2 - 1 L Amber	10 day																					X															
EB2-061214	6/12/14 15:30	WQ	HCl	3 - 40 mL Vial	10 day																				X																

Special Instructions: For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Sampler: Pam Hart

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

[signature] 6.13.14 930

FDG BLOCK 2 2 of 3

COC Rev 4

COC: 20140612-02, Page 1 of 1

SSFL Phase 3 Chain of Custody

13013 1481665 7497920-26

CDM Smith

DateShipped:	6/12/2014	Contact Name:	Pam Hartman	COC No:	20140612-03
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1
AirbillNo:	770288260743			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
EB1-061214	6/12/14 15:00	WQ	None	3 - 250 mL Amber	10 day							X			X							X																			
EB2-061214	6/12/14 15:30	WQ	None	3 - 250 mL Amber	10 day							X			X							X																			
EB2-061214	6/12/14 15:30	WQ	None	2 - 1 L Amber	10 day									X																											

Special Instructions:

Sampler: Pam Hartman

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Steve Myers	6/12/14	1600									

6-13-14 930

FDG Block 2 3 of 3

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Sample Administration Receipt Documentation Log

Doc Log ID: 17287

Group Number(s): 1481665

Client: CDM

SSFL

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/13/2014 9:30
Number of Packages:	2	Number of Projects:	1
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	3
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Brandy Barclay (2299) at 10:02 on 06/13/2014

Samples Chilled Details: SSFL

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	0.5	DT	Wet	Y	Bagged	N	N
2	DT121	1.7	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/14/2014
Group Number: 1481960
SDG: PH233
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
TB-061314 Water	7499516
FDG2-SL-582-NBZ-SB-0.0-0.5 Soil	7499517
FDG2-SL-582-NBZ-SB-3.0-3.5 Soil	7499518
FDG2-SL-584-NBZ-SB-0.0-0.5 Soil	7499519
FDG2-SL-585-NBZ-SB-0.0-0.5 Soil	7499520
FDG2-SL-586-NBZ-SB-0.0-0.5 Soil	7499521

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: TB-061314 Water
SSFL Phase 3

LL Sample # WW 7499516
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 08:00

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB613 SDG#: PH233-01TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**TPH GRO SW-8015B**		ug/l		ug/l	ug/l	
08229	TPH-GRO S.CA water C5-C12	n.a.	50	U	50	20	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08229	11b TPH by EPA 8015B GRO	TPH GRO SW-8015B	1	14170B94A	06/20/2014 14:56	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	14170B94A	06/20/2014 14:56	Laura M Krieger	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-582-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499517
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 07:50 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD582 SDG#: PH233-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	18	U	18	3.4	1
13099	PCB-1221	11104-28-2	18	U	18	5.3	1
13099	PCB-1232	11141-16-5	18	U	18	4.2	1
13099	PCB-1242	53469-21-9	18	U	18	4.2	1
13099	PCB-1248	12672-29-6	18	U	18	3.4	1
13099	PCB-1254	11097-69-1	18	U	18	4.5	1
13099	PCB-1260	11096-82-5	18	U	18	4.0	1
13099	PCB-1262	37324-23-5	18	U	18	3.4	1
13099	PCB-1268	11100-14-4	18	U	18	3.4	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.2	U	5.2	2.1	1
12952	EFH (C15-C20)	n.a.	3.7	J	5.2	2.1	1
12952	EFH (C21-C30)	n.a.	22		5.2	2.1	1
12952	EFH (C30-C40)	n.a.	73		10	4.2	1
12952	EFH (C8-C11)	n.a.	5.2	U	5.2	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.2	U	5.2	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.2	U	5.2	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	3.0	J	5.2	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	6.2	J	10	4.2	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.2	U	5.2	2.1	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	3.9		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 16:33	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-582-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499517
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 07:50 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD582 SDG#: PH233-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 23:26	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/19/2014 23:39	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-582-NBZ-SB-3.0-3.5 Soil
SSFL Phase 3

LL Sample # SW 7499518
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 08:05 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

F-582 SDG#: PH233-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	1.1	U	1.1	0.2	24.32
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	36	U	36	11	1
13099	Aroclor 5442	12642-23-8	36	U	36	11	1
13099	Aroclor 5460	11126-42-4	36	U	36	11	1
13099	PCB-1016	12674-11-2	18	U	18	3.6	1
13099	PCB-1221	11104-28-2	18	U	18	5.5	1
13099	PCB-1232	11141-16-5	18	U	18	4.4	1
13099	PCB-1242	53469-21-9	18	U	18	4.4	1
13099	PCB-1248	12672-29-6	18	U	18	3.6	1
13099	PCB-1254	11097-69-1	18	U	18	4.8	1
13099	PCB-1260	11096-82-5	18	U	18	4.2	1
13099	PCB-1262	37324-23-5	18	U	18	3.6	1
13099	PCB-1268	11100-14-4	18	U	18	3.6	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.5	U	5.5	2.2	1
12952	EFH (C15-C20)	n.a.	5.5	U	5.5	2.2	1
12952	EFH (C21-C30)	n.a.	8.1		5.5	2.2	1
12952	EFH (C30-C40)	n.a.	24		11	4.4	1
12952	EFH (C8-C11)	n.a.	5.5	U	5.5	2.2	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.5	U	5.5	2.2	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.5	U	5.5	2.2	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.5	U	5.5	2.2	1
13197	EFH C30-C40 w/ SiGel	n.a.	11	U	11	4.4	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.5	U	5.5	2.2	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	8.7		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-582-NBZ-SB-3.0-3.5 Soil
SSFL Phase 3

LL Sample # SW 7499518
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 08:05 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

F-582 SDG#: PH233-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 19:52	Laura M Krieger	24.32
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416534814	06/14/2014 15:46	Mitchell R Washel	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416534814	06/14/2014 15:47	Mitchell R Washel	n.a.
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 18:05	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 20:27	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/20/2014 00:00	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-584-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499519
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 09:50 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD584 SDG#: PH233-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	22		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	36		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	6.8		5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	0.83		0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 18:23	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-584-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499519
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 09:50 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD584 SDG#: PH233-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 21:14	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/20/2014 00:21	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-585-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499520
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 09:25 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD585 SDG#: PH233-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.4	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C15-C20)	n.a.	3.5	J	5.1	2.1	1
12952	EFH (C21-C30)	n.a.	18		5.1	2.1	1
12952	EFH (C30-C40)	n.a.	40		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	2.8		0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 18:42	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-585-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499520
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 09:25 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD585 SDG#: PH233-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 23:48	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/20/2014 00:43	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-586-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499521
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 09:00 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD586 SDG#: PH233-06*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C15-C20)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C21-C30)	n.a.	12		5.1	2.1	1
12952	EFH (C30-C40)	n.a.	30		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
	The reverse surrogate, capric acid, is present at <1%. The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	2.6		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141690028A	06/23/2014 19:01	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141690028A	06/19/2014 09:45	Katheryne V Sponheimer	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-586-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3

LL Sample # SW 7499521
LL Group # 1481960
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/13/2014 09:00 by SD

Submitted: 06/14/2014 09:20
Reported: 07/07/2014 12:26

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

FD586 SDG#: PH233-06*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141670004A	06/17/2014 22:43	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141670005A	06/20/2014 01:04	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141670005A	06/16/2014 15:15	Kelli M Barto	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141670004A	06/16/2014 15:15	Kelli M Barto	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481960
Reported: 07/07/14 at 12:26 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14170A16A	Sample number(s): 7499518									
11a TPH by EPA 8015B GRO	1.0	U	1.0	0.2	mg/kg	82		67-120		
Batch number: 14170B94A	Sample number(s): 7499516									
TPH-GRO S.CA water C5-C12	50	U	50.	20	ug/l	94	93	80-133	1	30
Batch number: 141690028A	Sample number(s): 7499517-7499521									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	82	83	36-106	0	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	100		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	105		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141670004A	Sample number(s): 7499517-7499521									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	94		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	96		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	94		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	91		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	77		60-115		
Batch number: 141670005A	Sample number(s): 7499517-7499521									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	68*		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	71*		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	70*		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	72		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	52*		60-115		
Batch number: 14174162401A	Sample number(s): 7499517-7499521									
14a Moisture Content by 160.3						100		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481960
Reported: 07/07/14 at 12:26 PM

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14170A16A	Sample number(s): 7499518 UNSPK: P501188								
11a TPH by EPA 8015B GRO	75	77	69-123	1	30				
Batch number: 141690028A	Sample number(s): 7499517-7499521 UNSPK: P494369								
PCB-1016	96	78	41-135	22	50				
PCB-1260	102	83	40-134	22	50				
Batch number: 141670004A	Sample number(s): 7499517-7499521 UNSPK: P492863								
EFH (C12-C14)	146*	135*	49-123	8	20				
EFH (C15-C20)	118	107	49-123	7	20				
EFH (C21-C30)	137*	130*	49-123	2	20				
EFH (C30-C40)	163*	195*	49-123	6	20				
EFH (C8-C11)	91	95	49-123	5	20				
Batch number: 141670005A	Sample number(s): 7499517-7499521 UNSPK: P492863								
EFH C12-C14 w/ SiGel	100	81	49-123	21*	20				
EFH C15-C20 w/ SiGel	77	66	49-123	15	20				
EFH C21-C30 w/ SiGel	60	55	49-123	6	20				
EFH C30-C40 w/ SiGel	89	83	49-123	7	20				
EFH C8-C11 w/ SiGel	52	47*	49-123	11	20				
Batch number: 14174162401A	Sample number(s): 7499517-7499521					BKG: P501188			
14a Moisture Content by 160.3						2.7	2.6	2	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 11a TPH by EPA 8015B GRO
Batch number: 14170A16A

	Trifluorotoluene-F
7499518	88
Blank	98
LCS	101
MS	91
MSD	89
Limits:	50-142

Analysis Name: 11b TPH by EPA 8015B GRO
Batch number: 14170B94A

	Trifluorotoluene-F
7499516	80
Blank	82
LCS	93
LCSD	91
Limits:	63-135

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1481960
Reported: 07/07/14 at 12:26 PM

Surrogate Quality Control

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141690028A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7499517	108	100
7499518	115	99
7499519	118	105
7499520	110	98
7499521	114	99
Blank	66	62
LCS	104	95
LCSD	99	91
MS	107	101
MSD	81	75
Limits:	45-120	45-120

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141670004A

	Chlorobenzene	Orthoterphenyl
7499517	86	91
7499518	91	93
7499519	92	89
7499520	95	100
7499521	71	92
Blank	97	101
LCS	74	96
MS	76	97
MSD	74	95
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141670005A

	Chlorobenzene	Orthoterphenyl
7499517	68	77
7499518	54	65*
7499519	52	62*
7499520	49	60*
7499521	49	61*
Blank	57	66
LCS	57	68
MS	59	69
MSD	52	61*
Limits:	37-125	66-123

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

acct# 13013 Gp# 1481960 Sample# 1481960

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/13/2014

CarrierName: FedEx

AirbillNo: 770297913914

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20140613-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate Confirm 6850/6860	Perchlorate 314.0/331	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate_Nitrite_TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
TB-061314	6/13/14 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X																
FDG2-SL-582-NBZ-SB-0.0-0.5	6/13/14 07:50	SO	None	1 - SS-Sleeve	10 day										X											X															
FDG2-SL-582-NBZ-SB-3.0-3.5	6/13/14 08:05	SO	None	1 - SS-Sleeve	10 day										X											X															
FDG2-SL-582-NBZ-SB-3.0-3.5	6/13/14 08:05	SO	None	2 - Encore	0																				X															
FDG2-SL-584-NBZ-SB-0.0-0.5	6/13/14 09:50	SO	None	1 - SS-Sleeve	10 day										X											X															
FDG2-SL-585-NBZ-SB-0.0-0.5	6/13/14 09:25	SO	None	1 - SS-Sleeve	10 day										X											X															
FDG2-SL-586-NBZ-SB-0.0-0.5	6/13/14 09:00	SO	None	1 - SS-Sleeve	10 day										X											X															

For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Special Instructions:

Sampler: Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Stacy Meyer	6/13/14	1400									
										6/14/14	920

Final Data Gap Block 2 1 of 1

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 17395

Group Number(s): 14 81960

Client: CDM

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/14/2014 9:20
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	3
Custody Seal Present:	Yes	Trip Blank Type:	HCl
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Wesley Miller (2308) at 09:50 on 06/14/2014

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	1.1	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/17/2014
Group Number: 1482333
SDG: PH234
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
TB-061614 Water	7501186
FDG2-SL-875-SA5A-SB-0.0-0.5 Soil	7501187
FDG2-SL-875-SA5A-SB-2.0-3.0 Soil	7501188
FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil	7501189
FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil	7501190
FDG2-SL-875-SA5A-SB-2.0-3.0 DUP Soil	7501191
FDG2-SL-876-SA5A-SB-0.0-0.5 Soil	7501192
FDG2-SL-876-SA5A-SB-4.0-5.0 Soil	7501193
FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil	7501194
FDG2-SL-877-SA5A-SB-0.0-0.5 Soil	7501195
FDG2-SL-877-SA5A-SB-3.0-4.0 Soil	7501196

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

Sample Description: TB-061614 Water
SSFL Phase 3 Subarea 5A

LL Sample # WW 7501186
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:00

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB616 SDG#: PH234-01TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	10	U	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: TB-061614 Water
SSFL Phase 3 Subarea 5A

LL Sample # WW 7501186
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:00

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB616 SDG#: PH234-01TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	3	U	3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/l		ug/l	ug/l	
00527	1,4-Dioxane	123-91-1	2.0	U	2.0	0.5	1
GC Volatiles	**TPH GRO SW-8015B**		ug/l		ug/l	ug/l	
08229	TPH-GRO S.CA water C5-C12	n.a.	50	U	50	20	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141701AA	06/19/2014 13:44	Sarah A Guill	1

*=This limit was used in the evaluation of the final result

Sample Description: TB-061614 Water
SSFL Phase 3 Subarea 5A

LL Sample # WW 7501186
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:00

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

TB616 SDG#: PH234-01TB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00527	13b 1,4-Dioxane by 8260B SIM	SW-846 8260B SIM	1	E141682AA	06/17/2014 22:30	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E141682AA	06/17/2014 22:30	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y141701AA	06/19/2014 13:44	Sarah A Guill	1
08229	11b TPH by EPA 8015B GRO	TPH GRO SW-8015B	1	14170B94A	06/20/2014 15:22	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	14170B94A	06/20/2014 15:22	Laura M Krieger	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.67	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	0.87	J	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	2.9		1.7	0.67	1
12969	Benzo(a)pyrene	50-32-8	2.9		1.7	0.67	1
12969	Benzo(b)fluoranthene	205-99-2	8.5		1.7	0.67	1
12969	Benzo(e)pyrene	192-97-2	4.0	J	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7		1.7	0.67	1
12969	Benzo(k)fluoranthene	207-08-9	6.6		1.7	0.67	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.1	1
12969	Chrysene	218-01-9	9.0		1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.67	1
12969	Diethylphthalate	84-66-2	18	U	18	6.1	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	15	J	18	6.1	1
12969	Fluoranthene	206-44-0	14		1.7	0.67	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.67	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.3	J	1.7	0.67	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.67	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.67	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.67	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.67	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.1	1
12969	Phenanthrene	85-01-8	6.8		1.7	0.67	1
12969	Pyrene	129-00-0	11		1.7	0.67	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
chrysene

Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	9.7	J	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1

For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.

GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	16		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	58		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.8		5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	17		10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
The reverse surrogate, capric acid, is present at <1%.							
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,600		39.2	7.06	1
06944	Antimony	7440-36-0	3.92	U	3.92	0.725	1
06935	Arsenic	7440-38-2	4.89		3.92	0.685	1
06946	Barium	7440-39-3	82.7		0.979	0.0323	1
06947	Beryllium	7440-41-7	0.455	J	0.979	0.0656	1
07914	Boron	7440-42-8	4.21	J	9.79	0.822	1
06949	Cadmium	7440-43-9	0.979	U	0.979	0.0744	1
01650	Calcium	7440-70-2	2,850		19.6	3.27	1
06951	Chromium	7440-47-3	18.4		2.94	0.157	1
06952	Cobalt	7440-48-4	4.22		0.979	0.0969	1
06953	Copper	7440-50-8	9.93		1.96	0.284	1
01654	Iron	7439-89-6	15,500		39.2	3.54	1
06955	Lead	7439-92-1	13.8		2.94	0.490	1
01656	Lithium	7439-93-2	14.2		3.9	0.33	1
01657	Magnesium	7439-95-4	3,230		9.79	1.64	1
06958	Manganese	7439-96-5	241		0.979	0.0813	1
06960	Molybdenum	7439-98-7	0.478	J	1.96	0.166	1
06961	Nickel	7440-02-0	11.3		1.96	0.127	1
10145	Phosphorus	7723-14-0	608		9.79	2.83	1
01662	Potassium	7440-09-7	2,730		97.9	8.17	1
01667	Sodium	7440-23-5	65.1	J	97.9	16.4	1
06969	Tin	7440-31-5	2.23	J	9.79	0.215	1
06970	Titanium	7440-32-6	763		0.979	0.166	1
06971	Vanadium	7440-62-2	30.5		0.979	0.127	1
06972	Zinc	7440-66-6	49.1		3.92	0.196	1
10146	Zirconium	7440-67-7	3.16	J	4.90	0.822	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.255	J	0.392	0.0979	2
06142	Silver	7440-22-4	0.0370	J	0.196	0.0255	2
06144	Strontium	7440-24-6	25.2		0.392	0.0666	2
06145	Thallium	7440-28-0	0.212		0.196	0.0294	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0234		0.0160	0.0096	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**	**Std. Units**	**Std. Units**	
00394	15a pH by 9045D The pH was measured in water at 22.8 C.	n.a.	6.49	0.0100	0.0100	1
Wet Chemistry	**EPA 160.3 modified**		**%**	**%**	**%**	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	0.84	0.10	0.10	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	0.0601	JB	0.997	0.0593	1
11031	12378-PeCDD	40321-76-4	0.324	JB	4.99	0.0583	1
11031	123478-HxCDD	39227-28-6	0.464	JQ	4.99	0.0566	1
11031	123678-HxCDD	57653-85-7	1.57	JB	4.99	0.0612	1
11031	123789-HxCDD	19408-74-3	1.16	JB	4.99	0.0580	1
11031	1234678-HpCDD	35822-46-9	38.9	B	4.99	0.0834	1
11031	OCDD	3268-87-9	738	B	9.97	0.0644	1
11031	2378-TCDF	51207-31-9	0.138	JQ	0.997	0.0669	1
11031	12378-PeCDF	57117-41-6	0.398	JB	4.99	0.0364	1
11031	23478-PeCDF	57117-31-4	0.406	JB	4.99	0.0350	1
11031	123478-HxCDF	70648-26-9	0.424	JB	4.99	0.0475	1
11031	123678-HxCDF	57117-44-9	0.298	JBQ	4.99	0.0430	1
11031	123789-HxCDF	72918-21-9	0.331	J	4.99	0.0481	1
11031	234678-HxCDF	60851-34-5	0.373	JBQ	4.99	0.0443	1
11031	1234678-HpCDF	67562-39-4	4.51	JB	4.99	0.0267	1
11031	1234789-HpCDF	55673-89-7	0.386	JB	4.99	0.0369	1
11031	OCDF	39001-02-0	14.6	B	9.97	0.0332	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	1.53				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	72	25 - 164
13C12-12378-PeCDD	72	25 - 181
13C12-123478-HxCDD	73	32 - 141
13C12-123678-HxCDD	76	28 - 130
13C12-123789-HxCDD	77	28 - 130
13C12-1234678-HpCDD	74	23 - 140
13C12-OCDD	71	17 - 157
13C12-2378-TCDF	72	24 - 169
13C12-12378-PeCDF	81	24 - 185
13C12-23478-PeCDF	78	21 - 178
13C12-123478-HxCDF	75	26 - 152
13C12-123678-HxCDF	81	26 - 123
13C12-234678-HxCDF	78	28 - 136
13C12-123789-HxCDF	83	29 - 147
13C12-1234678-HpCDF	91	28 - 143
13C12-1234789-HpCDF	70	26 - 138
13C12-OCDF	66	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/25/2014 07:14	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141750017A	06/25/2014 15:44	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	2	141750017A	06/25/2014 08:15	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141770027A	06/27/2014 22:16	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 21:45	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	2	141770027A	06/27/2014 11:00	William H Saadeh	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 03:02	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:34	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501187
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:20 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87500 SDG#: PH234-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:29	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:29	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:29	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:29	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:54	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14168039402A	06/17/2014 21:10	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	21	U	21	7	1
10237	Acrolein	107-02-8	100	U	100	21	1
10237	Acrylonitrile	107-13-1	21	U	21	4	1
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	1
10237	Benzene	71-43-2	5	U	5	0.5	1
10237	Bromobenzene	108-86-1	5	U	5	1	1
10237	Bromochloromethane	74-97-5	5	U	5	1	1
10237	Bromodichloromethane	75-27-4	5	U	5	1	1
10237	Bromoform	75-25-2	5	U	5	1	1
10237	Bromomethane	74-83-9	5	U	5	2	1
10237	2-Butanone	78-93-3	10	U	10	4	1
10237	t-Butyl alcohol	75-65-0	51	U	51	21	1
10237	n-Butylbenzene	104-51-8	5	U	5	1	1
10237	sec-Butylbenzene	135-98-8	5	U	5	1	1
10237	tert-Butylbenzene	98-06-6	5	U	5	1	1
10237	Carbon Disulfide	75-15-0	5	U	5	1	1
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	1
10237	Chlorobenzene	108-90-7	5	U	5	1	1
10237	Chloroethane	75-00-3	5	U	5	2	1
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
10237	Chloroform	67-66-3	5	U	5	1	1
10237	1-Chlorohexane	544-10-5	5	U	5	1	1
10237	Chloromethane	74-87-3	5	U	5	2	1
10237	2-Chlorotoluene	95-49-8	5	U	5	1	1
10237	4-Chlorotoluene	106-43-4	5	U	5	1	1
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10237	Dibromochloromethane	124-48-1	5	U	5	1	1
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	1
10237	Dibromomethane	74-95-3	5	U	5	1	1
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	1
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	1
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	1
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	1
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	1
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	1
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	1
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	1
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	1
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	1
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	1
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	1
10237	Ethylbenzene	100-41-4	5	U	5	1	1
10237	Freon 113	76-13-1	5	U	5	2	1
10237	Freon 133a	75-88-7	5	U	5	2	1
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10237	2-Hexanone	591-78-6	10	U	10	3	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	1
10237	Isopropylbenzene	98-82-8	5	U	5	1	1
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10237	Methyl Iodide	74-88-4	5	U	5	3	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	1
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10237	Methylene Chloride	75-09-2	5	U	5	2	1
10237	n-Propylbenzene	103-65-1	5	U	5	1	1
10237	Styrene	100-42-5	5	U	5	1	1
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	1
10237	Tetrachloroethene	127-18-4	5	U	5	1	1
10237	Toluene	108-88-3	5	U	5	1	1
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	1
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	1
10237	Trichloroethene	79-01-6	5	U	5	1	1
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	1
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10237	Vinyl Acetate	108-05-4	10	U	10	2	1
10237	Vinyl Chloride	75-01-4	5	U	5	1	1
10237	m+p-Xylene	179601-23-1	5	U	5	1	1
10237	o-Xylene	95-47-6	5	U	5	1	1
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
10326	1,4-Dioxane	123-91-1	16	U	16	5.5	26.71

The surrogate recovery for toluene-d8 is outside of QC limits for the GC/MS volatile fraction. The surrogate was mis-spiked in the sample vial which resulted in a saturated peak. The analysis was not repeated.

GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.68	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.68	1
12969	Benzo(a)pyrene	50-32-8	0.84	J	1.7	0.68	1
12969	Benzo(b)fluoranthene	205-99-2	2.0		1.7	0.68	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.68	1
12969	Benzo(k)fluoranthene	207-08-9	1.5	J	1.7	0.68	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.1	1
12969	Chrysene	218-01-9	2.4		1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.68	1
12969	Diethylphthalate	84-66-2	18	U	18	6.1	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	18	U	18	6.1	1
12969	Fluoranthene	206-44-0	1.4	J	1.7	0.68	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Fluorene	86-73-7	1.7	U	1.7	0.68	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.68	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.68	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.68	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.68	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.68	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.1	1
12969	Phenanthrene	85-01-8	0.70	J	1.7	0.68	1
12969	Pyrene	129-00-0	1.2	J	1.7	0.68	1
The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chrysene							
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	1.1	U	1.1	0.2	25.56
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.4	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	10	U	10	4.1	2
12952	EFH (C15-C20)	n.a.	10	U	10	4.1	2
12952	EFH (C21-C30)	n.a.	33		10	4.1	2
12952	EFH (C30-C40)	n.a.	85		20	8.2	2
12952	EFH (C8-C11)	n.a.	10	U	10	4.1	2
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	26		5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	67		10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
Due to the matrix of the sample extract, capric acid recovery can not be determined.							

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,500		40.3	7.26	1
06944	Antimony	7440-36-0	4.03	U	4.03	0.746	1
06935	Arsenic	7440-38-2	5.84		4.03	0.705	1
06946	Barium	7440-39-3	107		1.01	0.0333	1
06947	Beryllium	7440-41-7	0.581	J	1.01	0.0675	1
07914	Boron	7440-42-8	4.43	J	10.1	0.846	1
06949	Cadmium	7440-43-9	1.01	U	1.01	0.0766	1
01650	Calcium	7440-70-2	2,270		20.2	3.37	1
06951	Chromium	7440-47-3	19.5		3.02	0.161	1
06952	Cobalt	7440-48-4	4.91		1.01	0.0998	1
06953	Copper	7440-50-8	11.9		2.02	0.292	1
01654	Iron	7439-89-6	19,400		40.3	3.65	1
06955	Lead	7439-92-1	10.7		3.02	0.504	1
01656	Lithium	7439-93-2	20.7		4.0	0.34	1
01657	Magnesium	7439-95-4	4,140		10.1	1.68	1
06958	Manganese	7439-96-5	321		1.01	0.0836	1
06960	Molybdenum	7439-98-7	0.415	J	2.02	0.171	1
06961	Nickel	7440-02-0	13.1		2.02	0.131	1
10145	Phosphorus	7723-14-0	436		10.1	2.91	1
01662	Potassium	7440-09-7	3,650		101	8.40	1
01667	Sodium	7440-23-5	78.1	J	101	16.8	1
06969	Tin	7440-31-5	2.61	J	10.1	0.222	1
06970	Titanium	7440-32-6	1,070		1.01	0.171	1
06971	Vanadium	7440-62-2	36.0		1.01	0.131	1
06972	Zinc	7440-66-6	58.7		4.03	0.202	1
10146	Zirconium	7440-67-7	3.03	J	5.04	0.846	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.272	J	0.403	0.101	2
06142	Silver	7440-22-4	0.0425	J	0.202	0.0262	2
06144	Strontium	7440-24-6	22.6		0.403	0.0685	2
06145	Thallium	7440-28-0	0.274		0.202	0.0302	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0206		0.0162	0.0097	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	6.11		0.0100	0.0100	1
	The pH was measured in water at 23 C.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	2.7		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	1.00	U	1.00	0.0662	1
11031	12378-PeCDD	40321-76-4	0.140	JBQ	5.01	0.0590	1
11031	123478-HxCDD	39227-28-6	0.225	JQ	5.01	0.0598	1
11031	123678-HxCDD	57653-85-7	1.31	JB	5.01	0.0609	1
11031	123789-HxCDD	19408-74-3	1.19	JB	5.01	0.0570	1
11031	1234678-HpCDD	35822-46-9	35.5	B	5.01	0.112	1
11031	OCDD	3268-87-9	980	B	10.0	0.0783	1
11031	2378-TCDF	51207-31-9	0.102	J	1.00	0.0812	1
11031	12378-PeCDF	57117-41-6	0.251	JB	5.01	0.0336	1
11031	23478-PeCDF	57117-31-4	0.162	JBQ	5.01	0.0317	1
11031	123478-HxCDF	70648-26-9	0.252	JB	5.01	0.0456	1
11031	123678-HxCDF	57117-44-9	0.219	JBQ	5.01	0.0413	1
11031	123789-HxCDF	72918-21-9	0.406	JQ	5.01	0.0490	1
11031	234678-HxCDF	60851-34-5	0.304	JBQ	5.01	0.0425	1
11031	1234678-HpCDF	67562-39-4	3.21	JB	5.01	0.0232	1
11031	1234789-HpCDF	55673-89-7	0.114	JB	5.01	0.0339	1
11031	OCDF	39001-02-0	10.0	JB	10.0	0.0347	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	0.978				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	71	25 - 164
13C12-12378-PeCDD	78	25 - 181
13C12-123478-HxCDD	81	32 - 141
13C12-123678-HxCDD	84	28 - 130
13C12-123789-HxCDD	85	28 - 130
13C12-1234678-HpCDD	82	23 - 140
13C12-OCDD	79	17 - 157
13C12-2378-TCDF	71	24 - 169
13C12-12378-PeCDF	86	24 - 185
13C12-23478-PeCDF	82	21 - 178
13C12-123478-HxCDF	82	26 - 152
13C12-123678-HxCDF	91	26 - 123
13C12-234678-HxCDF	86	28 - 136
13C12-123789-HxCDF	84	29 - 147
13C12-1234678-HpCDF	99	28 - 143
13C12-1234789-HpCDF	75	26 - 138
13C12-OCDF	71	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

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Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141761AA	06/25/2014 16:01	Angela D Sneeringer	1
10326	13a 1,4-Dioxane by 8260B SIM	SW-846 8260B SIM	1	E141761AA	06/25/2014 15:15	Jason M Long	26.71
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	1	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	2	201416834829	06/17/2014 15:15	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	3	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	4	201416834829	06/17/2014 15:15	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	201416834829	06/17/2014 15:04	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	2	201416834829	06/17/2014 15:05	Larry E Bevins	n.a.
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/24/2014 04:26	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 22:23	Laura M Krieger	25.56
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416834829	06/17/2014 15:00	Larry E Bevins	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416834829	06/17/2014 15:00	Larry E Bevins	n.a.
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 21:10	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/23/2014 23:54	Heather E Williams	2
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 23:10	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 03:59	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501188
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03BKG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 16:26	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 06:50	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 06:50	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 06:50	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 06:50	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 10:56	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14168039402A	06/17/2014 21:10	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	150		20	7	0.99
10237	Acrolein	107-02-8	77	J	100	20	0.99
10237	Acrylonitrile	107-13-1	76		20	4	0.99
10237	t-Amyl methyl ether	994-05-8	20		5	1	0.99
10237	Benzene	71-43-2	21		5	0.5	0.99
10237	Bromobenzene	108-86-1	16		5	1	0.99
10237	Bromochloromethane	74-97-5	20		5	1	0.99
10237	Bromodichloromethane	75-27-4	18		5	1	0.99
10237	Bromoform	75-25-2	14		5	1	0.99
10237	Bromomethane	74-83-9	15		5	2	0.99
10237	2-Butanone	78-93-3	130		10	4	0.99
10237	t-Butyl alcohol	75-65-0	210		51	20	0.99
10237	n-Butylbenzene	104-51-8	12		5	1	0.99
10237	sec-Butylbenzene	135-98-8	15		5	1	0.99
10237	tert-Butylbenzene	98-06-6	17		5	1	0.99
10237	Carbon Disulfide	75-15-0	19		5	1	0.99
10237	Carbon Tetrachloride	56-23-5	20		5	1	0.99
10237	Chlorobenzene	108-90-7	18		5	1	0.99
10237	Chloroethane	75-00-3	14		5	2	0.99
10237	2-Chloroethyl Vinyl Ether	110-75-8	17		10	2	0.99
10237	Chloroform	67-66-3	22		5	1	0.99
10237	1-Chlorohexane	544-10-5	17		5	1	0.99
10237	Chloromethane	74-87-3	22		5	2	0.99
10237	2-Chlorotoluene	95-49-8	16		5	1	0.99
10237	4-Chlorotoluene	106-43-4	15		5	1	0.99
10237	Chlorotrifluoroethene	79-38-9	22		5	2	0.99
10237	1,2-Dibromo-3-chloropropane	96-12-8	14		5	2	0.99
10237	Dibromochloromethane	124-48-1	16		5	1	0.99
10237	1,2-Dibromoethane	106-93-4	20		5	1	0.99
10237	Dibromomethane	74-95-3	20		5	1	0.99
10237	1,2-Dichlorobenzene	95-50-1	13		5	1	0.99
10237	1,3-Dichlorobenzene	541-73-1	13		5	1	0.99
10237	1,4-Dichlorobenzene	106-46-7	13		5	1	0.99
10237	Dichlorodifluoromethane	75-71-8	22		5	2	0.99
10237	1,1-Dichloroethane	75-34-3	23		5	1	0.99
10237	1,2-Dichloroethane	107-06-2	21		5	1	0.99
10237	1,1-Dichloroethene	75-35-4	24		5	1	0.99
10237	cis-1,2-Dichloroethene	156-59-2	22		5	1	0.99
10237	trans-1,2-Dichloroethene	156-60-5	23		5	1	0.99
10237	1,2-Dichloropropane	78-87-5	21		5	1	0.99
10237	1,3-Dichloropropane	142-28-9	20		5	1	0.99
10237	2,2-Dichloropropane	594-20-7	21		5	1	0.99
10237	1,1-Dichloropropene	563-58-6	23		5	1	0.99
10237	cis-1,3-Dichloropropene	10061-01-5	19		5	1	0.99
10237	trans-1,3-Dichloropropene	10061-02-6	18		5	1	0.99
10237	Ethyl t-butyl ether	637-92-3	21		5	1	0.99
10237	Ethylbenzene	100-41-4	19		5	1	0.99
10237	Freon 113	76-13-1	22		5	2	0.99
10237	Freon 133a	75-88-7	25		5	2	0.99
10237	Hexachlorobutadiene	87-68-3	9		5	2	0.99
10237	2-Hexanone	591-78-6	93		10	3	0.99

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg	ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	23	5	1	0.99
10237	Isopropylbenzene	98-82-8	17	5	1	0.99
10237	p-Isopropyltoluene	99-87-6	13	5	1	0.99
10237	Methyl Iodide	74-88-4	22	5	3	0.99
10237	Methyl Tertiary Butyl Ether	1634-04-4	21	5	0.5	0.99
10237	4-Methyl-2-pentanone	108-10-1	96	10	3	0.99
10237	Methylene Chloride	75-09-2	22	5	2	0.99
10237	n-Propylbenzene	103-65-1	16	5	1	0.99
10237	Styrene	100-42-5	16	5	1	0.99
10237	1,1,1,2-Tetrachloroethane	630-20-6	18	5	1	0.99
10237	1,1,2,2-Tetrachloroethane	79-34-5	18	5	1	0.99
10237	Tetrachloroethene	127-18-4	19	5	1	0.99
10237	Toluene	108-88-3	21	5	1	0.99
10237	1,2,3-Trichlorobenzene	87-61-6	7	5	1	0.99
10237	1,2,4-Trichlorobenzene	120-82-1	8	5	1	0.99
10237	1,1,1-Trichloroethane	71-55-6	19	5	1	0.99
10237	1,1,2-Trichloroethane	79-00-5	21	5	1	0.99
10237	Trichloroethene	79-01-6	21	5	1	0.99
10237	Trichlorofluoromethane	75-69-4	22	5	2	0.99
10237	1,2,3-Trichloropropane	96-18-4	20	5	1	0.99
10237	1,2,4-Trimethylbenzene	95-63-6	15	5	1	0.99
10237	1,3,5-Trimethylbenzene	108-67-8	16	5	1	0.99
10237	Vinyl Acetate	108-05-4	11	10	2	0.99
10237	Vinyl Chloride	75-01-4	23	5	1	0.99
10237	m+p-Xylene	179601-23-1	36	5	1	0.99
10237	o-Xylene	95-47-6	18	5	1	0.99
GC/MS Volatiles	**SW-846 8260B SIM**		ug/kg	ug/kg	ug/kg	
10326	1,4-Dioxane	123-91-1	110	15	4.9	23.95

The surrogate recovery for toluene-d8 is outside of QC limits for the GC/MS volatile fraction. The surrogate was mis-spiked in the sample vial which resulted in a saturated peak. The analysis was not repeated.

GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg	ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	30	1.7	0.68	1
12969	Acenaphthylene	208-96-8	31	1.7	0.34	1
12969	Anthracene	120-12-7	31	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	33	1.7	0.68	1
12969	Benzo(a)pyrene	50-32-8	30	1.7	0.68	1
12969	Benzo(b)fluoranthene	205-99-2	40	1.7	0.68	1
12969	Benzo(e)pyrene	192-97-2	30	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	16	1.7	0.68	1
12969	Benzo(k)fluoranthene	207-08-9	34	1.7	0.68	1
12969	Butylbenzylphthalate	85-68-7	32	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	31	18	6.1	1
12969	Chrysene	218-01-9	34	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	19	1.7	0.68	1
12969	Diethylphthalate	84-66-2	30	18	6.1	1
12969	Dimethylphthalate	131-11-3	30	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	32	18	6.1	1
12969	Fluoranthene	206-44-0	36	1.7	0.68	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Fluorene	86-73-7	31		1.7	0.68	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	18		1.7	0.68	1
12969	1-Methylnaphthalene	90-12-0	31		1.7	0.68	1
12969	2-Methylnaphthalene	91-57-6	31		1.7	0.68	1
12969	Naphthalene	91-20-3	30		1.7	0.68	1
12969	N-Nitrosodimethylamine	62-75-9	29		1.7	0.68	1
12969	Di-n-octylphthalate	117-84-0	43		18	6.1	1
12969	Phenanthrene	85-01-8	32		1.7	0.68	1
12969	Pyrene	129-00-0	31		1.7	0.68	1
The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chrysene							
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	8.6		1.0	0.2	25.25
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	170		17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	170		17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.5		5.1	2.0	1
12952	EFH (C15-C20)	n.a.	9.8		5.1	2.0	1
12952	EFH (C21-C30)	n.a.	24		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	36		10	4.1	1
12952	EFH (C8-C11)	n.a.	4.5	J	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	4.1	J	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.9		5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	15		5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	26		10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	2.9	J	5.1	2.0	1
Due to the matrix of the sample extract, capric acid recovery can not be determined.							

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		mg/kg	mg/kg	mg/kg	
01643	Aluminum	7429-90-5	17,600	41.1	7.41	1
06944	Antimony	7440-36-0	24.1	4.11	0.761	1
06935	Arsenic	7440-38-2	20.9	4.11	0.719	1
06946	Barium	7440-39-3	301	1.03	0.0339	1
06947	Beryllium	7440-41-7	5.83	1.03	0.0689	1
07914	Boron	7440-42-8	206	10.3	0.863	1
06949	Cadmium	7440-43-9	4.80	1.03	0.0781	1
01650	Calcium	7440-70-2	2,880	20.6	3.43	1
06951	Chromium	7440-47-3	42.6	3.08	0.164	1
06952	Cobalt	7440-48-4	54.0	1.03	0.102	1
06953	Copper	7440-50-8	38.2	2.06	0.298	1
01654	Iron	7439-89-6	18,900	41.1	3.72	1
06955	Lead	7439-92-1	31.0	3.08	0.514	1
01656	Lithium	7439-93-2	127	4.1	0.35	1
01657	Magnesium	7439-95-4	4,340	10.3	1.72	1
06958	Manganese	7439-96-5	359	1.03	0.0853	1
06960	Molybdenum	7439-98-7	196	2.06	0.175	1
06961	Nickel	7440-02-0	63.0	2.06	0.134	1
10145	Phosphorus	7723-14-0	531	10.3	2.97	1
01662	Potassium	7440-09-7	4,930	103	8.57	1
01667	Sodium	7440-23-5	1,140	103	17.2	1
06969	Tin	7440-31-5	369	10.3	0.226	1
06970	Titanium	7440-32-6	1,320	1.03	0.175	1
06971	Vanadium	7440-62-2	88.3	1.03	0.134	1
06972	Zinc	7440-66-6	108	4.11	0.206	1
10146	Zirconium	7440-67-7	103	5.14	0.863	1
	SW-846 6020A		mg/kg	mg/kg	mg/kg	
06141	Selenium	7782-49-2	2.65	0.411	0.103	2
06142	Silver	7440-22-4	13.1	0.206	0.0267	2
06144	Strontium	7440-24-6	34.8	0.411	0.0699	2
06145	Thallium	7440-28-0	0.786	0.206	0.0308	2
	SW-846 7471B		mg/kg	mg/kg	mg/kg	
00159	3a Mercury 7471A	7439-97-6	0.167	0.0164	0.0098	1
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11625	14a Moisture Content by 160.3	n.a.	2.7	0.10	0.10	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		ng/kg		ng/kg	ng/kg	
11031	2378-TCDD	1746-01-6	19.6	B	0.994	0.0801	1
11031	12378-PeCDD	40321-76-4	102	B	4.97	0.0730	1
11031	123478-HxCDD	39227-28-6	101		4.97	0.0876	1
11031	123678-HxCDD	57653-85-7	101	B	4.97	0.0962	1
11031	123789-HxCDD	19408-74-3	101	B	4.97	0.0899	1
11031	1234678-HpCDD	35822-46-9	146	B	4.97	0.125	1
11031	OCDD	3268-87-9	1,440	B	9.94	0.0812	1
11031	2378-TCDF	51207-31-9	20.4		0.994	0.0945	1
11031	12378-PeCDF	57117-41-6	101	B	4.97	0.0548	1
11031	23478-PeCDF	57117-31-4	101	B	4.97	0.0508	1
11031	123478-HxCDF	70648-26-9	100	B	4.97	0.0814	1
11031	123678-HxCDF	57117-44-9	98.1	B	4.97	0.0730	1
11031	123789-HxCDF	72918-21-9	100		4.97	0.0877	1
11031	234678-HxCDF	60851-34-5	101	B	4.97	0.0756	1
11031	1234678-HpCDF	67562-39-4	102	B	4.97	0.0646	1
11031	1234789-HpCDF	55673-89-7	97.4	B	4.97	0.0787	1
11031	OCDF	39001-02-0	209	B	9.94	0.0555	1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	80	25 - 164
13C12-12378-PeCDD	82	25 - 181
13C12-123478-HxCDD	85	32 - 141
13C12-123678-HxCDD	84	28 - 130
13C12-123789-HxCDD	87	28 - 130
13C12-1234678-HpCDD	85	23 - 140
13C12-OCDD	85	17 - 157
13C12-2378-TCDF	86	24 - 169
13C12-12378-PeCDF	90	24 - 185
13C12-23478-PeCDF	89	21 - 178
13C12-123478-HxCDF	87	26 - 152
13C12-123678-HxCDF	95	26 - 123
13C12-234678-HxCDF	90	28 - 136
13C12-123789-HxCDF	92	29 - 147
13C12-1234678-HpCDF	94	28 - 143
13C12-1234789-HpCDF	85	26 - 138
13C12-OCDF	82	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range
C Confirmed quantitation on secondary GC column
Q EMPC - Estimated Maximum Possible Concentration
F Interference is present

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor
S	*Saturation of detection signal*					

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141761AA	06/25/2014 16:24	Angela D Sneeringer	0.99
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141761AA	06/25/2014 17:08	Angela D Sneeringer	0.99
10326	13a 1,4-Dioxane by 8260B SIM	SW-846 8260B SIM	1	E141761AA	06/25/2014 15:36	Jason M Long	23.95
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	1	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	2	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	3	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	4	201416834829	06/17/2014 15:15	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	201416834829	06/17/2014 15:02	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	2	201416834829	06/17/2014 15:03	Larry E Bevins	n.a.
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/24/2014 05:00	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 23:01	Laura M Krieger	25.25
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416834829	06/17/2014 15:01	Larry E Bevins	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416834829	06/17/2014 15:01	Larry E Bevins	n.a.
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 21:28	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 21:30	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 22:06	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 04:55	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MS Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501189
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MS

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 16:38	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 06:57	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 06:57	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 06:57	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 06:57	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 11:02	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
11625	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	160		20	7	1
10237	Acrolein	107-02-8	82	J	100	20	1
10237	Acrylonitrile	107-13-1	90		20	4	1
10237	t-Amyl methyl ether	994-05-8	22		5	1	1
10237	Benzene	71-43-2	24		5	0.5	1
10237	Bromobenzene	108-86-1	22		5	1	1
10237	Bromochloromethane	74-97-5	23		5	1	1
10237	Bromodichloromethane	75-27-4	21		5	1	1
10237	Bromoform	75-25-2	17		5	1	1
10237	Bromomethane	74-83-9	16		5	2	1
10237	2-Butanone	78-93-3	140		10	4	1
10237	t-Butyl alcohol	75-65-0	250		51	20	1
10237	n-Butylbenzene	104-51-8	21		5	1	1
10237	sec-Butylbenzene	135-98-8	24		5	1	1
10237	tert-Butylbenzene	98-06-6	25		5	1	1
10237	Carbon Disulfide	75-15-0	20		5	1	1
10237	Carbon Tetrachloride	56-23-5	23		5	1	1
10237	Chlorobenzene	108-90-7	23		5	1	1
10237	Chloroethane	75-00-3	15		5	2	1
10237	2-Chloroethyl Vinyl Ether	110-75-8	18		10	2	1
10237	Chloroform	67-66-3	24		5	1	1
10237	1-Chlorohexane	544-10-5	24		5	1	1
10237	Chloromethane	74-87-3	23		5	2	1
10237	2-Chlorotoluene	95-49-8	23		5	1	1
10237	4-Chlorotoluene	106-43-4	22		5	1	1
10237	Chlorotrifluoroethene	79-38-9	21		5	2	1.01
10237	1,2-Dibromo-3-chloropropane	96-12-8	17		5	2	1
10237	Dibromochloromethane	124-48-1	20		5	1	1
10237	1,2-Dibromoethane	106-93-4	23		5	1	1
10237	Dibromomethane	74-95-3	22		5	1	1
10237	1,2-Dichlorobenzene	95-50-1	19		5	1	1
10237	1,3-Dichlorobenzene	541-73-1	19		5	1	1
10237	1,4-Dichlorobenzene	106-46-7	19		5	1	1
10237	Dichlorodifluoromethane	75-71-8	24		5	2	1
10237	1,1-Dichloroethane	75-34-3	25		5	1	1
10237	1,2-Dichloroethane	107-06-2	24		5	1	1
10237	1,1-Dichloroethene	75-35-4	25		5	1	1
10237	cis-1,2-Dichloroethene	156-59-2	25		5	1	1
10237	trans-1,2-Dichloroethene	156-60-5	26		5	1	1
10237	1,2-Dichloropropane	78-87-5	24		5	1	1
10237	1,3-Dichloropropane	142-28-9	24		5	1	1
10237	2,2-Dichloropropane	594-20-7	24		5	1	1
10237	1,1-Dichloropropene	563-58-6	26		5	1	1
10237	cis-1,3-Dichloropropene	10061-01-5	21		5	1	1
10237	trans-1,3-Dichloropropene	10061-02-6	22		5	1	1
10237	Ethyl t-butyl ether	637-92-3	23		5	1	1
10237	Ethylbenzene	100-41-4	24		5	1	1
10237	Freon 113	76-13-1	24		5	2	1
10237	Freon 133a	75-88-7	26		5	2	1.01
10237	Hexachlorobutadiene	87-68-3	16		5	2	1
10237	2-Hexanone	591-78-6	100		10	3	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg	ug/kg	ug/kg	
10237	di-Isopropyl ether	108-20-3	25	5	1	1
10237	Isopropylbenzene	98-82-8	25	5	1	1
10237	p-Isopropyltoluene	99-87-6	22	5	1	1
10237	Methyl Iodide	74-88-4	24	5	3	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	23	5	0.5	1
10237	4-Methyl-2-pentanone	108-10-1	100	10	3	1
10237	Methylene Chloride	75-09-2	25	5	2	1
10237	n-Propylbenzene	103-65-1	25	5	1	1
10237	Styrene	100-42-5	22	5	1	1
10237	1,1,1,2-Tetrachloroethane	630-20-6	22	5	1	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	22	5	1	1
10237	Tetrachloroethene	127-18-4	24	5	1	1
10237	Toluene	108-88-3	25	5	1	1
10237	1,2,3-Trichlorobenzene	87-61-6	11	5	1	1
10237	1,2,4-Trichlorobenzene	120-82-1	12	5	1	1
10237	1,1,1-Trichloroethane	71-55-6	21	5	1	1
10237	1,1,2-Trichloroethane	79-00-5	24	5	1	1
10237	Trichloroethene	79-01-6	24	5	1	1
10237	Trichlorofluoromethane	75-69-4	23	5	2	1
10237	1,2,3-Trichloropropane	96-18-4	23	5	1	1
10237	1,2,4-Trimethylbenzene	95-63-6	23	5	1	1
10237	1,3,5-Trimethylbenzene	108-67-8	24	5	1	1
10237	Vinyl Acetate	108-05-4	14	10	2	1.01
10237	Vinyl Chloride	75-01-4	24	5	1	1
10237	m+p-Xylene	179601-23-1	48	5	1	1
10237	o-Xylene	95-47-6	24	5	1	1
GC/MS Volatiles	**SW-846 8260B SIM**		ug/kg	ug/kg	ug/kg	
10326	1,4-Dioxane	123-91-1	120	15	5.1	24.85

The surrogate recovery for toluene-d8 is outside of QC limits for the GC/MS volatile fraction. The surrogate was mis-spiked in the sample vial which resulted in a saturated peak. The analysis was not repeated.

GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg	ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	31	1.7	0.69	1
12969	Acenaphthylene	208-96-8	31	1.7	0.34	1
12969	Anthracene	120-12-7	32	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	35	1.7	0.69	1
12969	Benzo(a)pyrene	50-32-8	31	1.7	0.69	1
12969	Benzo(b)fluoranthene	205-99-2	43	1.7	0.69	1
12969	Benzo(e)pyrene	192-97-2	31	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	15	1.7	0.69	1
12969	Benzo(k)fluoranthene	207-08-9	35	1.7	0.69	1
12969	Butylbenzylphthalate	85-68-7	31	19	6.2	1
12969	Di-n-butylphthalate	84-74-2	31	19	6.2	1
12969	Chrysene	218-01-9	38	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	18	1.7	0.69	1
12969	Diethylphthalate	84-66-2	31	19	6.2	1
12969	Dimethylphthalate	131-11-3	30	19	6.2	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	140	19	6.2	1
12969	Fluoranthene	206-44-0	45	1.7	0.69	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Fluorene	86-73-7	32		1.7	0.69	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	17		1.7	0.69	1
12969	1-Methylnaphthalene	90-12-0	31		1.7	0.69	1
12969	2-Methylnaphthalene	91-57-6	32		1.7	0.69	1
12969	Naphthalene	91-20-3	31		1.7	0.69	1
12969	N-Nitrosodimethylamine	62-75-9	31		1.7	0.69	1
12969	Di-n-octylphthalate	117-84-0	45		19	6.2	1
12969	Phenanthrene	85-01-8	37		1.7	0.69	1
12969	Pyrene	129-00-0	39		1.7	0.69	1
The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chrysene							
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	8.7		1.0	0.2	25.05
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	180		17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	190		17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	6.4		5.1	2.0	1
12952	EFH (C15-C20)	n.a.	10		5.1	2.0	1
12952	EFH (C21-C30)	n.a.	27		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	45		10	4.1	1
12952	EFH (C8-C11)	n.a.	4.6	J	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	4.5	J	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	6.2		5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	18		5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	33		10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	3.2	J	5.1	2.0	1
Due to the matrix of the sample extract, capric acid recovery can not be determined.							

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		mg/kg	mg/kg	mg/kg	
01643	Aluminum	7429-90-5	17,100	40.3	7.26	1
06944	Antimony	7440-36-0	24.7	4.03	0.746	1
06935	Arsenic	7440-38-2	20.6	4.03	0.705	1
06946	Barium	7440-39-3	285	1.01	0.0333	1
06947	Beryllium	7440-41-7	5.72	1.01	0.0675	1
07914	Boron	7440-42-8	201	10.1	0.846	1
06949	Cadmium	7440-43-9	4.69	1.01	0.0766	1
01650	Calcium	7440-70-2	2,680	20.2	3.37	1
06951	Chromium	7440-47-3	38.6	3.02	0.161	1
06952	Cobalt	7440-48-4	53.0	1.01	0.0998	1
06953	Copper	7440-50-8	35.8	2.02	0.292	1
01654	Iron	7439-89-6	18,900	40.3	3.65	1
06955	Lead	7439-92-1	23.4	3.02	0.504	1
01656	Lithium	7439-93-2	129	4.0	0.34	1
01657	Magnesium	7439-95-4	4,180	10.1	1.68	1
06958	Manganese	7439-96-5	342	1.01	0.0836	1
06960	Molybdenum	7439-98-7	192	2.02	0.171	1
06961	Nickel	7440-02-0	60.6	2.02	0.131	1
10145	Phosphorus	7723-14-0	589	10.1	2.91	1
01662	Potassium	7440-09-7	4,890	101	8.40	1
01667	Sodium	7440-23-5	1,130	101	16.8	1
06969	Tin	7440-31-5	363	10.1	0.222	1
06970	Titanium	7440-32-6	1,270	1.01	0.171	1
06971	Vanadium	7440-62-2	84.6	1.01	0.131	1
06972	Zinc	7440-66-6	106	4.03	0.202	1
10146	Zirconium	7440-67-7	103	5.04	0.846	1
	SW-846 6020A		mg/kg	mg/kg	mg/kg	
06141	Selenium	7782-49-2	2.62	0.403	0.101	2
06142	Silver	7440-22-4	12.9	0.202	0.0262	2
06144	Strontium	7440-24-6	28.3	0.403	0.0685	2
06145	Thallium	7440-28-0	0.738	0.202	0.0302	2
	SW-846 7471B		mg/kg	mg/kg	mg/kg	
00159	3a Mercury 7471A	7439-97-6	0.166	0.0169	0.0101	1
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11625	14a Moisture Content by 160.3	n.a.	2.7	0.10	0.10	1

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Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

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CDM Federal Programs Corp.
3201 Jermantown Road
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87520 SDG#: PH234-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		ng/kg		ng/kg	ng/kg	
11031	2378-TCDD	1746-01-6	19.2	B	1.00	0.0915	1
11031	12378-PeCDD	40321-76-4	104	B	5.00	0.0752	1
11031	123478-HxCDD	39227-28-6	102		5.00	0.0826	1
11031	123678-HxCDD	57653-85-7	103	B	5.00	0.0881	1
11031	123789-HxCDD	19408-74-3	102	B	5.00	0.0814	1
11031	1234678-HpCDD	35822-46-9	154	B	5.00	0.128	1
11031	OCDD	3268-87-9	1,400	B	10.0	0.0938	1
11031	2378-TCDF	51207-31-9	20.9		1.00	0.0859	1
11031	12378-PeCDF	57117-41-6	101	B	5.00	0.0513	1
11031	23478-PeCDF	57117-31-4	103	B	5.00	0.0537	1
11031	123478-HxCDF	70648-26-9	103	B	5.00	0.108	1
11031	123678-HxCDF	57117-44-9	101	B	5.00	0.0945	1
11031	123789-HxCDF	72918-21-9	102		5.00	0.115	1
11031	234678-HxCDF	60851-34-5	102	B	5.00	0.100	1
11031	1234678-HpCDF	67562-39-4	106	B	5.00	0.0557	1
11031	1234789-HpCDF	55673-89-7	99.7	B	5.00	0.0806	1
11031	OCDF	39001-02-0	214	B	10.0	0.0636	1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	80	25 - 164
13C12-12378-PeCDD	81	25 - 181
13C12-123478-HxCDD	83	32 - 141
13C12-123678-HxCDD	84	28 - 130
13C12-123789-HxCDD	87	28 - 130
13C12-1234678-HpCDD	81	23 - 140
13C12-OCDD	78	17 - 157
13C12-2378-TCDF	79	24 - 169
13C12-12378-PeCDF	91	24 - 185
13C12-23478-PeCDF	84	21 - 178
13C12-123478-HxCDF	82	26 - 152
13C12-123678-HxCDF	92	26 - 123
13C12-234678-HxCDF	86	28 - 136
13C12-123789-HxCDF	85	29 - 147
13C12-1234678-HpCDF	100	28 - 143
13C12-1234789-HpCDF	76	26 - 138
13C12-OCDF	68	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range
C Confirmed quantitation on secondary GC column
Q EMPC - Estimated Maximum Possible Concentration
F Interference is present

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03MSD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor
S	*Saturation of detection signal*					

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

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CDM Federal Programs Corp.
3201 Jermantown Road
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Fairfax VA 22030

87520 SDG#: PH234-03MSD

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141761AA	06/25/2014 16:46	Angela D Sneeringer	1
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141761AA	06/25/2014 17:31	Angela D Sneeringer	1.01
10326	13a 1,4-Dioxane by 8260B SIM	SW-846 8260B SIM	1	E141761AA	06/25/2014 15:57	Jason M Long	24.85
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	1	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	2	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	3	201416834829	06/17/2014 15:15	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	4	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	201416834829	06/17/2014 15:03	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	2	201416834829	06/17/2014 15:04	Larry E Bevins	n.a.
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/24/2014 05:32	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 23:39	Laura M Krieger	25.05
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416834829	06/17/2014 14:58	Larry E Bevins	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416834829	06/17/2014 14:59	Larry E Bevins	n.a.
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 21:46	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 21:52	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 22:27	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 05:52	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 MSD Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501190
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

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CDM Federal Programs Corp.
3201 Jermantown Road
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87520 SDG#: PH234-03MSD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 16:42	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 06:59	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 06:59	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 06:59	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 06:59	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 11:04	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
11625	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 DUP Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501191
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03DUP

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	15,400		40.7	7.34	1
06944	Antimony	7440-36-0	4.07	U	4.07	0.753	1
06935	Arsenic	7440-38-2	5.49		4.07	0.712	1
06946	Barium	7440-39-3	110		1.02	0.0336	1
06947	Beryllium	7440-41-7	0.586	J	1.02	0.0682	1
07914	Boron	7440-42-8	4.20	J	10.2	0.855	1
06949	Cadmium	7440-43-9	1.02	U	1.02	0.0773	1
01650	Calcium	7440-70-2	2,430		20.4	3.40	1
06951	Chromium	7440-47-3	20.5		3.05	0.163	1
06952	Cobalt	7440-48-4	5.12		1.02	0.101	1
06953	Copper	7440-50-8	12.0		2.04	0.295	1
01654	Iron	7439-89-6	19,300		40.7	3.68	1
06955	Lead	7439-92-1	8.18		3.05	0.509	1
01656	Lithium	7439-93-2	19.5		4.1	0.35	1
01657	Magnesium	7439-95-4	4,150		10.2	1.70	1
06958	Manganese	7439-96-5	341		1.02	0.0845	1
06960	Molybdenum	7439-98-7	0.421	J	2.04	0.173	1
06961	Nickel	7440-02-0	12.7		2.04	0.132	1
10145	Phosphorus	7723-14-0	446		10.2	2.94	1
01662	Potassium	7440-09-7	3,780		102	8.49	1
01667	Sodium	7440-23-5	74.5	J	102	17.0	1
06969	Tin	7440-31-5	2.59	J	10.2	0.224	1
06970	Titanium	7440-32-6	1,070		1.02	0.173	1
06971	Vanadium	7440-62-2	34.9		1.02	0.132	1
06972	Zinc	7440-66-6	57.6		4.07	0.204	1
10146	Zirconium	7440-67-7	3.45	J	5.09	0.855	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.266	J	0.407	0.102	2
06142	Silver	7440-22-4	0.0332	J	0.204	0.0265	2
06144	Strontium	7440-24-6	23.7		0.407	0.0692	2
06145	Thallium	7440-28-0	0.263		0.204	0.0305	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0187		0.0164	0.0098	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	6.13		0.0100	0.0100	1
	The pH was measured in water at 23.2 C.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11625	14a Moisture Content by 160.3	n.a.	2.7		0.10	0.10	1
11626	14a Moisture Content by 160.3	n.a.	2.6		0.10	0.10	1
	The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-875-SA5A-SB-2.0-3.0 DUP Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501191
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87520 SDG#: PH234-03DUP

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 16:34	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 06:55	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 06:55	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 06:55	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 06:55	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 11:00	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14168039402A	06/17/2014 21:10	Luz M Groff	1
11625	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1
11626	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501192
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:15 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87600 SDG#: PH234-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	17	U	17	6.7	10
12969	Acenaphthylene	208-96-8	17	U	17	3.4	10
12969	Anthracene	120-12-7	17	U	17	3.4	10
12969	Benzo(a)anthracene	56-55-3	6.9	J	17	6.7	10
12969	Benzo(a)pyrene	50-32-8	17	U	17	6.7	10
12969	Benzo(b)fluoranthene	205-99-2	21		17	6.7	10
12969	Benzo(e)pyrene	192-97-2	170	U	170	33	10
12969	Benzo(g,h,i)perylene	191-24-2	7.0	J	17	6.7	10
12969	Benzo(k)fluoranthene	207-08-9	24		17	6.7	10
12969	Butylbenzylphthalate	85-68-7	180	U	180	60	10
12969	Di-n-butylphthalate	84-74-2	180	U	180	60	10
12969	Chrysene	218-01-9	29		17	3.4	10
12969	Dibenz(a,h)anthracene	53-70-3	17	U	17	6.7	10
12969	Diethylphthalate	84-66-2	180	U	180	60	10
12969	Dimethylphthalate	131-11-3	180	U	180	60	10
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	180	U	180	60	10
12969	Fluoranthene	206-44-0	42		17	6.7	10
12969	Fluorene	86-73-7	17	U	17	6.7	10
12969	Indeno(1,2,3-cd)pyrene	193-39-5	17	U	17	6.7	10
12969	1-Methylnaphthalene	90-12-0	17	U	17	6.7	10
12969	2-Methylnaphthalene	91-57-6	17	U	17	6.7	10
12969	Naphthalene	91-20-3	17	U	17	6.7	10
12969	N-Nitrosodimethylamine	62-75-9	17	U	17	6.7	10
12969	Di-n-octylphthalate	117-84-0	180	U	180	60	10
12969	Phenanthrene	85-01-8	26		17	6.7	10
12969	Pyrene	129-00-0	33		17	6.7	10
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chrysene						
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	10	U	10	4.0	2
12952	EFH (C15-C20)	n.a.	10	U	10	4.0	2
12952	EFH (C21-C30)	n.a.	32		10	4.0	2
12952	EFH (C30-C40)	n.a.	90		20	8.1	2
12952	EFH (C8-C11)	n.a.	10	U	10	4.0	2
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	16		5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	25		10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	1.2		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501192
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:15 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87600 SDG#: PH234-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/26/2014 02:10	Mark A Clark	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/24/2014 00:15	Heather E Williams	2
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 22:49	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501193
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87640 SDG#: PH234-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.69	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.35	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.35	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.69	1
12969	Benzo(a)pyrene	50-32-8	1.7	U	1.7	0.69	1
12969	Benzo(b)fluoranthene	205-99-2	1.7	U	1.7	0.69	1
12969	Benzo(e)pyrene	192-97-2	18	U	18	3.5	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.69	1
12969	Benzo(k)fluoranthene	207-08-9	1.7	U	1.7	0.69	1
12969	Butylbenzylphthalate	85-68-7	19	U	19	6.2	1
12969	Di-n-butylphthalate	84-74-2	19	U	19	6.2	1
12969	Chrysene	218-01-9	0.47	J	1.7	0.35	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.69	1
12969	Diethylphthalate	84-66-2	19	U	19	6.2	1
12969	Dimethylphthalate	131-11-3	19	U	19	6.2	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	19	U	19	6.2	1
12969	Fluoranthene	206-44-0	1.7	U	1.7	0.69	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.69	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.69	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.69	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.69	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.69	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.69	1
12969	Di-n-octylphthalate	117-84-0	19	U	19	6.2	1
12969	Phenanthrene	85-01-8	1.7	U	1.7	0.69	1
12969	Pyrene	129-00-0	1.7	U	1.7	0.69	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
chrysene

GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	1.1	U	1.1	0.2	25.88
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.2	U	5.2	2.1	1
12952	EFH (C15-C20)	n.a.	5.2	U	5.2	2.1	1
12952	EFH (C21-C30)	n.a.	5.2	U	5.2	2.1	1
12952	EFH (C30-C40)	n.a.	10	U	10	4.2	1
12952	EFH (C8-C11)	n.a.	5.2	U	5.2	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.2	U	5.2	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.2	U	5.2	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.2	U	5.2	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.2	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.2	U	5.2	2.1	1

The reverse surrogate, capric acid, is present at <1%.

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501193
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87640 SDG#: PH234-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3	n.a.	4.3	0.10	0.10	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501193
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87640 SDG#: PH234-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**	**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	0.0631 JBQ	1.02	0.0619	1
11031	12378-PeCDD	40321-76-4	0.157 JBQ	5.09	0.0413	1
11031	123478-HxCDD	39227-28-6	0.193 JQ	5.09	0.0391	1
11031	123678-HxCDD	57653-85-7	0.350 JBQ	5.09	0.0397	1
11031	123789-HxCDD	19408-74-3	0.350 JB	5.09	0.0364	1
11031	1234678-HpCDD	35822-46-9	5.89 B	5.09	0.0418	1
11031	OCDD	3268-87-9	112 B	10.2	0.0474	1
11031	2378-TCDF	51207-31-9	1.02 U	1.02	0.0563	1
11031	12378-PeCDF	57117-41-6	0.149 JB	5.09	0.0218	1
11031	23478-PeCDF	57117-31-4	0.117 JBQ	5.09	0.0208	1
11031	123478-HxCDF	70648-26-9	0.134 JBQ	5.09	0.0299	1
11031	123678-HxCDF	57117-44-9	0.120 JBQ	5.09	0.0274	1
11031	123789-HxCDF	72918-21-9	0.211 J	5.09	0.0314	1
11031	234678-HxCDF	60851-34-5	0.149 JBQ	5.09	0.0288	1
11031	1234678-HpCDF	67562-39-4	0.592 JB	5.09	0.0154	1
11031	1234789-HpCDF	55673-89-7	0.123 JBQ	5.09	0.0269	1
11031	OCDF	39001-02-0	1.84 JBQ	10.2	0.0411	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**	**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	0.159			1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	59	25 - 164
13C12-12378-PeCDD	75	25 - 181
13C12-123478-HxCDD	79	32 - 141
13C12-123678-HxCDD	82	28 - 130
13C12-123789-HxCDD	83	28 - 130
13C12-1234678-HpCDD	75	23 - 140
13C12-OCDD	65	17 - 157
13C12-2378-TCDF	59	24 - 169
13C12-12378-PeCDF	79	24 - 185
13C12-23478-PeCDF	76	21 - 178
13C12-123478-HxCDF	75	26 - 152
13C12-123678-HxCDF	86	26 - 123
13C12-234678-HxCDF	81	28 - 136
13C12-123789-HxCDF	82	29 - 147
13C12-1234678-HpCDF	99	28 - 143
13C12-1234789-HpCDF	65	26 - 138
13C12-OCDF	54	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501193
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87640 SDG#: PH234-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-876-SA5A-SB-4.0-5.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501193
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 09:45 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87640 SDG#: PH234-05

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/25/2014 05:00	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 20:30	Laura M Krieger	25.88
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416834829	06/17/2014 14:47	Larry E Bevins	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416834829	06/17/2014 14:47	Larry E Bevins	n.a.
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 19:22	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 16:46	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 06:49	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/kg		ug/kg	ug/kg	
10237	Acetone	67-64-1	21	U	21	7	1.02
10237	Acrolein	107-02-8	100	U	100	21	1.02
10237	Acrylonitrile	107-13-1	21	U	21	4	1.02
10237	t-Amyl methyl ether	994-05-8	5	U	5	1	1.02
10237	Benzene	71-43-2	5	U	5	0.5	1.02
10237	Bromobenzene	108-86-1	5	U	5	1	1.02
10237	Bromochloromethane	74-97-5	5	U	5	1	1.02
10237	Bromodichloromethane	75-27-4	5	U	5	1	1.02
10237	Bromoform	75-25-2	5	U	5	1	1.02
10237	Bromomethane	74-83-9	5	U	5	2	1.02
10237	2-Butanone	78-93-3	10	U	10	4	1.02
10237	t-Butyl alcohol	75-65-0	52	U	52	21	1.02
10237	n-Butylbenzene	104-51-8	5	U	5	1	1.02
10237	sec-Butylbenzene	135-98-8	5	U	5	1	1.02
10237	tert-Butylbenzene	98-06-6	5	U	5	1	1.02
10237	Carbon Disulfide	75-15-0	5	U	5	1	1.02
10237	Carbon Tetrachloride	56-23-5	5	U	5	1	1.02
10237	Chlorobenzene	108-90-7	5	U	5	1	1.02
10237	Chloroethane	75-00-3	5	U	5	2	1.02
10237	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1.02
10237	Chloroform	67-66-3	5	U	5	1	1.02
10237	1-Chlorohexane	544-10-5	5	U	5	1	1.02
10237	Chloromethane	74-87-3	5	U	5	2	1.02
10237	2-Chlorotoluene	95-49-8	5	U	5	1	1.02
10237	4-Chlorotoluene	106-43-4	5	U	5	1	1.02
10237	Chlorotrifluoroethene	79-38-9	5	U	5	2	1.02
10237	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1.02
10237	Dibromochloromethane	124-48-1	5	U	5	1	1.02
10237	1,2-Dibromoethane	106-93-4	5	U	5	1	1.02
10237	Dibromomethane	74-95-3	5	U	5	1	1.02
10237	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1.02
10237	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1.02
10237	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1.02
10237	Dichlorodifluoromethane	75-71-8	5	U	5	2	1.02
10237	1,1-Dichloroethane	75-34-3	5	U	5	1	1.02
10237	1,2-Dichloroethane	107-06-2	5	U	5	1	1.02
10237	1,1-Dichloroethene	75-35-4	5	U	5	1	1.02
10237	cis-1,2-Dichloroethene	156-59-2	5	U	5	1	1.02
10237	trans-1,2-Dichloroethene	156-60-5	5	U	5	1	1.02
10237	1,2-Dichloropropane	78-87-5	5	U	5	1	1.02
10237	1,3-Dichloropropane	142-28-9	5	U	5	1	1.02
10237	2,2-Dichloropropane	594-20-7	5	U	5	1	1.02
10237	1,1-Dichloropropene	563-58-6	5	U	5	1	1.02
10237	cis-1,3-Dichloropropene	10061-01-5	5	U	5	1	1.02
10237	trans-1,3-Dichloropropene	10061-02-6	5	U	5	1	1.02
10237	Ethyl t-butyl ether	637-92-3	5	U	5	1	1.02
10237	Ethylbenzene	100-41-4	5	U	5	1	1.02
10237	Freon 113	76-13-1	5	U	5	2	1.02
10237	Freon 133a	75-88-7	5	U	5	2	1.02
10237	Hexachlorobutadiene	87-68-3	5	U	5	2	1.02
10237	2-Hexanone	591-78-6	10	U	10	3	1.02

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	di-Isopropyl ether	108-20-3	5	U	5	1	1.02
10237	Isopropylbenzene	98-82-8	5	U	5	1	1.02
10237	p-Isopropyltoluene	99-87-6	5	U	5	1	1.02
10237	Methyl Iodide	74-88-4	5	U	5	3	1.02
10237	Methyl Tertiary Butyl Ether	1634-04-4	5	U	5	0.5	1.02
10237	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1.02
10237	Methylene Chloride	75-09-2	5	U	5	2	1.02
10237	n-Propylbenzene	103-65-1	5	U	5	1	1.02
10237	Styrene	100-42-5	5	U	5	1	1.02
10237	1,1,1,2-Tetrachloroethane	630-20-6	5	U	5	1	1.02
10237	1,1,2,2-Tetrachloroethane	79-34-5	5	U	5	1	1.02
10237	Tetrachloroethene	127-18-4	5	U	5	1	1.02
10237	Toluene	108-88-3	5	U	5	1	1.02
10237	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1.02
10237	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1.02
10237	1,1,1-Trichloroethane	71-55-6	5	U	5	1	1.02
10237	1,1,2-Trichloroethane	79-00-5	5	U	5	1	1.02
10237	Trichloroethene	79-01-6	5	U	5	1	1.02
10237	Trichlorofluoromethane	75-69-4	5	U	5	2	1.02
10237	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1.02
10237	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1.02
10237	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1.02
10237	Vinyl Acetate	108-05-4	10	U	10	2	1.02
10237	Vinyl Chloride	75-01-4	5	U	5	1	1.02
10237	m+p-Xylene	179601-23-1	5	U	5	1	1.02
10237	o-Xylene	95-47-6	5	U	5	1	1.02
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
10326	1,4-Dioxane	123-91-1	15	U	15	4.9	24.08

The surrogate recovery for toluene-d8 is outside of QC limits for the GC/MS volatile fraction. The surrogate was mis-spiked in the sample vial which resulted in a saturated peak. The analysis was not repeated.

GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.68	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.68	1
12969	Benzo(a)pyrene	50-32-8	0.81	J	1.7	0.68	1
12969	Benzo(b)fluoranthene	205-99-2	2.4		1.7	0.68	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	0.68	J	1.7	0.68	1
12969	Benzo(k)fluoranthene	207-08-9	1.3	J	1.7	0.68	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.1	1
12969	Chrysene	218-01-9	2.7		1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.68	1
12969	Diethylphthalate	84-66-2	18	U	18	6.1	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	18	U	18	6.1	1
12969	Fluoranthene	206-44-0	1.3	J	1.7	0.68	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Fluorene	86-73-7	1.7	U	1.7	0.68	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.68	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.68	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.68	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.68	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.68	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.1	1
12969	Phenanthrene	85-01-8	1.7	U	1.7	0.68	1
12969	Pyrene	129-00-0	1.0	J	1.7	0.68	1
The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chrysene							
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	1.0	U	1.0	0.2	25.3
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.4	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C21-C30)	n.a.	13		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	36		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	3.6	J	5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	14		10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
Due to the matrix of the sample extract, capric acid recovery can not be determined.							

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	14,600		39.8	7.17	1
06944	Antimony	7440-36-0	3.98	U	3.98	0.736	1
06935	Arsenic	7440-38-2	5.50		3.98	0.696	1
06946	Barium	7440-39-3	96.4		0.995	0.0328	1
06947	Beryllium	7440-41-7	0.548	J	0.995	0.0666	1
07914	Boron	7440-42-8	4.08	J	9.95	0.836	1
06949	Cadmium	7440-43-9	0.995	U	0.995	0.0756	1
01650	Calcium	7440-70-2	2,090		19.9	3.32	1
06951	Chromium	7440-47-3	18.4		2.98	0.159	1
06952	Cobalt	7440-48-4	4.77		0.995	0.0985	1
06953	Copper	7440-50-8	11.5		1.99	0.288	1
01654	Iron	7439-89-6	18,600		39.8	3.60	1
06955	Lead	7439-92-1	13.1		2.98	0.497	1
01656	Lithium	7439-93-2	19.9		4.0	0.34	1
01657	Magnesium	7439-95-4	4,010		9.95	1.66	1
06958	Manganese	7439-96-5	306		0.995	0.0826	1
06960	Molybdenum	7439-98-7	0.410	J	1.99	0.169	1
06961	Nickel	7440-02-0	11.7		1.99	0.129	1
10145	Phosphorus	7723-14-0	467		9.95	2.87	1
01662	Potassium	7440-09-7	3,440		99.5	8.30	1
01667	Sodium	7440-23-5	76.3	J	99.5	16.6	1
06969	Tin	7440-31-5	2.42	J	9.95	0.219	1
06970	Titanium	7440-32-6	1,000		0.995	0.169	1
06971	Vanadium	7440-62-2	32.5		0.995	0.129	1
06972	Zinc	7440-66-6	57.5		3.98	0.199	1
10146	Zirconium	7440-67-7	3.05	J	4.97	0.836	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.268	J	0.398	0.0995	2
06142	Silver	7440-22-4	0.0426	J	0.199	0.0259	2
06144	Strontium	7440-24-6	19.8		0.398	0.0676	2
06145	Thallium	7440-28-0	0.284		0.199	0.0298	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0197		0.0160	0.0096	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	5.86		0.0100	0.0100	1
	The pH was measured in water at 23.2 C.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	2.4		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	0.976	U	0.976	0.0539	1
11031	12378-PeCDD	40321-76-4	0.257	JBQ	4.88	0.0592	1
11031	123478-HxCDD	39227-28-6	0.590	J	4.88	0.0628	1
11031	123678-HxCDD	57653-85-7	2.81	JB	4.88	0.0636	1
11031	123789-HxCDD	19408-74-3	1.80	JB	4.88	0.0584	1
11031	1234678-HpCDD	35822-46-9	104	B	4.88	0.140	1
11031	OCDD	3268-87-9	2,800	B	9.76	0.111	1
11031	2378-TCDF	51207-31-9	0.172	JQ	0.976	0.0835	1
11031	12378-PeCDF	57117-41-6	0.359	JBQ	4.88	0.0372	1
11031	23478-PeCDF	57117-31-4	0.310	JBQ	4.88	0.0381	1
11031	123478-HxCDF	70648-26-9	0.529	JB	4.88	0.0454	1
11031	123678-HxCDF	57117-44-9	0.290	JBQ	4.88	0.0449	1
11031	123789-HxCDF	72918-21-9	0.505	J	4.88	0.0379	1
11031	234678-HxCDF	60851-34-5	0.491	JB	4.88	0.0451	1
11031	1234678-HpCDF	67562-39-4	8.99	B	4.88	0.0270	1
11031	1234789-HpCDF	55673-89-7	0.366	JB	4.88	0.0420	1
11031	OCDF	39001-02-0	32.0	B	9.76	0.0424	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**		**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	2.66				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	78	25 - 164
13C12-12378-PeCDD	82	25 - 181
13C12-123478-HxCDD	83	32 - 141
13C12-123678-HxCDD	86	28 - 130
13C12-123789-HxCDD	87	28 - 130
13C12-1234678-HpCDD	86	23 - 140
13C12-OCDD	84	17 - 157
13C12-2378-TCDF	77	24 - 169
13C12-12378-PeCDF	93	24 - 185
13C12-23478-PeCDF	86	21 - 178
13C12-123478-HxCDF	86	26 - 152
13C12-123678-HxCDF	91	26 - 123
13C12-234678-HxCDF	88	28 - 136
13C12-123789-HxCDF	114	29 - 147
13C12-1234678-HpCDF	109	28 - 143
13C12-1234789-HpCDF	80	26 - 138
13C12-OCDF	70	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	12a Volatile Organics EPA8260B	SW-846 8260B	1	B141761AA	06/25/2014 17:53	Angela D Sneeringer	1.02
10326	13a 1,4-Dioxane by 8260B SIM	SW-846 8260B SIM	1	E141761AA	06/25/2014 14:54	Jason M Long	24.08
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	1	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	2	201416834829	06/17/2014 15:15	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	3	201416834829	06/17/2014 15:14	Larry E Bevins	n.a.
07320	GC/MS - LL DIH2O Encore Prep	SW-846 5035	4	201416834829	06/17/2014 15:15	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	201416834829	06/17/2014 14:52	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	2	201416834829	06/17/2014 14:52	Larry E Bevins	n.a.
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/25/2014 05:34	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 21:08	Laura M Krieger	25.3
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416834829	06/17/2014 14:53	Larry E Bevins	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416834829	06/17/2014 14:53	Larry E Bevins	n.a.
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 22:05	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 20:47	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 21:23	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 07:45	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
01643	Aluminum	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06944	Antimony	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06935	Arsenic	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06946	Barium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06947	Beryllium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
07914	Boron	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06949	Cadmium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
01650	Calcium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-1175-SA5A-SB-2.0-3.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501194
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 08:50 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

11752 SDG#: PH234-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06951	Chromium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06952	Cobalt	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06953	Copper	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
01654	Iron	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06955	Lead	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
01656	Lithium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
01657	Magnesium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06958	Manganese	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06960	Molybdenum	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06961	Nickel	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
10145	Phosphorus	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
01662	Potassium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
01667	Sodium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06969	Tin	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06970	Titanium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06971	Vanadium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06972	Zinc	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
10146	Zirconium	SW-846 6010C	1	141680637002	06/19/2014 17:38	Katlin N Cataldi	1
06141	Selenium	SW-846 6020A	1	141680637002B	06/19/2014 07:32	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141680637002A	06/19/2014 07:32	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141680637002A	06/19/2014 07:32	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141680637002A	06/19/2014 07:32	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141680638002	06/19/2014 11:06	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141680637002	06/18/2014 12:24	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141680638002	06/18/2014 14:47	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14168039402A	06/17/2014 21:10	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501195
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 10:55 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87700 SDG#: PH234-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.67	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.33	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.33	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.67	1
12969	Benzo(a)pyrene	50-32-8	0.73	J	1.7	0.67	1
12969	Benzo(b)fluoranthene	205-99-2	1.8		1.7	0.67	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.3	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.67	1
12969	Benzo(k)fluoranthene	207-08-9	2.6		1.7	0.67	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.0	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.0	1
12969	Chrysene	218-01-9	2.2		1.7	0.33	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.67	1
12969	Diethylphthalate	84-66-2	18	U	18	6.0	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.0	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	8.3	J	18	6.0	1
12969	Fluoranthene	206-44-0	2.3		1.7	0.67	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.67	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.67	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.67	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.67	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.67	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.67	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.0	1
12969	Phenanthrene	85-01-8	1.3	J	1.7	0.67	1
12969	Pyrene	129-00-0	1.8		1.7	0.67	1

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
chrysene

GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	6.7		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	17		10	4.0	1
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1

The reverse surrogate, capric acid, is present at <1%.
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.
The following corrective action was taken:
The sample was re-extracted within the method required holding

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501195
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 10:55 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87700 SDG#: PH234-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
	time and the QC is compliant. The recovery for the sample surrogate(s) is outside the QC acceptance limits for the re-extraction. All results are reported from the first trial. Similar results were obtained in both trials.					
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3	n.a.	0.80	0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/25/2014 06:07	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141770027A	06/27/2014 20:30	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141700026A	06/25/2014 00:18	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141700026A	06/20/2014 09:30	Katheryne V Sponheimer	1
12959	EFH soil ext.(microwave)	SW-846 3546	2	141770027A	06/27/2014 11:00	William H Saadeh	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-3.0-4.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501196
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 11:10 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87730 SDG#: PH234-08*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.69	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	1.7	U	1.7	0.69	1
12969	Benzo(a)pyrene	50-32-8	1.7	U	1.7	0.69	1
12969	Benzo(b)fluoranthene	205-99-2	1.7	U	1.7	0.69	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.69	1
12969	Benzo(k)fluoranthene	207-08-9	1.7	U	1.7	0.69	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.2	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.2	1
12969	Chrysene	218-01-9	1.7	U	1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.69	1
12969	Diethylphthalate	84-66-2	18	U	18	6.2	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.2	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	18	U	18	6.2	1
12969	Fluoranthene	206-44-0	1.7	U	1.7	0.69	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.69	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.69	1
12969	1-Methylnaphthalene	90-12-0	1.7	U	1.7	0.69	1
12969	2-Methylnaphthalene	91-57-6	1.7	U	1.7	0.69	1
12969	Naphthalene	91-20-3	1.7	U	1.7	0.69	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.69	1
12969	Di-n-octylphthalate	117-84-0	8.1	J	18	6.2	1
12969	Phenanthrene	85-01-8	1.7	U	1.7	0.69	1
12969	Pyrene	129-00-0	1.7	U	1.7	0.69	1
GC Volatiles	**TPH GRO SW-846 8015B mod**		**mg/kg**		**mg/kg**	**mg/kg**	
05551	11a TPH by EPA 8015B GRO	n.a.	1.0	U	1.0	0.2	25.46
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C15-C20)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C21-C30)	n.a.	5.1	U	5.1	2.1	1
12952	EFH (C30-C40)	n.a.	10	U	10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.1	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
	The reverse surrogate, capric acid, is present at <1%.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	3.0		0.10	0.10	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-3.0-4.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501196
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 11:10 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87730 SDG#: PH234-08*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 160.3 modified**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-3.0-4.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501196
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 11:10 by SD

Submitted: 06/17/2014 09:15
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CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87730 SDG#: PH234-08*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**ng/kg**	**ng/kg**	**ng/kg**	
11031	2378-TCDD	1746-01-6	0.999 U	0.999	0.0718	1
11031	12378-PeCDD	40321-76-4	0.0588 JBQ	4.99	0.0423	1
11031	123478-HxCDD	39227-28-6	0.0520 J	4.99	0.0318	1
11031	123678-HxCDD	57653-85-7	0.161 JBQ	4.99	0.0325	1
11031	123789-HxCDD	19408-74-3	0.144 JBQ	4.99	0.0291	1
11031	1234678-HpCDD	35822-46-9	3.38 JB	4.99	0.0527	1
11031	OCDD	3268-87-9	96.7 B	9.99	0.0464	1
11031	2378-TCDF	51207-31-9	0.999 U	0.999	0.0562	1
11031	12378-PeCDF	57117-41-6	0.0428 JBQ	4.99	0.0242	1
11031	23478-PeCDF	57117-31-4	0.0261 JBQ	4.99	0.0241	1
11031	123478-HxCDF	70648-26-9	0.0813 JBQ	4.99	0.0221	1
11031	123678-HxCDF	57117-44-9	0.0336 JBQ	4.99	0.0186	1
11031	123789-HxCDF	72918-21-9	0.105 JQ	4.99	0.0240	1
11031	234678-HxCDF	60851-34-5	0.0452 JBQ	4.99	0.0201	1
11031	1234678-HpCDF	67562-39-4	0.322 JB	4.99	0.0168	1
11031	1234789-HpCDF	55673-89-7	0.0376 JBQ	4.99	0.0268	1
11031	OCDF	39001-02-0	1.08 JB	9.99	0.0393	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**ng/kg**	**ng/kg**	**ng/kg**	
11031	TEQ WHO 2005 - EDLx0.0	n.a.	0.0716			1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	61	25 - 164
13C12-12378-PeCDD	77	25 - 181
13C12-123478-HxCDD	79	32 - 141
13C12-123678-HxCDD	82	28 - 130
13C12-123789-HxCDD	83	28 - 130
13C12-1234678-HpCDD	79	23 - 140
13C12-OCDD	73	17 - 157
13C12-2378-TCDF	59	24 - 169
13C12-12378-PeCDF	82	24 - 185
13C12-23478-PeCDF	79	21 - 178
13C12-123478-HxCDF	75	26 - 152
13C12-123678-HxCDF	88	26 - 123
13C12-234678-HxCDF	81	28 - 136
13C12-123789-HxCDF	77	29 - 147
13C12-1234678-HpCDF	102	28 - 143
13C12-1234789-HpCDF	70	26 - 138
13C12-OCDF	61	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-3.0-4.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501196
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 11:10 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87730 SDG#: PH234-08*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry MRL*	Dry EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-877-SA5A-SB-3.0-4.0 Soil
SSFL Phase 3 Subarea 5A

LL Sample # SW 7501196
LL Group # 1482333
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/16/2014 11:10 by SD

Submitted: 06/17/2014 09:15
Reported: 07/07/2014 12:29

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

87730 SDG#: PH234-08*

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14169SLA026	06/25/2014 06:40	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14169SLA026	06/19/2014 10:30	Anna E Stager	1
05551	11a TPH by EPA 8015B GRO	TPH GRO SW-846 8015B mod	1	14170A16A	06/19/2014 21:46	Laura M Krieger	25.46
06130	GC - 5 g HL Encore Prep	SW-846 5035A	1	201416834829	06/17/2014 14:45	Larry E Bevins	n.a.
06130	GC - 5 g HL Encore Prep	SW-846 5035A	2	201416834829	06/17/2014 14:46	Larry E Bevins	n.a.
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 19:01	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 17:28	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11031	23a Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14170002	06/21/2014 08:42	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	EPA 1613B October 1994	1	14170002	06/19/2014 11:00	Robert Brown	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: B141761AA	Sample number(s): 7501188-7501190,7501194									
Acetone	20	U	20.	7	ug/kg	85		41-149		
Acrolein	100 U		100.	20	ug/kg	92		50-137		
Acrylonitrile	20	U	20.	4	ug/kg	90		58-123		
t-Amyl methyl ether	5	U	5.	1	ug/kg	98		63-130		
Benzene	5	U	5.	0.5	ug/kg	100		80-120		
Bromobenzene	5	U	5.	1	ug/kg	103		78-120		
Bromochloromethane	5	U	5.	1	ug/kg	97		75-129		
Bromodichloromethane	5	U	5.	1	ug/kg	90		75-120		
Bromoform	5	U	5.	1	ug/kg	81		70-126		
Bromomethane	5	U	5.	2	ug/kg	69		32-162		
2-Butanone	10	U	10.	4	ug/kg	91		47-136		
t-Butyl alcohol	50	U	50.	20	ug/kg	97		66-133		
n-Butylbenzene	5	U	5.	1	ug/kg	106		72-120		
sec-Butylbenzene	5	U	5.	1	ug/kg	105		69-120		
tert-Butylbenzene	5	U	5.	1	ug/kg	106		75-120		
Carbon Disulfide	5	U	5.	1	ug/kg	87		63-128		
Carbon Tetrachloride	5	U	5.	1	ug/kg	89		69-130		
Chlorobenzene	5	U	5.	1	ug/kg	105		80-120		
Chloroethane	5	U	5.	2	ug/kg	64		17-171		
2-Chloroethyl Vinyl Ether	10	U	10.	2	ug/kg	92		52-134		
Chloroform	5	U	5.	1	ug/kg	101		80-120		
1-Chlorohexane	5	U	5.	1	ug/kg	102		70-130		
Chloromethane	5	U	5.	2	ug/kg	91		56-120		
2-Chlorotoluene	5	U	5.	1	ug/kg	104		78-120		
4-Chlorotoluene	5	U	5.	1	ug/kg	105		79-120		
Chlorotrifluoroethene	5	U	5.	2	ug/kg	89		22-131		
1,2-Dibromo-3-chloropropane	5	U	5.	2	ug/kg	90		50-132		
Dibromochloromethane	5	U	5.	1	ug/kg	89		77-120		
1,2-Dibromoethane	5	U	5.	1	ug/kg	104		80-120		
Dibromomethane	5	U	5.	1	ug/kg	96		75-120		
1,2-Dichlorobenzene	5	U	5.	1	ug/kg	107		80-120		
1,3-Dichlorobenzene	5	U	5.	1	ug/kg	102		80-120		
1,4-Dichlorobenzene	5	U	5.	1	ug/kg	104		80-120		
Dichlorodifluoromethane	5	U	5.	2	ug/kg	89		26-137		
1,1-Dichloroethane	5	U	5.	1	ug/kg	101		71-122		
1,2-Dichloroethane	5	U	5.	1	ug/kg	102		66-136		
1,1-Dichloroethene	5	U	5.	1	ug/kg	102		73-129		
cis-1,2-Dichloroethene	5	U	5.	1	ug/kg	102		80-120		
trans-1,2-Dichloroethene	5	U	5.	1	ug/kg	108		79-120		
1,2-Dichloropropane	5	U	5.	1	ug/kg	100		77-120		
1,3-Dichloropropane	5	U	5.	1	ug/kg	103		73-120		
2,2-Dichloropropane	5	U	5.	1	ug/kg	97		72-123		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloropropene	5	U	5.	1	ug/kg	105		77-120		
cis-1,3-Dichloropropene	5	U	5.	1	ug/kg	96		74-120		
trans-1,3-Dichloropropene	5	U	5.	1	ug/kg	100		69-120		
Ethyl t-butyl ether	5	U	5.	1	ug/kg	99		59-134		
Ethylbenzene	5	U	5.	1	ug/kg	106		80-120		
Freon 113	5	U	5.	2	ug/kg	92		64-137		
Freon 133a	5	U	5.	2	ug/kg	100		78-120		
Hexachlorobutadiene	5	U	5.	2	ug/kg	100		46-130		
2-Hexanone	10	U	10.	3	ug/kg	98		40-129		
di-Isopropyl ether	5	U	5.	1	ug/kg	104		68-128		
Isopropylbenzene	5	U	5.	1	ug/kg	108		76-120		
p-Isopropyltoluene	5	U	5.	1	ug/kg	104		69-120		
Methyl Iodide	5	U	5.	3	ug/kg	97		72-130		
Methyl Tertiary Butyl Ether	5	U	5.	0.5	ug/kg	101		69-126		
4-Methyl-2-pentanone	10	U	10.	3	ug/kg	95		43-133		
Methylene Chloride	5	U	5.	2	ug/kg	102		80-124		
n-Propylbenzene	5	U	5.	1	ug/kg	106		77-120		
Styrene	5	U	5.	1	ug/kg	107		76-120		
1,1,1,2-Tetrachloroethane	5	U	5.	1	ug/kg	95		80-120		
1,1,2,2-Tetrachloroethane	5	U	5.	1	ug/kg	100		71-123		
Tetrachloroethene	5	U	5.	1	ug/kg	104		78-120		
Toluene	5	U	5.	1	ug/kg	105		80-120		
1,2,3-Trichlorobenzene	5	U	5.	1	ug/kg	101		64-120		
1,2,4-Trichlorobenzene	5	U	5.	1	ug/kg	102		68-120		
1,1,1-Trichloroethane	5	U	5.	1	ug/kg	86		63-135		
1,1,2-Trichloroethane	5	U	5.	1	ug/kg	104		80-120		
Trichloroethene	5	U	5.	1	ug/kg	101		80-120		
Trichlorofluoromethane	5	U	5.	2	ug/kg	87		58-133		
1,2,3-Trichloropropane	5	U	5.	1	ug/kg	104		71-123		
1,2,4-Trimethylbenzene	5	U	5.	1	ug/kg	105		79-120		
1,3,5-Trimethylbenzene	5	U	5.	1	ug/kg	106		78-120		
Vinyl Acetate	10	U	10.	2	ug/kg	101		40-127		
Vinyl Chloride	5	U	5.	1	ug/kg	94		59-120		
m+p-Xylene	5	U	5.	1	ug/kg	107		80-120		
o-Xylene	5	U	5.	1	ug/kg	107		80-120		
Batch number: E141682AA	Sample number(s): 7501186									
1,4-Dioxane	2.0	U	2.0	0.5	ug/l	103	105	80-123	2	30
Batch number: E141761AA	Sample number(s): 7501188-7501190,7501194									
1,4-Dioxane	15	U	15.	5.0	ug/kg	96		70-130		
Batch number: Y141701AA	Sample number(s): 7501186									
Acetone	20	U	20.	6	ug/l	82	85	43-149	4	30
Acrolein	100 U		100.	40	ug/l	97	94	52-129	3	30
Acrylonitrile	20	U	20.	4	ug/l	89	94	62-120	6	30
t-Amyl methyl ether	1	U	1.	0.5	ug/l	101	102	75-120	1	30
Benzene	1	U	1.	0.5	ug/l	103	105	78-120	1	30
Bromobenzene	5	U	5.	1	ug/l	102	103	80-120	1	30
Bromochloromethane	5	U	5.	1	ug/l	101	101	80-121	0	30
Bromodichloromethane	1	U	1.	0.5	ug/l	97	97	73-120	0	30
Bromoform	4	U	4.	0.5	ug/l	91	90	61-120	1	30
Bromomethane	1	U	1.	0.5	ug/l	92	95	58-120	3	30
2-Butanone	10	U	10.	3	ug/l	95	96	54-133	1	30
t-Butyl alcohol	50	U	50.	5	ug/l	115	113	75-120	2	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
n-Butylbenzene	5	U	5.	1	ug/l	106	107	68-120	1	30
sec-Butylbenzene	5	U	5.	1	ug/l	108	109	80-120	1	30
tert-Butylbenzene	5	U	5.	1	ug/l	104	106	73-120	2	30
Carbon Disulfide	5	U	5.	1	ug/l	86	90	58-126	4	30
Carbon Tetrachloride	1	U	1.	0.5	ug/l	100	103	74-130	3	30
Chlorobenzene	1	U	1.	0.5	ug/l	102	105	80-120	2	30
Chloroethane	1	U	1.	0.5	ug/l	87	87	56-120	0	30
2-Chloroethyl Vinyl Ether	10	U	10.	2	ug/l	101	103	54-126	2	30
Chloroform	1	U	1.	0.5	ug/l	103	104	80-122	1	30
1-Chlorohexane	5	U	5.	1	ug/l	104	107	80-120	3	30
Chloromethane	1	U	1.	0.5	ug/l	104	97	63-120	7	30
2-Chlorotoluene	5	U	5.	1	ug/l	102	102	80-120	1	30
4-Chlorotoluene	5	U	5.	1	ug/l	101	102	80-120	1	30
Chlorotrifluoroethene	5	U	5.	2	ug/l	85	82	47-120	4	30
1,2-Dibromo-3-chloropropane	5	U	5.	2	ug/l	98	99	56-120	0	30
Dibromochloromethane	1	U	1.	0.5	ug/l	91	92	72-120	1	30
1,2-Dibromoethane	1	U	1.	0.5	ug/l	105	107	76-120	2	30
Dibromomethane	1	U	1.	0.5	ug/l	103	102	80-120	1	30
1,2-Dichlorobenzene	5	U	5.	1	ug/l	102	102	80-120	0	30
1,3-Dichlorobenzene	5	U	5.	1	ug/l	102	102	80-120	1	30
1,4-Dichlorobenzene	5	U	5.	1	ug/l	101	103	80-120	2	30
Dichlorodifluoromethane	1	U	1.	0.5	ug/l	85	84	48-132	1	30
1,1-Dichloroethane	1	U	1.	0.5	ug/l	103	105	80-120	2	30
1,2-Dichloroethane	1	U	1.	0.5	ug/l	105	105	65-135	0	30
1,1-Dichloroethene	1	U	1.	0.5	ug/l	94	98	76-124	4	30
cis-1,2-Dichloroethene	1	U	1.	0.5	ug/l	105	107	80-120	2	30
trans-1,2-Dichloroethene	1	U	1.	0.5	ug/l	103	106	80-120	3	30
1,2-Dichloropropane	1	U	1.	0.5	ug/l	101	102	80-120	1	30
1,3-Dichloropropane	1	U	1.	0.5	ug/l	101	104	80-120	3	30
2,2-Dichloropropane	1	U	1.	0.5	ug/l	103	106	67-124	3	30
1,1-Dichloropropene	5	U	5.	1	ug/l	106	107	80-120	0	30
cis-1,3-Dichloropropene	1	U	1.	0.5	ug/l	98	99	80-120	1	30
trans-1,3-Dichloropropene	1	U	1.	0.5	ug/l	100	100	76-120	1	30
Ethyl t-butyl ether	1	U	1.	0.5	ug/l	102	102	74-120	0	30
Ethylbenzene	1	U	1.	0.5	ug/l	101	102	79-120	1	30
Freon 113	10	U	10.	2	ug/l	82	85	67-127	4	30
Freon 133a	5	U	5.	2	ug/l	115	116	46-152	1	30
Hexachlorobutadiene	5	U	5.	2	ug/l	101	100	51-125	1	30
2-Hexanone	10	U	10.	3	ug/l	96	97	44-126	1	30
di-Isopropyl ether	1	U	1.	0.5	ug/l	104	104	65-120	0	30
Isopropylbenzene	5	U	5.	1	ug/l	103	104	77-120	1	30
p-Isopropyltoluene	5	U	5.	1	ug/l	105	106	80-120	1	30
Methyl Iodide	1	U	1.	0.5	ug/l	106	106	75-128	0	30
Methyl Tertiary Butyl Ether	1	U	1.	0.5	ug/l	99	101	75-120	2	30
4-Methyl-2-pentanone	10	U	10.	3	ug/l	97	98	51-124	1	30
Methylene Chloride	3	U	3.	2	ug/l	93	95	80-120	2	30
n-Propylbenzene	5	U	5.	1	ug/l	106	107	80-120	2	30
Styrene	5	U	5.	1	ug/l	101	103	80-120	2	30
1,1,1,2-Tetrachloroethane	1	U	1.	0.5	ug/l	100	103	80-120	2	30
1,1,2,2-Tetrachloroethane	1	U	1.	0.5	ug/l	102	104	70-120	2	30
Tetrachloroethene	1	U	1.	0.5	ug/l	101	104	80-120	3	30
Toluene	1	U	1.	0.5	ug/l	104	106	80-120	2	30
1,2,3-Trichlorobenzene	5	U	5.	1	ug/l	100	100	58-126	1	30
1,2,4-Trichlorobenzene	5	U	5.	1	ug/l	103	104	65-120	2	30
1,1,1-Trichloroethane	1	U	1.	0.5	ug/l	99	99	66-126	0	30
1,1,2-Trichloroethane	1	U	1.	0.5	ug/l	103	104	80-120	0	30

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Trichloroethene	1	U	1.	0.5	ug/l	105	106	80-120	1	30
Trichlorofluoromethane	1	U	1.	0.5	ug/l	86	90	65-130	4	30
1,2,3-Trichloropropane	5	U	5.	1	ug/l	102	104	76-120	2	30
1,2,4-Trimethylbenzene	5	U	5.	1	ug/l	104	106	74-120	1	30
1,3,5-Trimethylbenzene	5	U	5.	1	ug/l	106	106	74-120	0	30
Vinyl Acetate	10	U	10.	2	ug/l	81	72	56-135	11	30
Vinyl Chloride	1	U	1.	0.5	ug/l	102	95	63-120	7	30
m+p-Xylene	1	U	1.	0.5	ug/l	101	102	80-120	1	30
o-Xylene	1	U	1.	0.5	ug/l	101	103	80-120	1	30
Batch number: 14169SLA026	Sample number(s): 7501187-7501190,7501192-7501196									
Acenaphthene	1.7	U	1.7	0.67	ug/kg	111		84-118		
Acenaphthylene	1.7	U	1.7	0.33	ug/kg	105		78-120		
Anthracene	1.7	U	1.7	0.33	ug/kg	105		85-118		
Benzo(a)anthracene	1.7	U	1.7	0.67	ug/kg	113		83-119		
Benzo(a)pyrene	1.7	U	1.7	0.67	ug/kg	104		80-122		
Benzo(b)fluoranthene	1.7	U	1.7	0.67	ug/kg	112		82-135		
Benzo(e)pyrene	17	U	17.	3.3	ug/kg	97		81-110		
Benzo(g,h,i)perylene	1.7	U	1.7	0.67	ug/kg	100		79-121		
Benzo(k)fluoranthene	1.7	U	1.7	0.67	ug/kg	109		79-123		
Butylbenzylphthalate	18	U	18.	6.0	ug/kg	100		75-144		
Di-n-butylphthalate	18	U	18.	6.0	ug/kg	100		75-148		
Chrysene	1.7	U	1.7	0.33	ug/kg	114*		84-113		
Dibenz(a,h)anthracene	1.7	U	1.7	0.67	ug/kg	103		83-123		
Diethylphthalate	18	U	18.	6.0	ug/kg	107		73-147		
Dimethylphthalate	18	U	18.	6.0	ug/kg	107		85-122		
Bis(2-Ethylhexyl)phthalate	18	U	18.	6.0	ug/kg	101		68-146		
Fluoranthene	1.7	U	1.7	0.67	ug/kg	114		85-116		
Fluorene	1.7	U	1.7	0.67	ug/kg	115		84-120		
Indeno(1,2,3-cd)pyrene	1.7	U	1.7	0.67	ug/kg	100		82-123		
1-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	106		78-119		
2-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	108		78-121		
Naphthalene	1.7	U	1.7	0.67	ug/kg	104		79-113		
N-Nitrosodimethylamine	1.7	U	1.7	0.67	ug/kg	109		71-124		
Di-n-octylphthalate	18	U	18.	6.0	ug/kg	100		71-148		
Phenanthrene	1.7	U	1.7	0.67	ug/kg	105		83-113		
Pyrene	1.7	U	1.7	0.67	ug/kg	103		80-119		
Batch number: 14170A16A	Sample number(s): 7501188-7501190,7501193-7501194,7501196									
11a TPH by EPA 8015B GRO	1.0	U	1.0	0.2	mg/kg	82		67-120		
Batch number: 14170B94A	Sample number(s): 7501186									
TPH-GRO S.CA water C5-C12	50	U	50.	20	ug/l	94	93	80-133	1	30
Batch number: 141720009A	Sample number(s): 7501188-7501190,7501194									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	96	98	36-106	2	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	101		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	106		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141750017A	Sample number(s): 7501187									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	93	94	36-106	1	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	107		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	110		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141700025A	Sample number(s): 7501188-7501190,7501192-7501194,7501196									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	98		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	100		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	98		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	62		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	84		60-115		
Batch number: 141700026A	Sample number(s): 7501195									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	22*		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	21*		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	21*		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	15*		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	21*		60-115		
Batch number: 141770026A	Sample number(s): 7501187-7501190,7501192-7501194,7501196									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	92		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	94		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	95		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	95		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	74		60-115		
Batch number: 141770027A	Sample number(s): 7501187,7501195									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	87		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	88		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	87		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	86		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	76		60-115		
Batch number: 141680637002	Sample number(s): 7501187-7501191,7501194									
Aluminum	10.0	J	40.0	7.21	mg/kg	107		80-120		
Antimony	4.00	U	4.00	0.740	mg/kg	105		80-120		
Arsenic	4.00	U	4.00	0.700	mg/kg	105		80-120		
Barium	1.00	U	1.00	0.0330	mg/kg	102		80-120		
Beryllium	1.00	U	1.00	0.0670	mg/kg	102		80-120		
Boron	1.76	J	10.0	0.840	mg/kg	99		80-120		
Cadmium	1.00	U	1.00	0.0760	mg/kg	103		80-120		
Calcium	24.6		20.0	3.34	mg/kg	105		80-120		
Chromium	3.00	U	3.00	0.160	mg/kg	103		80-120		
Cobalt	1.00	U	1.00	0.0990	mg/kg	105		80-120		
Copper	2.00	U	2.00	0.290	mg/kg	103		80-120		

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Iron	40.0 U	40.0	3.62	mg/kg	104		80-120		
Lead	3.00 U	3.00	0.500	mg/kg	108		80-120		
Lithium	4.0 U	4.0	0.34	mg/kg	101		80-120		
Magnesium	10.0 U	10.0	1.67	mg/kg	103		80-120		
Manganese	1.00 U	1.00	0.0830	mg/kg	102		80-120		
Molybdenum	2.00 U	2.00	0.170	mg/kg	102		80-120		
Nickel	2.00 U	2.00	0.130	mg/kg	108		80-120		
Phosphorus	10.0 U	10.0	2.89	mg/kg	104		80-120		
Potassium	100 U	100.	8.34	mg/kg	99		80-120		
Sodium	100 U	100.	16.7	mg/kg	101		80-120		
Tin	1.46 J	10.0	0.220	mg/kg	101		80-120		
Titanium	1.00 U	1.00	0.170	mg/kg	104		80-120		
Vanadium	1.00 U	1.00	0.130	mg/kg	104		80-120		
Zinc	0.386 J	4.00	0.200	mg/kg	103		80-120		
Zirconium	5.00 U	5.00	0.840	mg/kg	102		80-120		
Batch number: 141680637002A	Sample number(s): 7501187-7501191,7501194								
Silver	0.200 U	0.200	0.0260	mg/kg	103		80-120		
Strontium	0.134 J	0.400	0.0680	mg/kg	100		80-120		
Thallium	0.200 U	0.200	0.0300	mg/kg	102		80-120		
Batch number: 141680637002B	Sample number(s): 7501187-7501191,7501194								
Selenium	0.400 U	0.400	0.100	mg/kg	103		80-120		
Batch number: 141680638002	Sample number(s): 7501187-7501191,7501194								
3a Mercury 7471A	0.0167 U	0.0167	0.0100	mg/kg	85		85-120		
Batch number: 14168039402A	Sample number(s): 7501187-7501188,7501191,7501194								
15a pH by 9045D					100		95-105		
Batch number: 14174162401A	Sample number(s): 7501187-7501196								
14a Moisture Content by 160.3					100		80-120		
14a Moisture Content by 160.3					100		80-120		
14a Moisture Content by 160.3					100		80-120		

Analysis Name	Blank Result	Blank MRL**	Blank EDL	Report Units	OPR %REC	OPRD %REC	OPR/OPRD Limits	RPD	RPD Max
Batch number: 14170002	Sample number(s): 7501187-7501190,7501193-7501194,7501196								
2378-TCDD	0.0713 J	1.00	0.0557	ng/kg	96		67-158		
12378-PeCDD	0.0524 J	5.00	0.0333	ng/kg	99		70-142		
123478-HxCDD	5.00 U	5.00	0.0206	ng/kg	101		70-164		
123678-HxCDD	0.0329 J	5.00	0.0216	ng/kg	100		76-134		
123789-HxCDD	0.0404 J	5.00	0.0203	ng/kg	100		64-162		
1234678-HpCDD	0.0853 J	5.00	0.0200	ng/kg	98		70-140		
OCDD	0.231 J	10.0	0.0236	ng/kg	95		78-144		
2378-TCDF	1.00 U	1.00	0.0436	ng/kg	110		75-158		
12378-PeCDF	0.0517 J	5.00	0.0163	ng/kg	100		80-134		
23478-PeCDF	0.0235 J	5.00	0.0164	ng/kg	100		68-160		
123478-HxCDF	0.0457 J	5.00	0.0174	ng/kg	102		72-134		
123678-HxCDF	0.0297 J	5.00	0.0163	ng/kg	100		84-130		
123789-HxCDF	5.00 U	5.00	0.0154	ng/kg	98		78-130		
234678-HxCDF	0.0358 J	5.00	0.0170	ng/kg	100		70-156		

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Analysis Name	Blank Result	Blank MRL**	Blank EDL	Report Units	OPR %REC	OPRD %REC	OPR/OPRD Limits	RPD	RPD Max
1234678-HpCDF	0.0561 J	5.00	0.00619	ng/kg	96		82-122		
1234789-HpCDF	0.0335 J	5.00	0.00942	ng/kg	99		78-138		
OCDF	0.165 J	10.0	0.0311	ng/kg	98		63-170		
TEQ WHO 2005 - EDLx0.0	0.0000690			ng/kg					

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: B141761AA	Sample number(s): 7501188-7501190,7501194 UNSPK: 7501188								
Acetone	96	105	31-195	9	30				
Acrolein	51	54	10-165	6	30				
Acrylonitrile	74	88	48-139	17	30				
t-Amyl methyl ether	99	109	50-132	10	30				
Benzene	105	118	55-143	12	30				
Bromobenzene	77	106	43-139	32*	30				
Bromochloromethane	99	111	60-137	12	30				
Bromodichloromethane	89	103	53-136	15	30				
Bromoform	70	84	50-144	19	30				
Bromomethane	75	80	42-168	7	30				
2-Butanone	86	93	37-163	8	30				
t-Butyl alcohol	104	121	47-153	15	30				
n-Butylbenzene	59	102	30-146	54*	30				
sec-Butylbenzene	73	117	33-157	46*	30				
tert-Butylbenzene	82	122	41-152	39*	30				
Carbon Disulfide	92	98	48-146	7	30				
Carbon Tetrachloride	96	111	51-165	15	30				
Chlorobenzene	88	112	49-135	24	30				
Chloroethane	70	76	39-152	7	30				
2-Chloroethyl Vinyl Ether	82	87	32-139	7	30				
Chloroform	108	119	61-142	9	30				
1-Chlorohexane	83	115	70-130	33*	30				
Chloromethane	107	112	36-143	5	30				
2-Chlorotoluene	77	111	42-146	37*	30				
4-Chlorotoluene	73	108	39-145	38*	30				
Chlorotrifluoroethene	108	104	70-130	3	30				
1,2-Dibromo-3-chloropropane	67	85	34-165	24	30				
Dibromochloromethane	80	99	51-128	21	30				
1,2-Dibromoethane	98	112	54-129	14	30				
Dibromomethane	98	108	57-130	11	30				
1,2-Dichlorobenzene	65	95	36-133	37*	30				
1,3-Dichlorobenzene	63	94	34-134	40*	30				
1,4-Dichlorobenzene	63	95	35-136	41*	30				
Dichlorodifluoromethane	110	116	26-151	5	30				
1,1-Dichloroethane	111	122	63-142	10	30				
1,2-Dichloroethane	105	116	54-143	10	30				

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Quality Control Summary

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Reported: 07/07/14 at 12:29 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1-Dichloroethene	116	124	61-149	6	30				
cis-1,2-Dichloroethene	108	120	67-135	10	30				
trans-1,2-Dichloroethene	115	129	64-144	12	30				
1,2-Dichloropropane	104	118	54-144	12	30				
1,3-Dichloropropane	100	116	51-140	15	30				
2,2-Dichloropropane	105	116	53-147	10	30				
1,1-Dichloropropene	111	125	54-145	12	30				
cis-1,3-Dichloropropene	91	105	45-137	14	30				
trans-1,3-Dichloropropene	89	106	51-134	18	30				
Ethyl t-butyl ether	104	114	58-124	10	30				
Ethylbenzene	91	119	44-141	26	30				
Freon 113	109	116	56-156	6	30				
Freon 133a	124	124	61-131	2	30				
Hexachlorobutadiene	42	78	10-155	59*	30				
2-Hexanone	91	101	32-160	10	30				
di-Isopropyl ether	112	123	59-133	9	30				
Isopropylbenzene	86	120	38-144	34*	30				
p-Isopropyltoluene	66	108	29-152	48*	30				
Methyl Iodide	109	116	52-139	6	30				
Methyl Tertiary Butyl Ether	104	115	55-129	10	30				
4-Methyl-2-pentanone	94	101	46-139	7	30				
Methylene Chloride	109	121	60-149	10	30				
n-Propylbenzene	79	120	39-157	41*	30				
Styrene	80	106	35-134	28	30				
1,1,1,2-Tetrachloroethane	86	108	55-139	22	30				
1,1,2,2-Tetrachloroethane	89	108	29-182	19	30				
Tetrachloroethene	94	118	42-149	23	30				
Toluene	101	122	50-146	20	30				
1,2,3-Trichlorobenzene	36	54	10-140	40*	30				
1,2,4-Trichlorobenzene	38	60	10-136	44*	30				
1,1,1-Trichloroethane	94	103	52-146	10	30				
1,1,2-Trichloroethane	101	116	58-152	13	30				
Trichloroethene	103	118	53-144	14	30				
Trichlorofluoromethane	105	113	47-163	7	30				
1,2,3-Trichloropropane	96	113	36-180	16	30				
1,2,4-Trimethylbenzene	73	110	37-149	41*	30				
1,3,5-Trimethylbenzene	78	119	38-150	41*	30				
Vinyl Acetate	11*	13*	21-139	17	30				
Vinyl Chloride	113	119	50-154	5	30				
m+p-Xylene	89	117	44-137	28	30				
o-Xylene	88	115	42-137	26	30				
Batch number: E141761AA	Sample number(s): 7501188-7501190,7501194 UNSPK: 7501188								
1,4-Dioxane	87	96	70-130	13	30				
Batch number: 14169SLA026	Sample number(s): 7501187-7501190,7501192-7501196 UNSPK: 7501188								
Acenaphthene	90	91	48-127	3	30				
Acenaphthylene	90	90	60-128	1	30				
Anthracene	92	93	52-126	2	30				
Benzo(a)anthracene	98	103	44-143	7	30				
Benzo(a)pyrene	86	88	49-137	3	30				
Benzo(b)fluoranthene	112	121	26-142	8	30				

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Reported: 07/07/14 at 12:29 PM

Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Benzo(e)pyrene	87	89	63-111	4	30				
Benzo(g,h,i)perylene	47	43	33-141	8	30				
Benzo(k)fluoranthene	96	98	49-144	3	30				
Butylbenzylphthalate	95	92	64-156	3	30				
Di-n-butylphthalate	91	91	52-147	1	30				
Chrysene	94	104	43-141	11	30				
Dibenz(a,h)anthracene	57	54	25-145	5	30				
Diethylphthalate	89	90	66-140	2	30				
Dimethylphthalate	89	89	70-123	1	30				
Bis(2-Ethylhexyl)phthalate	96	408*	48-164	125*	30				
Fluoranthene	103	129	38-153	23	30				
Fluorene	93	94	57-130	3	30				
Indeno(1,2,3-cd)pyrene	54	51	26-139	5	30				
1-Methylnaphthalene	90	91	59-139	2	30				
2-Methylnaphthalene	92	94	46-147	4	30				
Naphthalene	88	90	52-136	4	30				
N-Nitrosodimethylamine	86	91	39-134	7	30				
Di-n-octylphthalate	126	132	52-162	6	30				
Phenanthrene	92	106	50-137	15	30				
Pyrene	88	109	26-143	23	30				
Batch number: 14170A16A	Sample number(s): 7501188-7501190,7501193-7501194,7501196 UNSPK: 7501188								
11a TPH by EPA 8015B GRO	75	77	69-123	1	30				
Batch number: 141720009A	Sample number(s): 7501188-7501190,7501194 UNSPK: 7501188								
PCB-1016	99	104	41-135	5	50				
PCB-1260	102	112	40-134	10	50				
Batch number: 141750017A	Sample number(s): 7501187 UNSPK: 7501187								
PCB-1016	86	100	41-135	15	50				
PCB-1260	88	109	40-134	20	50				
Batch number: 141700025A	Sample number(s): 7501188-7501190,7501192-7501194,7501196 UNSPK: 7501188								
EFH (C12-C14)	107	126*	49-123	16	20				
EFH (C15-C20)	127*	137*	49-123	7	20				
EFH (C21-C30)	-71*	-43*	49-123	14	20				
EFH (C30-C40)	-318 (2)	-264 (2)	49-123	21*	20				
EFH (C8-C11)	87	91	49-123	3	20				
Batch number: 141700026A	Sample number(s): 7501195 UNSPK: P501188								
EFH C12-C14 w/ SiGel	83	85	49-123	2	20				
EFH C15-C20 w/ SiGel	80	77	49-123	5	20				
EFH C21-C30 w/ SiGel	3*	4*	49-123	1	20				
EFH C30-C40 w/ SiGel	-67*	-85*	49-123	13	20				
EFH C8-C11 w/ SiGel	67	62	49-123	9	20				
Batch number: 141770026A	Sample number(s): 7501187-7501190,7501192-7501194,7501196 UNSPK: 7501188								
EFH C12-C14 w/ SiGel	82	88	49-123	8	20				
EFH C15-C20 w/ SiGel	78	81	49-123	4	20				
EFH C21-C30 w/ SiGel	-82*	-58*	49-123	19	20				
EFH C30-C40 w/ SiGel	-262	-217	49-123	22*	20				

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC (2)	MSD %REC (2)	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
EFH C8-C11 w/ SiGel	58	63	49-123	9	20				
Batch number: 141770027A	Sample number(s): 7501187,7501195 UNSPK: P502707								
EFH (C12-C14)	90	91	49-123	0	20				
EFH (C15-C20)	89	102	49-123	10	20				
EFH (C21-C30)	112	153*	49-123	16	20				
EFH (C30-C40)	135*	250*	49-123	26*	20				
EFH (C8-C11)	77	79	49-123	3	20				
Batch number: 141680637002	Sample number(s): 7501187-7501191,7501194 UNSPK: 7501188 BKG: 7501188								
Aluminum	1032 (2)	806 (2)	75-125	3	20	15,000	15,000	0	20
Antimony	47*	49*	75-125	3	20	3.92 U	3.96 U	0 (1)	20
Arsenic	98	98	75-125	1	20	5.68	5.34	6 (1)	20
Barium	94	88	75-125	5	20	104	107	3	20
Beryllium	102	102	75-125	2	20	0.566 J	0.570 J	1 (1)	20
Boron	98	97	75-125	2	20	4.31 J	4.09 J	5 (1)	20
Cadmium	93	93	75-125	2	20	0.980 U	0.990 U	0 (1)	20
Calcium	150 (2)	103 (2)	75-125	7	20	2,210	2,360	7	20
Chromium	112	94	75-125	10	20	19.0	20.0	5	20
Cobalt	95	95	75-125	2	20	4.78	4.98	4 (1)	20
Copper	102	95	75-125	7	20	11.5	11.7	1	20
Iron	-493 (2)	-449 (2)	75-125	0	20	18,800	18,800	0	20
Lead	132*	84	75-125	28*	20	10.4	7.96	26* (1)	20
Lithium	103	108	75-125	2	20	20.1	18.9	6 (1)	20
Magnesium	95 (2)	21 (2)	75-125	4	20	4,030	4,040	0	20
Manganese	73 (2)	41 (2)	75-125	5	20	313	332	6	20
Molybdenum	95	95	75-125	2	20	0.404 J	0.410 J	1 (1)	20
Nickel	97	94	75-125	4	20	12.8	12.4	3	20
Phosphorus	92 (2)	151 (2)	75-125	10	20	424	434	2	20
Potassium	124	122	75-125	1	20	3,560	3,680	3	20
Sodium	103	105	75-125	0	20	76.0 J	72.5 J	5 (1)	20
Tin	89	89	75-125	2	20	2.54 J	2.52 J	1 (1)	20
Titanium	244 (2)	196 (2)	75-125	4	20	1,040	1,040	0	20
Vanadium	102	96	75-125	4	20	35.0	33.9	3	20
Zinc	95	93	75-125	2	20	57.1	56.0	2	20
Zirconium	97	99	75-125	0	20	2.95 J	3.36 J	13 (1)	20
Batch number: 141680637002A	Sample number(s): 7501187-7501191,7501194 UNSPK: 7501188 BKG: 7501188								
Silver	128*	128*	75-125	2	20	0.0414 J	0.0323 J	25* (1)	20
Strontium	148*	71*	75-125	21*	20	22.0	23.1	5	20
Thallium	125	115	75-125	6	20	0.266	0.255	4 (1)	20
Batch number: 141680637002B	Sample number(s): 7501187-7501191,7501194 UNSPK: 7501188 BKG: 7501188								
Selenium	116	116	75-125	1	20	0.265 J	0.259 J	2 (1)	20
Batch number: 141680638002	Sample number(s): 7501187-7501191,7501194 UNSPK: 7501188 BKG: 7501188								
3a Mercury 7471A	89	86	65-135	1	20	0.0200	0.0182	10 (1)	20
Batch number: 14168039402A	Sample number(s): 7501187-7501188,7501191,7501194 BKG: 7501188								

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
15a pH by 9045D						6.11	6.13	0	3
Batch number: 14174162401A	Sample number(s): 7501187-7501196 BKG: 7501188								
14a Moisture Content by 160.3						2.7	2.6	2	20
14a Moisture Content by 160.3						2.7	2.6	2	20
14a Moisture Content by 160.3						2.7	2.6	2	20
Batch number: 14170002	Sample number(s): 7501187-7501190,7501193-7501194,7501196 UNSPK: 7501188								
2378-TCDD	99	96	40-135	2	20				
12378-PeCDD	103	104	40-135	2	20				
123478-HxCDD	102	101	40-135	0	20				
123678-HxCDD	100	101	40-135	2	20				
123789-HxCDD	100	101	40-135	1	20				
1234678-HpCDD	111	119	40-135	6	20				
OCDD	232 (2)	210 (2)	40-135	3	20				
2378-TCDF	102	104	40-135	2	20				
12378-PeCDF	101	100	40-135	0	20				
23478-PeCDF	101	103	40-135	2	20				
123478-HxCDF	101	103	40-135	3	20				
123678-HxCDF	98	101	40-135	3	20				
123789-HxCDF	100	101	40-135	2	20				
234678-HxCDF	101	102	40-135	1	20				
1234678-HpCDF	100	102	40-135	3	20				
1234789-HpCDF	98	99	40-135	2	20				
OCDF	100	102	40-135	2	20				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 12a Volatile Organics EPA8260B
Batch number: B141761AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7501188	100	101	102	93
7501189	100	106	102	97
7501190	101	105	104	96
7501194	100	100	104	91
Blank	100	106	100	97
LCS	100	101	102	99
MS	100	106	102	97
MSD	101	105	104	96
Limits:	80-120	80-120	81-117	74-121

Analysis Name: 13b 1,4-Dioxane by 8260B SIM
Batch number: E141682AA

	Toluene-d8

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Surrogate Quality Control

7501186	99
Blank	98
LCS	99
LCSD	99
Limits:	80-120

Analysis Name: 13a 1,4-Dioxane by 8260B SIM
Batch number: E141761AA

	Toluene-d8
7501188	47*
7501189	47*
7501190	48*
7501194	45*
Blank	108
LCS	107
MS	47*
MSD	48*
Limits:	70-130

Analysis Name: 12b Volatile Organics EPA8260B
Batch number: Y141701AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7501186	101	103	99	97
Blank	99	102	99	97
LCS	100	102	100	100
LCSD	99	102	101	100
Limits:	86-118	80-120	88-110	86-115

Analysis Name: 7a SVOC SIM EPA 8270D
Batch number: 14169SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7501187	103	108	92
7501188	93	93	81
7501189	100	100	86
7501190	93	94	83
7501192	108	106	101
7501193	99	102	90
7501194	83	76	76
7501195	104	104	93
7501196	95	100	85
Blank	103	107	90
LCS	104	109	94
MS	100	100	86
MSD	93	94	83
Limits:	59-115	61-118	70-127

Analysis Name: 11a TPH by EPA 8015B GRO

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Surrogate Quality Control

Batch number: 14170A16A

	Trifluorotoluene-F
7501188	91
7501189	91
7501190	89
7501193	85
7501194	92
7501196	88
Blank	98
LCS	101
MS	91
MSD	89
Limits:	50-142

Analysis Name: 11b TPH by EPA 8015B GRO
Batch number: 14170B94A

	Trifluorotoluene-F
7501186	79
Blank	82
LCS	93
LCSD	91
Limits:	63-135

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141720009A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7501188	120	110
7501189	122*	105
7501190	124*	114
7501194	122*	116
Blank	120	109
LCS	120	107
LCSD	131*	129*
MS	122*	105
MSD	124*	114
Limits:	45-120	45-120

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141750017A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7501187	120	100
Blank	125*	106
LCS	122*	110
LCSD	121*	112
MS	100	93
MSD	118	107
Limits:	45-120	45-120

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Surrogate Quality Control

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141700025A

	Chlorobenzene	Orthoterphenyl
7501188	90	91
7501189	79	95
7501190	98	104
7501192	83	87
7501193	78	96
7501194	77	95
7501196	83	98
Blank	73	89
LCS	79	97
MS	79	95
MSD	98	104
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141700026A

	Chlorobenzene	Orthoterphenyl
7501195	70	80
Blank	49	56*
LCS	24*	21*
MS	69	76
MSD	61	70
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141770026A

	Chlorobenzene	Orthoterphenyl
7501187	72	78
7501188	71	79
7501189	69	78
7501190	74	80
7501192	76	85
7501193	70	77
7501194	70	77
7501196	77	83
Blank	69	74
LCS	88	96
MS	69	78
MSD	74	80
Limits:	37-125	66-123

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141770027A

	Chlorobenzene	Orthoterphenyl
7501187	88	88
7501195	71	85
Blank	75	88

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Surrogate Quality Control

LCS	76	90
MS	72	82
MSD	71	81
Limits:	37-125	66-123

Analysis Name: 23a Dioxin/Furan by EPA 1613B
Batch number: 14170002

	13C12-2378-TCDD	13C12-12378-PeCDD	13C12-123478-HxCDD	13C12-123678-HxCDD	13C12-123789-HxCDD	13C12-1234678-HpCDD
7501187	72	72	73	76	77	74
7501188	71	78	81	84	85	82
7501189	80	82	85	84	87	85
7501190	80	81	83	84	87	81
7501193	59	75	79	82	83	75
7501194	78	82	83	86	87	86
7501196	61	77	79	82	83	79
Blank	77	81	85	87	87	77
MS	80	82	85	84	87	85
MSD	80	81	83	84	87	81
OPR	72	83	85	87	87	86
Limits:	25-164	25-181	32-141	28-130	28-130	23-140

	13C12-OCDD	13C12-2378-TCDF	13C12-12378-PeCDF	13C12-23478-PeCDF	13C12-123478-HxCDF	13C12-123678-HxCDF
7501187	71	72	81	78	75	81
7501188	79	71	86	82	82	91
7501189	85	86	90	89	87	95
7501190	78	79	91	84	82	92
7501193	65	59	79	76	75	86
7501194	84	77	93	86	86	91
7501196	73	59	82	79	75	88
Blank	62	76	89	84	87	95
MS	85	86	90	89	87	95
MSD	78	79	91	84	82	92
OPR	80	68	88	83	81	93
Limits:	17-157	24-169	24-185	21-178	26-152	26-123

	13C12-234678-HxCDF	13C12-123789-HxCDF	13C12-1234678-HpCDF	13C12-1234789-HpCDF	13C12-OCDF
7501187	78	83	91	70	66
7501188	86	84	99	75	71
7501189	90	92	94	85	82
7501190	86	85	100	76	68
7501193	81	82	99	65	54
7501194	88	114	109	80	70
7501196	81	77	102	70	61
Blank	89	105	98	71	58
MS	90	92	94	85	82
MSD	86	85	100	76	68
OPR	87	96	110	76	70
Limits:	28-136	29-147	28-143	26-138	17-157

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482333
Reported: 07/07/14 at 12:29 PM

Surrogate Quality Control

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SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/16/2014
CarrierName: FedEx
AirbillNo: 770318721323

A-13013
G-1482333
S-7501186-96

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

COC No: 20140616-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc. Nitrate_Nitrite_TKN	TOC SM 5310B	Grain Size ASTM 2488--09a	Other
TB-061614	6/16/14 08:00	WQ	HCl	9 - 40 mL Vial	10 day																		X	X	X																
FDG2-SL-875-SA5A-SB-0.0-0.5	6/16/14 08:20	SO	None	2 - 16 oz glass	10 day	X	X					X		X	X			X								X															
FDG2-SL-875-SA5A-SB-2.0-3.0MS	6/16/14 08:45	SO	None	6 - 16 oz glass	10 day	X	X					X		X	X			X								X															MS/MSD
FDG2-SL-875-SA5A-SB-2.0-3.0MS	6/16/14 08:45	SO	None	24 - Encore	10 day																		X	X	X																MS/MSD
FDG2-SL-876-SA5A-SB-0.0-0.5	6/16/14 09:15	SO	None	1 - 16 oz glass	10 day							X														X															
FDG2-SL-876-SA5A-SB-4.0-5.0	6/16/14 09:45	SO	None	1 - 16 oz glass	10 day							X		X												X															
FDG2-SL-876-SA5A-SB-4.0-5.0	6/16/14 09:45	SO	None	2 - Encore	10 day																				X															
FDG2-SL-1175-SA5A-SB-2.0-3.0	6/16/14 08:50	SO	None	2 - 16 oz glass	10 day	X	X					X		X	X			X								X															
FDG2-SL-1175-SA5A-SB-2.0-3.0	6/16/14 08:50	SO	None	8 - Encore	10 day																		X	X	X															
FDG2-SL-877-SA5A-SB-0.0-0.5	6/16/14 10:55	SO	None	1 - 16 oz glass	10 day							X														X															
FDG2-SL-877-SA5A-SB-3.0-4.0	6/16/14 11:10	SO	None	1 - 16 oz glass	10 day							X		X												X															
FDG2-SL-877-SA5A-SB-3.0-4.0	6/16/14 11:10	SO	None	2 - Encore	10 day																				X															

For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Special Instructions:

Sampler: Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Mypel	06/16/14	1600									
										6/17/14	0915

Final Data Gap 1 of 1

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 17547

Group Number(s): 1482333

Client: CDM Smith

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/17/2014 9:15
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	9
Custody Seal Present:	Yes	Trip Blank Type:	HCL
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	N/A		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Joseph Gruber (5200) at 09:56 on 06/17/2014

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT131	3.7	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 07, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/18/2014
Group Number: 1482731
SDG: PH235
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
FDG2-SL-567-NBZ-SB-0.0-0.5 Soil	7502707
FDG2-SL-568-NBZ-SB-0.0-0.5 Soil	7502708
FDG2-SL-572-NBZ-SB-0.0-0.5 Soil	7502709

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

Sample Description: FDG2-SL-567-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502707
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 08:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

567-- SDG#: PH235-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg		ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	1.7	U	1.7	0.68	1
12969	Acenaphthylene	208-96-8	1.7	U	1.7	0.34	1
12969	Anthracene	120-12-7	1.7	U	1.7	0.34	1
12969	Benzo(a)anthracene	56-55-3	0.75	J	1.7	0.68	1
12969	Benzo(a)pyrene	50-32-8	0.69	J	1.7	0.68	1
12969	Benzo(b)fluoranthene	205-99-2	2.3		1.7	0.68	1
12969	Benzo(e)pyrene	192-97-2	17	U	17	3.4	1
12969	Benzo(g,h,i)perylene	191-24-2	1.7	U	1.7	0.68	1
12969	Benzo(k)fluoranthene	207-08-9	4.8		1.7	0.68	1
12969	Butylbenzylphthalate	85-68-7	18	U	18	6.1	1
12969	Di-n-butylphthalate	84-74-2	18	U	18	6.1	1
12969	Chrysene	218-01-9	1.9		1.7	0.34	1
12969	Dibenz(a,h)anthracene	53-70-3	1.7	U	1.7	0.68	1
12969	Diethylphthalate	84-66-2	18	U	18	6.1	1
12969	Dimethylphthalate	131-11-3	18	U	18	6.1	1
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	6.4	J	18	6.1	1
12969	Fluoranthene	206-44-0	1.7	J	1.7	0.68	1
12969	Fluorene	86-73-7	1.7	U	1.7	0.68	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	U	1.7	0.68	1
12969	1-Methylnaphthalene	90-12-0	0.71	J	1.7	0.68	1
12969	2-Methylnaphthalene	91-57-6	0.69	J	1.7	0.68	1
12969	Naphthalene	91-20-3	1.0	J	1.7	0.68	1
12969	N-Nitrosodimethylamine	62-75-9	1.7	U	1.7	0.68	1
12969	Di-n-octylphthalate	117-84-0	18	U	18	6.1	1
12969	Phenanthrene	85-01-8	1.4	J	1.7	0.68	1
12969	Pyrene	129-00-0	1.5	J	1.7	0.68	1
Pesticides/PCBs	**SW-846 8082A**		ug/kg		ug/kg	ug/kg	
13099	Aroclor 5432	63496-31-1	33	U	33	10	1
13099	Aroclor 5442	12642-23-8	33	U	33	10	1
13099	Aroclor 5460	11126-42-4	33	U	33	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		mg/kg		mg/kg	mg/kg	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	2.4	J	5.1	2.0	1
12952	EFH (C21-C30)	n.a.	16		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	37		10	4.1	1

For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-567-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502707
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 08:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

567-- SDG#: PH235-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	3.1	J	5.1	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	10	U	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.0	1
The reverse surrogate, capric acid, is present at <1%.							
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	13,200		40.7	4.61	1
06944	Antimony	7440-36-0	4.07	U	4.07	0.335	1
06935	Arsenic	7440-38-2	6.95		4.07	0.650	1
06946	Barium	7440-39-3	91.9		1.02	0.0335	1
06947	Beryllium	7440-41-7	0.548	J	1.02	0.0681	1
07914	Boron	7440-42-8	3.75	J	10.2	0.854	1
06949	Cadmium	7440-43-9	1.02	U	1.02	0.0335	1
01650	Calcium	7440-70-2	5,720		20.3	3.85	1
06951	Chromium	7440-47-3	14.3		3.05	0.112	1
06952	Cobalt	7440-48-4	6.34		1.02	0.0976	1
06953	Copper	7440-50-8	10.9		2.03	0.335	1
01654	Iron	7439-89-6	19,500		40.7	3.39	1
06955	Lead	7439-92-1	13.9		3.05	0.508	1
01656	Lithium	7439-93-2	22.9		4.1	0.65	1
01657	Magnesium	7439-95-4	4,250		10.2	1.70	1
06958	Manganese	7439-96-5	346		1.02	0.0843	1
06960	Molybdenum	7439-98-7	0.671	J	2.03	0.173	1
06961	Nickel	7440-02-0	8.77		2.03	0.152	1
10145	Phosphorus	7723-14-0	409		10.2	0.325	1
01662	Potassium	7440-09-7	3,630		102	13.2	1
01667	Sodium	7440-23-5	66.8	J	102	17.0	1
06969	Tin	7440-31-5	3.48	J	10.2	0.437	1
06970	Titanium	7440-32-6	909		1.02	0.173	1
06971	Vanadium	7440-62-2	30.1		1.02	0.0925	1
06972	Zinc	7440-66-6	57.9		4.07	0.264	1
10146	Zirconium	7440-67-7	2.16	J	5.08	0.823	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.200	J	0.407	0.102	2
06142	Silver	7440-22-4	0.0264	J	0.203	0.0203	2
06144	Strontium	7440-24-6	34.9		0.407	0.0581	2
06145	Thallium	7440-28-0	0.284		0.203	0.0305	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0297		0.0160	0.0096	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	6.73		0.0100	0.0100	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-567-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502707
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 08:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

567-- SDG#: PH235-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**SW-846 9045D modified**		Std. Units	Std. Units	Std. Units	
	The pH was measured in water at 23.3 C.					
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3	n.a.	1.6	0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/24/2014 06:05	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 22:23	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141770027A	06/27/2014 20:51	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 17:49	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	2	141770027A	06/27/2014 11:00	William H Saadeh	1
01643	Aluminum	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06944	Antimony	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06935	Arsenic	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06946	Barium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06947	Beryllium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
07914	Boron	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06949	Cadmium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
01650	Calcium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06951	Chromium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06952	Cobalt	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06953	Copper	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
01654	Iron	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06955	Lead	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
01656	Lithium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
01657	Magnesium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06958	Manganese	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-567-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502707
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 08:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

567-- SDG#: PH235-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06960	Molybdenum	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06961	Nickel	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
10145	Phosphorus	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
01662	Potassium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
01667	Sodium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06969	Tin	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06970	Titanium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06971	Vanadium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06972	Zinc	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
10146	Zirconium	SW-846 6010C	1	141750637001	06/25/2014 20:03	John P Hook	1
06141	Selenium	SW-846 6020A	1	141750637001B	06/25/2014 05:56	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141750637001A	06/25/2014 05:56	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141750637001A	06/25/2014 05:56	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141750637001A	06/25/2014 05:56	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141780638002	06/30/2014 10:41	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141750637001	06/24/2014 07:40	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141780638002	06/29/2014 12:35	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14169039401A	06/18/2014 21:20	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-568-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502708
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 07:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

568-- SDG#: PH235-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/kg**		**ug/kg**	**ug/kg**	
12969	Acenaphthene	83-32-9	18	U	18	7.0	10
12969	Acenaphthylene	208-96-8	18	U	18	3.5	10
12969	Anthracene	120-12-7	18	U	18	3.5	10
12969	Benzo(a)anthracene	56-55-3	18	U	18	7.0	10
12969	Benzo(a)pyrene	50-32-8	18	U	18	7.0	10
12969	Benzo(b)fluoranthene	205-99-2	9.8	J	18	7.0	10
12969	Benzo(e)pyrene	192-97-2	180	U	180	35	10
12969	Benzo(g,h,i)perylene	191-24-2	18	U	18	7.0	10
12969	Benzo(k)fluoranthene	207-08-9	13	J	18	7.0	10
12969	Butylbenzylphthalate	85-68-7	190	U	190	63	10
12969	Di-n-butylphthalate	84-74-2	190	U	190	63	10
12969	Chrysene	218-01-9	18		18	3.5	10
12969	Dibenz(a,h)anthracene	53-70-3	18	U	18	7.0	10
12969	Diethylphthalate	84-66-2	190	U	190	63	10
12969	Dimethylphthalate	131-11-3	190	U	190	63	10
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	190	U	190	63	10
12969	Fluoranthene	206-44-0	17	J	18	7.0	10
12969	Fluorene	86-73-7	18	U	18	7.0	10
12969	Indeno(1,2,3-cd)pyrene	193-39-5	18	U	18	7.0	10
12969	1-Methylnaphthalene	90-12-0	25		18	7.0	10
12969	2-Methylnaphthalene	91-57-6	26		18	7.0	10
12969	Naphthalene	91-20-3	70		18	7.0	10
12969	N-Nitrosodimethylamine	62-75-9	18	U	18	7.0	10
12969	Di-n-octylphthalate	117-84-0	190	U	190	63	10
12969	Phenanthrene	85-01-8	48		18	7.0	10
12969	Pyrene	129-00-0	16	J	18	7.0	10
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	35	U	35	11	1
13099	Aroclor 5442	12642-23-8	35	U	35	11	1
13099	Aroclor 5460	11126-42-4	35	U	35	11	1
13099	PCB-1016	12674-11-2	18	U	18	3.5	1
13099	PCB-1221	11104-28-2	18	U	18	5.4	1
13099	PCB-1232	11141-16-5	18	U	18	4.3	1
13099	PCB-1242	53469-21-9	18	U	18	4.3	1
13099	PCB-1248	12672-29-6	18	U	18	3.5	1
13099	PCB-1254	11097-69-1	8.0	J	18	4.7	1
13099	PCB-1260	11096-82-5	18	U	18	4.1	1
13099	PCB-1262	37324-23-5	18	U	18	3.5	1
13099	PCB-1268	11100-14-4	18	U	18	3.5	1
	For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.						
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	26	U	26	11	5
12952	EFH (C15-C20)	n.a.	27		26	11	5
12952	EFH (C21-C30)	n.a.	130		26	11	5
12952	EFH (C30-C40)	n.a.	260		53	21	5

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-568-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502708
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 07:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

568-- SDG#: PH235-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C8-C11)	n.a.	26	U	26	11	5
13197	EFH C12-C14 w/ SiGel	n.a.	5.3	U	5.3	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.3	U	5.3	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	4.9	J	5.3	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	8.3	J	11	4.2	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.3	U	5.3	2.1	1

The reverse surrogate, capric acid, is present at <1%.
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The recovery for the method blank surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.
The following corrective action was taken:
The sample was re-extracted within the method required holding time and the QC is compliant. The recovery for the sample surrogate(s) is outside the QC acceptance limits for the re-extraction. All results are reported from the first trial. Similar results were obtained in both trials.

Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	12,800		42.3	4.80	1
06944	Antimony	7440-36-0	4.23	U	4.23	0.349	1
06935	Arsenic	7440-38-2	13.0		4.23	0.677	1
06946	Barium	7440-39-3	99.0		1.06	0.0349	1
06947	Beryllium	7440-41-7	0.535	J	1.06	0.0708	1
07914	Boron	7440-42-8	1.86	J	10.6	0.888	1
06949	Cadmium	7440-43-9	1.06	U	1.06	0.0349	1
01650	Calcium	7440-70-2	5,850		21.1	4.01	1
06951	Chromium	7440-47-3	16.9		3.17	0.116	1
06952	Cobalt	7440-48-4	5.59		1.06	0.101	1
06953	Copper	7440-50-8	12.4		2.11	0.349	1
01654	Iron	7439-89-6	21,300		42.3	3.53	1
06955	Lead	7439-92-1	23.6		3.17	0.529	1
01656	Lithium	7439-93-2	25.7		4.2	0.68	1
01657	Magnesium	7439-95-4	5,170		10.6	1.77	1
06958	Manganese	7439-96-5	345		1.06	0.0877	1
06960	Molybdenum	7439-98-7	0.312	J	2.11	0.180	1
06961	Nickel	7440-02-0	11.5		2.11	0.159	1
10145	Phosphorus	7723-14-0	489		10.6	0.338	1
01662	Potassium	7440-09-7	4,070		106	13.7	1
01667	Sodium	7440-23-5	79.9	J	106	17.7	1
06969	Tin	7440-31-5	3.52	J	10.6	0.455	1
06970	Titanium	7440-32-6	1,010		1.06	0.180	1
06971	Vanadium	7440-62-2	30.8		1.06	0.0962	1
06972	Zinc	7440-66-6	75.3		4.23	0.275	1
10146	Zirconium	7440-67-7	1.69	J	5.29	0.856	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.151	J	0.423	0.106	2
06142	Silver	7440-22-4	0.0410	J	0.211	0.0211	2

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-568-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502708
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 07:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

568-- SDG#: PH235-02

CAT No.	Analysis Name		CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals		**SW-846 6020A**		**mg/kg**	**mg/kg**	**mg/kg**	
06144	Strontium		7440-24-6	29.6	0.423	0.0605	2
06145	Thallium		7440-28-0	0.273	0.211	0.0317	2
		SW-846 7471B		**mg/kg**	**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A		7439-97-6	0.0371	0.0174	0.0104	1
Wet Chemistry		**SW-846 9045D modified**		**Std. Units**	**Std. Units**	**Std. Units**	
00394	15a pH by 9045D		n.a.	6.43	0.0100	0.0100	1
	The pH was measured in water at 23.1 C.						
Wet Chemistry		**EPA 160.3 modified**		**%**	**%**	**%**	
11624	14a Moisture Content by 160.3		n.a.	5.4	0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/26/2014 02:44	Mark A Clark	10
10811	BNA Soil Microwave SIM	SW-846 3546	2	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141750017A	06/25/2014 16:39	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	2	141750017A	06/25/2014 08:15	Katheryne V Sponheimer	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141770027A	06/30/2014 19:36	Heather E Williams	5
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141700026A	06/25/2014 01:23	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	1	141700026A	06/20/2014 09:30	Katheryne V Sponheimer	1
12959	EFH soil ext.(microwave)	SW-846 3546	2	141770027A	06/27/2014 11:00	William H Saadeh	1
01643	Aluminum	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06944	Antimony	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06935	Arsenic	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06946	Barium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06947	Beryllium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
07914	Boron	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06949	Cadmium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-568-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502708
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 07:55 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

568-- SDG#: PH235-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01650	Calcium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06951	Chromium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06952	Cobalt	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06953	Copper	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
01654	Iron	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06955	Lead	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
01656	Lithium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
01657	Magnesium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06958	Manganese	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06960	Molybdenum	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06961	Nickel	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
10145	Phosphorus	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
01662	Potassium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
01667	Sodium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06969	Tin	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06970	Titanium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06971	Vanadium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06972	Zinc	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
10146	Zirconium	SW-846 6010C	1	141750637001	06/25/2014 20:25	John P Hook	1
06141	Selenium	SW-846 6020A	1	141750637001B	06/25/2014 06:10	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141750637001A	06/25/2014 06:10	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141750637001A	06/25/2014 06:10	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141750637001A	06/25/2014 06:10	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141780638002	06/30/2014 10:43	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141750637001	06/24/2014 07:40	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141780638002	06/29/2014 12:35	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14169039401A	06/18/2014 21:20	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-572-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7502709
LL Group # 1482731
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/17/2014 11:45 by SD

Submitted: 06/18/2014 10:05
Reported: 07/07/2014 12:31

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

572-- SDG#: PH235-03*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	7.3		5.1	2.0	1
12952	EFH (C21-C30)	n.a.	62		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	98		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	14		5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	14		10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	2.1		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/23/2014 20:47	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 18:32	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401A	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 14174SLA026	Sample number(s): 7502707-7502708									
Acenaphthene	1.7	U	1.7	0.67	ug/kg	111		84-118		
Acenaphthylene	1.7	U	1.7	0.33	ug/kg	105		78-120		
Anthracene	1.7	U	1.7	0.33	ug/kg	103		85-118		
Benzo(a)anthracene	1.7	U	1.7	0.67	ug/kg	110		83-119		
Benzo(a)pyrene	1.7	U	1.7	0.67	ug/kg	101		80-122		
Benzo(b)fluoranthene	1.7	U	1.7	0.67	ug/kg	110		82-135		
Benzo(e)pyrene	17	U	17.	3.3	ug/kg	96		81-110		
Benzo(g,h,i)perylene	1.7	U	1.7	0.67	ug/kg	98		79-121		
Benzo(k)fluoranthene	1.7	U	1.7	0.67	ug/kg	105		79-123		
Butylbenzylphthalate	18	U	18.	6.0	ug/kg	100		75-144		
Di-n-butylphthalate	18	U	18.	6.0	ug/kg	98		75-148		
Chrysene	1.7	U	1.7	0.33	ug/kg	112		84-113		
Dibenz(a,h)anthracene	1.7	U	1.7	0.67	ug/kg	101		83-123		
Diethylphthalate	18	U	18.	6.0	ug/kg	105		73-147		
Dimethylphthalate	18	U	18.	6.0	ug/kg	105		85-122		
Bis(2-Ethylhexyl)phthalate	18	U	18.	6.0	ug/kg	102		68-146		
Fluoranthene	1.7	U	1.7	0.67	ug/kg	110		85-116		
Fluorene	1.7	U	1.7	0.67	ug/kg	113		84-120		
Indeno(1,2,3-cd)pyrene	1.7	U	1.7	0.67	ug/kg	98		82-123		
1-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	105		78-119		
2-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	107		78-121		
Naphthalene	1.7	U	1.7	0.67	ug/kg	103		79-113		
N-Nitrosodimethylamine	1.7	U	1.7	0.67	ug/kg	108		71-124		
Di-n-octylphthalate	18	U	18.	6.0	ug/kg	99		71-148		
Phenanthrene	1.7	U	1.7	0.67	ug/kg	102		83-113		
Pyrene	1.7	U	1.7	0.67	ug/kg	101		80-119		
Batch number: 141720009A	Sample number(s): 7502707									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	96	98	36-106	2	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	101		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	106		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141750017A	Sample number(s): 7502708									
Aroclor 5432	33	U	33.	10	ug/kg					

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Aroclor 5442	33	U	33.	10	ug/kg	93	94	36-106	1	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	107		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	110		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					
Batch number: 141700025A	Sample number(s): 7502709									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	98		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	100		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	98		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	62		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	84		60-115		
Batch number: 141700026A	Sample number(s): 7502708									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	22*		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	21*		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	21*		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	15*		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	21*		60-115		
Batch number: 141770026A	Sample number(s): 7502707,7502709									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	92		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	94		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	95		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	95		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	74		60-115		
Batch number: 141770027A	Sample number(s): 7502707-7502708									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	87		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	88		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	87		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	86		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	76		60-115		
Batch number: 141750637001	Sample number(s): 7502707-7502708									
Aluminum	40.0	U	40.0	4.54	mg/kg	107		80-120		
Antimony	4.00	U	4.00	0.330	mg/kg	106		80-120		
Arsenic	4.00	U	4.00	0.640	mg/kg	105		80-120		
Barium	1.00	U	1.00	0.0330	mg/kg	99		80-120		
Beryllium	1.00	U	1.00	0.0670	mg/kg	102		80-120		
Boron	10.0	U	10.0	0.840	mg/kg	96		80-120		
Cadmium	1.00	U	1.00	0.0330	mg/kg	103		80-120		
Calcium	10.7	J	20.0	3.79	mg/kg	109		80-120		
Chromium	3.00	U	3.00	0.110	mg/kg	99		80-120		
Cobalt	1.00	U	1.00	0.0960	mg/kg	104		80-120		
Copper	2.00	U	2.00	0.330	mg/kg	103		80-120		
Iron	40.0	U	40.0	3.34	mg/kg	107		80-120		
Lead	3.00	U	3.00	0.500	mg/kg	102		80-120		
Lithium	4.0	U	4.0	0.64	mg/kg	105		80-120		
Magnesium	10.0	U	10.0	1.67	mg/kg	104		80-120		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Manganese	1.00	U	1.00	0.0830	mg/kg	103		80-120		
Molybdenum	2.00	U	2.00	0.170	mg/kg	102		80-120		
Nickel	2.00	U	2.00	0.150	mg/kg	106		80-120		
Phosphorus	1.76	J	10.0	0.320	mg/kg	101		80-120		
Potassium	100	U	100.	13.0	mg/kg	104		80-120		
Sodium	100	U	100.	16.7	mg/kg	104		80-120		
Tin	1.49	J	10.0	0.430	mg/kg	102		80-120		
Titanium	1.00	U	1.00	0.170	mg/kg	100		80-120		
Vanadium	1.00	U	1.00	0.0910	mg/kg	98		80-120		
Zinc	4.00	U	4.00	0.260	mg/kg	100		80-120		
Zirconium	5.00	U	5.00	0.810	mg/kg	103		80-120		
Batch number: 141750637001A	Sample number(s): 7502707-7502708									
Silver	0.200	U	0.200	0.0200	mg/kg	101		80-120		
Strontium	0.0581	J	0.400	0.0572	mg/kg	105		80-120		
Thallium	0.200	U	0.200	0.0300	mg/kg	103		80-120		
Batch number: 141750637001B	Sample number(s): 7502707-7502708									
Selenium	0.400	U	0.400	0.100	mg/kg	97		80-120		
Batch number: 141780638002	Sample number(s): 7502707-7502708									
3a Mercury 7471A	0.0167	U	0.0167	0.0100	mg/kg	90		85-120		
Batch number: 14169039401A	Sample number(s): 7502707-7502708									
15a pH by 9045D						100		95-105		
Batch number: 14174162401A	Sample number(s): 7502707-7502709									
14a Moisture Content by 160.3						100		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 14174SLA026	Sample number(s): 7502707-7502708 UNSPK: 7502707								
Acenaphthene	104	104	48-127	1	30				
Acenaphthylene	103	103	60-128	0	30				
Anthracene	103	102	52-126	0	30				
Benzo(a)anthracene	110	107	44-143	2	30				
Benzo(a)pyrene	95	95	49-137	0	30				
Benzo(b)fluoranthene	123	123	26-142	0	30				
Benzo(e)pyrene	98	98	63-111	0	30				
Benzo(g,h,i)perylene	48	45	33-141	5	30				
Benzo(k)fluoranthene	106	107	49-144	0	30				
Butylbenzylphthalate	115	119	64-156	4	30				
Di-n-butylphthalate	107	105	52-147	1	30				
Chrysene	106	103	43-141	3	30				
Dibenz(a,h)anthracene	59	57	25-145	4	30				
Diethylphthalate	101	101	66-140	0	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Dimethylphthalate	98	101	70-123	2	30				
Bis(2-Ethylhexyl)phthalate	107	110	48-164	3	30				
Fluoranthene	108	109	38-153	1	30				
Fluorene	108	108	57-130	0	30				
Indeno(1,2,3-cd)pyrene	55	53	26-139	5	30				
1-Methylnaphthalene	104	104	59-139	0	30				
2-Methylnaphthalene	107	107	46-147	1	30				
Naphthalene	103	103	52-136	0	30				
N-Nitrosodimethylamine	105	105	39-134	1	30				
Di-n-octylphthalate	172*	178*	52-162	3	30				
Phenanthrene	100	101	50-137	0	30				
Pyrene	102	103	26-143	0	30				
Batch number: 141720009A	Sample number(s): 7502707 UNSPK: P501188								
PCB-1016	99	104	41-135	5	50				
PCB-1260	102	112	40-134	10	50				
Batch number: 141750017A	Sample number(s): 7502708 UNSPK: P501187								
PCB-1016	86	100	41-135	15	50				
PCB-1260	88	109	40-134	20	50				
Batch number: 141700025A	Sample number(s): 7502709 UNSPK: P501188								
EFH (C12-C14)	107	126*	49-123	16	20				
EFH (C15-C20)	127*	137*	49-123	7	20				
EFH (C21-C30)	-71*	-43*	49-123	14	20				
EFH (C30-C40)	-318 (2)	-264 (2)	49-123	21*	20				
EFH (C8-C11)	87	91	49-123	3	20				
Batch number: 141700026A	Sample number(s): 7502708 UNSPK: P501188								
EFH C12-C14 w/ SiGel	83	85	49-123	2	20				
EFH C15-C20 w/ SiGel	80	77	49-123	5	20				
EFH C21-C30 w/ SiGel	3*	4*	49-123	1	20				
EFH C30-C40 w/ SiGel	-67*	-85*	49-123	13	20				
EFH C8-C11 w/ SiGel	67	62	49-123	9	20				
Batch number: 141770026A	Sample number(s): 7502707,7502709 UNSPK: P501188								
EFH C12-C14 w/ SiGel	82	88	49-123	8	20				
EFH C15-C20 w/ SiGel	78	81	49-123	4	20				
EFH C21-C30 w/ SiGel	-82*	-58*	49-123	19	20				
EFH C30-C40 w/ SiGel	-262 (2)	-217 (2)	49-123	22*	20				
EFH C8-C11 w/ SiGel	58	63	49-123	9	20				
Batch number: 141770027A	Sample number(s): 7502707-7502708 UNSPK: 7502707								
EFH (C12-C14)	90	91	49-123	0	20				
EFH (C15-C20)	89	102	49-123	10	20				
EFH (C21-C30)	112	153*	49-123	16	20				
EFH (C30-C40)	135*	250*	49-123	26*	20				
EFH (C8-C11)	77	79	49-123	3	20				
Batch number: 141750637001	Sample number(s): 7502707-7502708 UNSPK: 7502707 BKG: 7502707								

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Aluminum	1388 (2)	1481 (2)	75-125	1	20	13,000	13,000	0	20
Antimony	47*	43*	75-125	9	20	4.00 U	4.00 U	0 (1)	20
Arsenic	100	99	75-125	1	20	6.84	6.07	12 (1)	20
Barium	95	94	75-125	1	20	90.4	80.5	12	20
Beryllium	100	99	75-125	1	20	0.539 J	0.530 J	2 (1)	20
Boron	97	94	75-125	3	20	3.69 J	2.32 J	46* (1)	20
Cadmium	93	93	75-125	1	20	1.00 U	1.00 U	0 (1)	20
Calcium	-182 (2)	-374 (2)	75-125	17	20	5,620	3,430	49*	20
Chromium	110	99	75-125	6	20	14.0	13.8	2 (1)	20
Cobalt	94	95	75-125	1	20	6.24	4.66	29* (1)	20
Copper	101	100	75-125	1	20	10.8	9.08	17 (1)	20
Iron	-94 (2)	632 (2)	75-125	4	20	19,200	18,700	3	20
Lead	89	88	75-125	0	20	13.7	13.8	1 (1)	20
Lithium	104	106	75-125	1	20	22.5	23.4	4	20
Magnesium	156 (2)	162 (2)	75-125	0	20	4,180	4,010	4	20
Manganese	14 (2)	23 (2)	75-125	1	20	340	305	11	20
Molybdenum	96	96	75-125	0	20	0.660 J	0.313 J	71* (1)	20
Nickel	98	98	75-125	0	20	8.63	8.34	3 (1)	20
Phosphorus	260 (2)	50 (2)	75-125	37*	20	403	366	10	20
Potassium	121	128*	75-125	2	20	3,570	3,470	3	20
Sodium	103	103	75-125	0	20	65.8 J	65.8 J	0 (1)	20
Tin	91	91	75-125	1	20	3.43 J	3.28 J	4 (1)	20
Titanium	321 (2)	271 (2)	75-125	4	20	894	931	4	20
Vanadium	108	98	75-125	6	20	29.7	29.0	2	20
Zinc	94	94	75-125	0	20	57.0	52.6	8	20
Zirconium	96	96	75-125	0	20	2.13 J	2.04 J	5 (1)	20
Batch number: 141750637001A	Sample number(s): 7502707-7502708 UNSPK: 7502707 BKG: 7502707								
Silver	144*	117	75-125	21*	20	0.0260 J	0.0423 J	48* (1)	20
Strontium	152 (2)	26 (2)	75-125	24*	20	34.3	22.8	40*	20
Thallium	158*	114	75-125	21*	20	0.279	0.258	8 (1)	20
Batch number: 141750637001B	Sample number(s): 7502707-7502708 UNSPK: 7502707 BKG: 7502707								
Selenium	131*	113	75-125	14	20	0.196 J	0.155 J	23* (1)	20
Batch number: 141780638002	Sample number(s): 7502707-7502708 UNSPK: P504494 BKG: P504494								
3a Mercury 7471A	94	92	65-135	1	20	0.0407	0.0376	8 (1)	20
Batch number: 14169039401A	Sample number(s): 7502707-7502708 BKG: 7502707								
15a pH by 9045D						6.73	6.74	0	3
Batch number: 14174162401A	Sample number(s): 7502707-7502709 BKG: P501188								
14a Moisture Content by 160.3						2.7	2.6	2	20

Surrogate Quality Control

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 7a SVOC SIM EPA 8270D
Batch number: 14174SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7502707	112	107	97
7502708	89	79	95
Blank	111	114	100
LCS	110	115	99
MS	112	110	99
MSD	112	109	98
Limits:	59-115	61-118	70-127

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141720009A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7502707	116	111
Blank	120	109
LCS	120	107
LCSD	131*	129*
MS	122*	105
MSD	124*	114
Limits:	45-120	45-120

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141750017A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7502708	113	107
Blank	125*	106
LCS	122*	110
LCSD	121*	112
MS	100	93
MSD	118	107
Limits:	45-120	45-120

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141700025A

	Chlorobenzene	Orthoterphenyl
7502709	90	122
Blank	73	89
LCS	79	97
MS	79	95
MSD	98	104
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1482731
Reported: 07/07/14 at 12:31 PM

Surrogate Quality Control

Batch number: 141700026A

	Chlorobenzene	Orthoterphenyl
7502708	49	68
Blank	49	56*
LCS	24*	21*
MS	69	76
MSD	61	70
Limits:	37-125	66-123

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141770026A

	Chlorobenzene	Orthoterphenyl
7502707	70	76
7502709	66	72
Blank	69	74
LCS	88	96
MS	69	78
MSD	74	80
Limits:	37-125	66-123

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141770027A

	Chlorobenzene	Orthoterphenyl
7502707	87	85
7502708	85	91
Blank	75	88
LCS	76	90
MS	72	82
MSD	71	81
Limits:	37-125	66-123

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/17/2014
CarrierName: FedEx
AirbillNo: 770330975227

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

A-13013
G-1482731
S-7502707-09

COC No: 20140617-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
FDG2-SL-567-NBZ-SB-0.0-0.5	6/17/14 08:55	SO	None	2 - SS-Sleeve	10 day	X	X					X			X											X															
FDG2-SL-567-NBZ-SB-0.0-0.5	6/17/14 08:55	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-568-NBZ-SB-0.0-0.5	6/17/14 07:55	SO	None	2 - SS-Sleeve	10 day	X	X					X			X											X															
FDG2-SL-568-NBZ-SB-0.0-0.5	6/17/14 07:55	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-572-NBZ-SB-0.0-0.5	6/17/14 11:45	SO	None	1 - SS-Sleeve	10 day																					X															

For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Special Instructions:

Sampler: Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Sandy Mypel	06/17/14	1600									
										6/18/14	1005

Final Data Gap Block 2 1 of 1

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Sample Administration Receipt Documentation Log

Doc Log ID: 17712

Group Number(s): 1482731

Client: CDM Smith

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/18/2014 10:05
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	0
Custody Seal Present:	Yes	Trip Blank Type:	N/A
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	N/A		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Joseph Gruber (5200) at 11:59 on 06/18/2014

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
2	DT131	2.4	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

July 03, 2014

Project: SSFL Phase 3 Sampling

Submittal Date: 06/19/2014
Group Number: 1483089
SDG: PH237
PO Number: 1204-002-001-AL
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
FDG2-SL-573-NBZ-SB-0.0-0.5 Soil	7504493
FDG2-SL-574-NBZ-SB-0.0-0.5 Soil	7504494
FDG2-SL-575-NBZ-SB-0.0-0.5 Soil	7504495
EB1-061814 Water	7504496

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Lancaster Labs Env Attn: Nicole Maljovec

Respectfully Submitted,

Nicole L. Maljovec
Principal Specialist Group Leader

(717) 556-7259

Sample Description: FDG2-SL-573-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504493
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 09:40 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

573-- SDG#: PH237-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	25	U	25	10	5
12952	EFH (C15-C20)	n.a.	14	J	25	10	5
12952	EFH (C21-C30)	n.a.	100		25	10	5
12952	EFH (C30-C40)	n.a.	320		50	20	5
12952	EFH (C8-C11)	n.a.	25	U	25	10	5
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	27		5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	56		10	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
	The reverse surrogate, capric acid, is present at <1%.						
Wet Chemistry	**EPA 160.3 modified**		**%**		**%**	**%**	
11624	14a Moisture Content by 160.3	n.a.	1.4		0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/24/2014 00:37	Heather E Williams	5
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 23:52	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401B	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-574-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504494
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 08:20 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

574-- SDG#: PH237-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082A**		**ug/kg**		**ug/kg**	**ug/kg**	
13099	Aroclor 5432	63496-31-1	34	U	34	10	1
13099	Aroclor 5442	12642-23-8	34	U	34	10	1
13099	Aroclor 5460	11126-42-4	34	U	34	10	1
13099	PCB-1016	12674-11-2	17	U	17	3.4	1
13099	PCB-1221	11104-28-2	17	U	17	5.2	1
13099	PCB-1232	11141-16-5	17	U	17	4.2	1
13099	PCB-1242	53469-21-9	17	U	17	4.2	1
13099	PCB-1248	12672-29-6	17	U	17	3.4	1
13099	PCB-1254	11097-69-1	17	U	17	4.5	1
13099	PCB-1260	11096-82-5	17	U	17	4.0	1
13099	PCB-1262	37324-23-5	17	U	17	3.4	1
13099	PCB-1268	11100-14-4	17	U	17	3.4	1
For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.							
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C12-C14)	n.a.	5.1	U	5.1	2.0	1
12952	EFH (C15-C20)	n.a.	4.2	J	5.1	2.0	1
12952	EFH (C21-C30)	n.a.	25		5.1	2.0	1
12952	EFH (C30-C40)	n.a.	38		10	4.1	1
12952	EFH (C8-C11)	n.a.	5.1	U	5.1	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
13197	EFH C21-C30 w/ SiGel	n.a.	3.9	J	5.1	2.1	1
13197	EFH C30-C40 w/ SiGel	n.a.	5.7	J	10	4.1	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.1	U	5.1	2.1	1
The reverse surrogate, capric acid, is present at <1%.							
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	21,900		41.0	4.66	1
06944	Antimony	7440-36-0	4.10	U	4.10	0.338	1
06935	Arsenic	7440-38-2	3.96	J	4.10	0.656	1
06946	Barium	7440-39-3	132		1.03	0.0338	1
06947	Beryllium	7440-41-7	0.886	J	1.03	0.0687	1
07914	Boron	7440-42-8	10.3	U	10.3	0.862	1
06949	Cadmium	7440-43-9	1.03	U	1.03	0.0338	1
01650	Calcium	7440-70-2	4,700		20.5	3.89	1
06951	Chromium	7440-47-3	21.6		3.08	0.113	1
06952	Cobalt	7440-48-4	7.56		1.03	0.0985	1
06953	Copper	7440-50-8	15.8		2.05	0.338	1
01654	Iron	7439-89-6	28,600		82.1	6.85	2
06955	Lead	7439-92-1	20.5		3.08	0.513	1
01656	Lithium	7439-93-2	30.2		4.1	0.66	1
01657	Magnesium	7439-95-4	6,010		10.3	1.71	1
06958	Manganese	7439-96-5	428		1.03	0.0851	1
06960	Molybdenum	7439-98-7	0.339	J	2.05	0.174	1
06961	Nickel	7440-02-0	14.0		2.05	0.154	1
10145	Phosphorus	7723-14-0	509		10.3	0.328	1
01662	Potassium	7440-09-7	5,720		103	13.3	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-574-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504494
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 08:20 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

574-- SDG#: PH237-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/kg**	**mg/kg**	**mg/kg**	
01667	Sodium	7440-23-5	86.7 J	103	17.1	1
06969	Tin	7440-31-5	4.07 J	10.3	0.441	1
06970	Titanium	7440-32-6	1,090	1.03	0.174	1
06971	Vanadium	7440-62-2	41.9	1.03	0.0933	1
06972	Zinc	7440-66-6	86.0	4.10	0.267	1
10146	Zirconium	7440-67-7	2.28 J	5.13	0.831	1
	SW-846 6020A		**mg/kg**	**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.240 J	0.410	0.103	2
06142	Silver	7440-22-4	0.0517 J	0.205	0.0205	2
06144	Strontium	7440-24-6	34.1	0.410	0.0587	2
06145	Thallium	7440-28-0	0.355	0.205	0.0308	2
	SW-846 7471B		**mg/kg**	**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0418	0.0162	0.0097	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**	**Std. Units**	**Std. Units**	
00394	15a pH by 9045D The pH was measured in water at 21.5 C.	n.a.	5.92	0.0100	0.0100	1
Wet Chemistry	**EPA 160.3 modified**		**%**	**%**	**%**	
11624	14a Moisture Content by 160.3 Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	2.5	0.10	0.10	1

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 23:00	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 20:05	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 18:53	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-574-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504494
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 08:20 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

574-- SDG#: PH237-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
01643	Aluminum	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06944	Antimony	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06935	Arsenic	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06946	Barium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06947	Beryllium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
07914	Boron	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06949	Cadmium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
01650	Calcium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06951	Chromium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06952	Cobalt	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06953	Copper	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
01654	Iron	SW-846 6010C	1	141750637001	06/27/2014 11:46	Joanne M Gates	2
06955	Lead	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
01656	Lithium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
01657	Magnesium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06958	Manganese	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06960	Molybdenum	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06961	Nickel	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
10145	Phosphorus	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
01662	Potassium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
01667	Sodium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06969	Tin	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06970	Titanium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06971	Vanadium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06972	Zinc	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
10146	Zirconium	SW-846 6010C	1	141750637001	06/25/2014 20:29	John P Hook	1
06141	Selenium	SW-846 6020A	1	141750637001B	06/25/2014 06:18	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141750637001A	06/25/2014 06:18	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141750637001A	06/25/2014 06:18	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141750637001A	06/25/2014 06:18	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141780638002	06/30/2014 10:45	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141750637001	06/24/2014 07:40	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141780638002	06/29/2014 12:35	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14170039401A	06/19/2014 20:30	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401B	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-575-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504495
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 07:55 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

575-- SDG#: PH237-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		ug/kg		ug/kg	ug/kg	
12969	Acenaphthene	83-32-9	17	U	17	6.7	10
12969	Acenaphthylene	208-96-8	17	U	17	3.4	10
12969	Anthracene	120-12-7	17	U	17	3.4	10
12969	Benzo(a)anthracene	56-55-3	17	U	17	6.7	10
12969	Benzo(a)pyrene	50-32-8	17	U	17	6.7	10
12969	Benzo(b)fluoranthene	205-99-2	17	U	17	6.7	10
12969	Benzo(e)pyrene	192-97-2	170	U	170	34	10
12969	Benzo(g,h,i)perylene	191-24-2	17	U	17	6.7	10
12969	Benzo(k)fluoranthene	207-08-9	10	J	17	6.7	10
12969	Butylbenzylphthalate	85-68-7	180	U	180	60	10
12969	Di-n-butylphthalate	84-74-2	180	U	180	60	10
12969	Chrysene	218-01-9	17	U	17	3.4	10
12969	Dibenz(a,h)anthracene	53-70-3	17	U	17	6.7	10
12969	Diethylphthalate	84-66-2	180	U	180	60	10
12969	Dimethylphthalate	131-11-3	180	U	180	60	10
12969	Bis(2-Ethylhexyl)phthalate	117-81-7	180	U	180	60	10
12969	Fluoranthene	206-44-0	17	U	17	6.7	10
12969	Fluorene	86-73-7	17	U	17	6.7	10
12969	Indeno(1,2,3-cd)pyrene	193-39-5	17	U	17	6.7	10
12969	1-Methylnaphthalene	90-12-0	17	U	17	6.7	10
12969	2-Methylnaphthalene	91-57-6	17	U	17	6.7	10
12969	Naphthalene	91-20-3	17	U	17	6.7	10
12969	N-Nitrosodimethylamine	62-75-9	17	U	17	6.7	10
12969	Di-n-octylphthalate	117-84-0	180	U	180	60	10
12969	Phenanthrene	85-01-8	17	U	17	6.7	10
12969	Pyrene	129-00-0	17	U	17	6.7	10

Reporting limits were raised due to interference from the sample matrix.

Pesticides/PCBs	**SW-846 8082A**		ug/kg		ug/kg	ug/kg	
13099	Aroclor 5432	63496-31-1	33	U	33	9.9	1
13099	Aroclor 5442	12642-23-8	33	U	33	9.9	1
13099	Aroclor 5460	11126-42-4	33	U	33	9.9	1
13099	PCB-1016	12674-11-2	17	U	17	3.3	1
13099	PCB-1221	11104-28-2	17	U	17	5.1	1
13099	PCB-1232	11141-16-5	17	U	17	4.1	1
13099	PCB-1242	53469-21-9	17	U	17	4.1	1
13099	PCB-1248	12672-29-6	17	U	17	3.3	1
13099	PCB-1254	11097-69-1	17	U	17	4.4	1
13099	PCB-1260	11096-82-5	17	U	17	3.9	1
13099	PCB-1262	37324-23-5	17	U	17	3.3	1
13099	PCB-1268	11100-14-4	17	U	17	3.3	1

For all QC parameters which are outside project defined limits, but within the laboratory statistical limits, no corrective action is taken.

GC Petroleum Hydrocarbons	**SW-846 8015B modified**		mg/kg		mg/kg	mg/kg	
12952	EFH (C12-C14)	n.a.	5.0	U	5.0	2.0	1
12952	EFH (C15-C20)	n.a.	4.5	J	5.0	2.0	1
12952	EFH (C21-C30)	n.a.	20		5.0	2.0	1
12952	EFH (C30-C40)	n.a.	46		10	4.0	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-575-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504495
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 07:55 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

575-- SDG#: PH237-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/kg**		**mg/kg**	**mg/kg**	
12952	EFH (C8-C11)	n.a.	5.0	U	5.0	2.0	1
13197	EFH C12-C14 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C15-C20 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
13197	EFH C21-C30 w/ SiGel	n.a.	9.8		5.0	2.0	1
13197	EFH C30-C40 w/ SiGel	n.a.	16		9.9	4.0	1
13197	EFH C8-C11 w/ SiGel	n.a.	5.0	U	5.0	2.0	1
The reverse surrogate, capric acid, is present at <1%.							
Metals	**SW-846 6010C**		**mg/kg**		**mg/kg**	**mg/kg**	
01643	Aluminum	7429-90-5	10,900		40.3	4.57	1
06944	Antimony	7440-36-0	4.03	U	4.03	0.332	1
06935	Arsenic	7440-38-2	2.50	J	4.03	0.645	1
06946	Barium	7440-39-3	73.3		1.01	0.0332	1
06947	Beryllium	7440-41-7	0.411	J	1.01	0.0675	1
07914	Boron	7440-42-8	0.892	J	10.1	0.846	1
06949	Cadmium	7440-43-9	1.01	U	1.01	0.0332	1
01650	Calcium	7440-70-2	3,070		20.1	3.82	1
06951	Chromium	7440-47-3	12.2		3.02	0.111	1
06952	Cobalt	7440-48-4	4.12		1.01	0.0967	1
06953	Copper	7440-50-8	8.21		2.01	0.332	1
01654	Iron	7439-89-6	17,800		40.3	3.36	1
06955	Lead	7439-92-1	11.8		3.02	0.504	1
01656	Lithium	7439-93-2	24.8		4.0	0.64	1
01657	Magnesium	7439-95-4	3,810		10.1	1.68	1
06958	Manganese	7439-96-5	266		1.01	0.0836	1
06960	Molybdenum	7439-98-7	2.01	U	2.01	0.171	1
06961	Nickel	7440-02-0	7.30		2.01	0.151	1
10145	Phosphorus	7723-14-0	374		10.1	0.322	1
01662	Potassium	7440-09-7	3,390		101	13.1	1
01667	Sodium	7440-23-5	58.4	J	101	16.8	1
06969	Tin	7440-31-5	3.18	J	10.1	0.433	1
06970	Titanium	7440-32-6	843		1.01	0.171	1
06971	Vanadium	7440-62-2	24.3		1.01	0.0917	1
06972	Zinc	7440-66-6	53.1		4.03	0.262	1
10146	Zirconium	7440-67-7	1.39	J	5.04	0.816	1
	SW-846 6020A		**mg/kg**		**mg/kg**	**mg/kg**	
06141	Selenium	7782-49-2	0.175	J	0.403	0.101	2
06142	Silver	7440-22-4	0.0288	J	0.201	0.0201	2
06144	Strontium	7440-24-6	15.2		0.403	0.0576	2
06145	Thallium	7440-28-0	0.211		0.201	0.0302	2
	SW-846 7471B		**mg/kg**		**mg/kg**	**mg/kg**	
00159	3a Mercury 7471A	7439-97-6	0.0145	J	0.0158	0.0095	1
Wet Chemistry	**SW-846 9045D modified**		**Std. Units**		**Std. Units**	**Std. Units**	
00394	15a pH by 9045D	n.a.	6.41		0.0100	0.0100	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-575-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504495
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 07:55 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

575-- SDG#: PH237-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	**SW-846 9045D modified**		Std. Units	Std. Units	Std. Units	
	The pH was measured in water at 21.9 C.					
Wet Chemistry	**EPA 160.3 modified**		%	%	%	
11624	14a Moisture Content by 160.3	n.a.	0.73	0.10	0.10	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12969	7a SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14174SLA026	06/26/2014 03:17	Mark A Clark	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	14174SLA026	06/23/2014 14:40	Kelli M Barto	1
13099	19a PCBs and PCTs 8082A	SW-846 8082A	1	141720009A	06/23/2014 23:19	Monica M Souders	1
13100	PCB/PCT Solids Update IV Ext.	SW-846 3546	1	141720009A	06/23/2014 05:30	Roman Kuropatkin	1
12952	10a TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141700025A	06/20/2014 20:26	Heather E Williams	1
13197	37a TPH-EFH w/Si Gel	SW-846 8015B modified	1	141770026A	06/30/2014 19:14	Heather E Williams	1
13204	EFH Microwave Ext. w/SiGel	SW-846 3546	2	141770026A	06/27/2014 11:00	William H Saadeh	1
12959	EFH soil ext.(microwave)	SW-846 3546	1	141700025A	06/20/2014 09:30	Katheryne V Sponheimer	1
01643	Aluminum	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06944	Antimony	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06935	Arsenic	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06946	Barium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06947	Beryllium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
07914	Boron	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06949	Cadmium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
01650	Calcium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06951	Chromium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06952	Cobalt	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06953	Copper	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
01654	Iron	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06955	Lead	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
01656	Lithium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
01657	Magnesium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06958	Manganese	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: FDG2-SL-575-NBZ-SB-0.0-0.5 Soil
SSFL Phase 3 Subarea NBZ

LL Sample # SW 7504495
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 07:55 by SD

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

575-- SDG#: PH237-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06960	Molybdenum	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06961	Nickel	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
10145	Phosphorus	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
01662	Potassium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
01667	Sodium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06969	Tin	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06970	Titanium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06971	Vanadium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06972	Zinc	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
10146	Zirconium	SW-846 6010C	1	141750637001	06/25/2014 20:40	John P Hook	1
06141	Selenium	SW-846 6020A	1	141750637001B	06/25/2014 06:20	Choon Y Tian	2
06142	Silver	SW-846 6020A	1	141750637001A	06/25/2014 06:20	Choon Y Tian	2
06144	Strontium	SW-846 6020A	1	141750637001A	06/25/2014 06:20	Choon Y Tian	2
06145	Thallium	SW-846 6020A	1	141750637001A	06/25/2014 06:20	Choon Y Tian	2
00159	3a Mercury 7471A	SW-846 7471B	1	141780638002	06/30/2014 10:55	Damary Valentin	1
10637	SW SW846 (IV)ICP/ICPMS Digest	SW-846 3050B	1	141750637001	06/24/2014 07:40	James L Mertz	1
10638	SW SW846 (IV) Hg Digest	SW-846 7471B	1	141780638002	06/29/2014 12:35	James L Mertz	1
00394	15a pH by 9045D	SW-846 9045D modified	1	14170039401A	06/19/2014 20:30	Luz M Groff	1
11624	14a Moisture Content by 160.3	EPA 160.3 modified	1	14174162401B	06/23/2014 20:06	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10335	Acetone	67-64-1	20	U	20	6	1
10335	Acrolein	107-02-8	100	U	100	40	1
10335	Acrylonitrile	107-13-1	20	U	20	4	1
10335	t-Amyl methyl ether	994-05-8	1	U	1	0.5	1
10335	Benzene	71-43-2	1	U	1	0.5	1
10335	Bromobenzene	108-86-1	5	U	5	1	1
10335	Bromochloromethane	74-97-5	5	U	5	1	1
10335	Bromodichloromethane	75-27-4	1	U	1	0.5	1
10335	Bromoform	75-25-2	4	U	4	0.5	1
10335	Bromomethane	74-83-9	1	U	1	0.5	1
10335	2-Butanone	78-93-3	3	J	10	3	1
10335	t-Butyl alcohol	75-65-0	50	U	50	5	1
10335	n-Butylbenzene	104-51-8	5	U	5	1	1
10335	sec-Butylbenzene	135-98-8	5	U	5	1	1
10335	tert-Butylbenzene	98-06-6	5	U	5	1	1
10335	Carbon Disulfide	75-15-0	5	U	5	1	1
10335	Carbon Tetrachloride	56-23-5	1	U	1	0.5	1
10335	Chlorobenzene	108-90-7	1	U	1	0.5	1
10335	Chloroethane	75-00-3	1	U	1	0.5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	10	U	10	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.						
10335	Chloroform	67-66-3	1	U	1	0.5	1
10335	1-Chlorohexane	544-10-5	5	U	5	1	1
10335	Chloromethane	74-87-3	1	U	1	0.5	1
10335	2-Chlorotoluene	95-49-8	5	U	5	1	1
10335	4-Chlorotoluene	106-43-4	5	U	5	1	1
10335	Chlorotrifluoroethene	79-38-9	5	U	5	2	1
10335	1,2-Dibromo-3-chloropropane	96-12-8	5	U	5	2	1
10335	Dibromochloromethane	124-48-1	1	U	1	0.5	1
10335	1,2-Dibromoethane	106-93-4	1	U	1	0.5	1
10335	Dibromomethane	74-95-3	1	U	1	0.5	1
10335	1,2-Dichlorobenzene	95-50-1	5	U	5	1	1
10335	1,3-Dichlorobenzene	541-73-1	5	U	5	1	1
10335	1,4-Dichlorobenzene	106-46-7	5	U	5	1	1
10335	Dichlorodifluoromethane	75-71-8	1	U	1	0.5	1
10335	1,1-Dichloroethane	75-34-3	1	U	1	0.5	1
10335	1,2-Dichloroethane	107-06-2	1	U	1	0.5	1
10335	1,1-Dichloroethene	75-35-4	1	U	1	0.5	1
10335	cis-1,2-Dichloroethene	156-59-2	1	U	1	0.5	1
10335	trans-1,2-Dichloroethene	156-60-5	1	U	1	0.5	1
10335	1,2-Dichloropropane	78-87-5	1	U	1	0.5	1
10335	1,3-Dichloropropane	142-28-9	1	U	1	0.5	1
10335	2,2-Dichloropropane	594-20-7	1	U	1	0.5	1
10335	1,1-Dichloropropene	563-58-6	5	U	5	1	1
10335	cis-1,3-Dichloropropene	10061-01-5	1	U	1	0.5	1
10335	trans-1,3-Dichloropropene	10061-02-6	1	U	1	0.5	1
10335	Ethyl t-butyl ether	637-92-3	1	U	1	0.5	1
10335	Ethylbenzene	100-41-4	1	U	1	0.5	1
10335	Freon 113	76-13-1	10	U	10	2	1
10335	Freon 133a	75-88-7	5	U	5	2	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Hexachlorobutadiene	87-68-3	5	U	5	2	1
10335	2-Hexanone	591-78-6	10	U	10	3	1
10335	di-Isopropyl ether	108-20-3	1	U	1	0.5	1
10335	Isopropylbenzene	98-82-8	5	U	5	1	1
10335	p-Isopropyltoluene	99-87-6	5	U	5	1	1
10335	Methyl Iodide	74-88-4	1	U	1	0.5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1	U	1	0.5	1
10335	4-Methyl-2-pentanone	108-10-1	10	U	10	3	1
10335	Methylene Chloride	75-09-2	3	U	3	2	1
10335	n-Propylbenzene	103-65-1	5	U	5	1	1
10335	Styrene	100-42-5	5	U	5	1	1
10335	1,1,1,2-Tetrachloroethane	630-20-6	1	U	1	0.5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	1	U	1	0.5	1
10335	Tetrachloroethene	127-18-4	1	U	1	0.5	1
10335	Toluene	108-88-3	1	U	1	0.5	1
10335	1,2,3-Trichlorobenzene	87-61-6	5	U	5	1	1
10335	1,2,4-Trichlorobenzene	120-82-1	5	U	5	1	1
10335	1,1,1-Trichloroethane	71-55-6	1	U	1	0.5	1
10335	1,1,2-Trichloroethane	79-00-5	1	U	1	0.5	1
10335	Trichloroethene	79-01-6	1	U	1	0.5	1
10335	Trichlorofluoromethane	75-69-4	1	U	1	0.5	1
10335	1,2,3-Trichloropropane	96-18-4	5	U	5	1	1
10335	1,2,4-Trimethylbenzene	95-63-6	5	U	5	1	1
10335	1,3,5-Trimethylbenzene	108-67-8	5	U	5	1	1
10335	Vinyl Acetate	108-05-4	10	U	10	2	1
10335	Vinyl Chloride	75-01-4	1	U	1	0.5	1
10335	m+p-Xylene	179601-23-1	1	U	1	0.5	1
10335	o-Xylene	95-47-6	1	U	1	0.5	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: vinyl acetate.						
GC/MS Volatiles	**SW-846 8260B SIM**		**ug/l**		**ug/l**	**ug/l**	
00527	1,4-Dioxane	123-91-1	2.0	U	2.0	0.5	1
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Acenaphthene	83-32-9	0.052	U	0.052	0.010	1
12971	Acenaphthylene	208-96-8	0.052	U	0.052	0.010	1
12971	Anthracene	120-12-7	0.052	U	0.052	0.010	1
12971	Benzo(a)anthracene	56-55-3	0.052	U	0.052	0.010	1
12971	Benzo(a)pyrene	50-32-8	0.052	U	0.052	0.010	1
12971	Benzo(b)fluoranthene	205-99-2	0.052	U	0.052	0.010	1
12971	Benzo(e)pyrene	192-97-2	0.052	U	0.052	0.010	1
12971	Benzo(g,h,i)perylene	191-24-2	0.052	U	0.052	0.010	1
12971	Benzo(k)fluoranthene	207-08-9	0.052	U	0.052	0.010	1
12971	Butylbenzylphthalate	85-68-7	1.0	U	1.0	0.052	1
12971	Di-n-butylphthalate	84-74-2	0.13	J	1.0	0.052	1
12971	Chrysene	218-01-9	0.052	U	0.052	0.010	1
12971	Dibenz(a,h)anthracene	53-70-3	0.052	U	0.052	0.010	1
12971	Diethylphthalate	84-66-2	0.11	J	1.0	0.052	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D SIM**		**ug/l**		**ug/l**	**ug/l**	
12971	Dimethylphthalate	131-11-3	1.0	U	1.0	0.052	1
12971	Bis(2-Ethylhexyl)phthalate	117-81-7	0.094	J	1.0	0.052	1
12971	Fluoranthene	206-44-0	0.052	U	0.052	0.010	1
12971	Fluorene	86-73-7	0.052	U	0.052	0.010	1
12971	Indeno(1,2,3-cd)pyrene	193-39-5	0.052	U	0.052	0.010	1
12971	1-Methylnaphthalene	90-12-0	0.011	J	0.052	0.010	1
12971	2-Methylnaphthalene	91-57-6	0.015	J	0.052	0.010	1
12971	Naphthalene	91-20-3	0.036	J	0.052	0.031	1
12971	N-Nitrosodimethylamine	62-75-9	0.052	U	0.052	0.010	1
12971	Di-n-octylphthalate	117-84-0	1.0	U	1.0	0.052	1
12971	Phenanthrene	85-01-8	0.052	U	0.052	0.031	1
12971	Pyrene	129-00-0	0.052	U	0.052	0.010	1

Target analytes were detected in the method blank associated with the samples as noted on the QC Summary. Since the result is within the acceptance range allowed by the method, the data is reported.

GC Volatiles	**TPH GRO SW-8015B**		**ug/l**		**ug/l**	**ug/l**	
08229	TPH-GRO S.CA water C5-C12	n.a.	50	U	50	20	1
Pesticides/PCBs	**SW-846 8082A**		**ug/l**		**ug/l**	**ug/l**	
13092	Aroclor 5432	63496-31-1	0.43	U	0.43	0.087	1
13092	Aroclor 5442	12642-23-8	0.43	U	0.43	0.087	1
13092	Aroclor 5460	11126-42-4	0.43	U	0.43	0.095	1
13092	PCB-1016	12674-11-2	0.43	U	0.43	0.087	1
13092	PCB-1221	11104-28-2	0.43	U	0.43	0.087	1
13092	PCB-1232	11141-16-5	0.43	U	0.43	0.17	1
13092	PCB-1242	53469-21-9	0.43	U	0.43	0.087	1
13092	PCB-1248	12672-29-6	0.43	U	0.43	0.087	1
13092	PCB-1254	11097-69-1	0.43	U	0.43	0.087	1
13092	PCB-1260	11096-82-5	0.43	U	0.43	0.13	1
13092	PCB-1262	37324-23-5	0.43	U	0.43	0.17	1
13092	PCB-1268	11100-14-4	0.43	U	0.43	0.14	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**mg/l**		**mg/l**	**mg/l**	
10365	EFH (C12-C14)	n.a.	0.098	U	0.098	0.049	1
10365	EFH (C15-C20)	n.a.	0.098	U	0.098	0.049	1
10365	EFH (C21-C30)	n.a.	0.098	U	0.098	0.049	1
10365	EFH (C30 - C40)	n.a.	0.49	U	0.49	0.098	1
10365	EFH (C8-C11)	n.a.	0.098	U	0.098	0.049	1
13205	EFH C12-C14 w/ SiGel	n.a.	0.098	U	0.098	0.049	1
13205	EFH C15-C20 w/ SiGel	n.a.	0.098	U	0.098	0.049	1
13205	EFH C21-C30 w/ SiGel	n.a.	0.098	U	0.098	0.049	1
13205	EFH C30-C40 w/ SiGel	n.a.	0.49	U	0.49	0.098	1
13205	EFH C8-C11 w/ SiGel	n.a.	0.098	U	0.098	0.049	1

The reverse surrogate, capric acid, is present at <1%.
The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	0.400 U	0.400	0.0674	1
07044	Antimony	7440-36-0	0.0400 U	0.0400	0.0051	1
07035	Arsenic	7440-38-2	0.0400 U	0.0400	0.0072	1
07046	Barium	7440-39-3	0.0100 U	0.0100	0.00033	1
07047	Beryllium	7440-41-7	0.0100 U	0.0100	0.00067	1
08014	Boron	7440-42-8	0.0061 J	0.100	0.0046	1
07049	Cadmium	7440-43-9	0.00037 J	0.0100	0.00033	1
01750	Calcium	7440-70-2	0.400 U	0.400	0.0334	1
07051	Chromium	7440-47-3	0.0300 U	0.0300	0.0013	1
07052	Cobalt	7440-48-4	0.0100 U	0.0100	0.0010	1
07053	Copper	7440-50-8	0.0200 U	0.0200	0.0028	1
01754	Iron	7439-89-6	0.400 U	0.400	0.0334	1
07055	Lead	7439-92-1	0.0300 U	0.0300	0.0047	1
01756	Lithium	7439-93-2	0.0400 U	0.0400	0.0046	1
01757	Magnesium	7439-95-4	0.200 U	0.200	0.0167	1
07058	Manganese	7439-96-5	0.00085 J	0.0100	0.00083	1
07060	Molybdenum	7439-98-7	0.0100 J	0.0200	0.0017	1
07061	Nickel	7440-02-0	0.0200 U	0.0200	0.0016	1
10143	Phosphorus	7723-14-0	0.200 U	0.200	0.0050	1
01762	Potassium	7440-09-7	1.00 U	1.00	0.133	1
01767	Sodium	7440-23-5	2.00 U	2.00	0.167	1
07069	Tin	7440-31-5	0.0400 U	0.0400	0.0024	1
07070	Titanium	7440-32-6	0.0200 U	0.0200	0.0017	1
07071	Vanadium	7440-62-2	0.0100 U	0.0100	0.0019	1
07072	Zinc	7440-66-6	0.0400 U	0.0400	0.0020	1
10144	Zirconium	7440-67-7	0.100 U	0.100	0.0081	1
	SW-846 6020A		**mg/l**	**mg/l**	**mg/l**	
06041	Selenium	7782-49-2	0.0040 U	0.0040	0.00050	1
06042	Silver	7440-22-4	0.0010 U	0.0010	0.00013	1
06044	Strontium	7440-24-6	0.0020 U	0.0020	0.00031	1
06045	Thallium	7440-28-0	0.0010 U	0.0010	0.00015	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	3b Mercury 7470A	7439-97-6	0.00020 U	0.00020	0.000060	1
Wet Chemistry	**SW-846 9040C**		**Std. Units**	**Std. Units**	**Std. Units**	
12152	28b pH (9040B and 9040C)	n.a.	5.2	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received MRL*	As Received EDL	Dilution Factor
Dioxins/Furans	**EPA 1613B October 1994**		**pg/l**		**pg/l**	**pg/l**	
10915	2378-TCDD	1746-01-6	0.812	JQ	2.08	0.522	1
10915	12378-PeCDD	40321-76-4	10.4	U	10.4	0.553	1
10915	123478-HxCDD	39227-28-6	10.4	U	10.4	0.791	1
10915	123678-HxCDD	57653-85-7	2.08	JB	10.4	0.874	1
10915	123789-HxCDD	19408-74-3	1.57	JB	10.4	0.805	1
10915	1234678-HpCDD	35822-46-9	29.4	B	10.4	1.57	1
10915	OCDD	3268-87-9	157	B	20.8	1.60	1
10915	2378-TCDF	51207-31-9	2.08	U	2.08	0.252	1
10915	12378-PeCDF	57117-41-6	10.4	U	10.4	0.303	1
10915	23478-PeCDF	57117-31-4	0.761	JBQ	10.4	0.272	1
10915	123478-HxCDF	70648-26-9	10.4	U	10.4	0.574	1
10915	123678-HxCDF	57117-44-9	0.613	JBQ	10.4	0.562	1
10915	123789-HxCDF	72918-21-9	2.78	JBQ	10.4	0.679	1
10915	234678-HxCDF	60851-34-5	10.4	U	10.4	0.549	1
10915	1234678-HpCDF	67562-39-4	2.52	JBQ	10.4	0.796	1
10915	1234789-HpCDF	55673-89-7	1.08	JB	10.4	1.01	1
10915	OCDF	39001-02-0	6.09	JB	20.8	1.12	1
D/F Toxic Equivalents	**EPA 1613B October 1994**		**pg/l**		**pg/l**	**pg/l**	
10915	TEQ WHO 2005 - EDLx0.0	n.a.	0.718				1

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	82	25 - 164
13C12-12378-PeCDD	77	25 - 181
13C12-123478-HxCDD	84	32 - 141
13C12-123678-HxCDD	83	28 - 130
13C12-123789-HxCDD	82	28 - 130
13C12-1234678-HpCDD	76	23 - 140
13C12-OCDD	68	17 - 157
13C12-2378-TCDF	76	24 - 169
13C12-12378-PeCDF	70	24 - 185
13C12-23478-PeCDF	69	21 - 178
13C12-123478-HxCDF	71	26 - 152
13C12-123678-HxCDF	74	26 - 123
13C12-234678-HxCDF	71	28 - 136
13C12-123789-HxCDF	68	29 - 147
13C12-1234678-HpCDF	67	28 - 143
13C12-1234789-HpCDF	63	26 - 138
13C12-OCDF	60	17 - 157

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank
U Undetected
J Estimated concentration between Estimated Detection Limit and Minimum Level
E Exceeds calibration range

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received MRL*	As Received EDL	Dilution Factor

C *Confirmed quantitation on secondary GC column*
Q *EMPC - Estimated Maximum Possible Concentration*
F *Interference is present*
S *Saturation of detection signal*

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

General Sample Comments

CA ELAP Lab Certification No. 2792; CA NELAP Lab Certification No. 10276CA

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	12b Volatile Organics EPA8260B	SW-846 8260B	1	Y141811AA	06/30/2014 11:21	Sarah A Guill	1
00527	13b 1,4-Dioxane by 8260B SIM	SW-846 8260B SIM	1	E141712AA	06/20/2014 21:53	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E141712AA	06/20/2014 21:53	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y141811AA	06/30/2014 11:21	Sarah A Guill	1
12971	7b SVOC SIM EPA 8270D	SW-846 8270D SIM	1	14171WAC026	06/27/2014 04:11	Chad A Moline	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	14171WAC026	06/20/2014 16:00	Seth A Farrier	1
08229	11b TPH by EPA 8015B GRO	TPH GRO SW-8015B	1	14170B94A	06/20/2014 15:48	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	14170B94A	06/20/2014 15:48	Laura M Krieger	1
13092	21b PCBs and PCTs 8082A	SW-846 8082A	1	141750008A	06/25/2014 19:44	Monica M Souders	1
13093	PCB/PCT Waters Update IV	SW-846 3510C	1	141750008A	06/24/2014 15:00	Seth A Farrier	1
10365	10b TPH by EPA 8015B (DRO)	SW-846 8015B modified	1	141740019A	06/25/2014 20:06	Heather E Williams	1
13205	10b TPH-DRO (w/Si Gel)	SW-846 8015B modified	1	141740020A	06/26/2014 15:39	Heather E Williams	1
13212	EFH Water Ext. w/SiGel	SW-846 3510C	1	141740020A	06/24/2014 03:00	Sherry L Morrow	1
11203	EFH Waters Extraction	SW-846 3510C	1	141740019A	06/24/2014 03:00	Sherry L Morrow	1
10915	17b Dioxin/Furan by EPA 1613B	EPA 1613B October 1994	1	14177002	07/01/2014 12:00	Joseph D Anderson	1
10914	Dioxins/Furans in Water - SepF	EPA 1613B October 1994	1	14177002	06/26/2014 09:35	Brett M Weidman	1
01743	Aluminum	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07044	Antimony	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07035	Arsenic	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07046	Barium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07047	Beryllium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
08014	Boron	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07049	Cadmium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
01750	Calcium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07051	Chromium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07052	Cobalt	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07053	Copper	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
01754	Iron	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07055	Lead	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
01756	Lithium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
01757	Magnesium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07058	Manganese	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07060	Molybdenum	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07061	Nickel	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1

*=This limit was used in the evaluation of the final result

Sample Description: EB1-061814 Water
SSFL Phase 3 Subarea NBZ

LL Sample # WW 7504496
LL Group # 1483089
Account # 13013

Project Name: SSFL Phase 3 Sampling

Collected: 06/18/2014 15:00 by SM

Submitted: 06/19/2014 09:20
Reported: 07/03/2014 08:56

CDM Federal Programs Corp.
3201 Jermantown Road
Suite 400
Fairfax VA 22030

EB118 SDG#: PH237-04EB*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10143	Phosphorus	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
01762	Potassium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
01767	Sodium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07069	Tin	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07070	Titanium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07071	Vanadium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
07072	Zinc	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
10144	Zirconium	SW-846 6010C	1	141780635002	06/30/2014 20:49	John P Hook	1
06041	Selenium	SW-846 6020A	1	141780639001B	07/01/2014 10:42	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	141780639001A	07/01/2014 10:42	Choon Y Tian	1
06044	Strontium	SW-846 6020A	1	141780639001A	07/01/2014 10:42	Choon Y Tian	1
06045	Thallium	SW-846 6020A	1	141780639001A	07/01/2014 10:42	Choon Y Tian	1
00259	3b Mercury 7470A	SW-846 7470A	1	141785713006	06/30/2014 12:53	Damary Valentin	1
10635	WW SW846(IV) ICP Dig (tot rec)	SW-846 3005A	1	141780635002	06/30/2014 10:16	Micaela L Dishong	1
10639	ICP/MS SW846 (IV) Water Digest	SW-846 3010A modified	1	141780639001	06/30/2014 09:35	Micaela L Dishong	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	141785713006	06/30/2014 08:40	Damary Valentin	1
12152	28b pH (9040B and 9040C)	SW-846 9040C	1	14170121521B	06/19/2014 20:00	Luz M Groff	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: E141712AA	Sample number(s): 7504496									
1,4-Dioxane	2.0	U	2.0	0.5	ug/l	103	101	80-123	3	30
Batch number: Y141811AA	Sample number(s): 7504496									
Acetone	20	U	20.	6	ug/l	100	97	43-149	3	30
Acrolein	100 U		100.	40	ug/l	74	74	52-129	0	30
Acrylonitrile	20	U	20.	4	ug/l	97	96	62-120	1	30
t-Amyl methyl ether	1	U	1.	0.5	ug/l	98	99	75-120	1	30
Benzene	1	U	1.	0.5	ug/l	101	102	78-120	0	30
Bromobenzene	5	U	5.	1	ug/l	99	99	80-120	0	30
Bromochloromethane	5	U	5.	1	ug/l	98	100	80-121	3	30
Bromodichloromethane	1	U	1.	0.5	ug/l	99	99	73-120	0	30
Bromoform	4	U	4.	0.5	ug/l	87	86	61-120	2	30
Bromomethane	1	U	1.	0.5	ug/l	92	92	58-120	0	30
2-Butanone	10	U	10.	3	ug/l	105	104	54-133	1	30
t-Butyl alcohol	50	U	50.	5	ug/l	118	118	75-120	0	30
n-Butylbenzene	5	U	5.	1	ug/l	104	104	68-120	0	30
sec-Butylbenzene	5	U	5.	1	ug/l	105	105	80-120	0	30
tert-Butylbenzene	5	U	5.	1	ug/l	102	100	73-120	1	30
Carbon Disulfide	5	U	5.	1	ug/l	84	84	58-126	1	30
Carbon Tetrachloride	1	U	1.	0.5	ug/l	104	102	74-130	2	30
Chlorobenzene	1	U	1.	0.5	ug/l	101	102	80-120	1	30
Chloroethane	1	U	1.	0.5	ug/l	83	84	56-120	1	30
2-Chloroethyl Vinyl Ether	10	U	10.	2	ug/l	99	100	54-126	1	30
Chloroform	1	U	1.	0.5	ug/l	105	104	80-122	1	30
1-Chlorohexane	5	U	5.	1	ug/l	101	103	80-120	1	30
Chloromethane	1	U	1.	0.5	ug/l	96	97	63-120	1	30
2-Chlorotoluene	5	U	5.	1	ug/l	99	99	80-120	0	30
4-Chlorotoluene	5	U	5.	1	ug/l	99	100	80-120	1	30
Chlorotrifluoroethene	5	U	5.	2	ug/l	48	49	47-120	2	30
1,2-Dibromo-3-chloropropane	5	U	5.	2	ug/l	104	101	56-120	2	30
Dibromochloromethane	1	U	1.	0.5	ug/l	92	91	72-120	1	30
1,2-Dibromoethane	1	U	1.	0.5	ug/l	106	106	76-120	1	30
Dibromomethane	1	U	1.	0.5	ug/l	101	102	80-120	1	30
1,2-Dichlorobenzene	5	U	5.	1	ug/l	99	99	80-120	0	30
1,3-Dichlorobenzene	5	U	5.	1	ug/l	99	98	80-120	1	30
1,4-Dichlorobenzene	5	U	5.	1	ug/l	100	100	80-120	0	30
Dichlorodifluoromethane	1	U	1.	0.5	ug/l	74	74	48-132	0	30
1,1-Dichloroethane	1	U	1.	0.5	ug/l	104	105	80-120	1	30
1,2-Dichloroethane	1	U	1.	0.5	ug/l	111	111	65-135	0	30
1,1-Dichloroethene	1	U	1.	0.5	ug/l	98	98	76-124	0	30
cis-1,2-Dichloroethene	1	U	1.	0.5	ug/l	104	104	80-120	0	30
trans-1,2-Dichloroethene	1	U	1.	0.5	ug/l	101	104	80-120	3	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,2-Dichloropropane	1	U	1.	0.5	ug/l	100	101	80-120	1	30
1,3-Dichloropropane	1	U	1.	0.5	ug/l	103	104	80-120	1	30
2,2-Dichloropropane	1	U	1.	0.5	ug/l	108	109	67-124	1	30
1,1-Dichloropropene	5	U	5.	1	ug/l	106	107	80-120	1	30
cis-1,3-Dichloropropene	1	U	1.	0.5	ug/l	97	98	80-120	1	30
trans-1,3-Dichloropropene	1	U	1.	0.5	ug/l	100	102	76-120	2	30
Ethyl t-butyl ether	1	U	1.	0.5	ug/l	101	101	74-120	0	30
Ethylbenzene	1	U	1.	0.5	ug/l	100	100	79-120	0	30
Freon 113	10	U	10.	2	ug/l	84	83	67-127	1	30
Freon 133a	5	U	5.	2	ug/l	104	105	46-152	1	30
Hexachlorobutadiene	5	U	5.	2	ug/l	98	98	51-125	1	30
2-Hexanone	10	U	10.	3	ug/l	101	101	44-126	0	30
di-Isopropyl ether	1	U	1.	0.5	ug/l	104	106	65-120	2	30
Isopropylbenzene	5	U	5.	1	ug/l	101	101	77-120	0	30
p-Isopropyltoluene	5	U	5.	1	ug/l	103	103	80-120	0	30
Methyl Iodide	1	U	1.	0.5	ug/l	96	97	75-128	1	30
Methyl Tertiary Butyl Ether	1	U	1.	0.5	ug/l	102	101	75-120	0	30
4-Methyl-2-pentanone	10	U	10.	3	ug/l	102	102	51-124	0	30
Methylene Chloride	3	U	3.	2	ug/l	103	104	80-120	0	30
n-Propylbenzene	5	U	5.	1	ug/l	105	104	80-120	1	30
Styrene	5	U	5.	1	ug/l	99	100	80-120	0	30
1,1,1,2-Tetrachloroethane	1	U	1.	0.5	ug/l	100	102	80-120	2	30
1,1,2,2-Tetrachloroethane	1	U	1.	0.5	ug/l	103	102	70-120	1	30
Tetrachloroethene	1	U	1.	0.5	ug/l	99	100	80-120	0	30
Toluene	1	U	1.	0.5	ug/l	103	104	80-120	1	30
1,2,3-Trichlorobenzene	5	U	5.	1	ug/l	99	99	58-126	1	30
1,2,4-Trichlorobenzene	5	U	5.	1	ug/l	99	98	65-120	1	30
1,1,1-Trichloroethane	1	U	1.	0.5	ug/l	98	99	66-126	1	30
1,1,2-Trichloroethane	1	U	1.	0.5	ug/l	101	101	80-120	0	30
Trichloroethene	1	U	1.	0.5	ug/l	103	102	80-120	1	30
Trichlorofluoromethane	1	U	1.	0.5	ug/l	84	84	65-130	0	30
1,2,3-Trichloropropane	5	U	5.	1	ug/l	104	104	76-120	0	30
1,2,4-Trimethylbenzene	5	U	5.	1	ug/l	104	104	74-120	0	30
1,3,5-Trimethylbenzene	5	U	5.	1	ug/l	104	103	74-120	1	30
Vinyl Acetate	10	U	10.	2	ug/l	47*	48*	56-135	1	30
Vinyl Chloride	1	U	1.	0.5	ug/l	90	92	63-120	2	30
m+p-Xylene	1	U	1.	0.5	ug/l	99	100	80-120	0	30
o-Xylene	1	U	1.	0.5	ug/l	98	99	80-120	1	30
Batch number: 14171WAC026	Sample number(s): 7504496									
Acenaphthene	0.050	U	0.050	0.010	ug/l	102	105	83-119	3	30
Acenaphthylene	0.050	U	0.050	0.010	ug/l	92	95	81-130	4	30
Anthracene	0.050	U	0.050	0.010	ug/l	99	101	83-125	1	30
Benzo(a)anthracene	0.050	U	0.050	0.010	ug/l	93	92	79-122	1	30
Benzo(a)pyrene	0.050	U	0.050	0.010	ug/l	96	98	80-121	2	30
Benzo(b)fluoranthene	0.050	U	0.050	0.010	ug/l	101	101	79-136	0	30
Benzo(e)pyrene	0.050	U	0.050	0.010	ug/l	95	96	67-118	2	30
Benzo(g,h,i)perylene	0.050	U	0.050	0.010	ug/l	99	98	72-132	1	30
Benzo(k)fluoranthene	0.050	U	0.050	0.010	ug/l	98	100	81-131	2	30
Butylbenzylphthalate	1.0	U	1.0	0.050	ug/l	80	81	40-138	1	30
Di-n-butylphthalate	0.057	J	1.0	0.050	ug/l	84	97	64-141	14	30
Chrysene	0.050	U	0.050	0.010	ug/l	99	99	84-118	0	30
Dibenz(a,h)anthracene	0.050	U	0.050	0.010	ug/l	98	91	66-133	7	30
Diethylphthalate	1.0	U	1.0	0.050	ug/l	90	93	64-137	4	30
Dimethylphthalate	1.0	U	1.0	0.050	ug/l	86	91	23-139	6	30
Bis(2-Ethylhexyl)phthalate	0.11	J	1.0	0.050	ug/l	91	83	70-143	9	30

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Fluoranthene	0.050	U	0.050	0.010	ug/l	91	93	84-124	2	30
Fluorene	0.050	U	0.050	0.010	ug/l	94	97	82-119	3	30
Indeno(1,2,3-cd)pyrene	0.050	U	0.050	0.010	ug/l	95	93	68-132	2	30
1-Methylnaphthalene	0.050	U	0.050	0.010	ug/l	91	92	86-130	1	30
2-Methylnaphthalene	0.050	U	0.050	0.010	ug/l	88	90	81-131	2	30
Naphthalene	0.050	U	0.050	0.030	ug/l	94	94	82-122	0	30
N-Nitrosodimethylamine	0.050	U	0.050	0.010	ug/l	80	84	56-96	5	30
Di-n-octylphthalate	1.0	U	1.0	0.050	ug/l	81	67	57-145	19	30
Phenanthrene	0.050	U	0.050	0.030	ug/l	97	99	83-116	2	30
Pyrene	0.050	U	0.050	0.010	ug/l	91	94	78-125	3	30
Batch number: 14174SLA026	Sample number(s): 7504495									
Acenaphthene	1.7	U	1.7	0.67	ug/kg	111		84-118		
Acenaphthylene	1.7	U	1.7	0.33	ug/kg	105		78-120		
Anthracene	1.7	U	1.7	0.33	ug/kg	103		85-118		
Benzo(a)anthracene	1.7	U	1.7	0.67	ug/kg	110		83-119		
Benzo(a)pyrene	1.7	U	1.7	0.67	ug/kg	101		80-122		
Benzo(b)fluoranthene	1.7	U	1.7	0.67	ug/kg	110		82-135		
Benzo(e)pyrene	17	U	17.	3.3	ug/kg	96		81-110		
Benzo(g,h,i)perylene	1.7	U	1.7	0.67	ug/kg	98		79-121		
Benzo(k)fluoranthene	1.7	U	1.7	0.67	ug/kg	105		79-123		
Butylbenzylphthalate	18	U	18.	6.0	ug/kg	100		75-144		
Di-n-butylphthalate	18	U	18.	6.0	ug/kg	98		75-148		
Chrysene	1.7	U	1.7	0.33	ug/kg	112		84-113		
Dibenz(a,h)anthracene	1.7	U	1.7	0.67	ug/kg	101		83-123		
Diethylphthalate	18	U	18.	6.0	ug/kg	105		73-147		
Dimethylphthalate	18	U	18.	6.0	ug/kg	105		85-122		
Bis(2-Ethylhexyl)phthalate	18	U	18.	6.0	ug/kg	102		68-146		
Fluoranthene	1.7	U	1.7	0.67	ug/kg	110		85-116		
Fluorene	1.7	U	1.7	0.67	ug/kg	113		84-120		
Indeno(1,2,3-cd)pyrene	1.7	U	1.7	0.67	ug/kg	98		82-123		
1-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	105		78-119		
2-Methylnaphthalene	1.7	U	1.7	0.67	ug/kg	107		78-121		
Naphthalene	1.7	U	1.7	0.67	ug/kg	103		79-113		
N-Nitrosodimethylamine	1.7	U	1.7	0.67	ug/kg	108		71-124		
Di-n-octylphthalate	18	U	18.	6.0	ug/kg	99		71-148		
Phenanthrene	1.7	U	1.7	0.67	ug/kg	102		83-113		
Pyrene	1.7	U	1.7	0.67	ug/kg	101		80-119		
Batch number: 14170B94A	Sample number(s): 7504496									
TPH-GRO S.CA water C5-C12	50	U	50.	20	ug/l	94	93	80-133	1	30
Batch number: 141720009A	Sample number(s): 7504494-7504495									
Aroclor 5432	33	U	33.	10	ug/kg					
Aroclor 5442	33	U	33.	10	ug/kg	96	98	36-106	2	30
Aroclor 5460	33	U	33.	10	ug/kg					
PCB-1016	17	U	17.	3.3	ug/kg	101		82-116		
PCB-1221	17	U	17.	5.1	ug/kg					
PCB-1232	17	U	17.	4.1	ug/kg					
PCB-1242	17	U	17.	4.1	ug/kg					
PCB-1248	17	U	17.	3.3	ug/kg					
PCB-1254	17	U	17.	4.4	ug/kg					
PCB-1260	17	U	17.	3.9	ug/kg	106		84-125		
PCB-1262	17	U	17.	3.3	ug/kg					
PCB-1268	17	U	17.	3.3	ug/kg					

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 141750008A	Sample number(s): 7504496									
Aroclor 5432	0.40	U	0.40	0.080	ug/l					
Aroclor 5442	0.40	U	0.40	0.080	ug/l	84	48	34-115	55*	30
Aroclor 5460	0.40	U	0.40	0.088	ug/l					
PCB-1016	0.40	U	0.40	0.080	ug/l	94	97	60-117	4	30
PCB-1221	0.40	U	0.40	0.080	ug/l					
PCB-1232	0.40	U	0.40	0.16	ug/l					
PCB-1242	0.40	U	0.40	0.080	ug/l					
PCB-1248	0.40	U	0.40	0.080	ug/l					
PCB-1254	0.40	U	0.40	0.080	ug/l					
PCB-1260	0.40	U	0.40	0.12	ug/l	103	107	67-128	4	30
PCB-1262	0.40	U	0.40	0.16	ug/l					
PCB-1268	0.40	U	0.40	0.13	ug/l					
Batch number: 141700025A	Sample number(s): 7504493-7504495									
EFH (C12-C14)	5.0	U	5.0	2.0	mg/kg	98		76-115		
EFH (C15-C20)	5.0	U	5.0	2.0	mg/kg	100		78-127		
EFH (C21-C30)	5.0	U	5.0	2.0	mg/kg	98		77-127		
EFH (C30-C40)	10	U	10.	4.0	mg/kg	62		44-134		
EFH (C8-C11)	5.0	U	5.0	2.0	mg/kg	84		60-115		
Batch number: 141740019A	Sample number(s): 7504496									
EFH (C12-C14)	0.10	U	0.10	0.050	mg/l	94	94	67-109	0	30
EFH (C15-C20)	0.10	U	0.10	0.050	mg/l	99	101	71-119	2	30
EFH (C21-C30)	0.10	U	0.10	0.050	mg/l	96	98	75-117	2	30
EFH (C30 - C40)	0.50	U	0.50	0.10	mg/l	49	68	44-134	32*	30
EFH (C8-C11)	0.10	U	0.10	0.050	mg/l	74	70	55-86	5	30
Batch number: 141740020A	Sample number(s): 7504496									
EFH C12-C14 w/ SiGel	0.10	U	0.10	0.050	mg/l	63*	62*	67-109	3	30
EFH C15-C20 w/ SiGel	0.10	U	0.10	0.050	mg/l	67*	67*	71-119	0	30
EFH C21-C30 w/ SiGel	0.10	U	0.10	0.050	mg/l	65*	66*	75-117	2	30
EFH C30-C40 w/ SiGel	0.50	U	0.50	0.10	mg/l	32*	51	44-134	45*	30
EFH C8-C11 w/ SiGel	0.10	U	0.10	0.050	mg/l	47*	44*	55-86	5	30
Batch number: 141770026A	Sample number(s): 7504493-7504495									
EFH C12-C14 w/ SiGel	5.0	U	5.0	2.0	mg/kg	92		76-115		
EFH C15-C20 w/ SiGel	5.0	U	5.0	2.0	mg/kg	94		78-127		
EFH C21-C30 w/ SiGel	5.0	U	5.0	2.0	mg/kg	95		77-127		
EFH C30-C40 w/ SiGel	10	U	10.	4.0	mg/kg	95		44-134		
EFH C8-C11 w/ SiGel	5.0	U	5.0	2.0	mg/kg	74		60-115		
Batch number: 141750637001	Sample number(s): 7504494-7504495									
Aluminum	40.0	U	40.0	4.54	mg/kg	107		80-120		
Antimony	4.00	U	4.00	0.330	mg/kg	106		80-120		
Arsenic	4.00	U	4.00	0.640	mg/kg	105		80-120		
Barium	1.00	U	1.00	0.0330	mg/kg	99		80-120		
Beryllium	1.00	U	1.00	0.0670	mg/kg	102		80-120		
Boron	10.0	U	10.0	0.840	mg/kg	96		80-120		
Cadmium	1.00	U	1.00	0.0330	mg/kg	103		80-120		
Calcium	10.7	J	20.0	3.79	mg/kg	109		80-120		
Chromium	3.00	U	3.00	0.110	mg/kg	99		80-120		
Cobalt	1.00	U	1.00	0.0960	mg/kg	104		80-120		
Copper	2.00	U	2.00	0.330	mg/kg	103		80-120		
Iron	40.0	U	40.0	3.34	mg/kg	107		80-120		
Lead	3.00	U	3.00	0.500	mg/kg	102		80-120		

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Lithium	4.0	U	4.0	0.64	mg/kg	105		80-120		
Magnesium	10.0	U	10.0	1.67	mg/kg	104		80-120		
Manganese	1.00	U	1.00	0.0830	mg/kg	103		80-120		
Molybdenum	2.00	U	2.00	0.170	mg/kg	102		80-120		
Nickel	2.00	U	2.00	0.150	mg/kg	106		80-120		
Phosphorus	1.76	J	10.0	0.320	mg/kg	101		80-120		
Potassium	100 U		100.	13.0	mg/kg	104		80-120		
Sodium	100 U		100.	16.7	mg/kg	104		80-120		
Tin	1.49	J	10.0	0.430	mg/kg	102		80-120		
Titanium	1.00	U	1.00	0.170	mg/kg	100		80-120		
Vanadium	1.00	U	1.00	0.0910	mg/kg	98		80-120		
Zinc	4.00	U	4.00	0.260	mg/kg	100		80-120		
Zirconium	5.00	U	5.00	0.810	mg/kg	103		80-120		
Batch number: 141750637001A	Sample number(s): 7504494-7504495									
Silver	0.200	U	0.200	0.0200	mg/kg	101		80-120		
Strontium	0.0581	J	0.400	0.0572	mg/kg	105		80-120		
Thallium	0.200	U	0.200	0.0300	mg/kg	103		80-120		
Batch number: 141750637001B	Sample number(s): 7504494-7504495									
Selenium	0.400	U	0.400	0.100	mg/kg	97		80-120		
Batch number: 141780635002	Sample number(s): 7504496									
Aluminum	0.400	U	0.400	0.0674	mg/l	110	107	90-112	3	20
Antimony	0.0400	U	0.0400	0.0051	mg/l	105	104	88-111	1	20
Arsenic	0.0400	U	0.0400	0.0072	mg/l	106	107	90-113	0	20
Barium	0.0100	U	0.0100	0.00033	mg/l	104	103	90-110	1	20
Beryllium	0.0100	U	0.0100	0.00067	mg/l	102	99	90-111	2	20
Boron	0.100	U	0.100	0.0046	mg/l	98	97	90-110	1	20
Cadmium	0.0100	U	0.0100	0.00033	mg/l	105	105	90-112	0	20
Calcium	0.400	U	0.400	0.0334	mg/l	107	105	90-112	2	20
Chromium	0.0300	U	0.0300	0.0013	mg/l	102	100	90-110	2	20
Cobalt	0.0100	U	0.0100	0.0010	mg/l	105	105	90-114	0	20
Copper	0.0200	U	0.0200	0.0028	mg/l	107	106	90-112	2	20
Iron	0.400	U	0.400	0.0334	mg/l	108	106	90-112	1	20
Lead	0.0300	U	0.0300	0.0047	mg/l	107	108	88-116	1	20
Lithium	0.0400	U	0.0400	0.0046	mg/l	105	104	90-110	1	20
Magnesium	0.200	U	0.200	0.0167	mg/l	107	105	89-110	2	20
Manganese	0.0011	J	0.0100	0.00083	mg/l	104	103	90-110	1	20
Molybdenum	0.0200	U	0.0200	0.0017	mg/l	105	106	90-110	0	20
Nickel	0.0200	U	0.0200	0.0016	mg/l	109	109	90-117	0	20
Phosphorus	0.200	U	0.200	0.0050	mg/l	103	103	90-110	0	20
Potassium	1.00	U	1.00	0.133	mg/l	108	106	90-110	2	20
Sodium	2.00	U	2.00	0.167	mg/l	107	105	87-114	2	20
Tin	0.0400	U	0.0400	0.0024	mg/l	101	100	90-110	0	20
Titanium	0.0200	U	0.0200	0.0017	mg/l	104	102	90-113	2	20
Vanadium	0.0100	U	0.0100	0.0019	mg/l	107	105	90-110	2	20
Zinc	0.0400	U	0.0400	0.0020	mg/l	103	103	90-110	0	20
Zirconium	0.100	U	0.100	0.0081	mg/l	106	105	90-110	2	20
Batch number: 141780638002	Sample number(s): 7504494-7504495									
3a Mercury 7471A	0.0167	U	0.0167	0.0100	mg/kg	90		85-120		
Batch number: 141780639001A	Sample number(s): 7504496									

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Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Analysis Name	Blank Result		Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Silver	0.0010	U	0.0010	0.00013	mg/l	102	107	90-115	5	20
Strontium	0.0020	U	0.0020	0.00031	mg/l	102	106	90-110	4	20
Thallium	0.0010	U	0.0010	0.00015	mg/l	104	104	90-115	1	20
Batch number: 141780639001B	Sample number(s): 7504496									
Selenium	0.0040	U	0.0040	0.00050	mg/l	104	106	90-114	2	20
Batch number: 141785713006	Sample number(s): 7504496									
3b Mercury 7470A	0.00020	U	0.00020	0.00006 0	mg/l	100	101	90-115	0	20
Batch number: 14170039401A	Sample number(s): 7504494-7504495									
15a pH by 9045D						100		95-105		
Batch number: 14170121521B	Sample number(s): 7504496									
28b pH (9040B and 9040C)						100		90-110		
Batch number: 14174162401B	Sample number(s): 7504493-7504495									
14a Moisture Content by 160.3						100		80-120		

Analysis Name	Blank Result		Blank MRL**	Blank EDL	Report Units	OPR %REC	OPRD %REC	OPR/OPRD Limits	RPD	RPD Max
Batch number: 14177002	Sample number(s): 7504496									
2378-TCDD	2.00	U	2.00	0.510	pg/l	108		60-150		
12378-PeCDD	10.0	U	10.0	0.380	pg/l	106		60-150		
123478-HxCDD	10.0	U	10.0	0.256	pg/l	105		60-150		
123678-HxCDD	0.492	J	10.0	0.273	pg/l	106		60-150		
123789-HxCDD	0.308	J	10.0	0.240	pg/l	104		60-150		
1234678-HpCDD	4.82	J	10.0	0.324	pg/l	105		60-150		
OCDD	32.9		20.0	0.252	pg/l	98		60-150		
2378-TCDF	2.00	U	2.00	0.272	pg/l	108		60-150		
12378-PeCDF	10.0	U	10.0	0.170	pg/l	109		60-150		
23478-PeCDF	0.312	J	10.0	0.142	pg/l	107		60-150		
123478-HxCDF	0.326	J	10.0	0.198	pg/l	106		60-150		
123678-HxCDF	0.343	J	10.0	0.196	pg/l	107		60-150		
123789-HxCDF	0.237	J	10.0	0.185	pg/l	101		60-150		
234678-HxCDF	0.174	J	10.0	0.171	pg/l	103		60-150		
1234678-HpCDF	0.721	J	10.0	0.103	pg/l	104		60-150		
1234789-HpCDF	0.278	J	10.0	0.0999	pg/l	105		60-150		
OCDF	2.02	J	20.0	0.232	pg/l	99		60-150		
TEQ WHO 2005 - EDLx0.0	0.0587				pg/l					

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

	MS	MSD	MS/MSD	RPD	BKG	DUP	DUP	Dup RPD

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
Batch number: 14174SLA026	Sample number(s): 7504495 UNSPK: P502707								
Acenaphthene	104	104	48-127	1	30				
Acenaphthylene	103	103	60-128	0	30				
Anthracene	103	102	52-126	0	30				
Benzo(a)anthracene	110	107	44-143	2	30				
Benzo(a)pyrene	95	95	49-137	0	30				
Benzo(b)fluoranthene	123	123	26-142	0	30				
Benzo(e)pyrene	98	98	63-111	0	30				
Benzo(g,h,i)perylene	48	45	33-141	5	30				
Benzo(k)fluoranthene	106	107	49-144	0	30				
Butylbenzylphthalate	115	119	64-156	4	30				
Di-n-butylphthalate	107	105	52-147	1	30				
Chrysene	106	103	43-141	3	30				
Dibenz(a,h)anthracene	59	57	25-145	4	30				
Diethylphthalate	101	101	66-140	0	30				
Dimethylphthalate	98	101	70-123	2	30				
Bis(2-Ethylhexyl)phthalate	107	110	48-164	3	30				
Fluoranthene	108	109	38-153	1	30				
Fluorene	108	108	57-130	0	30				
Indeno(1,2,3-cd)pyrene	55	53	26-139	5	30				
1-Methylnaphthalene	104	104	59-139	0	30				
2-Methylnaphthalene	107	107	46-147	1	30				
Naphthalene	103	103	52-136	0	30				
N-Nitrosodimethylamine	105	105	39-134	1	30				
Di-n-octylphthalate	172*	178*	52-162	3	30				
Phenanthrene	100	101	50-137	0	30				
Pyrene	102	103	26-143	0	30				
Batch number: 141720009A	Sample number(s): 7504494-7504495 UNSPK: P501188								
PCB-1016	99	104	41-135	5	50				
PCB-1260	102	112	40-134	10	50				
Batch number: 141700025A	Sample number(s): 7504493-7504495 UNSPK: P501188								
EFH (C12-C14)	107	126*	49-123	16	20				
EFH (C15-C20)	127*	137*	49-123	7	20				
EFH (C21-C30)	-71*	-43*	49-123	14	20				
EFH (C30-C40)	-318 (2)	-264 (2)	49-123	21*	20				
EFH (C8-C11)	87	91	49-123	3	20				
Batch number: 141770026A	Sample number(s): 7504493-7504495 UNSPK: P501188								
EFH C12-C14 w/ SiGel	82	88	49-123	8	20				
EFH C15-C20 w/ SiGel	78	81	49-123	4	20				
EFH C21-C30 w/ SiGel	-82*	-58*	49-123	19	20				
EFH C30-C40 w/ SiGel	-262 (2)	-217 (2)	49-123	22*	20				
EFH C8-C11 w/ SiGel	58	63	49-123	9	20				
Batch number: 141750637001	Sample number(s): 7504494-7504495 UNSPK: P502707 BKG: P502707								
Aluminum	1388 (2)	1481 (2)	75-125	1	20	13,000	13,000	0	20
Antimony	47*	43*	75-125	9	20	4.00 U	4.00 U	0 (1)	20
Arsenic	100	99	75-125	1	20	6.84	6.07	12 (1)	20
Barium	95	94	75-125	1	20	90.4	80.5	12	20
Beryllium	100	99	75-125	1	20	0.539 J	0.530 J	2 (1)	20
Boron	97	94	75-125	3	20	3.69 J	2.32 J	46* (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc		DUP Conc		DUP RPD	Dup RPD Max
Cadmium	93	93	75-125	1	20	1.00	U	1.00	U	0 (1)	20
Calcium	-182 (2)	-374 (2)	75-125	17	20	5,620		3,430		49*	20
Chromium	110	99	75-125	6	20	14.0		13.8		2 (1)	20
Cobalt	94	95	75-125	1	20	6.24		4.66		29* (1)	20
Copper	101	100	75-125	1	20	10.8		9.08		17 (1)	20
Iron	-94 (2)	632 (2)	75-125	4	20	19,200		18,700		3	20
Lead	89	88	75-125	0	20	13.7		13.8		1 (1)	20
Lithium	104	106	75-125	1	20	22.5		23.4		4	20
Magnesium	156 (2)	162 (2)	75-125	0	20	4,180		4,010		4	20
Manganese	14 (2)	23 (2)	75-125	1	20	340		305		11	20
Molybdenum	96	96	75-125	0	20	0.660	J	0.313	J	71* (1)	20
Nickel	98	98	75-125	0	20	8.63		8.34		3 (1)	20
Phosphorus	260 (2)	50 (2)	75-125	37*	20	403		366		10	20
Potassium	121	128*	75-125	2	20	3,570		3,470		3	20
Sodium	103	103	75-125	0	20	65.8	J	65.8	J	0 (1)	20
Tin	91	91	75-125	1	20	3.43	J	3.28	J	4 (1)	20
Titanium	321 (2)	271 (2)	75-125	4	20	894		931		4	20
Vanadium	108	98	75-125	6	20	29.7		29.0		2	20
Zinc	94	94	75-125	0	20	57.0		52.6		8	20
Zirconium	96	96	75-125	0	20	2.13	J	2.04	J	5 (1)	20
Batch number: 141750637001A	Sample number(s): 7504494-7504495 UNSPK: P502707 BKG: P502707										
Silver	144*	117	75-125	21*	20	0.0260	J	0.0423	J	48* (1)	20
Strontium	152 (2)	26 (2)	75-125	24*	20	34.3		22.8		40*	20
Thallium	158*	114	75-125	21*	20	0.279		0.258		8 (1)	20
Batch number: 141750637001B	Sample number(s): 7504494-7504495 UNSPK: P502707 BKG: P502707										
Selenium	131*	113	75-125	14	20	0.196	J	0.155	J	23* (1)	20
Batch number: 141780638002	Sample number(s): 7504494-7504495 UNSPK: 7504494 BKG: 7504494										
3a Mercury 7471A	94	92	65-135	1	20	0.0407		0.0376		8 (1)	20
Batch number: 14170039401A	Sample number(s): 7504494-7504495 BKG: 7504494										
15a pH by 9045D						5.92		5.89		1	3
Batch number: 14170121521B	Sample number(s): 7504496 BKG: P505586										
28b pH (9040B and 9040C)						6.6		6.6		0	3
Batch number: 14174162401B	Sample number(s): 7504493-7504495 BKG: 7504493										
14a Moisture Content by 160.3						1.4		1.4		2	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 13b 1,4-Dioxane by 8260B SIM
Batch number: E141712AA

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Surrogate Quality Control

	Toluene-d8
7504496	97
Blank	98
LCS	98
LCSD	98
Limits:	80-120

Analysis Name: 12b Volatile Organics EPA8260B
Batch number: Y141811AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7504496	101	100	100	98
Blank	101	101	101	98
LCS	101	100	101	100
LCSD	101	100	102	101
Limits:	86-118	80-120	88-110	86-115

Analysis Name: 7b SVOC SIM EPA 8270D
Batch number: 14171WAC026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7504496	94	105	92
Blank	101	115	93
LCS	97	111	94
LCSD	98	113	94
Limits:	59-128	62-141	70-134

Analysis Name: 7a SVOC SIM EPA 8270D
Batch number: 14174SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7504495	116*	110	108
Blank	111	114	100
LCS	110	115	99
MS	112	110	99
MSD	112	109	98
Limits:	59-115	61-118	70-127

Analysis Name: 11b TPH by EPA 8015B GRO
Batch number: 14170B94A

	Trifluorotoluene-F
7504496	88
Blank	82
LCS	93
LCSD	91
Limits:	63-135

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Surrogate Quality Control

Analysis Name: 19a PCBs and PCTs 8082A
Batch number: 141720009A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7504494	113	105
7504495	123*	113
Blank	120	109
LCS	120	107
LCSD	131*	129*
MS	122*	105
MSD	124*	114
Limits:	45-120	45-120

Analysis Name: 21b PCBs and PCTs 8082A
Batch number: 141750008A

	Tetrachloro-m-xylene	Decachlorobiphenyl
7504496	119	81
Blank	102	109
LCS	110	89
LCSD	118	105
Limits:	45-120	45-120

Analysis Name: 10a TPH by EPA 8015B (DRO)
Batch number: 141700025A

	Chlorobenzene	Orthoterphenyl
7504493	97	101
7504494	85	87
7504495	77	98
Blank	73	89
LCS	79	97
MS	79	95
MSD	98	104
Limits:	37-125	66-123

Analysis Name: 10b TPH by EPA 8015B (DRO)
Batch number: 141740019A

	Chlorobenzene	Orthoterphenyl
7504496	108	100
Blank	69	94
LCS	68	93
LCSD	103	95
Limits:	45-126	69-119

Analysis Name: 10b TPH-DRO (w/Si Gel)
Batch number: 141740020A

	Chlorobenzene	Orthoterphenyl
7504496	63	72

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: CDM Federal Programs Corp. Group Number: 1483089
Reported: 07/03/14 at 08:56 AM

Surrogate Quality Control

Blank	59	72
LCS	52	66*
LCSD	52	64*
Limits:	45-126	69-119

Analysis Name: 37a TPH-EFH w/Si Gel
Batch number: 141770026A

	Chlorobenzene	Orthoterphenyl
7504493	74	83
7504494	68	72
7504495	75	81
Blank	69	74
LCS	88	96
MS	69	78
MSD	74	80
Limits:	37-125	66-123

Analysis Name: 17b Dioxin/Furan by EPA 1613B
Batch number: 14177002

	13C12-2378-TCDD	13C12-12378-PeCDD	13C12-123478-HxCDD	13C12-123678-HxCDD	13C12-123789-HxCDD	13C12-1234678-HpCDD
7504496	82	77	84	83	82	76
Blank	80	84	83	83	87	107
OPR	74	76	80	82	81	82
Limits:	25-164	25-181	32-141	28-130	28-130	23-140

	13C12-OCDD	13C12-2378-TCDF	13C12-12378-PeCDF	13C12-23478-PeCDF	13C12-123478-HxCDF	13C12-123678-HxCDF
7504496	68	76	70	69	71	74
Blank	134	92	83	90	84	89
OPR	87	82	88	87	87	86
Limits:	17-157	24-169	24-185	21-178	26-152	26-123

	13C12-234678-HxCDF	13C12-123789-HxCDF	13C12-1234678-HpCDF	13C12-1234789-HpCDF	13C12-OCDF
7504496	71	68	67	63	60
Blank	91	100	105	122	133
OPR	86	98	90	87	90
Limits:	28-136	29-147	28-143	26-138	17-157

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/18/2014
CarrierName: FedEx
AirbillNo: 770345474930

A-13013
G-1483089
S-7504493-96

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

COC No: 20140618-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
FDG2-SL-573-NBZ-SB-0.0-0.5	6/18/14 09:40	SO	None	1 - SS-Sleeve	10 day																				X																
FDG2-SL-574-NBZ-SB-0.0-0.5	6/18/14 08:20	SO	None	2 - SS-Sleeve	10 day	X	X								X										X																
FDG2-SL-574-NBZ-SB-0.0-0.5	6/18/14 08:20	SO	None	1 - 4 oz glass	10 day													X																							
FDG2-SL-575-NBZ-SB-0.0-0.5	6/18/14 07:55	SO	None	2 - SS-Sleeve	10 day	X	X					X			X										X																
FDG2-SL-575-NBZ-SB-0.0-0.5	6/18/14 07:55	SO	None	1 - 4 oz glass	10 day													X																							

Special Instructions: For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Sampler: Sandy Do

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Stacy Mupelod	6/18/14	16:00									
										6/19/14	0920

Final Data Gap Block 2 1 of 2

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/18/2014
CarrierName: FedEx
AirbillNo: 770345474930

Contact Name: Pam Hartman
Contact Phone: (818)466-8007

A-13013
G-1483089
S-750493-96

COC No: 20140618-02
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Mercury Speciation 3200	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other
EB1-061814	6/18/14 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																	
EB1-061814	6/18/14 15:00	WQ	None	2 - 250 mL Amber	10 day							X			X																											
EB1-061814	6/18/14 15:00	WQ	None	2 - 1 L Amber	10 day									X																											
EB1-061814	6/18/14 15:00	WQ	None	1 - 250 mL Poly	10 day														X																					
EB1-061814	6/18/14 15:00	WQ	HCl	9 - 40 mL Vial	10 day																		X	X	X															
EB1-061814	6/18/14 15:00	WQ	HCl	2 - 1 L Amber	10 day																					X														

Special Instructions: For all EFH, silica gel cleanup required on half the extract. Analyze both extracts for EFH.

Sampler: Steph Mupell

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Steph Mupell	06/18/14	1600									
									CEsh	6/19/14	0820

Final Data Gap Block 2 2 of 2

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Sample Administration Receipt Documentation Log

Doc Log ID: 17842

Group Number(s): 1483089

Client: CDM SMITH

SSFL PHASE 3

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	06/19/2014 9:20
Number of Packages:	4	Number of Projects:	2
State/Province of Origin:	CA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Total Trip Blank Qty:	0
Custody Seal Present:	Yes	Trip Blank Type:	N/A
Custody Seal Intact:	Yes	Air Quality Samples Present:	No
Samples Chilled:	Yes	Air Quality Flow Controllers Present:	N/A
Paperwork Enclosed:	Yes	Flow Controller Quantity:	0
Samples Intact:	Yes	Air Quality Returns:	N/A
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		
Sample IDs on COC match Containers:	Yes		
Sample Date/Times match COC:	Yes		
VOA Vial Headspace ≥ 6mm:	No		
VOA IDs (≥ 6mm):	N/A		

Unpacked by Corey Eshleman (3647) at 11:13 on 06/19/2014

Samples Chilled Details: SSFL PHASE 3

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Samples Collected Same Day as Receipt?	Elevated Temp?
1	DT121	1.0	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Appendix C
Data Usability Assessment Report and Data Validation Reports
(On CD)

Appendix C
Data Usability Assessment Report

The purpose of this data usability and assessment report (DUAR) is to summarize the data validation performed on the data set for Go-Backs, Trenches and Soil Vapor Location samples collected, and determine whether the sample results meet the Data Quality Objectives (DQOs) outlined in the following documents:

- *Master Field Sampling Plan for Chemical Data Gap Investigation Sampling at Area IV, Santa Susana Field Laboratory, Ventura County, California* (CDM Federal Programs Corporation [CDM Smith] 2012a) (Master Field Sampling Plan [FSP])
- *Addendum No. 10 to Master Field Sampling Plan for Chemical Data Gap Investigation, Phase 3 Go-Back Soil Chemical Sampling at Area IV, Santa Susana Field Laboratory, Ventura County, California, Subareas 5B,5C and 3/6* (CDM Smith 2014) (Addendum to the Master FSP)
- *Addendum No. 11 to Master Field Sampling Plan for Chemical Data Gap Investigation, Phase 3 Go-Back Soil Chemical Sampling at Area IV, Santa Susana Field Laboratory, Ventura County, California, Subareas 5A, 5D, 8 and Northern Buffer Zone (*CDM Smith 2014) (Addendum to the Master FSP)
- *Addendum No. 12 to Master Field Sampling Plan for Chemical Data Gap Investigation, Phase 3 Soil Vapor Implementation for Area IV, Santa Susana Field Laboratory* (MWH Americas, Inc. 2014a) (Addendum to the Master FSP)
- *Final Phase 3 Data Gap Analysis for Subareas 5B, 5C, 3/6, and 7 Technical Memorandum, Santa Susana Field Laboratory, Ventura County*, (MWH Americas, Inc. 2013)
- *Final Phase 3 Data Gap Analysis for Subareas 5A, 5D, and 8 and Northern Buffer Zone Technical Memorandum, Santa Susana Field Laboratory, Ventura County,* (MWH Americas, Inc. 2014)
- *Technical Memorandum Summary of Phase 3 Trench Investigation Activities in Area IV, Santa Susana Field Laboratory, Ventura County* (MWH September 2014)
- *Phase 3 Subarea 5A North Implementation Plan, Santa Susana Field Laboratory* (United States Department of Energy [DOE] 2013)

The Master FSP is Appendix A of *Work Plan for Chemical Data Gap Investigation, Phase 3 Soil Chemical Sampling at Area IV, Santa Susana Field Laboratory, Ventura County, California* (CDM Smith 2012b) (Work Plan), which also includes Appendix B, Quality Assurance Project Plan (QAPP); Appendix C, Worker Safety and Health Program; and Appendix D, Standard Operating Procedures (SOPs).

C.1 Usability Summary

For this data usability assessment, 65 data sets were reviewed for Go-Backs, Trenches and Soil Vapor Locations. A data set consists of 20 or fewer samples grouped together by analytical method for analyses depending on the time and date of when the samples were

received by the laboratory. A data set is called a sample delivery group (SDG). The analytical methods and procedures performed are discussed in Section 2.6 of the Go-Backs, Trenches and Soil Vapor Locations Technical Memorandum (TM).

Samples were collected and analyzed in accordance with the Master FSP (CDM Smith 2012a) and all Addendums listed above. Deviations were encountered during the field investigation sampling activities and are discussed in detail in Section 2.8 of the Go-Backs, Trenches and Soil Vapor Locations TM.

The validated data for Go-Backs, Trenches and Soil Vapor Location samples are usable as reported with the exception of one triethylene glycol result, 15 herbicide results in 10 samples and one SVOC result (2,6-dichlorophenol). This equates to 0.09057 percent of the results. These rejected results do not impact project objectives and goals. Specific details are provided in the validation reports in this appendix and below.

C.2 Data Validation Procedures

Data were validated by the independent data validation firm Laboratory Data Consultants, Inc. All data validation was conducted in accordance with *U.S. Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA 2004), *EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 2008), and *EPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (EPA 2005).

The data validation strategy was to validate 10 percent of the data according to EPA Level IV protocols (all QC parameters and raw data) and the remaining 90 percent according to EPA Level III (all QC parameters except calibrations and raw data) protocols. The Level IV determination also included reviewing 10 percent for each laboratory and each method. In order to achieve this, the validators chose appropriate samples in each SDG. Hence, not all samples in some of the SDGs were Level IV validated but they received a mixture of Level IV and Level III review.

Table C-1 shows all SDGs and associated samples for Go-Backs, Trenches and Soil Vapor Location samples. Some SDGs may contain samples from other subareas but all samples in an SDG were validated together.

In order to evaluate the quality of the laboratory and the validation firm, CDM Smith chemists reviewed 10 percent of the Go-Backs, Trenches and Soil Vapor Location sample SDGs. The purpose of the review was to identify any quality control issues with the laboratory not identified by the validation firm or any discrepancies in validation procedures by the validation firm. No additional qualifiers were applied to the data based on CDM Smith's review.

C.3 Quality Assurance Objectives

Quality assurance (QA) objectives for measurement data are expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS). The QA objectives provide a mechanism for evaluating and measuring data quality.

A review of the collected data is necessary to determine if DQOs established in the Master FSP (CDM Smith 2012a) have been met. The following data measurement tasks were evaluated:

- Specification and adherence to analytical method and reporting limit requirements
- Identification of the appropriate laboratory analytical QC requirements and verification that QC requirements were met
- Verification that measurement performance criteria (representativeness and completeness) for the data were met
- Verification that field procedures were followed, deviations were documented, and determination of impact on data quality from these deviations

The data validation review determines if the collected data are of sufficient quality to support their intended use.

C.4 Summary of Field and Laboratory QA Activities

CDM Smith completed sampling activities for Go-Backs, Trenches and Soil Vapor Location samples in accordance with the approved Master FSP (CDM Smith 2012a) and discussed in the TM. A total of 241 soil samples were collected and analyzed from the sample locations associated with Go-Backs, Trenches and Soil Vapor Locations. Tables 2-1, 2-2 and 2-3 in the TM provide a summary of the samples collected and the laboratory analyses requested.

An index of samples associated with each SDG is presented at the beginning of the data validation reports presented in this appendix. The Master FSP (CDM Smith 2012a) defined the procedures to be followed and the data quality requirements for the field sampling events.

C.5 Field Quality QA/QC

The matrix spike/matrix spike duplicates (MS/MSDs) and field duplicates samples were collected at a frequency of approximately 1 per 20 samples (5 percent). During sampling for Go-Backs, Trenches and Soil Vapor Location samples, a total of 13 field duplicate/MS/MSD samples were collected equating to approximately 5.2 to 5.8 percent for each sample type. On an individual method basis, the five percent goal was met or exceeded for all analyses. Field duplicate and MS/MSD samples met the frequency requirements detailed in the Master FSP (CDM Smith 2012a).

Twenty-four equipment rinsate blank samples were collected. The equipment rinsate blank results are presented in Table C-2.

Three field blanks were collected during sampling for Go-Backs, Trenches and Soil Vapor Locations. The results for these samples are presented in Table C-3.

Forty-six trip blank samples were shipped with the samples. The results for these samples are presented in Table C-4.

Data qualifications based on blank detections are discussed in Section C.7.3 and in the Appendix C validation reports.

Temperature blanks were included with each shipment of samples. Based on validation results, all temperature blanks for Go-Backs, Trenches and Soil Vapor Location samples met criteria.

As stated previously, on an individual method basis, the five percent goal was met or exceeded for all analyses. Field duplicate and MS/MSD samples met the frequency requirements detailed in the Master FSP (CDM Smith 2012a) for the Phase 3 Go-Backs, Trenches and Soil Vapor Location sampling program. Further, field QA/QC objectives were attained through the use of appropriate sampling techniques and collection of the required number and frequency of QC samples.

C.6 Laboratory Quality QA/QC

Analytical QA/QC was assessed by laboratory QC checks, method blanks, sample custody tracking, sample preservation, adherence to holding times, laboratory control samples (LCSs), MSs, calibration recoveries, surrogates, tuning criteria, second column confirmations, internal standards, serial dilutions, laboratory duplicates, and interference check standards. The majority of the laboratory QC sample criteria met project requirements as indicated in the data validation reports in this appendix with the appropriate qualifiers applied. For the Go-Backs, Trenches and Soil Vapor Locations one triethylene glycol result, 15 herbicide results in 10 samples and one SVOC result (2,6-dichlorophenol) were rejected. Specific details are provided in the validation reports in Appendix C and discussed below.

C.7 Data Quality Indicators

This section summarizes the validation performed. Individual SDG validation reports with specific sample detail are provided in this appendix.

Achievement of the DQOs was determined in part by the use of data quality indicators (DQIs) as described in the Master FSP (CDM Smith 2012a). These DQIs for measurement data are expressed in terms of PARCCS. The DQIs provide a mechanism for ongoing control to evaluate and measure data quality throughout the project. These criteria are defined in the sections below.

C.7.1 Precision

Precision is a quantitative term that estimates the reproducibility of a set of replicate measurements under a given set of conditions. It is defined as a measurement of mutual agreement between measurements of the same property and is expressed in terms of relative percent difference (RPD) between duplicate determinations.

RPD is calculated as follows:

$$\textbf{RPD = absolute value [(C1-C2)/\{(C1+C2)/2)\}] x 100\%}$$

Where:

C1 = concentration of primary sample
C2 = concentration of duplicate sample

Field and analytical precision were determined from the review of the field duplicate results. The sample results were compared by calculating their RPDs. The field duplicate samples were collected in the same manner as the original samples but were collected in separate, individual containers, given separate sample identifiers, and treated as individual samples by the laboratory.

Laboratory duplicate RPD control limits are presented in the Work Plan (CDM Smith 2012c) or are laboratory specific. For laboratory duplicates, if one or both of the sample results were less than two times the RL, a control limit of the absolute difference equal to the RL value was used for comparison.

The field duplicate RPD criterion is 50 percent. Field duplicates for this project were validated using the following: If one result is non-detect and the other result is above the RL, the RPD result is shown as 200 percent and the field duplicate sample and parent sample results are qualified as estimated "J" or "UJ." If the field duplicate RPD was above the 50 percent criterion (and both sample results were above the RL), the field duplicate and parent sample results for that analyte were qualified as estimated "J."

Qualifiers were applied to applicable sample analyte results during the validation process based on laboratory and field duplicate precision results. Details are discussed in the laboratory validation reports in this appendix. Tables C-5, C-6 and C-7 show the field duplicate pairs and RPD results for Go-Backs, Trenches and Soil Vapor Location samples. RPD results outside of criteria are highlighted.

Laboratory precision criteria for Phase 3 Go-Backs, Trenches, and Soil Vapor Location samples required the qualification of the following analytes:

- 238 metal results

Field duplicate precision criteria for Phase 3 Go-Backs, Trenches and Soil Vapor Location samples required the qualification of the following analytes:

- 85 dioxin results
- 15 metal results
- 3 mercury results
- 14 TPH GRO/EFH results
- 3 pesticide results
- 2 PCB/PCT results
- 1 herbicide result
- 55 SVOC SIM results

No results were rejected based on field duplicate precision criteria. All field duplicate RPD results are presented in Appendix C. In summary, sample results that have been qualified as estimated "J/UJ" due to precision criteria are usable for project decisions with a degree of caution.

There is no discernable pattern or reason for the laboratory and field sample RPD exceedances identified. No field sampling issues were identified from the RPD results that were outside of criteria and the exceedances are reasonable for this type of sampling activity.

C.7.2 Accuracy

Accuracy is the degree of agreement between a measurement and the accepted reference or true value and is a measure of the bias in a system. Accuracy of the data was assessed by comparing LCS recovery, MS recovery, calibration recovery, Inductively Coupled Plasma (ICP) interferences, and by performing serial dilution checks during metals analyses. Accuracy is expressed as percent recovery (%R), which is calculated by:

$$\textbf{Percent Recovery} = \frac{\textbf{(Total Analyte Found – Analyte Originally Present)}}{\textbf{Analyte Added}} \times 100$$

Analytical accuracy for the entire data collection activity is difficult to assess because several sources of error exist. Errors can be introduced by any of the following:

- Sampling procedure
- Field contamination
- Sample preservation and handling
- Sample matrix
- Sample preparation
- Analytical techniques

Accuracy is maintained to the extent possible by adhering to the approved analytical method and field and analytical standard operating procedures.

Qualifiers were applied to applicable sample analyte results during the validation process based on laboratory accuracy results and are discussed in detail in the laboratory validation reports in Appendix C.

The following Go-Backs, Trenches and Soil Vapor Location individual analyte results were qualified as estimated "J/UJ" based on accuracy criteria:

- 6 dioxin results, 332 metal results, 4 glycol/terphenyl results, 2 glycol results, 24 TPH GRO/EFH results, 1 pesticide result, 7 herbicide results, 2 VOC results, 4 SVOC results, 34 SVOC SIM and 4 energetic results due to MS recoveries
- 129 metal analyte results due to serial dilutions
- 312 TPH GRO/EFH results, 8 herbicide results, 20 SVOC results, 56 SVOC SIM results and 4 energetic results for LCS recoveries

- 105 TPH GRO/EFH results, 2 PCB/PCT results and 1 VOC SIM (1,4-Dioxane) result for surrogate recoveries
- 5 dioxins results, 1 PCB/PCT result and 1 herbicide result for second column confirmation results
- 55 TPH GRO/EFH results, 16 pesticide results, 4 herbicide results, 9 VOC results and 17 SVOC SIM results for calibration criteria

The following individual analyte results were rejected "R" based on accuracy criteria:

- 1 triethylene glycol result, 7 herbicide results and 1 2,6-dichlorophenol result based on MS criteria
- 8 herbicide results based on LCSs

Sample preservation, handling, and holding times are additional measures of accuracy of the data. All sample preservation, holding times and handling criteria were met except for 16 glycol results. These results were qualified as estimated "J/UJ."

Sample results that have been qualified as estimated "J/UJ" due to accuracy criteria are usable for project decisions. Sample results that have been rejected are not usable for project decisions.

C.7.3 Blank Contamination

Field blanks (e.g., equipment and trip) and laboratory method blanks are analyzed to identify possible sources of contamination. Contamination of a sample can be introduced by field sample collection methods, sample handling, preparation, and/or analysis. The laboratory validation reports in this appendix and summarized below discuss the results qualified based on field and laboratory blank contamination.

The following individual analyte results were qualified as nondetect "U" based on laboratory blank contamination for the Go-Backs, Trenches and Soil Vapor Location samples:

- 735 dioxin results (44% of all dioxin results)
- 175 metal results (4.7% of all metal results)

For the dioxins, MDLs for this analysis are very low, reported in nanogram per kilogram (ng/kg) or parts per trillion, resulting in numerous results qualified as estimated "J." Many of these estimated values have been subsequently qualified as non-detect "U" because the compound was detected in related laboratory blanks. In the laboratory blanks, low level detections of dioxin analytes are somewhat inevitable because of the nature and universal extent of the compounds. The dioxin levels found in the blanks are well below site-related action levels. Therefore, the resulting qualification of associated sample results as not detected or "U" does not falsely diminish identification of site-related contaminants.

Tables C-2 through C-4 provide a summary of chemicals observed in the equipment, field and trip blank samples. Most of the equipment blanks, field blanks and trip blanks detected

compounds were below the RLs but above the MDLs. ASTM International Type II water is not typically certified "clean" to the low RLs established for the low level methods used for the co-located sampling program.

Eighty-one percent of the detected compounds in the equipment and field blanks were below the RLs but above the MDLs. Compounds detected above the RL are highlighted yellow in the associated tables. Perchlorate was detected above the RL in one of the equipment blanks. Samples associated with this equipment blank either had nondetect concentrations for perchlorate or it was previously determined that site processes did not constitute sampling for perchlorate at the other associated locations. 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin was also detected in one of the equipment blank samples at a concentration above the RL. Associated samples either had concentrations of this analyte above the specific analyte validation blank action level or it was previously determined that site processes did not constitute sampling for dioxins at the other associated locations. The concentration of the dioxin analyte detected in the equipment blank could possibly be contributing to the concentrations detected in the samples but not at a level that required qualification based on validation protocol. Other analytes were detected in equipment and/or field blank samples above the RL indicating inherent low level contamination in the source water used. All Phase 3 equipment blanks will continue to be monitored to determine if these low level detections are consistent, thus indicating a possible deficiency in decontamination procedures and/or source water impacts that need to be addressed and corrected.

For Go-Backs, Trenches and Soil Vapor Location samples, 129 metal results were qualified based on field/equipment blanks results. To date, chemical detections in equipment blank samples appear to be random occurrences.

Trip blank results are presented in Table C-4. All the trip blank results were nondetect.

C.7.4 Representativeness, Comparability, and Sensitivity

Representativeness, comparability, and sensitivity are achieved by using EPA-approved sampling procedures and analytical methodologies. By following the procedures described in the Work Plan (CDM Smith 2012c) for this sampling event and future sampling events, sample analysis should yield results representative of environmental conditions at the time of sampling. Similarly, reasonable comparability of analytical results for this and future sampling events can be achieved if approved EPA analytical methods and standardized reporting units are employed.

C.7.4.1 Representativeness

Representativeness is a qualitative term that expresses the degree to which the sample data accurately and precisely represent the environmental conditions corresponding to the location and depth interval of sample collection. Requirements and procedures for sample collection are designed to maximize sample representativeness.

Representativeness also can be monitored by reviewing field documentation and/or by performing field audits. For this report, a detailed review was performed on the CoC forms, field data collection forms, laboratory sample confirmation logs, and data validation packages. Laboratory QA/QC requirements were included in the Master FSP (CDM Smith

2012a) and laboratory statements of work (SOWs) to ensure that the laboratory analytical results were representative of true field conditions.

Field sampling accuracy was attained through strict adherence to the approved Master FSP (CDM Smith 2012a) and by using approved standard operating procedures for field data collection. Based on this, the data should represent as near as possible the actual field conditions at the time of sampling.

Representativeness has been achieved by the performed field work and laboratory analyses. The analytical data generated, that have not been rejected, are viewed to be a representative characterization of the project area.

C.7.4.2 Comparability

Comparability is a qualitative term that expresses the confidence with which a data set can be compared with another. Strict adherence to standard sample collection procedures, analytical detection limits, and analytical methods assures that data from like samples and sample conditions are comparable. This comparability is independent of laboratory personnel, data reviewers, or sampling personnel. Comparability criteria are met for the project if, based on data review, the sample collection and analytical procedures are determined to have been followed, or defined to show that variations did not affect the values reported.

To ensure comparability of data generated for the site, standard sample collection procedures and Department of Toxic Substances Control (DTSC)-approved analytical methods were utilized by CDM Smith. The sample analyses were performed by Eurofins Lancaster Laboratories. Utilizing such procedures and methods enables the current data to be comparable with previous and future data sets generated with similar methods.

C.7.4.3 Sensitivity

Sensitivity is related to the ability to compare analytical results with project-specific levels of interest, such as risk-based screening levels or action levels. Analytical detection limits for the various sample analytes should be below the level of interest to allow an effective comparison.

Detection Limits

Each analytical method used during the sampling events was selected because it had potential to achieve RLs established for this project. RLs were established for each analyte in consultation with the laboratory to achieve analytical results at or below regulatory comparison criteria.

The method detection limit (MDL) is defined as the concentration of an analyte that produces a signal with a 99 percent confidence that the concentration is above that of a blank but that that concentration cannot be accurately quantified. A blank is a sample that does not contain measurable concentrations of the analyte of concern. Tested by statistical performance, calibration samples, and LCSs, MDLs represent the best fundamental measurement of instrument sensitivity and the basis for establishing RLs.

The laboratory RL is typically about 3 to 5 times higher than the MDL and is a laboratory-specific number. The actual sample RL is variable based on the sample matrix, moisture content, and other sample-specific factors. When a sample has to be diluted before analysis, either because of matrix problems or to bring the instrument response within the linear dynamic range, the RL is raised by a factor corresponding to the dilution factor.

In reporting environmental sample results, laboratories follow protocols that help ensure that the result reported is at the lowest level and is defensible, taking into account the ability of the instrument to differentiate a signal generated by the analyte from the background instrument noise, imprecision added to the detection capabilities of the analyte due to the sample processing manipulations (MDLs) and sample matrix affects, and adjustments made to the detection limits based on difficulties encountered in analyzing the sample (dilution factors, etc.).

The result for an analyte is flagged with a "U" if that analyte was not detected, or qualified with a "J" flag if blank or other QC results fall outside the appropriate tolerance limits. If an analyte is present at a concentration between the MDL and the RL, the analytical result is flagged with a "J," indicating an estimated quantity. Qualifying the result as an estimated concentration reflects increased uncertainty in the reported value.

The following analyses and individual analyte sample results were qualified as estimated "J" due to the sample results being reported as detected below the RL for Go-Backs, Trenches and Soil Vapor Location samples:

- Method 1613B (Dioxins)
  - 566 individual analyte results
- Methods 6010C/6020A (Metals)
  - 573 individual analyte results
- Methods 7199 (Hexavalent Chromium)
  - 5 individual analyte results
- Methods 7471B (Mercury)
  - 34 individual analyte results
- Method 8015M (TPH GRO/EFH)
  - 123 individual analyte results
- Method 8081B (Pesticides)
  - 30 individual analyte results
- Method 8082A (PCBs)
  - 31 individual analyte results
- Method 8151A (Herbicides)
  - 3 individual analyte results

- Method 8260B (VOCs)
  - 3 individual analyte results

- Method 8270D (SVOCs)
  - 19 individual analyte results

- Method 8270D SIM (SVOCs)
  - 372 individual analyte results

For the data validated in the Go-Backs, Trenches and Soil Vapor Location TM, RLs for a majority of the sample results were low enough to compare to the RLs stated in the Master FSP (CDM Smith 2012a). RLs above those stated in the Master FSP (CDM Smith 2012a) will be evaluated on a case by case basis to see if resampling is required.

C.8 Review of Selected Validation Reports

CDM Smith performed a review of 10 percent of the validation reports identified in Table C-1. This review involved comparing the validation report results against the laboratory data packages as well as the validation guidance documents. All validation report results that were reviewed were verified against the laboratory data packages and determined that validation documents were followed as required.

C.9 Data Completeness

Completeness of the data collection program is defined as the percentage of samples planned for collection as listed in the Master FSP (CDM Smith 2012a) versus the actual number of samples collected during the field program (see equation A).

Completeness for acceptable data is defined as the percentage of acceptable data obtained judged to be valid versus the total quantity of data generated (see equation B). Acceptable data include both data that pass all the QC criteria (unqualified data) and data that may not pass all the QC criteria but had appropriate corrective actions taken (qualified but usable data).

A. $$\%\text{Completeness} = Cx\frac{100}{n}$$

Where:

C = actual number of samples collected
n = total number of samples planned

B. $$\%\text{Completeness} = Vx\frac{100}{n'}$$

Where:

V = number of measurements judged valid
n' = total number of measurements made

The overall completeness goal, as defined in the Master FSP (CDM Smith 2012a), for this sampling event was 90 percent for each analytical test for all project data.

A total of 241 soil samples including the field duplicates were collected and analyzed. Some locations required only a subsurface sample while other locations required both a surface and a subsurface sample. The number of subsurface samples to be collected at each location was not pre-determined because the total depth of each boring varies depending on the local geology. The completeness goal for the actual number of samples collected compared to the number of samples planned is considered acceptable as a sample was collected from each location (depending on shallow refusal).

The completeness goal achieved for acceptable data was 99.90 percent for Go-Backs, Trenches and Soil Vapor Location samples for the number of measurements judged to be valid versus the total number of measurements made for all samples analyzed.

The following Phase 3 Go-Backs, Trenches and Soil Vapor Location individual analyte results were rejected per analyses:

- Method 8015C
  - One out of 32 glycol (triethylene glycol) results (3.12 percent)
- Method 8151A
  - Fifteen out of 140 herbicide results (10.71 percent)
- Method 8270D
  - One out of 619 SVOC (2,6-Cihlorophenol) results (0.16 percent)

Table C-8 summarizes all results that were estimated or rejected for Phase 3 Go-Backs, Trenches and Soil Vapor Location samples.

The completeness goals for both the locations sampled and the number of measurements judged to be valid were met or are planned to be met.

Sampling deviations from procedures described in the Master FSP (CDM Smith 2012a) are discussed in Section 2.8 of the Phase 3 Go-Backs, Trenches and Soil Vapor Location samples TM. Deviations did not impact DQOs for this sampling event. The data reported are suitable for their intended use for characterization of Area IV of SSFL. The DQIs identified in the Master FSP (CDM Smith 2012a) met appropriate criteria. The completeness goals for both the locations sampled and the number of measurements judged to be valid were met or will be met. The achievement of the completeness goals for the data indicates a sufficient amount of usable data has been generated for project decisions.

C.10 Assessment of Data Usability and Reconciliation with WP/FSAP Goals

Over 99 percent of the data validated for Phase 3 Go-Backs, Trenches and Soil Vapor Location samples, are suitable for their intended use for site characterization. Sample results that were qualified as estimated are usable for project decisions. Rejected sample results are not suitable for project use. The rejected analyte results do not impact achievement of the overall

project objectives. The RLs reported generally met the expected limits proposed by the analytical laboratories in their subcontract agreements with CDM Smith.

Field duplicate precision also met criteria a majority of the time. RPDs were outside criteria predominantly when the sample results were close to the RL and/or below the project required action limits. Decisions based on results close to the RL should be made with a degree of caution. The achievement of the completeness goals for number of samples collected, and the number of sample results acceptable for use provides sufficient quality data to support project decisions.

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Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	SL-838-SA5B-SB-0.0-0.5	PH158	SO	1/13/2014
Go Back	SL-838-SA5B-SB-4.0-5.0	PH158	SO	1/13/2014
Go Back	SL-840-SA5B-SB-0.0-0.5	PH158	SO	1/13/2014
Go Back	SL-840-SA5B-SB-4.0-5.0	PH158	SO	1/13/2014
Go Back	SL-840-SA5B-SB-7.0-8.0	PH158	SO	1/13/2014
Go Back	TB-011314	PH158	WQ	1/13/2014
Go Back	EB-011414	PH159	WQ	1/14/2014
Go Back	SL-839-SA5B-SB-0.0-0.5	PH159	SO	1/14/2014
Go Back	SL-839-SA5B-SB-15.5-16.5	PH159	SO	1/14/2014
Go Back	SL-839-SA5B-SB-4.0-5.0	PH159	SO	1/14/2014
Go Back	SL-839-SA5B-SB-9.0-10.0	PH159	SO	1/14/2014
Go Back	SL-843-SA5B-SB-0.0-0.5	PH159	SO	1/14/2014
Go Back	SL-843-SA5B-SB-4.0-5.0	PH159	SO	1/14/2014
Go Back	SL-843-SA5B-SB-7.0-8.0	PH159	SO	1/14/2014
Go Back	TB-011414	PH159	WQ	1/14/2014
Go Back	FDG-SL-798-SA5B-SB-0.0-0.5	PH172	SO	5/7/2014
Go Back	EB-050814	PH173	WQ	5/8/2014
Go Back	FDG-SL-1049-SA5C-SB-0.0-0.5	PH173	SO	5/8/2014
Go Back	FDG-SL-511-SA5C-SB-0.0-0.5	PH173	SO	5/8/2014
Go Back	FDG-SL-511-SA5C-SB-2.0-3.0	PH173	SO	5/8/2014
Go Back	FDG-SL-749-SA5C-SB-0.0-0.5	PH173	SO	5/8/2014
Go Back	SVL-501-SA5B-SB-0.75-1.25	PH174	SO	5/12/2014
Go Back	TB-051214	PH174	WQ	5/12/2014
Go Back	FDG-SL-748-SA5C-SB-0.0-0.5	PH175	SO	5/12/2014
Go Back	FDG-SL-748-SA5C-SB-4.0-5.0	PH175	SO	5/12/2014
Go Back	FB-051314	PH176	WQ	5/13/2014
Go Back	FDG-SL-756-SA5C-SB-15.0-16.0	PH176	SO	5/13/2014
Go Back	FDG-SL-836-SA5B-SB-15.0-16.0	PH176	SO	5/13/2014
Go Back	FDG-SL-836-SA5B-SB-19.0-20.0	PH176	SO	5/13/2014
Go Back	TB1-051314	PH176	WQ	5/13/2014
Go Back	EB1-051414	PH177	WQ	5/14/2014
Go Back	EB2-051414	PH177	WQ	5/14/2014
Go Back	FDG-SL-757-SA5C-SB-0.0-0.5	PH177	SO	5/14/2014
Go Back	FDG-SL-757-SA5C-SB-4.0-5.0	PH177	SO	5/14/2014
Go Back	FDG-SL-757-SA5C-SB-8.0-9.0	PH177	SO	5/14/2014
Go Back	FDG-SL-841-SA5B-SB-0.0-0.5	PH177	SO	5/14/2014
Go Back	FDG-SL-841-SA5B-SB-4.0-5.0	PH177	SO	5/14/2014
Go Back	FDG-SL-841-SA5B-SB-9.0-10.0	PH177	SO	5/14/2014
Go Back	FDG-SL-842-SA5B-SB-0.0-0.5	PH177	SO	5/14/2014
Go Back	FDG-SL-842-SA5B-SB-4.0-5.0	PH177	SO	5/14/2014
Go Back	TB1-051414	PH177	WQ	5/14/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	EB2-051514	PH178	WQ	5/15/2014
Go Back	SVL-534-SA5B-SB-3.0-3.5	PH178	SO	5/15/2014
Go Back	SVL-538-SA5B-SB-1.5-2.0	PH178	SO	5/15/2014
Go Back	SVL-566-SA5B-SB-2.0-2.5	PH178	SO	5/15/2014
Go Back	TB-051514	PH178	WQ	5/15/2014
Go Back	SVL-532-SA5B-SB-4.0-5.0	PH180	SO	5/13/2014
Go Back	SVL-832-SA5B-SB-4.0-5.0	PH180	SO	5/13/2014
Go Back	TB2-051314	PH180	WQ	5/13/2014
Go Back	SVL-504-SA8-SB-2.0-2.5	PH181	SO	5/16/2014
Go Back	SVL-519-SA8-SB-7.5-8.0	PH181	SO	5/16/2014
Go Back	TB-051614	PH181	WQ	5/16/2014
Go Back	SVL-521-SA5B-SB-3.0-3.5	PH182	SO	5/14/2014
Go Back	SVL-543-SA5B-SB-2.0-2.5	PH182	SO	5/14/2014
Go Back	TB2-051414	PH182	WQ	5/14/2014
Go Back	SVL-517-SA8-SB-10.0-11.0	PH183	SO	5/19/2014
Go Back	SVL-517-SA8-SB-15.5-16.5	PH183	SO	5/19/2014
Go Back	SVL-517-SA8-SB-5.0-6.0	PH183	SO	5/19/2014
Go Back	SVL-524-SA8-SB-4.5-5.5	PH183	SO	5/19/2014
Go Back	SVL-528-SA8-SB-11.0-12.0	PH183	SO	5/19/2014
Go Back	SVL-528-SA8-SB-5.0-6.0	PH183	SO	5/19/2014
Go Back	TB1-051914	PH183	WQ	5/19/2014
Go Back	SL-534-SA8-TR-0.5	PH185	SO	5/19/2014
Go Back	SL-534-SA8-TR-5.0	PH185	SO	5/19/2014
Go Back	SL-548-SA8-TR-0.5	PH185	SO	5/19/2014
Go Back	SL-548-SA8-TR-10.0	PH185	SO	5/19/2014
Go Back	SL-548-SA8-TR-5.0	PH185	SO	5/19/2014
Go Back	SL-848-SA8-TR-5.0	PH185	SO	5/19/2014
Go Back	TB2-051914	PH185	WQ	5/19/2014
Go Back	SVL-525-SA5C-SB-10.0-11.0	PH186	SO	5/20/2014
Go Back	SVL-525-SA5C-SB-15.0-16.0	PH186	SO	5/20/2014
Go Back	SVL-525-SA5C-SB-5.0-6.0	PH186	SO	5/20/2014
Go Back	SVL-531-SA5C-SB-2.5-2.9	PH186	SO	5/20/2014
Go Back	TB2-052014	PH186	WQ	5/20/2014
Go Back	FDG2-SL-1174-SA5A-SB-4.0-5.0	PH188	SO	5/20/2014
Go Back	FDG2-SL-874-SA5A-SB-0.0-0.5	PH188	SO	5/20/2014
Go Back	FDG2-SL-874-SA5A-SB-12.0-13.0	PH188	SO	5/20/2014
Go Back	FDG2-SL-874-SA5A-SB-4.0-5.0	PH188	SO	5/20/2014
Go Back	TB1-052014	PH188	WQ	5/20/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	SL-569-SA6-TR-0.5	PH189	SO	5/20/2014
Go Back	SL-569-SA6-TR-2.5	PH189	SO	5/20/2014
Go Back	SL-570-SA6-TR-0.5	PH189	SO	5/20/2014
Go Back	SL-570-SA6-TR-2.0	PH189	SO	5/20/2014
Go Back	SL-570-SA6-TR-6.0	PH189	SO	5/20/2014
Go Back	SL-611-SA8-TR-0.5	PH189	SO	5/20/2014
Go Back	SL-611-SA8-TR-10.5	PH189	SO	5/20/2014
Go Back	SL-611-SA8-TR-5.0	PH189	SO	5/20/2014
Go Back	TB3-052014	PH189	WQ	5/20/2014
Go Back	EB-052114	PH190	WQ	5/21/2014
Go Back	SVL-512-SA5D-SB-5.0-6.0	PH190	SO	5/21/2014
Go Back	SVL-515-SA5D-SB-5.0-6.0	PH190	SO	5/21/2014
Go Back	TB2-052114	PH190	WQ	5/21/2014
Go Back	FB-052114	PH191	WQ	5/21/2014
Go Back	SL-686-SA6-TR-0.5	PH192	SO	5/21/2014
Go Back	SL-686-SA6-TR-11.0	PH192	SO	5/21/2014
Go Back	SL-686-SA6-TR-5.0	PH192	SO	5/21/2014
Go Back	TB3-052114	PH192	WQ	5/21/2014
Go Back	FDG2-SL-584-SA5D-SB-0.0-0.5	PH193	SO	5/21/2014
Go Back	FDG2-SL-584-SA5D-SB-4.0-5.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-585-SA5D-SB-0.0-0.5	PH193	SO	5/21/2014
Go Back	FDG2-SL-585-SA5D-SB-4.0-5.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-586-SA5D-SB-0.0-0.5	PH193	SO	5/21/2014
Go Back	FDG2-SL-586-SA5D-SB-2.0-3.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-623-SA8-SB-0.0-0.5	PH193	SO	5/21/2014
Go Back	FDG2-SL-623-SA8-SB-14.0-15.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-623-SA8-SB-19.0-20.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-623-SA8-SB-4.0-5.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-623-SA8-SB-9.0-10.0	PH193	SO	5/21/2014
Go Back	FDG2-SL-885-SA5D-SB-0.0-0.5	PH193	SO	5/21/2014
Go Back	TB1-052114	PH193	WQ	5/21/2014
Go Back	SVL-511-SA5D-SB-4.5-5.5	PH194	SO	5/22/2014
Go Back	SVL-811-SA5D-SB-4.5-5.5	PH194	SO	5/22/2014
Go Back	TB2-052214	PH194	WQ	5/22/2014
Go Back	EB3-052214	PH195	WQ	5/22/2014
Go Back	SL-587-SA5A-TR-0.5	PH195	SO	5/22/2014
Go Back	SL-587-SA5A-TR-5.5	PH195	SO	5/22/2014
Go Back	SL-730-SA5A-TR-0.5	PH195	SO	5/22/2014
Go Back	SL-730-SA5A-TR-6.0	PH195	SO	5/22/2014
Go Back	SL-887-SA5A-TR-5.5	PH195	SO	5/22/2014
Go Back	TB3-052214	PH195	WQ	5/22/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	EB1-052214	PH196	WQ	5/22/2014
Go Back	EB2-052214	PH196	WQ	5/22/2014
Go Back	FDG2-SL-578-NBZ-SB-0.0-0.5	PH196	SO	5/22/2014
Go Back	FDG2-SL-581-NBZ-SB-0.0-0.5	PH196	SO	5/22/2014
Go Back	FDG2-SL-581-NBZ-SB-13.0-14.0	PH196	SO	5/22/2014
Go Back	FDG2-SL-581-NBZ-SB-4.0-5.0	PH196	SO	5/22/2014
Go Back	FDG2-SL-581-NBZ-SB-9.0-10.0	PH196	SO	5/22/2014
Go Back	FDG2-SL-628-SA8-SB-0.0-0.5	PH196	SO	5/22/2014
Go Back	FDG2-SL-628-SA8-SB-14.0-15.0	PH196	SO	5/22/2014
Go Back	FDG2-SL-628-SA8-SB-4.0-5.0	PH196	SO	5/22/2014
Go Back	FDG2-SL-628-SA8-SB-9.0-10.0	PH196	SO	5/22/2014
Go Back	TB1-052214	PH196	WQ	5/22/2014
Go Back	FDG2-SL-561-NBZ-SB-0.0-0.5	PH197	SO	5/23/2014
Go Back	SVL-536-SA5D-SB-1.8-2.3	PH198	SO	5/23/2014
Go Back	TB2-052314	PH198	WQ	5/23/2014
Go Back	SL-636-SA5A-TR-0.5	PH199	SO	5/23/2014
Go Back	SL-636-SA5A-TR-3.5	PH199	SO	5/23/2014
Go Back	SL-636-SA5A-TR-7.5	PH199	SO	5/23/2014
Go Back	TB3-052314	PH199	WQ	5/23/2014
Go Back	SVL-532-SA5D-SB-4.0-4.5	PH200	SO	5/27/2014
Go Back	SVL-546-SA5D-SB-5.0-6.0	PH200	SO	5/27/2014
Go Back	SVL-550-SA5D-SB-5.0-6.0	PH200	SO	5/27/2014
Go Back	TB2-052714	PH200	WQ	5/27/2014
Go Back	SL-693-SA5B-TR-0.5	PH201	SO	5/27/2014
Go Back	SL-693-SA5B-TR-3.5	PH201	SO	5/27/2014
Go Back	SL-693-SA5B-TR-5.0	PH201	SO	5/27/2014
Go Back	SL-707-SA5B-TR-0.5	PH201	SO	5/27/2014
Go Back	SL-707-SA5B-TR-3.0	PH201	SO	5/27/2014
Go Back	TB3-052714	PH201	WQ	5/27/2014
Go Back	SVL-507-SA5C-SB-5.0-6.0	PH203	SO	5/28/2014
Go Back	SVL-545-SA5C-SB-3.0-3.5	PH203	SO	5/28/2014
Go Back	SVL-551-SA5C-SB-2.0-2.8	PH203	SO	5/28/2014
Go Back	TB2-052814	PH203	WQ	5/28/2014
Go Back	SL-529-SA5B-TR-0.5	PH204	SO	5/28/2014
Go Back	SL-529-SA5B-TR-11.0	PH204	SO	5/28/2014
Go Back	SL-529-SA5B-TR-2.0	PH204	SO	5/28/2014
Go Back	SL-529-SA5B-TR-3.0	PH204	SO	5/28/2014
Go Back	SL-693-SA5B-TR-3.0	PH204	SO	5/28/2014
Go Back	SL-699-SA5B-TR-0.5	PH204	SO	5/28/2014
Go Back	SL-699-SA5B-TR-3.0	PH204	SO	5/28/2014
Go Back	SL-699-SA5B-TR-8.0	PH204	SO	5/28/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	TB3-052814	PH204	WQ	5/28/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	EB2-052914	PH206	WQ	5/29/2014
Go Back	SVL-557-SA5C-SB-3.0-3.5	PH206	SO	5/29/2014
Go Back	SVL-559-SA5C-SB-2.5-3.0	PH206	SO	5/29/2014
Go Back	TB2-052914	PH206	WQ	5/29/2014
Go Back	EB1-052914	PH207	WQ	5/29/2014
Go Back	SL-503-SA5C-TR-0.5	PH207	SO	5/29/2014
Go Back	SL-503-SA5C-TR-5.0	PH207	SO	5/29/2014
Go Back	SL-503-SA5C-TR-7.5	PH207	SO	5/29/2014
Go Back	SL-605-SA5C-TR-0.5	PH207	SO	5/29/2014
Go Back	SL-605-SA5C-TR-10.0	PH207	SO	5/29/2014
Go Back	SL-605-SA5C-TR-5.0	PH207	SO	5/29/2014
Go Back	TB3-052914	PH207	WQ	5/29/2014
Go Back	SL-651-SA5C-TR-0.5	PH209	SO	5/30/2014
Go Back	SL-651-SA5C-TR-10.0	PH209	SO	5/30/2014
Go Back	SL-651-SA5C-TR-15.0	PH209	SO	5/30/2014
Go Back	SL-651-SA5C-TR-5.0	PH209	SO	5/30/2014
Go Back	SL-951-SA5C-TR-5.0	PH209	SO	5/30/2014
Go Back	TB3-053014	PH209	WQ	5/30/2014
Go Back	SVL-518-SA5C-SB-11.0-11.5	PH211	SO	6/2/2014
Go Back	SVL-518-SA5C-SB-5.5-6.0	PH211	SO	6/2/2014
Go Back	SVL-563-SA5C-SB-1.0-1.5	PH211	SO	6/2/2014
Go Back	SVL-576-SA5B-SB-4.0-4.3	PH211	SO	6/2/2014
Go Back	TB3-060214	PH211	WQ	6/2/2014
Go Back	SL-653-SA5C-TR-0.5	PH212	SO	6/2/2014
Go Back	SL-653-SA5C-TR-10.0	PH212	SO	6/2/2014
Go Back	SL-653-SA5C-TR-15.0	PH212	SO	6/2/2014
Go Back	SL-653-SA5C-TR-5.0	PH212	SO	6/2/2014
Go Back	TB4-060214	PH212	WQ	6/2/2014
Go Back	SVL-553-SA5D-SB-14.0-15.0	PH214	SO	6/3/2014
Go Back	SVL-553-SA5D-SB-19.0-20.0	PH214	SO	6/3/2014
Go Back	SVL-553-SA5D-SB-4.5-5.5	PH214	SO	6/3/2014
Go Back	SVL-553-SA5D-SB-9.0-10.0	PH214	SO	6/3/2014
Go Back	SVL-556-SA5D-SB-10.0-11.0	PH214	SO	6/3/2014
Go Back	SVL-556-SA5D-SB-4.5-5.5	PH214	SO	6/3/2014
Go Back	SVL-602-SA5B-SB-4.5-5.0	PH214	SO	6/3/2014
Go Back	TB1-060314	PH214	WQ	6/3/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	EB1-060414	PH216	WQ	6/4/2014
Go Back	EB2-060414	PH216	WQ	6/4/2014
Go Back	EB4-060414	PH216	WQ	6/4/2014
Go Back	EB5-060414	PH216	WQ	6/4/2014
Go Back	SVL-566-SA5A-SB-3.0-3.5	PH216	SO	6/4/2014
Go Back	SVL-571-SA5A-SB-2.5-3.0	PH216	SO	6/4/2014
Go Back	SVL-574-SA5A-SB-1.5-2.0	PH216	SO	6/4/2014
Go Back	SVL-576-SA5A-SB-2.5-3.0	PH216	SO	6/4/2014
Go Back	SVL-577-SA5B-SB-5.3-5.8	PH216	SO	6/4/2014
Go Back	SVL-586-SA5B-SB-3.75-4.25	PH216	SO	6/4/2014
Go Back	SVL-986-SA5B-SB-3.75-4.25	PH216	SO	6/4/2014
Go Back	TB3-060414	PH216	WQ	6/4/2014
Go Back	EB3-060414	PH217	WQ	6/4/2014
Go Back	SL-646-SA5C-TR-0.5	PH217	SO	6/4/2014
Go Back	SL-646-SA5C-TR-5.0	PH217	SO	6/4/2014
Go Back	SL-655-SA5C-TR-0.5	PH217	SO	6/4/2014
Go Back	SL-655-SA5C-TR-5.0	PH217	SO	6/4/2014
Go Back	TB2-060414	PH217	WQ	6/4/2014
Go Back	SVL-529-SA5A-SB-4.0-4.5	PH219	SO	6/5/2014
Go Back	SVL-552-SA5A-SB-1.5-2.0	PH219	SO	6/5/2014
Go Back	SVL-554-SA5A-SB-1.5-2.0	PH219	SO	6/5/2014
Go Back	TB2-060514	PH219	WQ	6/5/2014
Go Back	EB-060514	PH220	WQ	6/5/2014
Go Back	FDG2-SL-624-SA8-SB-0.0-0.5	PH220	SO	6/5/2014
Go Back	FDG2-SL-625-SA8-SB-0.0-0.5	PH220	SO	6/5/2014
Go Back	FDG2-SL-631-SA8-SB-0.0-0.5	PH220	SO	6/5/2014
Go Back	FDG2-SL-631-SA8-SB-4.5-5.0	PH220	SO	6/5/2014
Go Back	FDG2-SL-631-SA8-SB-7.0-8.0	PH220	SO	6/5/2014
Go Back	TB1-060514	PH220	WQ	6/5/2014
Go Back	FDG2-SL-626-SA8-SB-0.0-0.5	PH221	SO	6/6/2014
Go Back	FDG2-SL-626-SA8-SB-4.0-5.0	PH221	SO	6/6/2014
Go Back	FDG2-SL-691-SA6-SB-0.0-0.5	PH221	SO	6/6/2014
Go Back	FDG2-SL-692-SA6-SB-0.0-0.5	PH221	SO	6/6/2014
Go Back	FDG2-SL-693-SA6-SB-0.0-0.5	PH221	SO	6/6/2014
Go Back	TB1-060614	PH221	WQ	6/6/2014
Go Back	SVL-627-SA5A-SB-3.0-3.5	PH222	SO	6/6/2014
Go Back	TB2-060614	PH222	WQ	6/6/2014
Go Back	SVL-527-SA6-SB-2.0-3.0	PH223	SO	6/9/2014
Go Back	SVL-574-SA6-SB-3.8-4.3	PH223	SO	6/9/2014
Go Back	SVL-611-SA5A-SB-1.35-1.85	PH223	SO	6/9/2014
Go Back	SVL-630-SA5A-SB-1.5-2.0	PH223	SO	6/9/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	TB-060914	PH223	WQ	6/9/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	FDG2-SL-558-NBZ-SB-0.0-0.5	PH224	SO	6/9/2014
Go Back	FDG2-SL-559-NBZ-SB-0.0-0.5	PH224	SO	6/9/2014
Go Back	FDG2-SL-632-SA8-SB-0.0-0.5	PH224	SO	6/9/2014
Go Back	FDG2-SL-858-NBZ-SB-0.0-0.5	PH224	SO	6/9/2014
Go Back	SVL-549-SA5C-SB-6.3-6.8	PH226	SO	6/10/2014
Go Back	SVL-551-SA6-SB-4.0-5.0	PH226	SO	6/10/2014
Go Back	SVL-561-SA5C-SB-10.5-11.0	PH226	SO	6/10/2014
Go Back	SVL-562-SA5B-SB-8.0-9.0	PH226	SO	6/10/2014
Go Back	TB2-061014	PH226	WQ	6/10/2014
Go Back	FDG2-SL-564-NBZ-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-565-NBZ-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-566-NBZ-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-576-NBZ-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-576-NBZ-SB-2.0-3.0	PH227	SO	6/10/2014
Go Back	FDG2-SL-612-SA5D-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-613-SA5D-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-614-SA5D-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-630-SA8-SB-0.0-0.5	PH227	SO	6/10/2014
Go Back	FDG2-SL-630-SA8-SB-4.0-5.0	PH227	SO	6/10/2014
Go Back	FDG2-SL-630-SA8-SB-7.0-8.0	PH227	SO	6/10/2014
Go Back	FDG2-SL-930-SA8-SB-4.0-5.0	PH227	SO	6/10/2014
Go Back	TB1-061014	PH227	WQ	6/10/2014
Go Back	EB1-061114	PH228	WQ	6/11/2014
Go Back	EB2-061114	PH228	WQ	6/11/2014
Go Back	EB3-061114	PH228	WQ	6/11/2014
Go Back	EB4-061114	PH228	WQ	6/11/2014
Go Back	SVL-536-SA5B-SB-1.5-2.0	PH228	SO	6/11/2014
Go Back	SVL-563-SA5B-SB-4.5-5.0	PH228	SO	6/11/2014
Go Back	SVL-569-SA5B-SB-2.5-3.0	PH228	SO	6/11/2014
Go Back	SVL-577-SA6-SB-1.0-2.0	PH228	SO	6/11/2014
Go Back	TB2-061114	PH228	WQ	6/11/2014
Go Back	FDG2-SL-560-NBZ-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-571-NBZ-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-577-NBZ-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-629-SA8-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-694-SA6-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-695-SA6-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-878-SA5A-SB-0.0-0.5	PH229	SO	6/11/2014
Go Back	FDG2-SL-878-SA5A-SB-4.0-5.0	PH229	SO	6/11/2014
Go Back	TB1-061114	PH229	WQ	6/11/2014

Table C-1
SDGs and Associated Samples
Go-Backs, Trenches and Soil Vapor Locations

Task Code	Sample Name	Lab SDG	Matrix Code	Sample Date
Go Back	SVL-532-SA8-SB-3.5-4.0	PH230	SO	6/12/2014
Go Back	SVL-546-SA8-SB-4.4-4.9	PH230	SO	6/12/2014
Go Back	SVL-846-SA8-SB-4.4-4.9	PH230	SO	6/12/2014
Go Back	TB-061214	PH230	WQ	6/12/2014
Go Back	EB1-061214	PH231	WQ	6/12/2014
Go Back	EB2-061214	PH231	WQ	6/12/2014
Go Back	FDG2-SL-562-NBZ-SB-0.0-0.5	PH231	SO	6/12/2014
Go Back	FDG2-SL-563-NBZ-SB-0.0-0.5	PH231	SO	6/12/2014
Go Back	FDG2-SL-569-NBZ-SB-0.0-0.5	PH231	SO	6/12/2014
Go Back	FDG2-SL-570-NBZ-SB-0.0-0.5	PH231	SO	6/12/2014
Go Back	FDG2-SL-583-NBZ-SB-0.0-0.5	PH231	SO	6/12/2014
Go Back	FDG2-SL-582-NBZ-SB-0.0-0.5	PH233	SO	6/13/2014
Go Back	FDG2-SL-582-NBZ-SB-3.0-3.5	PH233	SO	6/13/2014
Go Back	FDG2-SL-584-NBZ-SB-0.0-0.5	PH233	SO	6/13/2014
Go Back	FDG2-SL-585-NBZ-SB-0.0-0.5	PH233	SO	6/13/2014
Go Back	FDG2-SL-586-NBZ-SB-0.0-0.5	PH233	SO	6/13/2014
Go Back	TB-061314	PH233	WQ	6/13/2014
Go Back	FDG2-SL-1175-SA5A-SB-2.0-3.0	PH234	SO	6/16/2014
Go Back	FDG2-SL-875-SA5A-SB-0.0-0.5	PH234	SO	6/16/2014
Go Back	FDG2-SL-875-SA5A-SB-2.0-3.0	PH234	SO	6/16/2014
Go Back	FDG2-SL-876-SA5A-SB-0.0-0.5	PH234	SO	6/16/2014
Go Back	FDG2-SL-876-SA5A-SB-4.0-5.0	PH234	SO	6/16/2014
Go Back	FDG2-SL-877-SA5A-SB-0.0-0.5	PH234	SO	6/16/2014
Go Back	FDG2-SL-877-SA5A-SB-3.0-4.0	PH234	SO	6/16/2014
Go Back	TB-061614	PH234	WQ	6/16/2014
Go Back	FDG2-SL-567-NBZ-SB-0.0-0.5	PH235	SO	6/17/2014
Go Back	FDG2-SL-568-NBZ-SB-0.0-0.5	PH235	SO	6/17/2014
Go Back	FDG2-SL-572-NBZ-SB-0.0-0.5	PH235	SO	6/17/2014
Go Back	EB1-061814	PH237	WQ	6/18/2014
Go Back	FDG2-SL-573-NBZ-SB-0.0-0.5	PH237	SO	6/18/2014
Go Back	FDG2-SL-574-NBZ-SB-0.0-0.5	PH237	SO	6/18/2014
Go Back	FDG2-SL-575-NBZ-SB-0.0-0.5	PH237	SO	6/18/2014

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB-011414		EB-050814		EB-052114		EB-060514		EB1-051414	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG	
	Sample Date:	01/14/2014		05/08/2014		05/21/2014		06/05/2014		05/14/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L					5	U				
1,1,1-Trichloroethane	8260B	µg/L					5	U				
1,1,2,2-Tetrachloroethane	8260B	µg/L					5	U				
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L					5	U				
1,1,2-Trichloroethane	8260B	µg/L					5	U				
1,1'-Biphenyl	8270D	µg/L										
1,1-Dichloroethane	8260B	µg/L					5	U				
1,1-Dichloroethene	8260B	µg/L					5	U				
1,1-Dichloropropene	8260B	µg/L					5	U				
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,4,6,7,8-HPCDF	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,4,7,8,9-HPCDF	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	0.537	J	0.146	J			9.72	U	10.3	U
1,2,3,4,7,8-HXCDF	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,6,7,8-HXCDF	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,7,8,9-HXCDF	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,7,8-Pentachlorodibenzofuran	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
1,2,3-Trichlorobenzene	8260B	µg/L					5	U				
1,2,3-Trichloropropane	8260B	µg/L					5	U				
1,2,4-Trichlorobenzene	8260B	µg/L					5	U				
1,2,4-Trichlorobenzene	8270D	µg/L										
1,2,4-Trimethylbenzene	8260B	µg/L					5	U				
1,2-Dibromo-3-chloropropane	8260B	µg/L					5	U				
1,2-Dibromoethane	8260B	µg/L					5	U				
1,2-Dichlorobenzene	8260B	µg/L					5	U				
1,2-Dichlorobenzene	8270D	µg/L										
1,2-Dichloroethane	8260B	µg/L					5	U				
1,2-Dichloropropane	8260B	µg/L					5	U				
1,2-Diphenylhydrazine	8270D	µg/L										
1,3,5-Trimethylbenzene	8260B	µg/L					5	U				
1,3,5-Trinitrobenzene	8330A	µg/L										
1,3-Dichlorobenzene	8260B	µg/L					5	U				
1,3-Dichlorobenzene	8270D	µg/L										
1,3-Dichloropropane	8260B	µg/L					5	U				
1,4-Dichlorobenzene	8260B	µg/L					5	U				
1,4-Dichlorobenzene	8270D	µg/L										
1,4-Dioxane	8260B SIM	µg/L										
1-Chlorohexane	8260B	µg/L					5	U				
1-Methylnaphthalene	8270D	µg/L										
1-Methylnaphthalene	8270D SIM	µg/L	0.053	U	0.051	U			0.024	J	0.057	U
2,2-Dichloropropane	8260B	µg/L					5	U				
2,2-Dichlor-Propionic Acid	8151A	µg/L										
2,3,4,6,7,8-HXCDF	1613B	pg/L	0.404	J	0.114	J			9.72	U	10.3	U
2,3,4,7,8-PECDF	1613B	pg/L	10.1	U	9.7	U			9.72	U	10.3	U
2,3,7,8-TCDD	1613B	pg/L	2.01	U	1.94	U			1.94	U	2.06	U
2,3,7,8-Tetrachlorodibenzofuran	1613B	pg/L	2.01	U	1.94	U			1.94	U	0.156	J
2,4,5-T	8151A	µg/L										
2,4,5-Trichlorophenol	8270D	µg/L										
2,4,6-Trichlorophenol	8270D	µg/L										
2,4,6-Trinitrotoluene	8330A	µg/L										
2,4-D	8151A	µg/L										
2,4-DB	8151A	µg/L										
2,4-Diamino-6-nitrotoluene	8330A	µg/L										
2,4-Dichlorophenol	8270D	µg/L										
2,4-Dimethylphenol	8270D	µg/L										
2,4-Dinitrophenol	8270D	µg/L										
2,4-Dinitrotoluene	8330A	µg/L										
2,6-Diamino-4-nitrotoluene	8330A	µg/L										
2,6-Dichlorophenol	8270D	µg/L										
2,6-Dinitrotoluene	8330A	µg/L										
2-Amino-4,6-Dinitrotoluene	8330A	µg/L										
2-Butanone (MEK)	8260B	µg/L					10	U				
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L					5	U				
2-Chloroethyl Vinyl Ether	8260B	µg/L					10	U				
2-Chloronaphthalene	8270D	µg/L										
2-Chlorophenol	8270D	µg/L										
2-Chlorotoluene	8260B	µg/L					5	U				
2-Hexanone	8260B	µg/L					10	U				
2-Methylnaphthalene	8270D	µg/L										
2-Methylnaphthalene	8270D SIM	µg/L	0.053	U	0.051	U			0.034	J	0.057	U
2-Methylphenol	8270D	µg/L										
2-Nitroaniline	8270D	µg/L										
2-Nitrophenol	8270D	µg/L										
2-Nitrotoluene	8330A	µg/L										
2-Phenylbutane	8260B	µg/L					5	U				
3,3'-Dichlorobenzidine	8270D	µg/L										
3,5-Dimethylphenol	8270D	µg/L										
3-Nitroaniline	8270D	µg/L										
3-Nitrotoluene	8330A	µg/L										
4,4'-DDD	8081B	µg/L										
4,4'-DDE	8081B	µg/L										
4,4'-DDT	8081B	µg/L										
4,6-Dinitro-2-methylphenol	8270D	µg/L										
4-Amino-2,6-Dinitrotoluene	8330A	µg/L										
4-Bromophenyl-phenylether	8270D	µg/L										
4-Chloro-3-methylphenol	8270D	µg/L										
4-Chloroaniline	8270D	µg/L										
4-Chlorophenyl-phenylether	8270D	µg/L										
4-Chlorotoluene	8260B	µg/L					5	U				
4-Methyl-2-pentanone (MIBK)	8260B	µg/L					10	U				
4-Methylphenol	8270D	µg/L										
4-Nitroaniline	8270D	µg/L										
4-Nitrophenol	8270D	µg/L										
4-Nitrotoluene	8330A	µg/L										
Acenaphthene	8270D	µg/L										
Acenaphthene	8270D SIM	µg/L	0.053	U	0.016	J			0.053	U	0.057	U
Acenaphthylene	8270D	µg/L										
Acenaphthylene	8270D SIM	µg/L	0.053	U	0.021	J			0.053	U	0.057	U
Acetone	8260B	µg/L					20	U				
Acrolein	8260B	µg/L					100	U				
Acrylonitrile	8260B	µg/L					20	U				
Aldrin	8081B	µg/L										
Alpha-Bhc	8081B	µg/L										
Aluminum	6010C	mg/L	0.4	U	0.4	U			0.4	U	0.4	U
Aniline	8270D	µg/L										
Anthracene	8270D	µg/L										
Anthracene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Antimony	6010C	mg/L	0.04	U	0.04	U			0.04	U	0.04	U

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB-011414		EB-050814		EB-052114		EB-060514		EB1-051414	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG	
	Sample Date:	01/14/2014		05/08/2014		05/21/2014		06/05/2014		05/14/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Aroclor 1016	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 1221	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 1232	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 1242	8082A	µg/L	0.4	U	0.41	UJ			0.42	U	0.41	U
Aroclor 1248	8082A	µg/L	0.4	U	0.41	UJ			0.42	U	0.41	U
Aroclor 1254	8082A	µg/L	0.4	U	0.41	UJ			0.42	U	0.41	U
Aroclor 1260	8082A	µg/L	0.4	U	0.41	UJ			0.42	U	0.41	U
Aroclor 1262	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 1268	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 5432	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 5442	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Aroclor 5460	8082A	µg/L	0.4	U	0.41	U			0.42	U	0.41	U
Arsenic	6010C	mg/L	0.04	U	0.04	U			0.04	U	0.04	U
Barium	6010C	mg/L	0.00036	J	0.01	U			0.01	U	0.00034	J
Benzene	8260B	µg/L					5	U				
Benzidine	8270D	µg/L										
Benzo(a)anthracene	8270D	µg/L										
Benzo(a)anthracene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Benzo(a)pyrene	8270D	µg/L										
Benzo(a)pyrene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Benzo(b)fluoranthene	8270D	µg/L										
Benzo(b)fluoranthene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Benzo(e)pyrene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Benzo(g,h,i)perylene	8270D	µg/L										
Benzo(g,h,i)perylene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Benzo(k)fluoranthene	8270D	µg/L										
Benzo(k)fluoranthene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Benzoic Acid	8270D	µg/L										
Benzyl Alcohol	8270D	µg/L										
Beryllium	6010C	mg/L	0.01	U	0.01	U			0.01	U	0.01	U
Beta-Bhc	8081B	µg/L										
bis(2-chloroethoxy)methane	8270D	µg/L										
bis(2-chloroethyl) ether	8270D	µg/L										
bis(2-chloroisopropyl) ether	8270D	µg/L										
Bis(2-ethylhexyl)phthalate	8270D	µg/L										
Bis(2-ethylhexyl)phthalate	8270D SIM	µg/L	1.1	U	1	UJ			1	J	1.1	UJ
Boron	6010C	mg/L	0.1	U	0.0084	J			0.1	U	0.0106	J
Bromobenzene	8260B	µg/L					5	U				
Bromochloromethane	8260B	µg/L					5	U				
Bromodichloromethane	8260B	µg/L					5	U				
Bromoform	8260B	µg/L					5	U				
Bromomethane	8260B	µg/L					5	U				
Butylbenzylphthalate	8270D	µg/L										
Butylbenzylphthalate	8270D SIM	µg/L	1.1	U	1	U			1.1	U	1.1	U
Cadmium	6010C	mg/L	0.01	U	0.01	U			0.01	U	0.01	U
Calcium	6010C	mg/L	0.4	U	0.4	U			0.4	U	0.4	U
Carbazole	8270D	µg/L										
Carbon Disulfide	8260B	µg/L					5	U				
Carbon Tetrachloride	8260B	µg/L					5	U				
Chlordane	8081B	µg/L										
Chlorobenzene	8260B	µg/L					5	U				
Chloroethane	8260B	µg/L					5	U				
Chloroform	8260B	µg/L					5	U				
Chloromethane	8260B	µg/L					5	U				
Chlorotrifluoroethylene	8260B	µg/L					5	UJ				
Chromium	6010C	mg/L	0.03	U	0.03	U			0.03	U	0.03	U
Chromium (Hexavalent Compounds)	7199	µg/L										
Chrysene	8270D	µg/L										
Chrysene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
cis-1,2-Dichloroethene	8260B	µg/L					5	U				
cis-1,3-Dichloropropene	8260B	µg/L					5	U				
Cobalt	6010C	mg/L	0.01	U	0.01	U			0.01	U	0.01	U
Copper	6010C	mg/L	0.02	U	0.02	U			0.02	U	0.02	U
Cymene	8260B	µg/L					5	U				
Delta-Bhc	8081B	µg/L										
Di isopropyl Ether	8260B	µg/L					5	U				
Dibenzo(a,h)anthracene	8270D	µg/L										
Dibenzo(a,h)anthracene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	UJ
Dibenzofuran	8270D	µg/L										
Dibromochloromethane	8260B	µg/L					5	U				
Dibromomethane	8260B	µg/L					5	U				
Dicamba	8151A	µg/L										
Dichlorodifluoromethane	8260B	µg/L					5	U				
Dichlorprop	8151A	µg/L										
Dieldrin	8081B	µg/L										
Diethylene Glycol	8015C	mg/L										
Diethylphthalate	8270D	µg/L										
Diethylphthalate	8270D SIM	µg/L	0.44	J	0.48	J			1.1	U	1.1	U
Dimethylphthalate	8270D	µg/L										
Dimethylphthalate	8270D SIM	µg/L	1.1	U	1	U			1.1	U	1.1	U
Di-n-butylphthalate	8270D	µg/L										
Di-n-butylphthalate	8270D SIM	µg/L	0.17	J	1	U			0.098	J	1.1	U
Dinitrobutyl Phenol	8151A	µg/L										
Di-n-octylphthalate	8270D	µg/L										
Di-n-octylphthalate	8270D SIM	µg/L	1.1	U	1	U			1.1	U	1.1	UJ
Diphenylamine	8270D	µg/L										
EFH (C12-C14)	8015M	mg/L	0.098	U	0.098	U			0.1	UJ	0.098	U
EFH (C12-C14) w/ Silica Gel	8015M	mg/L			0.098	U			0.1	UJ	0.098	UJ
EFH (C15-C20)	8015M	mg/L	0.098	U	0.098	U			0.1	U	0.098	U
EFH (C15-C20) w/ Silica Gel	8015M	mg/L			0.098	U			0.1	U	0.098	U
EFH (C21-C30)	8015M	mg/L	0.098	U	0.098	U			0.1	U	0.098	U
EFH (C21-C30) w/ Silica Gel	8015M	mg/L			0.098	U			0.1	U	0.098	UJ
EFH (C30-C40)	8015M	mg/L	0.49	U	0.49	U			0.5	U	0.49	U
EFH (C30-C40) w/ Silica Gel	8015M	mg/L			0.49	U			0.5	U	0.49	U
EFH (C8-C11)	8015M	mg/L	0.098	U	0.098	U			0.1	UJ	0.098	U
EFH (C8-C11) w/ Silica Gel	8015M	mg/L			0.098	U			0.1	UJ	0.098	UJ
Endosulfan I	8081B	µg/L										
Endosulfan II	8081B	µg/L										
Endosulfan Sulfate	8081B	µg/L										
Endrin	8081B	µg/L										
Endrin Aldehyde	8081B	µg/L										
Endrin Ketone	8081B	µg/L										
Ethylbenzene	8260B	µg/L					5	U				
Ethylene Glycol	8015C	mg/L										
Fluoranthene	8270D	µg/L										
Fluoranthene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Fluorene	8270D	µg/L										
Fluorene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Formaldehyde	8315A	µg/L										
Gamma-Bhc (Lindane)	8081B	µg/L										
Gasoline Range Organics (C5-C12)	8015M	µg/L	50	U	50	U			50	U		

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB-011414		EB-050814		EB-052114		EB-060514		EB1-051414	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG	
	Sample Date:	01/14/2014		05/08/2014		05/21/2014		06/05/2014		05/14/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Heptachlor	8081B	µg/L										
Heptachlor Epoxide	8081B	µg/L										
Hexachloro-1,3-butadiene	8260B	µg/L					5	U				
Hexachlorobenzene	8270D	µg/L										
Hexachlorobutadiene	8270D	µg/L										
Hexachlorocyclopentadiene	8270D	µg/L										
Hexachloroethane	8270D	µg/L										
HMX	8330A	µg/L										
Indeno(1,2,3-cd)pyrene	8270D	µg/L										
Indeno(1,2,3-cd)pyrene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Iron	6010C	mg/L	0.4	U	0.4	U			0.4	U	0.4	U
Isophorone	8270D	µg/L										
Isopropylbenzene	8260B	µg/L					5	U				
Lead	6010C	mg/L	0.03	U	0.03	U			0.03	U	0.03	U
Lithium	6010C	mg/L	0.04	U	0.04	U			0.04	U	0.04	U
m,p-Xylene	8260B	µg/L					5	U				
Magnesium	6010C	mg/L	0.2	U	0.2	U			0.2	U	0.2	U
Manganese	6010C	mg/L	0.01	U	0.01	U			0.01	U	0.01	U
MCPA	8151A	µg/L										
MCPP	8151A	µg/L										
M-Dinitrobenzene	8330A	µg/L										
Mercury	7470A	mg/L	0.0002	U	0.0002	U			0.0002	U	0.0002	U
Methoxychlor	8081B	µg/L										
Methyl Iodide	8260B	µg/L					5	U				
Methyl Tert-Butyl Ether	8260B	µg/L					5	U				
Methylene Chloride	8260B	µg/L					5	U				
Mirex	8081B	µg/L										
Molybdenum	6010C	mg/L	0.02	U	0.02	U			0.02	U	0.0029	J
Morpholine	8270D SIM	µg/L										
m-Terphenyl	8015B	mg/L										
Naphthalene	8270D	µg/L										
Naphthalene	8270D SIM	µg/L	0.053	U	0.051	U			0.072		0.057	U
n-Butylbenzene	8260B	µg/L					5	U				
Nickel	6010C	mg/L	0.02	U	0.02	U			0.02	U	0.02	U
Nitrobenzene	8270D	µg/L										
Nitrobenzene	8330A	µg/L										
Nitroglycerin	8330A	µg/kg										
N-Nitrosodimethylamine	8270D	µg/L										
N-Nitrosodimethylamine	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
N-Nitroso-di-n-propylamine	8270D	µg/L										
N-Nitrosodiphenylamine	8270D	µg/L										
n-Propylbenzene	8260B	µg/L					5	U				
OCDD	1613B	pg/L	20.1	U	19.4	U			19.4	U	20.6	U
OCDF	1613B	pg/L	20.1	U	19.4	U			19.4	U	20.6	U
o-Terphenyl	8015B	mg/L										
o-Xylene	8260B	µg/L					5	U				
Pentachlorophenol	8270D	µg/L										
Perchlorate	6850	µg/L	1	U	1	U					6.4	
PETN	8330A	µg/kg										
pH	9040C	pH	6.4		5.9				6.3		5.8	
Phenanthrene	8270D	µg/L										
Phenanthrene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Phenol	8270D	µg/L										
Phosphorus	6010C	mg/L	0.2	U	0.2	U			0.2	U	0.2	U
Potassium	6010C	mg/L	1	U	1	U			1	U	1	U
Propylene Glycol	8015C	mg/L										
p-Terphenyl	8015B	mg/L										
Pyrene	8270D	µg/L										
Pyrene	8270D SIM	µg/L	0.053	U	0.051	U			0.053	U	0.057	U
Pyridine	8270D	µg/L										
RDX	8330A	µg/L										
Selenium	6020A	mg/L	0.004	U	0.004	U			0.004	U	0.004	U
Silver	6020A	mg/L	0.001	U	0.001	U			0.001	U	0.001	U
Silvex (2,4,5-TP)	8151A	µg/L										
Sodium	6010C	mg/L	2	U	2	U			2	U	2	U
Strontium	6020A	mg/L	0.002	U	0.002	U			0.002	U	0.002	U
Styrene	8260B	µg/L					5	U				
Technical Toxaphene	8081B	µg/L										
tert-Butyl ethyl ether	8260B	µg/L					5	U				
tert-Butylbenzene	8260B	µg/L					5	U				
Tertiary amyl methyl ether	8260B	µg/L					5	U				
Tertiary butyl alcohol	8260B	µg/L					50	U				
Tetrachloroethene	8260B	µg/L					5	U				
Tetryl	8330A	µg/L										
Thallium	6020A	mg/L	0.001	U	0.001	U			0.001	U	0.001	U
Tin	6010C	mg/L	0.04	U	0.04	U			0.04	U	0.04	U
Titanium	6010C	mg/L	0.02	U	0.02	U			0.02	U	0.02	U
Toluene	8260B	µg/L					5	U				
trans-1,2-Dichloroethene	8260B	µg/L					5	U				
trans-1,3-Dichloropropene	8260B	µg/L					5	U				
Trichloroethene	8260B	µg/L					5	U				
Trichlorofluoromethane	8260B	µg/L					5	U				
Triethylene Glycol	8015C	mg/L										
Vanadium	6010C	mg/L	0.01	U	0.01	U			0.01	U	0.01	U
Vinyl Acetate	8260B	µg/L					10	U				
Vinyl Chloride	8260B	µg/L					5	U				
Zinc	6010C	mg/L	0.04	U	0.04	U			0.04	U	0.04	U
Zirconium	6010C	mg/L	0.1	U	0.1	U			0.1	U	0.1	U

Notes:
ug/L - microgram per liter
mg/L - milligram per liter
ng/L - nanogram per liter
pg/L - picogram per liter
U - Compound not detected above the reporting limit

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB1-052214		EB1-052914		EB1-060414		EB1-061114		EB1-061214	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK TR		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG	
	Sample Date:	05/22/2014		05/29/2014		06/04/2014		06/11/2014		06/12/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L			1	U	5	U	1	U		
1,1,1-Trichloroethane	8260B	µg/L			1	U	5	U	1	U		
1,1,2,2-Tetrachloroethane	8260B	µg/L			1	U	5	U	1	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L			10	U	5	U	10	U		
1,1,2-Trichloroethane	8260B	µg/L			1	U	5	U	1	U		
1,1'-Biphenyl	8270D	µg/L			1	U						
1,1-Dichloroethane	8260B	µg/L			1	U	5	U	1	U		
1,1-Dichloroethene	8260B	µg/L			1	U	5	U	1	U		
1,1-Dichloropropene	8260B	µg/L			5	U	5	U	5	U		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1613B	pg/L			9.6	U					10.2	U
1,2,3,4,6,7,8-HPCDF	1613B	pg/L			9.6	U					10.2	U
1,2,3,4,7,8,9-HPCDF	1613B	pg/L			9.6	U					10.2	U
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L			0.293	J					10.2	U
1,2,3,4,7,8-HXCDF	1613B	pg/L			9.6	U					10.2	U
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L			9.6	U					10.2	U
1,2,3,6,7,8-HXCDF	1613B	pg/L			9.6	U					10.2	U
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	1613B	pg/L			9.6	U					10.2	U
1,2,3,7,8,9-HXCDF	1613B	pg/L			9.6	U					10.2	U
1,2,3,7,8-Pentachlorodibenzofuran	1613B	pg/L			9.6	U					10.2	U
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1613B	pg/L			9.6	U					10.2	U
1,2,3-Trichlorobenzene	8260B	µg/L			5	U	5	U	5	U		
1,2,3-Trichloropropane	8260B	µg/L			5	U	5	U	5	U		
1,2,4-Trichlorobenzene	8260B	µg/L			5	U	5	U	5	U		
1,2,4-Trichlorobenzene	8270D	µg/L			1	U						
1,2,4-Trimethylbenzene	8260B	µg/L			5	U	5	U	5	U		
1,2-Dibromo-3-chloropropane	8260B	µg/L			5	U	5	U	5	U		
1,2-Dibromoethane	8260B	µg/L			1	U	5	U	1	U		
1,2-Dichlorobenzene	8260B	µg/L			5	U	5	U	5	U		
1,2-Dichlorobenzene	8270D	µg/L			1	U						
1,2-Dichloroethane	8260B	µg/L			1	U	5	U	1	U		
1,2-Dichloropropane	8260B	µg/L			1	U	5	U	1	U		
1,2-Diphenylhydrazine	8270D	µg/L			1	U						
1,3,5-Trimethylbenzene	8260B	µg/L			5	U	5	U	5	U		
1,3,5-Trinitrobenzene	8330A	µg/L			0.6	U						
1,3-Dichlorobenzene	8260B	µg/L			5	U	5	U	5	U		
1,3-Dichlorobenzene	8270D	µg/L			1	U						
1,3-Dichloropropane	8260B	µg/L			1	U	5	U	1	U		
1,4-Dichlorobenzene	8260B	µg/L			5	U	5	U	5	U		
1,4-Dichlorobenzene	8270D	µg/L			1	U						
1,4-Dioxane	8260B SIM	µg/L										
1-Chlorohexane	8260B	µg/L			5	U	5	U	5	U		
1-Methylnaphthalene	8270D	µg/L			0.5	U						
1-Methylnaphthalene	8270D SIM	µg/L	0.02	J	0.023	J					0.02	J
2,2-Dichloropropane	8260B	µg/L			1	U	5	U	1	U		
2,2-Dichlor-Propionic Acid	8151A	µg/L			1.2	U					1.2	U
2,3,4,6,7,8-HXCDF	1613B	pg/L			9.6	U					10.2	U
2,3,4,7,8-PECDF	1613B	pg/L			0.216	J					0.0938	J
2,3,7,8-TCDD	1613B	pg/L			1.92	U					2.04	U
2,3,7,8-Tetrachlorodibenzofuran	1613B	pg/L			1.92	U					0.0871	J
2,4,5-T	8151A	µg/L			0.048	U					0.048	U
2,4,5-Trichlorophenol	8270D	µg/L			1	U						
2,4,6-Trichlorophenol	8270D	µg/L			1	U						
2,4,6-Trinitrotoluene	8330A	µg/L			0.6	U						
2,4-D	8151A	µg/L			0.48	U					0.48	U
2,4-DB	8151A	µg/L			0.96	U					0.59	J
2,4-Diamino-6-nitrotoluene	8330A	µg/L			0.6	U						
2,4-Dichlorophenol	8270D	µg/L			1	U						
2,4-Dimethylphenol	8270D	µg/L			1	U						
2,4-Dinitrophenol	8270D	µg/L			30	U						
2,4-Dinitrotoluene	8330A	µg/L			0.6	U						
2,6-Diamino-4-nitrotoluene	8330A	µg/L			0.6	U						
2,6-Dichlorophenol	8270D	µg/L			1	U						
2,6-Dinitrotoluene	8330A	µg/L			0.6	U						
2-Amino-4,6-Dinitrotoluene	8330A	µg/L			0.6	U						
2-Butanone (MEK)	8260B	µg/L			10	U	10	U	10	U		
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L			5	U	5	U	5	U		
2-Chloroethyl Vinyl Ether	8260B	µg/L			10	U	10	U	10	U		
2-Chloronaphthalene	8270D	µg/L			1	U						
2-Chlorophenol	8270D	µg/L			1	U						
2-Chlorotoluene	8260B	µg/L			5	U	5	U	5	U		
2-Hexanone	8260B	µg/L			10	U	10	U	10	U		
2-Methylnaphthalene	8270D	µg/L			0.5	U						
2-Methylnaphthalene	8270D SIM	µg/L	0.03	J	0.033	J					0.027	J
2-Methylphenol	8270D	µg/L			1	U						
2-Nitroaniline	8270D	µg/L			1	U						
2-Nitrophenol	8270D	µg/L			1	U						
2-Nitrotoluene	8330A	µg/L			0.6	U						
2-Phenylbutane	8260B	µg/L			5	U	5	U	5	U		
3,3'-Dichlorobenzidine	8270D	µg/L			5	U						
3,5-Dimethylphenol	8270D	µg/L			10	U						
3-Nitroaniline	8270D	µg/L			1	U						
3-Nitrotoluene	8330A	µg/L			1.2	U						
4,4'-DDD	8081B	µg/L			0.017	U					0.017	U
4,4'-DDE	8081B	µg/L			0.017	U					0.017	U
4,4'-DDT	8081B	µg/L			0.017	U					0.017	U
4,6-Dinitro-2-methylphenol	8270D	µg/L			15	U						
4-Amino-2,6-Dinitrotoluene	8330A	µg/L			0.6	U						
4-Bromophenyl-phenylether	8270D	µg/L			1	U						
4-Chloro-3-methylphenol	8270D	µg/L			1	U						
4-Chloroaniline	8270D	µg/L			1	U						
4-Chlorophenyl-phenylether	8270D	µg/L			1	U						
4-Chlorotoluene	8260B	µg/L			5	U	5	U	5	U		
4-Methyl-2-pentanone (MIBK)	8260B	µg/L			10	U	10	U	10	U		
4-Methylphenol	8270D	µg/L			1	U						
4-Nitroaniline	8270D	µg/L			1	U						
4-Nitrophenol	8270D	µg/L			30	U						
4-Nitrotoluene	8330A	µg/L			1.2	U						
Acenaphthene	8270D	µg/L			0.5	U						
Acenaphthene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Acenaphthylene	8270D	µg/L			0.5	U						
Acenaphthylene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Acetone	8260B	µg/L			20	U	20	U	20	U		
Acrolein	8260B	µg/L			100	U	100	U	100	U		
Acrylonitrile	8260B	µg/L			20	U	20	U	20	U		
Aldrin	8081B	µg/L			0.0083	U					0.0085	U
Alpha-Bhc	8081B	µg/L			0.0083	U					0.0085	U
Aluminum	6010C	mg/L	0.4	U	0.4	U					0.4	U
Aniline	8270D	µg/L			1	U						
Anthracene	8270D	µg/L			0.5	U						
Anthracene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Antimony	6010C	mg/L	0.04	U	0.04	U					0.04	U

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB1-052214		EB1-052914		EB1-060414		EB1-061114		EB1-061214	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK TR		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG	
	Sample Date:	05/22/2014		05/29/2014		06/04/2014		06/11/2014		06/12/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Aroclor 1016	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1221	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1232	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1242	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1248	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1254	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1260	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1262	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 1268	8082A	µg/L	0.42	U	0.42	U					0.43	UJ
Aroclor 5432	8082A	µg/L	0.42	U	0.42	U					0.43	U
Aroclor 5442	8082A	µg/L	0.42	U	0.42	U					0.43	U
Aroclor 5460	8082A	µg/L	0.42	U	0.42	U					0.43	U
Arsenic	6010C	mg/L	0.04	U	0.04	U					0.04	U
Barium	6010C	mg/L	0.01	U	0.01	U					0.01	U
Benzene	8260B	µg/L			1	U	5	U	1	U		
Benzidine	8270D	µg/L			61	U						
Benzo(a)anthracene	8270D	µg/L			0.5	U						
Benzo(a)anthracene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Benzo(a)pyrene	8270D	µg/L			0.5	U						
Benzo(a)pyrene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Benzo(b)fluoranthene	8270D	µg/L			0.5	U						
Benzo(b)fluoranthene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Benzo(e)pyrene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Benzo(g,h,i)perylene	8270D	µg/L			0.5	U						
Benzo(g,h,i)perylene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Benzo(k)fluoranthene	8270D	µg/L			0.5	U						
Benzo(k)fluoranthene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Benzoic Acid	8270D	µg/L			15	UJ						
Benzyl Alcohol	8270D	µg/L			15	U						
Beryllium	6010C	mg/L	0.01	U	0.01	U					0.01	U
Beta-Bhc	8081B	µg/L			0.0083	U					0.017	
bis(2-chloroethoxy)methane	8270D	µg/L			1	U						
bis(2-chloroethyl) ether	8270D	µg/L			1	U						
bis(2-chloroisopropyl) ether	8270D	µg/L			1	U						
Bis(2-ethylhexyl)phthalate	8270D	µg/L			5	U						
Bis(2-ethylhexyl)phthalate	8270D SIM	µg/L	1	UJ	1	UJ					1.1	UJ
Boron	6010C	mg/L	0.1	U	0.1	U					0.1	U
Bromobenzene	8260B	µg/L			5	U	5	U	5	U		
Bromochloromethane	8260B	µg/L			5	U	5	U	5	U		
Bromodichloromethane	8260B	µg/L			1	U	5	U	1	U		
Bromoform	8260B	µg/L			4	U	5	U	4	U		
Bromomethane	8260B	µg/L			1	U	5	U	1	U		
Butylbenzylphthalate	8270D	µg/L			5	U						
Butylbenzylphthalate	8270D SIM	µg/L	1	UJ	1	U					1.1	U
Cadmium	6010C	mg/L	0.01	U	0.01	U					0.01	U
Calcium	6010C	mg/L	0.4	U	0.4	U					0.4	U
Carbazole	8270D	µg/L			1	U						
Carbon Disulfide	8260B	µg/L			5	U	5	U	5	U		
Carbon Tetrachloride	8260B	µg/L			1	U	5	U	1	U		
Chlordane	8081B	µg/L			0.42	U					0.43	U
Chlorobenzene	8260B	µg/L			1	U	5	U	1	U		
Chloroethane	8260B	µg/L			1	U	5	U	1	U		
Chloroform	8260B	µg/L	0.6	J	1	U	5	U	1	U		
Chloromethane	8260B	µg/L			1	U	5	U	1	U		
Chlorotrifluoroethylene	8260B	µg/L			5	U	5	U	5	U		
Chromium	6010C	mg/L	0.03	U	0.03	U					0.03	U
Chromium (Hexavalent Compounds)	7199	µg/L			10	U						
Chrysene	8270D	µg/L			0.5	U						
Chrysene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
cis-1,2-Dichloroethene	8260B	µg/L			1	U	5	U	1	U		
cis-1,3-Dichloropropene	8260B	µg/L			1	U	5	U	1	U		
Cobalt	6010C	mg/L	0.01	U	0.01	U					0.01	U
Copper	6010C	mg/L	0.02	U	0.02	U					0.02	U
Cymene	8260B	µg/L			5	U	5	U	5	U		
Delta-Bhc	8081B	µg/L			0.0083	U					0.0085	U
Di isopropyl Ether	8260B	µg/L			1	U	5	U	1	U		
Dibenzo(a,h)anthracene	8270D	µg/L			0.5	U						
Dibenzo(a,h)anthracene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Dibenzofuran	8270D	µg/L			1	U						
Dibromochloromethane	8260B	µg/L			1	U	5	U	1	U		
Dibromomethane	8260B	µg/L			1	U	5	U	1	U		
Dicamba	8151A	µg/L			0.29	UJ					0.29	U
Dichlorodifluoromethane	8260B	µg/L			1	U	5	U	1	U		
Dichlorprop	8151A	µg/L			0.48	U					0.48	U
Dieldrin	8081B	µg/L			0.017	U					0.017	U
Diethylene Glycol	8015C	mg/L			10	U						
Diethylphthalate	8270D	µg/L			5	U						
Diethylphthalate	8270D SIM	µg/L	0.053	J	0.057	J					1.1	U
Dimethylphthalate	8270D	µg/L			5	U						
Dimethylphthalate	8270D SIM	µg/L	1	UJ	1	U					1.1	U
Di-n-butylphthalate	8270D	µg/L			5	U						
Di-n-butylphthalate	8270D SIM	µg/L	0.09	J	1	U					1.1	U
Dinitrobutyl Phenol	8151A	µg/L			0.48	U					0.48	U
Di-n-octylphthalate	8270D	µg/L			5	U						
Di-n-octylphthalate	8270D SIM	µg/L	1	UJ	1	U					1.1	UJ
Diphenylamine	8270D	µg/L			5	U						
EFH (C12-C14)	8015M	mg/L	0.1	UJ	0.095	U					0.1	U
EFH (C12-C14) w/ Silica Gel	8015M	mg/L	0.1	UJ	0.095	U					0.1	UJ
EFH (C15-C20)	8015M	mg/L	0.1	UJ	0.095	U					0.1	U
EFH (C15-C20) w/ Silica Gel	8015M	mg/L	0.1	UJ	0.095	U					0.1	U
EFH (C21-C30)	8015M	mg/L	0.1	UJ	0.095	U					0.1	U
EFH (C21-C30) w/ Silica Gel	8015M	mg/L	0.1	UJ	0.095	U					0.1	UJ
EFH (C30-C40)	8015M	mg/L	0.5	UJ	0.48	U					0.51	U
EFH (C30-C40) w/ Silica Gel	8015M	mg/L	0.5	UJ	0.48	U					0.51	U
EFH (C8-C11)	8015M	mg/L	0.1	UJ	0.095	U					0.1	U
EFH (C8-C11) w/ Silica Gel	8015M	mg/L	0.1	UJ	0.095	UJ					0.1	UJ
Endosulfan I	8081B	µg/L			0.0083	U					0.0085	U
Endosulfan II	8081B	µg/L			0.017	U					0.017	U
Endosulfan Sulfate	8081B	µg/L			0.017	U					0.017	U
Endrin	8081B	µg/L			0.017	U					0.017	U
Endrin Aldehyde	8081B	µg/L			0.083	U					0.085	U
Endrin Ketone	8081B	µg/L			0.017	U					0.017	U
Ethylbenzene	8260B	µg/L			1	U	5	U	1	U		
Ethylene Glycol	8015C	mg/L			10	U						
Fluoranthene	8270D	µg/L			0.5	U						
Fluoranthene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Fluorene	8270D	µg/L			0.5	U						
Fluorene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Formaldehyde	8315A	µg/L										
Gamma-Bhc (Lindane)	8081B	µg/L			0.0083	U					0.0085	U
Gasoline Range Organics (C5-C12)	8015M	µg/L			50	U					50	U

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB1-052214		EB1-052914		EB1-060414		EB1-061114		EB1-061214	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK TR		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG	
	Sample Date:	05/22/2014		05/29/2014		06/04/2014		06/11/2014		06/12/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Heptachlor	8081B	µg/L			0.0083	U					0.0085	U
Heptachlor Epoxide	8081B	µg/L			0.0083	U					0.0085	U
Hexachloro-1,3-butadiene	8260B	µg/L			5	U	5	U	5	U		
Hexachlorobenzene	8270D	µg/L			0.5	U						
Hexachlorobutadiene	8270D	µg/L			1	U						
Hexachlorocyclopentadiene	8270D	µg/L			15	U						
Hexachloroethane	8270D	µg/L			5	U						
HMX	8330A	µg/L			2	U						
Indeno(1,2,3-cd)pyrene	8270D	µg/L			0.5	U						
Indeno(1,2,3-cd)pyrene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Iron	6010C	mg/L	0.4	U	0.4	U					0.4	U
Isophorone	8270D	µg/L			1	U						
Isopropylbenzene	8260B	µg/L			5	U	5	U	5	U		
Lead	6010C	mg/L	0.03	U	0.03	U					0.03	U
Lithium	6010C	mg/L	0.04	U	0.04	U					0.04	U
m,p-Xylene	8260B	µg/L			1	U	5	U	1	U		
Magnesium	6010C	mg/L	0.2	U	0.2	U					0.2	U
Manganese	6010C	mg/L	0.01	U	0.01	U					0.01	U
MCPA	8151A	µg/L			190	U					190	U
MCPP	8151A	µg/L			190	U					190	U
M-Dinitrobenzene	8330A	µg/L			0.6	U						
Mercury	7470A	mg/L	0.0002	U	0.0002	U					0.0002	U
Methoxychlor	8081B	µg/L			0.083	U					0.085	U
Methyl Iodide	8260B	µg/L			1	U	5	U	1	U		
Methyl Tert-Butyl Ether	8260B	µg/L			1	U	5	U	1	U		
Methylene Chloride	8260B	µg/L	7	J	5		5	U	4			
Mirex	8081B	µg/L			0.042	U					0.043	U
Molybdenum	6010C	mg/L	0.02	U	0.0054	J					0.02	U
Morpholine	8270D SIM	µg/L			20	U						
m-Terphenyl	8015B	mg/L			0.0048	U						
Naphthalene	8270D	µg/L			0.5	U						
Naphthalene	8270D SIM	µg/L	0.11	J	0.087						0.058	
n-Butylbenzene	8260B	µg/L			5	U	5	U	5	U		
Nickel	6010C	mg/L	0.02	U	0.02	U					0.02	U
Nitrobenzene	8270D	µg/L			1	U						
Nitrobenzene	8330A	µg/L			0.6	U						
Nitroglycerin	8330A	µg/kg			100000000	U						
N-Nitrosodimethylamine	8270D	µg/L			5	U						
N-Nitrosodimethylamine	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	UJ
N-Nitroso-di-n-propylamine	8270D	µg/L			1	U						
N-Nitrosodiphenylamine	8270D	µg/L			1	U						
n-Propylbenzene	8260B	µg/L			5	U	5	U	5	U		
OCDD	1613B	pg/L			19.2	U					20.4	U
OCDF	1613B	pg/L			19.2	U					0.74	J
o-Terphenyl	8015B	mg/L			0.0048	U						
o-Xylene	8260B	µg/L			1	U	5	U	1	U		
Pentachlorophenol	8270D	µg/L			5	U						
Perchlorate	6850	µg/L			1	U						
PETN	8330A	µg/kg			100000000	U						
pH	9040C	pH	5.4		5.7						5.6	
Phenanthrene	8270D	µg/L			0.5	U						
Phenanthrene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Phenol	8270D	µg/L			1	U						
Phosphorus	6010C	mg/L	0.2	U	0.2	U					0.2	U
Potassium	6010C	mg/L	1	U	1	U					1	U
Propylene Glycol	8015C	mg/L			10	U						
p-Terphenyl	8015B	mg/L			0.0048	U						
Pyrene	8270D	µg/L			0.5	U						
Pyrene	8270D SIM	µg/L	0.051	UJ	0.051	U					0.056	U
Pyridine	8270D	µg/L			5	U						
RDX	8330A	µg/L			0.6	U						
Selenium	6020A	mg/L	0.004	U	0.004	U					0.004	U
Silver	6020A	mg/L	0.001	U	0.001	U					0.001	U
Silvex (2,4,5-TP)	8151A	µg/L			0.048	U					0.048	U
Sodium	6010C	mg/L	2	U	2	U					2	U
Strontium	6020A	mg/L	0.002	U	0.00042	J					0.002	U
Styrene	8260B	µg/L			5	U	5	U	5	U		
Technical Toxaphene	8081B	µg/L			0.83	U					0.85	U
tert-Butyl ethyl ether	8260B	µg/L			1	U	5	U	1	U		
tert-Butylbenzene	8260B	µg/L			5	U	5	U	5	U		
Tertiary amyl methyl ether	8260B	µg/L			1	U	5	U	1	U		
Tertiary butyl alcohol	8260B	µg/L			50	U	50	U	50	U		
Tetrachloroethene	8260B	µg/L			1	U	5	U	1	U		
Tetryl	8330A	µg/L			0.6	U						
Thallium	6020A	mg/L	0.001	U	0.001	U					0.001	U
Tin	6010C	mg/L	0.04	U	0.04	U					0.04	U
Titanium	6010C	mg/L	0.02	U	0.02	U					0.02	U
Toluene	8260B	µg/L			1	U	5	U	1	U		
trans-1,2-Dichloroethene	8260B	µg/L			1	U	5	U	1	U		
trans-1,3-Dichloropropene	8260B	µg/L			1	U	5	U	1	U		
Trichloroethene	8260B	µg/L			1	U	5	U	1	U		
Trichlorofluoromethane	8260B	µg/L			1	U	5	U	1	U		
Triethylene Glycol	8015C	mg/L			10	U						
Vanadium	6010C	mg/L	0.01	U	0.01	U					0.01	U
Vinyl Acetate	8260B	µg/L			10	U	10	U	10	U		
Vinyl Chloride	8260B	µg/L			1	U	5	U	1	U		
Zinc	6010C	mg/L	0.04	U	0.04	U					0.04	U
Zirconium	6010C	mg/L	0.1	U	0.1	U					0.1	U

Notes:
ug/L - microgram per liter
mg/L - milligram per liter
ng/L - nanogram per liter
pg/L - picogram per liter
U - Compound not detected above the reporting limit

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB1-061814		EB2-051414		EB2-051514		EB2-052214		EB2-052914	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV	
	Sample Date:	06/18/2014		05/14/2014		05/15/2014		05/22/2014		05/29/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L	1	U			5	U			1	U
1,1,1-Trichloroethane	8260B	µg/L	1	U			5	U			1	U
1,1,2,2-Tetrachloroethane	8260B	µg/L	1	U			5	U			1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L	10	U			5	U			10	U
1,1,2-Trichloroethane	8260B	µg/L	1	U			5	U			1	U
1,1'-Biphenyl	8270D	µg/L										
1,1-Dichloroethane	8260B	µg/L	1	U			5	U			1	U
1,1-Dichloroethene	8260B	µg/L	1	U			5	U			1	U
1,1-Dichloropropene	8260B	µg/L	5	U			5	U			5	U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1613B	pg/L	29.4		11.2	U			9.78	U		
1,2,3,4,6,7,8-HPCDF	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,4,7,8,9-HPCDF	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,4,7,8-HXCDF	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,6,7,8-HXCDF	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	1.57	J	11.2	U			9.78	U		
1,2,3,7,8,9-HXCDF	1613B	pg/L	2.78	J	11.2	U			9.78	U		
1,2,3,7,8-Pentachlorodibenzofuran	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1613B	pg/L	10.4	U	11.2	U			9.78	U		
1,2,3-Trichlorobenzene	8260B	µg/L	5	U			5	U			5	U
1,2,3-Trichloropropane	8260B	µg/L	5	U			5	U			5	U
1,2,4-Trichlorobenzene	8260B	µg/L	5	U			5	U			5	U
1,2,4-Trichlorobenzene	8270D	µg/L										
1,2,4-Trimethylbenzene	8260B	µg/L	5	U			5	U			5	U
1,2-Dibromo-3-chloropropane	8260B	µg/L	5	U			5	U			5	U
1,2-Dibromoethane	8260B	µg/L	1	U			5	U			1	U
1,2-Dichlorobenzene	8260B	µg/L	5	U			5	U			5	U
1,2-Dichlorobenzene	8270D	µg/L										
1,2-Dichloroethane	8260B	µg/L	1	U			5	U			1	U
1,2-Dichloropropane	8260B	µg/L	1	U			5	U			1	U
1,2-Diphenylhydrazine	8270D	µg/L										
1,3,5-Trimethylbenzene	8260B	µg/L	5	U			5	U			5	U
1,3,5-Trinitrobenzene	8330A	µg/L										
1,3-Dichlorobenzene	8260B	µg/L	5	U			5	U			5	U
1,3-Dichlorobenzene	8270D	µg/L										
1,3-Dichloropropane	8260B	µg/L	1	U			5	U			1	U
1,4-Dichlorobenzene	8260B	µg/L	5	U			5	U			5	U
1,4-Dichlorobenzene	8270D	µg/L										
1,4-Dioxane	8260B SIM	µg/L	2	U								
1-Chlorohexane	8260B	µg/L	5	U			5	U			5	U
1-Methylnaphthalene	8270D	µg/L										
1-Methylnaphthalene	8270D SIM	µg/L	0.011	J	0.053	U			0.033	J		
2,2-Dichloropropane	8260B	µg/L	1	U			5	U			1	U
2,2-Dichlor-Propionic Acid	8151A	µg/L										
2,3,4,6,7,8-HXCDF	1613B	pg/L	10.4	U	11.2	U			9.78	U		
2,3,4,7,8-PECDF	1613B	pg/L	10.4	U	11.2	U			9.78	U		
2,3,7,8-TCDD	1613B	pg/L	0.812	J	2.24	U			1.96	U		
2,3,7,8-Tetrachlorodibenzofuran	1613B	pg/L	2.08	U	2.24	U			0.119	J		
2,4,5-T	8151A	µg/L										
2,4,5-Trichlorophenol	8270D	µg/L										
2,4,6-Trichlorophenol	8270D	µg/L										
2,4,6-Trinitrotoluene	8330A	µg/L										
2,4-D	8151A	µg/L										
2,4-DB	8151A	µg/L										
2,4-Diamino-6-nitrotoluene	8330A	µg/L										
2,4-Dichlorophenol	8270D	µg/L										
2,4-Dimethylphenol	8270D	µg/L										
2,4-Dinitrophenol	8270D	µg/L										
2,4-Dinitrotoluene	8330A	µg/L										
2,6-Diamino-4-nitrotoluene	8330A	µg/L										
2,6-Dichlorophenol	8270D	µg/L										
2,6-Dinitrotoluene	8330A	µg/L										
2-Amino-4,6-Dinitrotoluene	8330A	µg/L										
2-Butanone (MEK)	8260B	µg/L	3	J			10	U			10	U
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L	5	U			5	U			5	U
2-Chloroethyl Vinyl Ether	8260B	µg/L	10	U			10	U			10	U
2-Chloronaphthalene	8270D	µg/L										
2-Chlorophenol	8270D	µg/L										
2-Chlorotoluene	8260B	µg/L	5	U			5	U			5	U
2-Hexanone	8260B	µg/L	10	U			10	U			10	U
2-Methylnaphthalene	8270D	µg/L										
2-Methylnaphthalene	8270D SIM	µg/L	0.015	J	0.053	U			0.052	J		
2-Methylphenol	8270D	µg/L										
2-Nitroaniline	8270D	µg/L										
2-Nitrophenol	8270D	µg/L										
2-Nitrotoluene	8330A	µg/L										
2-Phenylbutane	8260B	µg/L	5	U			5	U			5	U
3,3'-Dichlorobenzidine	8270D	µg/L										
3,5-Dimethylphenol	8270D	µg/L										
3-Nitroaniline	8270D	µg/L										
3-Nitrotoluene	8330A	µg/L										
4,4'-DDD	8081B	µg/L							0.018	UJ		
4,4'-DDE	8081B	µg/L							0.018	UJ		
4,4'-DDT	8081B	µg/L							0.018	UJ		
4,6-Dinitro-2-methylphenol	8270D	µg/L										
4-Amino-2,6-Dinitrotoluene	8330A	µg/L										
4-Bromophenyl-phenylether	8270D	µg/L										
4-Chloro-3-methylphenol	8270D	µg/L										
4-Chloroaniline	8270D	µg/L										
4-Chlorophenyl-phenylether	8270D	µg/L										
4-Chlorotoluene	8260B	µg/L	5	U			5	U			5	U
4-Methyl-2-pentanone (MIBK)	8260B	µg/L	10	U			10	U			10	U
4-Methylphenol	8270D	µg/L										
4-Nitroaniline	8270D	µg/L										
4-Nitrophenol	8270D	µg/L										
4-Nitrotoluene	8330A	µg/L										
Acenaphthene	8270D	µg/L										
Acenaphthene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Acenaphthylene	8270D	µg/L										
Acenaphthylene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Acetone	8260B	µg/L	20	U			20	U			20	U
Acrolein	8260B	µg/L	100	U			100	U			100	U
Acrylonitrile	8260B	µg/L	20	U			20	U			20	U
Aldrin	8081B	µg/L							0.0092	UJ		
Alpha-Bhc	8081B	µg/L							0.0092	UJ		
Aluminum	6010C	mg/L	0.4	U	0.4	U			0.4	U		
Aniline	8270D	µg/L										
Anthracene	8270D	µg/L										
Anthracene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Antimony	6010C	mg/L	0.04	U	0.04	U			0.04	U		

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB1-061814		EB2-051414		EB2-051514		EB2-052214		EB2-052914	
	Location:	EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV	
	Sample Date:	06/18/2014		05/14/2014		05/15/2014		05/22/2014		05/29/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Aroclor 1016	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1221	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1232	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1242	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1248	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1254	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1260	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1262	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 1268	8082A	µg/L	0.43	U	0.4	U			0.42	U		
Aroclor 5432	8082A	µg/L	0.43	UJ	0.4	U			0.42	U		
Aroclor 5442	8082A	µg/L	0.43	UJ	0.4	U			0.42	U		
Aroclor 5460	8082A	µg/L	0.43	UJ	0.4	U			0.42	U		
Arsenic	6010C	mg/L	0.04	U	0.04	U			0.04	U		
Barium	6010C	mg/L	0.01	U	0.01	U			0.01	U		
Benzene	8260B	µg/L	1	U			5	U			1	U
Benzidine	8270D	µg/L										
Benzo(a)anthracene	8270D	µg/L										
Benzo(a)anthracene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Benzo(a)pyrene	8270D	µg/L										
Benzo(a)pyrene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Benzo(b)fluoranthene	8270D	µg/L										
Benzo(b)fluoranthene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Benzo(e)pyrene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Benzo(g,h,i)perylene	8270D	µg/L										
Benzo(g,h,i)perylene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Benzo(k)fluoranthene	8270D	µg/L										
Benzo(k)fluoranthene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Benzoic Acid	8270D	µg/L										
Benzyl Alcohol	8270D	µg/L										
Beryllium	6010C	mg/L	0.01	U	0.01	U			0.01	U		
Beta-Bhc	8081B	µg/L							0.0092	UJ		
bis(2-chloroethoxy)methane	8270D	µg/L										
bis(2-chloroethyl) ether	8270D	µg/L										
bis(2-chloroisopropyl) ether	8270D	µg/L										
Bis(2-ethylhexyl)phthalate	8270D	µg/L										
Bis(2-ethylhexyl)phthalate	8270D SIM	µg/L	1	U	1.1	UJ			1.1	UJ		
Boron	6010C	mg/L	0.0061	J	0.1	U			0.1	U		
Bromobenzene	8260B	µg/L	5	U			5	U			5	U
Bromochloromethane	8260B	µg/L	5	U			5	U			5	U
Bromodichloromethane	8260B	µg/L	1	U			5	U			1	U
Bromoform	8260B	µg/L	4	U			5	U			4	U
Bromomethane	8260B	µg/L	1	U			5	U			1	U
Butylbenzylphthalate	8270D	µg/L										
Butylbenzylphthalate	8270D SIM	µg/L	1	U	1.1	U			1.1	UJ		
Cadmium	6010C	mg/L	0.00037	J	0.01	U			0.01	U		
Calcium	6010C	mg/L	0.4	U	0.4	U			0.4	U		
Carbazole	8270D	µg/L										
Carbon Disulfide	8260B	µg/L	5	U			5	U			5	U
Carbon Tetrachloride	8260B	µg/L	1	U			5	U			1	U
Chlordane	8081B	µg/L							0.46	UJ		
Chlorobenzene	8260B	µg/L	1	U			5	U			1	U
Chloroethane	8260B	µg/L	1	U			5	U			1	U
Chloroform	8260B	µg/L	1	U			5	U			1	U
Chloromethane	8260B	µg/L	1	U			5	U			1	U
Chlorotrifluoroethylene	8260B	µg/L	5	U			5	UJ			5	U
Chromium	6010C	mg/L	0.03	U	0.03	U			0.03	U		
Chromium (Hexavalent Compounds)	7199	µg/L										
Chrysene	8270D	µg/L										
Chrysene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
cis-1,2-Dichloroethene	8260B	µg/L	1	U			5	U			1	U
cis-1,3-Dichloropropene	8260B	µg/L	1	U			5	U			1	U
Cobalt	6010C	mg/L	0.01	U	0.01	U			0.01	U		
Copper	6010C	mg/L	0.02	U	0.02	U			0.02	U		
Cymene	8260B	µg/L	5	U			5	U			5	U
Delta-Bhc	8081B	µg/L							0.0092	UJ		
Di isopropyl Ether	8260B	µg/L	1	U			5	U			1	U
Dibenzo(a,h)anthracene	8270D	µg/L										
Dibenzo(a,h)anthracene	8270D SIM	µg/L	0.052	U	0.053	UJ			0.054	UJ		
Dibenzofuran	8270D	µg/L										
Dibromochloromethane	8260B	µg/L	1	U			5	U			1	U
Dibromomethane	8260B	µg/L	1	U			5	U			1	U
Dicamba	8151A	µg/L										
Dichlorodifluoromethane	8260B	µg/L	1	U			5	U			1	U
Dichlorprop	8151A	µg/L										
Dieldrin	8081B	µg/L							0.018	UJ		
Diethylene Glycol	8015C	mg/L										
Diethylphthalate	8270D	µg/L										
Diethylphthalate	8270D SIM	µg/L	0.11	J	1.1	U			1.1	UJ		
Dimethylphthalate	8270D	µg/L										
Dimethylphthalate	8270D SIM	µg/L	1	U	1.1	U			1.1	UJ		
Di-n-butylphthalate	8270D	µg/L										
Di-n-butylphthalate	8270D SIM	µg/L	1	U	1.1	U			0.1	J		
Dinitrobutyl Phenol	8151A	µg/L										
Di-n-octylphthalate	8270D	µg/L										
Di-n-octylphthalate	8270D SIM	µg/L	1	U	1.1	UJ			1.1	UJ		
Diphenylamine	8270D	µg/L										
EFH (C12-C14)	8015M	mg/L	0.098	U	0.097	U			0.1	UJ		
EFH (C12-C14) w/ Silica Gel	8015M	mg/L	0.098	UJ	0.097	UJ			0.1	UJ		
EFH (C15-C20)	8015M	mg/L	0.098	U	0.097	U			0.1	UJ		
EFH (C15-C20) w/ Silica Gel	8015M	mg/L	0.098	UJ	0.097	U			0.1	UJ		
EFH (C21-C30)	8015M	mg/L	0.098	U	0.097	U			0.1	UJ		
EFH (C21-C30) w/ Silica Gel	8015M	mg/L	0.098	UJ	0.097	UJ			0.1	UJ		
EFH (C30-C40)	8015M	mg/L	0.49	UJ	0.49	U			0.5	UJ		
EFH (C30-C40) w/ Silica Gel	8015M	mg/L	0.49	UJ	0.49	U			0.5	UJ		
EFH (C8-C11)	8015M	mg/L	0.098	U	0.097	U			0.1	UJ		
EFH (C8-C11) w/ Silica Gel	8015M	mg/L	0.098	UJ	0.097	UJ			0.1	UJ		
Endosulfan I	8081B	µg/L							0.0092	UJ		
Endosulfan II	8081B	µg/L							0.018	UJ		
Endosulfan Sulfate	8081B	µg/L							0.018	UJ		
Endrin	8081B	µg/L							0.018	UJ		
Endrin Aldehyde	8081B	µg/L							0.092	UJ		
Endrin Ketone	8081B	µg/L							0.018	UJ		
Ethylbenzene	8260B	µg/L	1	U			5	U			1	U
Ethylene Glycol	8015C	mg/L										
Fluoranthene	8270D	µg/L										
Fluoranthene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Fluorene	8270D	µg/L										
Fluorene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Formaldehyde	8315A	µg/L							50	UJ		
Gamma-Bhc (Lindane)	8081B	µg/L							0.0092	UJ		
Gasoline Range Organics (C5-C12)	8015M	µg/L	50	U	50	U						

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

			Sample Name:		EB1-061814		EB2-051414		EB2-051514		EB2-052214		EB2-052914	
			Location:		EQUIPMENT BLANK FDG		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK SV	
			Sample Date:		06/18/2014		05/14/2014		05/15/2014		05/22/2014		05/29/2014	
			Sample Type:		EB		EB		EB		EB		EB	
			Lab:		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Heptachlor	8081B	µg/L							0.0092	UJ		
Heptachlor Epoxide	8081B	µg/L							0.0092	UJ		
Hexachloro-1,3-butadiene	8260B	µg/L	5	U			5	U			5	U
Hexachlorobenzene	8270D	µg/L										
Hexachlorobutadiene	8270D	µg/L										
Hexachlorocyclopentadiene	8270D	µg/L										
Hexachloroethane	8270D	µg/L										
HMX	8330A	µg/L										
Indeno(1,2,3-cd)pyrene	8270D	µg/L										
Indeno(1,2,3-cd)pyrene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Iron	6010C	mg/L	0.4	U	0.4	U			0.4	U		
Isophorone	8270D	µg/L										
Isopropylbenzene	8260B	µg/L	5	U			5	U			5	U
Lead	6010C	mg/L	0.03	U	0.03	U			0.03	U		
Lithium	6010C	mg/L	0.04	U	0.04	U			0.04	U		
m,p-Xylene	8260B	µg/L	1	U			5	U			1	U
Magnesium	6010C	mg/L	0.2	U	0.2	U			0.2	U		
Manganese	6010C	mg/L	0.01	U	0.01	U			0.01	U		
MCPA	8151A	µg/L										
MCPP	8151A	µg/L										
M-Dinitrobenzene	8330A	µg/L										
Mercury	7470A	mg/L	0.0002	U	0.0002	U			0.0002	U		
Methoxychlor	8081B	µg/L							0.092	UJ		
Methyl Iodide	8260B	µg/L	1	U			5	U			1	U
Methyl Tert-Butyl Ether	8260B	µg/L	1	U			5	U			1	U
Methylene Chloride	8260B	µg/L	3	U			5	U			3	U
Mirex	8081B	µg/L							0.046	UJ		
Molybdenum	6010C	mg/L	0.01	J	0.02	U			0.02	U		
Morpholine	8270D SIM	µg/L										
m-Terphenyl	8015B	mg/L										
Naphthalene	8270D	µg/L										
Naphthalene	8270D SIM	µg/L	0.036	J	0.053	U			0.15	J		
n-Butylbenzene	8260B	µg/L	5	U			5	U			5	U
Nickel	6010C	mg/L	0.02	U	0.02	U			0.02	U		
Nitrobenzene	8270D	µg/L										
Nitrobenzene	8330A	µg/L										
Nitroglycerin	8330A	µg/kg										
N-Nitrosodimethylamine	8270D	µg/L										
N-Nitrosodimethylamine	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
N-Nitroso-di-n-propylamine	8270D	µg/L										
N-Nitrosodiphenylamine	8270D	µg/L										
n-Propylbenzene	8260B	µg/L	5	U			5	U			5	U
OCDD	1613B	pg/L	20.8	U	22.4	U			19.6	U		
OCDF	1613B	pg/L	20.8	U	22.4	U			19.6	U		
o-Terphenyl	8015B	mg/L										
o-Xylene	8260B	µg/L	1	U			5	U			1	U
Pentachlorophenol	8270D	µg/L										
Perchlorate	6850	µg/L			0.4	J						
PETN	8330A	µg/kg										
pH	9040C	pH	5.2		5.8				6.8			
Phenanthrene	8270D	µg/L										
Phenanthrene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Phenol	8270D	µg/L										
Phosphorus	6010C	mg/L	0.2	U	0.2	U			0.2	U		
Potassium	6010C	mg/L	1	U	0.114	J			1	U		
Propylene Glycol	8015C	mg/L										
p-Terphenyl	8015B	mg/L										
Pyrene	8270D	µg/L										
Pyrene	8270D SIM	µg/L	0.052	U	0.053	U			0.054	UJ		
Pyridine	8270D	µg/L										
RDX	8330A	µg/L										
Selenium	6020A	mg/L	0.004	U	0.004	U			0.004	U		
Silver	6020A	mg/L	0.001	U	0.001	U			0.001	U		
Silvex (2,4,5-TP)	8151A	µg/L										
Sodium	6010C	mg/L	2	U	2	U			2	U		
Strontium	6020A	mg/L	0.002	U	0.002	U			0.002	U		
Styrene	8260B	µg/L	5	U			5	U			5	U
Technical Toxaphene	8081B	µg/L							0.92	UJ		
tert-Butyl ethyl ether	8260B	µg/L	1	U			5	U			1	U
tert-Butylbenzene	8260B	µg/L	5	U			5	U			5	U
Tertiary amyl methyl ether	8260B	µg/L	1	U			5	U			1	U
Tertiary butyl alcohol	8260B	µg/L	50	U			50	U			50	U
Tetrachloroethene	8260B	µg/L	1	U			5	U			1	U
Tetryl	8330A	µg/L										
Thallium	6020A	mg/L	0.001	U	0.001	U			0.001	U		
Tin	6010C	mg/L	0.04	U	0.04	U			0.04	U		
Titanium	6010C	mg/L	0.02	U	0.02	U			0.02	U		
Toluene	8260B	µg/L	1	U			5	U			1	U
trans-1,2-Dichloroethene	8260B	µg/L	1	U			5	U			1	U
trans-1,3-Dichloropropene	8260B	µg/L	1	U			5	U			1	U
Trichloroethene	8260B	µg/L	1	U			5	U			1	U
Trichlorofluoromethane	8260B	µg/L	1	U			5	U			1	U
Triethylene Glycol	8015C	mg/L										
Vanadium	6010C	mg/L	0.01	U	0.01	U			0.01	U		
Vinyl Acetate	8260B	µg/L	10	UJ			10	U			10	U
Vinyl Chloride	8260B	µg/L	1	U			5	U			1	U
Zinc	6010C	mg/L	0.04	U	0.04	U			0.04	U		
Zirconium	6010C	mg/L	0.1	U	0.1	U			0.1	U		

Notes:
ug/L - microgram per liter
mg/L - milligram per liter
ng/L - nanogram per liter
pg/L - picogram per liter
U - Compound not detected above the reporting limit

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

			Sample Name:		EB2-060414		EB2-061114		EB2-061214		EB3-052214		EB3-060414	
			Location:		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK TR		EQUIPMENT BLANK TR	
			Sample Date:		06/04/2014		06/11/2014		06/12/2014		05/22/2014		06/04/2014	
			Sample Type:		EB		EB		EB		EB		EB	
			Lab:		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L	5	U	1	U			5	U		
1,1,1-Trichloroethane	8260B	µg/L	5	U	1	U			5	U		
1,1,2,2-Tetrachloroethane	8260B	µg/L	5	U	1	U			5	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L	5	U	10	U			5	U		
1,1,2-Trichloroethane	8260B	µg/L	5	U	1	U			5	U		
1,1'-Biphenyl	8270D	µg/L									1	U
1,1-Dichloroethane	8260B	µg/L	5	U	1	U			5	U		
1,1-Dichloroethene	8260B	µg/L	5	U	1	U			5	U		
1,1-Dichloropropene	8260B	µg/L	5	U	5	U			5	U		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,4,6,7,8-HPCDF	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,4,7,8,9-HPCDF	1613B	pg/L					0.367	J	9.56	U	9.57	U
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,4,7,8-HXCDF	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L					9.86	U	9.56	U	0.313	J
1,2,3,6,7,8-HXCDF	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,7,8,9-HXCDF	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,7,8-Pentachlorodibenzofuran	1613B	pg/L					9.86	U	9.56	U	9.57	U
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1613B	pg/L					0.251	J	9.56	U	9.57	U
1,2,3-Trichlorobenzene	8260B	µg/L	5	U	5	U			5	U		
1,2,3-Trichloropropane	8260B	µg/L	5	U	5	U			5	U		
1,2,4-Trichlorobenzene	8260B	µg/L	5	U	5	U			5	U		
1,2,4-Trichlorobenzene	8270D	µg/L									1	UJ
1,2,4-Trimethylbenzene	8260B	µg/L	5	U	5	U			5	U		
1,2-Dibromo-3-chloropropane	8260B	µg/L	5	U	5	U			5	U		
1,2-Dibromoethane	8260B	µg/L	5	U	1	U			5	U		
1,2-Dichlorobenzene	8260B	µg/L	5	U	5	U			5	U		
1,2-Dichlorobenzene	8270D	µg/L									1	U
1,2-Dichloroethane	8260B	µg/L	5	U	1	U			5	U		
1,2-Dichloropropane	8260B	µg/L	5	U	1	U			5	U		
1,2-Diphenylhydrazine	8270D	µg/L									1	U
1,3,5-Trimethylbenzene	8260B	µg/L	5	U	5	U			5	U		
1,3,5-Trinitrobenzene	8330A	µg/L									0.6	U
1,3-Dichlorobenzene	8260B	µg/L	5	U	5	U			5	U		
1,3-Dichlorobenzene	8270D	µg/L									1	U
1,3-Dichloropropane	8260B	µg/L	5	U	1	U			5	U		
1,4-Dichlorobenzene	8260B	µg/L	5	U	5	U			5	U		
1,4-Dichlorobenzene	8270D	µg/L									1	U
1,4-Dioxane	8260B SIM	µg/L										
1-Chlorohexane	8260B	µg/L	5	U	5	U			5	U		
1-Methylnaphthalene	8270D	µg/L									0.6	U
1-Methylnaphthalene	8270D SIM	µg/L					0.02	J	0.051	UJ	0.02	J
2,2-Dichloropropane	8260B	µg/L	5	U	1	U			5	U		
2,2-Dichlor-Propionic Acid	8151A	µg/L									1.2	U
2,3,4,6,7,8-HXCDF	1613B	pg/L					9.86	U	9.56	U	9.57	U
2,3,4,7,8-PECDF	1613B	pg/L					0.234	J	9.56	U	9.57	U
2,3,7,8-TCDD	1613B	pg/L					1.97	U	1.91	U	0.262	J
2,3,7,8-Tetrachlorodibenzofuran	1613B	pg/L					1.97	U	0.203	J	1.91	U
2,4,5-T	8151A	µg/L									0.048	U
2,4,5-Trichlorophenol	8270D	µg/L									1	U
2,4,6-Trichlorophenol	8270D	µg/L									1	U
2,4,6-Trinitrotoluene	8330A	µg/L									0.6	U
2,4-D	8151A	µg/L									0.48	U
2,4-DB	8151A	µg/L									0.96	U
2,4-Diamino-6-nitrotoluene	8330A	µg/L									0.6	U
2,4-Dichlorophenol	8270D	µg/L									1	U
2,4-Dimethylphenol	8270D	µg/L									1	U
2,4-Dinitrophenol	8270D	µg/L									34	U
2,4-Dinitrotoluene	8330A	µg/L									0.6	U
2,6-Diamino-4-nitrotoluene	8330A	µg/L									0.6	U
2,6-Dichlorophenol	8270D	µg/L									1	U
2,6-Dinitrotoluene	8330A	µg/L									0.6	U
2-Amino-4,6-Dinitrotoluene	8330A	µg/L									0.6	U
2-Butanone (MEK)	8260B	µg/L	10	U	10	U			10	U		
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L	5	U	5	U			5	U		
2-Chloroethyl Vinyl Ether	8260B	µg/L	10	U	10	U			10	U		
2-Chloronaphthalene	8270D	µg/L									1	U
2-Chlorophenol	8270D	µg/L									1	U
2-Chlorotoluene	8260B	µg/L	5	U	5	U			5	U		
2-Hexanone	8260B	µg/L	10	U	10	U			10	U		
2-Methylnaphthalene	8270D	µg/L									0.6	U
2-Methylnaphthalene	8270D SIM	µg/L					0.028	J	0.051	U	0.028	J
2-Methylphenol	8270D	µg/L									1	U
2-Nitroaniline	8270D	µg/L									1	U
2-Methylphenol	8270D	µg/L									1	U
2-Nitroaniline	8270D	µg/L									1	U
2-Nitrophenol	8270D	µg/L									1	U
2-Nitrotoluene	8330A	µg/L									0.6	U
2-Phenylbutane	8260B	µg/L	5	U	5	U			5	U		
3,3'-Dichlorobenzidine	8270D	µg/L									6	U
3,5-Dimethylphenol	8270D	µg/L									11	U
3-Nitroaniline	8270D	µg/L									1	U
3-Nitrotoluene	8330A	µg/L									1.2	U
4,4'-DDD	8081B	µg/L					0.017	U			0.017	U
4,4'-DDE	8081B	µg/L					0.017	U			0.017	U
4,4'-DDT	8081B	µg/L					0.017	U			0.017	U
4,6-Dinitro-2-methylphenol	8270D	µg/L									17	U
4-Amino-2,6-Dinitrotoluene	8330A	µg/L									0.6	U
4-Bromophenyl-phenylether	8270D	µg/L									1	U
4-Chloro-3-methylphenol	8270D	µg/L									1	U
4-Chloroaniline	8270D	µg/L									1	U
4-Chlorophenyl-phenylether	8270D	µg/L									1	U
4-Chlorotoluene	8260B	µg/L	5	U	5	U			5	U		
4-Methyl-2-pentanone (MIBK)	8260B	µg/L	10	U	10	U			10	U		
4-Methylphenol	8270D	µg/L									1	U
4-Nitroaniline	8270D	µg/L									1	U
4-Nitrophenol	8270D	µg/L									34	U
4-Nitrotoluene	8330A	µg/L									1.2	U
Acenaphthene	8270D	µg/L									0.6	U
Acenaphthene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Acenaphthylene	8270D	µg/L									0.6	U
Acenaphthylene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Acetone	8260B	µg/L	20	U	20	U			20	U		
Acrolein	8260B	µg/L	100	U	100	U			100	U		
Acrylonitrile	8260B	µg/L	20	U	20	U			20	U		
Aldrin	8081B	µg/L					0.0084	U			0.0083	UJ
Alpha-Bhc	8081B	µg/L					0.0084	U			0.0083	U
Aluminum	6010C	mg/L					0.4	U	0.4	U	0.4	U
Aniline	8270D	µg/L									1	U
Anthracene	8270D	µg/L									0.6	U
Anthracene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Antimony	6010C	mg/L					0.04	U	0.04	U	0.04	U

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB2-060414		EB2-061114		EB2-061214		EB3-052214		EB3-060414	
	Location:	EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK TR		EQUIPMENT BLANK TR	
	Sample Date:	06/04/2014		06/11/2014		06/12/2014		05/22/2014		06/04/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Aroclor 1016	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1221	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1232	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1242	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1248	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1254	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1260	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1262	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 1268	8082A	µg/L					0.42	UJ	0.42	U	0.42	U
Aroclor 5432	8082A	µg/L					0.42	U	0.42	U	0.42	U
Aroclor 5442	8082A	µg/L					0.42	U	0.42	U	0.42	U
Aroclor 5460	8082A	µg/L					0.42	U	0.42	U	0.42	U
Arsenic	6010C	mg/L					0.04	U	0.04	U	0.04	U
Barium	6010C	mg/L					0.01	U	0.01	U	0.0007	J
Benzene	8260B	µg/L	5	U	1	U			5	U		
Benzidine	8270D	µg/L										
Benzo(a)anthracene	8270D	µg/L									0.6	U
Benzo(a)anthracene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Benzo(a)pyrene	8270D	µg/L									0.6	U
Benzo(a)pyrene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Benzo(b)fluoranthene	8270D	µg/L									0.6	U
Benzo(b)fluoranthene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Benzo(e)pyrene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Benzo(g,h,i)perylene	8270D	µg/L									0.6	U
Benzo(g,h,i)perylene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Benzo(k)fluoranthene	8270D	µg/L									0.6	U
Benzo(k)fluoranthene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Benzoic Acid	8270D	µg/L									17	U
Benzyl Alcohol	8270D	µg/L									17	U
Beryllium	6010C	mg/L					0.01	U	0.01	U	0.01	U
Beta-Bhc	8081B	µg/L					0.009	U			0.0083	U
bis(2-chloroethoxy)methane	8270D	µg/L									1	U
bis(2-chloroethyl) ether	8270D	µg/L									1	U
bis(2-chloroisopropyl) ether	8270D	µg/L									1	U
Bis(2-ethylhexyl)phthalate	8270D	µg/L									6	U
Bis(2-ethylhexyl)phthalate	8270D SIM	µg/L					1.1	UJ	1	UJ	1.1	UJ
Boron	6010C	mg/L					0.1	U	0.1	U	0.1	U
Bromobenzene	8260B	µg/L	5	U	5	U			5	U		
Bromochloromethane	8260B	µg/L	5	U	5	U			5	U		
Bromodichloromethane	8260B	µg/L	5	U	1	U			5	U		
Bromoform	8260B	µg/L	5	U	4	U			5	U		
Bromomethane	8260B	µg/L	5	U	1	U			5	U		
Butylbenzylphthalate	8270D	µg/L									6	U
Butylbenzylphthalate	8270D SIM	µg/L					1.1	U	1	U	1.1	U
Cadmium	6010C	mg/L					0.01	U	0.01	U	0.01	U
Calcium	6010C	mg/L					0.4	U	0.15	J	0.151	J
Carbazole	8270D	µg/L									1	U
Carbon Disulfide	8260B	µg/L	5	U	5	U			5	U		
Carbon Tetrachloride	8260B	µg/L	5	U	1	U			5	U		
Chlordane	8081B	µg/L					0.42	U			0.42	U
Chlorobenzene	8260B	µg/L	5	U	1	U			5	U		
Chloroethane	8260B	µg/L	5	U	1	U			5	U		
Chloroform	8260B	µg/L	5	U	1	U			5	U		
Chloromethane	8260B	µg/L	5	U	1	U			5	U		
Chlorotrifluoroethylene	8260B	µg/L	5	U	5	U			5	UJ		
Chromium	6010C	mg/L					0.03	U	0.03	U	0.03	U
Chromium (Hexavalent Compounds)	7199	µg/L									10	UJ
Chrysene	8270D	µg/L									0.6	U
Chrysene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
cis-1,2-Dichloroethene	8260B	µg/L	5	U	1	U			5	U		
cis-1,3-Dichloropropene	8260B	µg/L	5	U	1	U			5	U		
Cobalt	6010C	mg/L					0.01	U	0.01	U	0.01	U
Copper	6010C	mg/L					0.02	U	0.02	U	0.02	U
Cymene	8260B	µg/L	5	U	5	U			5	U		
Delta-Bhc	8081B	µg/L					0.0084	U			0.0083	U
Di isopropyl Ether	8260B	µg/L	5	U	1	U			5	U		
Dibenzo(a,h)anthracene	8270D	µg/L									0.6	U
Dibenzo(a,h)anthracene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Dibenzofuran	8270D	µg/L									1	U
Dibromochloromethane	8260B	µg/L	5	U	1	U			5	U		
Dibromomethane	8260B	µg/L	5	U	1	U			5	U		
Dicamba	8151A	µg/L									0.29	U
Dichlorodifluoromethane	8260B	µg/L	5	U	1	U			5	U		
Dichlorprop	8151A	µg/L									0.48	U
Dieldrin	8081B	µg/L					0.017	U			0.017	U
Diethylene Glycol	8015C	mg/L									10	U
Diethylphthalate	8270D	µg/L									6	U
Diethylphthalate	8270D SIM	µg/L					1.1	U	0.097	J	1.1	U
Dimethylphthalate	8270D	µg/L									6	U
Dimethylphthalate	8270D SIM	µg/L					1.1	U	1	U	1.1	U
Di-n-butylphthalate	8270D	µg/L									6	U
Di-n-butylphthalate	8270D SIM	µg/L					1.1	U	0.1	J	0.14	J
Dinitrobutyl Phenol	8151A	µg/L									0.48	U
Di-n-octylphthalate	8270D	µg/L									6	U
Di-n-octylphthalate	8270D SIM	µg/L					1.1	UJ	1	U	1.1	U
Diphenylamine	8270D	µg/L									6	U
EFH (C12-C14)	8015M	mg/L					0.099	U	0.1	U	0.097	UJ
EFH (C12-C14) w/ Silica Gel	8015M	mg/L					0.099	UJ	0.1	U	0.097	UJ
EFH (C15-C20)	8015M	mg/L					0.099	U	0.1	U	0.097	U
EFH (C15-C20) w/ Silica Gel	8015M	mg/L					0.099	U	0.1	U	0.097	U
EFH (C21-C30)	8015M	mg/L					0.099	U	0.1	U	0.097	U
EFH (C21-C30) w/ Silica Gel	8015M	mg/L					0.099	UJ	0.1	U	0.097	U
EFH (C30-C40)	8015M	mg/L					0.49	U	0.5	U	0.48	U
EFH (C30-C40) w/ Silica Gel	8015M	mg/L					0.49	U	0.5	U	0.48	U
EFH (C8-C11)	8015M	mg/L					0.099	U	0.1	U	0.097	UJ
EFH (C8-C11) w/ Silica Gel	8015M	mg/L					0.099	UJ	0.1	U	0.097	UJ
Endosulfan I	8081B	µg/L					0.0084	U			0.0083	U
Endosulfan II	8081B	µg/L					0.017	U			0.017	U
Endosulfan Sulfate	8081B	µg/L					0.017	U			0.017	U
Endrin	8081B	µg/L					0.017	U			0.017	U
Endrin Aldehyde	8081B	µg/L					0.084	U			0.083	U
Endrin Ketone	8081B	µg/L					0.017	U			0.017	U
Ethylbenzene	8260B	µg/L	5	U	1	U			5	U		
Ethylene Glycol	8015C	mg/L									10	U
Fluoranthene	8270D	µg/L									0.6	U
Fluoranthene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Fluorene	8270D	µg/L									0.6	U
Fluorene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Formaldehyde	8315A	µg/L										
Gamma-Bhc (Lindane)	8081B	µg/L					0.0084	U			0.0083	U
Gasoline Range Organics (C5-C12)	8015M	µg/L					50	U	50	U	50	U

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

	Sample Name:	EB2-060414		EB2-061114		EB2-061214		EB3-052214		EB3-060414	
	Location:	EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK FDG		EQUIPMENT BLANK TR		EQUIPMENT BLANK TR	
	Sample Date:	06/04/2014		06/11/2014		06/12/2014		05/22/2014		06/04/2014	
	Sample Type:	EB		EB		EB		EB		EB	
	Lab:	LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Heptachlor	8081B	µg/L					0.0084	U			0.0083	U
Heptachlor Epoxide	8081B	µg/L					0.0084	U			0.0083	U
Hexachloro-1,3-butadiene	8260B	µg/L	5	U	5	U			5	U		
Hexachlorobenzene	8270D	µg/L									0.6	U
Hexachlorobutadiene	8270D	µg/L									1	UJ
Hexachlorocyclopentadiene	8270D	µg/L									17	U
Hexachloroethane	8270D	µg/L									6	U
HMX	8330A	µg/L									2	U
Indeno(1,2,3-cd)pyrene	8270D	µg/L									0.6	U
Indeno(1,2,3-cd)pyrene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Iron	6010C	mg/L					0.4	U	0.4	U	0.4	U
Isophorone	8270D	µg/L									1	U
Isopropylbenzene	8260B	µg/L	5	U	5	U			5	U		
Lead	6010C	mg/L					0.03	U	0.03	U	0.03	U
Lithium	6010C	mg/L					0.04	U	0.04	U	0.04	U
m,p-Xylene	8260B	µg/L	5	U	1	U			5	U		
Magnesium	6010C	mg/L					0.2	U	0.2	U	0.2	U
Manganese	6010C	mg/L					0.01	U	0.0009	J	0.01	U
MCPA	8151A	µg/L									190	U
MCPP	8151A	µg/L									190	U
M-Dinitrobenzene	8330A	µg/L									0.6	U
Mercury	7470A	mg/L					0.0002	U	0.0002	U	0.0002	U
Methoxychlor	8081B	µg/L					0.084	U			0.083	U
Methyl Iodide	8260B	µg/L	5	U	1	U			5	U		
Methyl Tert-Butyl Ether	8260B	µg/L	5	U	1	U			5	U		
Methylene Chloride	8260B	µg/L	5	U	4				5	U		
Mirex	8081B	µg/L					0.042	U			0.042	U
Molybdenum	6010C	mg/L					0.02	U	0.02	U	0.02	U
Morpholine	8270D SIM	µg/L							20	U		
m-Terphenyl	8015B	mg/L									0.0048	U
Naphthalene	8270D	µg/L									0.6	U
Naphthalene	8270D SIM	µg/L					0.058		0.051	U	0.073	
n-Butylbenzene	8260B	µg/L	5	U	5	U			5	U		
Nickel	6010C	mg/L					0.02	U	0.02	U	0.02	U
Nitrobenzene	8270D	µg/L									1	U
Nitrobenzene	8330A	µg/L									0.6	U
Nitroglycerin	8330A	µg/kg									100000000	U
N-Nitrosodimethylamine	8270D	µg/L									6	U
N-Nitrosodimethylamine	8270D SIM	µg/L					0.057	UJ	0.051	U	0.057	U
N-Nitroso-di-n-propylamine	8270D	µg/L									1	U
N-Nitrosodiphenylamine	8270D	µg/L									1	U
n-Propylbenzene	8260B	µg/L	5	U	5	U			5	U		
OCDD	1613B	pg/L					19.7	U	19.1	U	19.1	U
OCDF	1613B	pg/L					1.06	J	19.1	U	19.1	U
o-Terphenyl	8015B	mg/L									0.0048	U
o-Xylene	8260B	µg/L	5	U	1	U			5	U		
Pentachlorophenol	8270D	µg/L									6	U
Perchlorate	6850	µg/L									1	U
PETN	8330A	µg/kg									100000000	U
pH	9040C	pH					5.3		7.2		6.4	
Phenanthrene	8270D	µg/L									0.6	U
Phenanthrene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Phenol	8270D	µg/L									1	U
Phosphorus	6010C	mg/L					0.2	U	0.2	U	0.2	U
Potassium	6010C	mg/L					1	U	1	U	1	U
Propylene Glycol	8015C	mg/L									10	U
p-Terphenyl	8015B	mg/L									0.0048	U
Pyrene	8270D	µg/L									0.6	U
Pyrene	8270D SIM	µg/L					0.057	U	0.051	U	0.057	U
Pyridine	8270D	µg/L									6	U
RDX	8330A	µg/L									0.6	U
Selenium	6020A	mg/L					0.004	U	0.004	U	0.004	U
Silver	6020A	mg/L					0.001	U	0.001	U	0.001	U
Silvex (2,4,5-TP)	8151A	µg/L									0.048	U
Sodium	6010C	mg/L					2	U	2	U	2	U
Strontium	6020A	mg/L					0.002	U	0.00046	J	0.00069	J
Styrene	8260B	µg/L	5	U	5	U			5	U		
Technical Toxaphene	8081B	µg/L					0.84	U			0.83	U
tert-Butyl ethyl ether	8260B	µg/L	5	U	1	U			5	U		
tert-Butylbenzene	8260B	µg/L	5	U	5	U			5	U		
Tertiary amyl methyl ether	8260B	µg/L	5	U	1	U			5	U		
Tertiary butyl alcohol	8260B	µg/L	50	U	50	U			50	U		
Tetrachloroethene	8260B	µg/L	5	U	1	U			5	U		
Tetryl	8330A	µg/L									0.6	U
Thallium	6020A	mg/L					0.001	U	0.001	U	0.001	U
Tin	6010C	mg/L					0.04	U	0.04	U	0.04	U
Titanium	6010C	mg/L					0.02	U	0.02	U	0.02	U
Toluene	8260B	µg/L	5	U	1	U			5	U		
trans-1,2-Dichloroethene	8260B	µg/L	5	U	1	U			5	U		
trans-1,3-Dichloropropene	8260B	µg/L	5	U	1	U			5	U		
Trichloroethene	8260B	µg/L	5	U	1	U			5	U		
Trichlorofluoromethane	8260B	µg/L	5	U	1	U			5	U		
Triethylene Glycol	8015C	mg/L									10	U
Vanadium	6010C	mg/L					0.01	U	0.01	U	0.01	U
Vinyl Acetate	8260B	µg/L	10	U	10	U			10	U		
Vinyl Chloride	8260B	µg/L	5	U	1	U			5	U		
Zinc	6010C	mg/L					0.04	U	0.04	U	0.04	U
Zirconium	6010C	mg/L					0.1	U	0.1	U	0.1	U

Notes:
ug/L - microgram per liter
mg/L - milligram per liter
ng/L - nanogram per liter
pg/L - picogram per liter
U - Compound not detected above the reporting limit

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

			Sample Name:		EB3-061114		EB4-060414		EB4-061114		EB5-060414	
			Location:		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV	
			Sample Date:		06/11/2014		06/04/2014		06/11/2014		06/04/2014	
			Sample Type:		EB		EB		EB		EB	
			Lab:		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,1,1-Trichloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,1,2,2-Tetrachloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L	10	U	5	U	10	U	5	U
1,1,2-Trichloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,1'-Biphenyl	8270D	µg/L								
1,1-Dichloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,1-Dichloroethene	8260B	µg/L	1	U	5	U	1	U	5	U
1,1-Dichloropropene	8260B	µg/L	5	U	5	U	5	U	5	U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1613B	pg/L								
1,2,3,4,6,7,8-HPCDF	1613B	pg/L								
1,2,3,4,7,8,9-HPCDF	1613B	pg/L								
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L								
1,2,3,4,7,8-HXCDF	1613B	pg/L								
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L								
1,2,3,6,7,8-HXCDF	1613B	pg/L								
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	1613B	pg/L								
1,2,3,7,8,9-HXCDF	1613B	pg/L								
1,2,3,7,8-Pentachlorodibenzofuran	1613B	pg/L								
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1613B	pg/L								
1,2,3-Trichlorobenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,2,3-Trichloropropane	8260B	µg/L	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	8270D	µg/L								
1,2,4-Trimethylbenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	8260B	µg/L	5	U	5	U	5	U	5	U
1,2-Dibromoethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,2-Dichlorobenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,2-Dichlorobenzene	8270D	µg/L								
1,2-Dichloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
1,2-Dichloropropane	8260B	µg/L	1	U	5	U	1	U	5	U
1,2-Diphenylhydrazine	8270D	µg/L								
1,3,5-Trimethylbenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,3,5-Trinitrobenzene	8330A	µg/L								
1,3-Dichlorobenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,3-Dichlorobenzene	8270D	µg/L								
1,3-Dichloropropane	8260B	µg/L	1	U	5	U	1	U	5	U
1,4-Dichlorobenzene	8260B	µg/L	5	U	5	U	5	U	5	U
1,4-Dichlorobenzene	8270D	µg/L								
1,4-Dioxane	8260B SIM	µg/L								
1-Chlorohexane	8260B	µg/L	5	U	5	U	5	U	5	U
1-Methylnaphthalene	8270D	µg/L								
1-Methylnaphthalene	8270D SIM	µg/L								
2,2-Dichloropropane	8260B	µg/L	1	U	5	U	1	U	5	U
2,2-Dichlor-Propionic Acid	8151A	µg/L								
2,3,4,6,7,8-HXCDF	1613B	pg/L								
2,3,4,7,8-PECDF	1613B	pg/L								
2,3,7,8-TCDD	1613B	pg/L								
2,3,7,8-Tetrachlorodibenzofuran	1613B	pg/L								
2,4,5-T	8151A	µg/L								
2,4,5-Trichlorophenol	8270D	µg/L								
2,4,6-Trichlorophenol	8270D	µg/L								
2,4,6-Trinitrotoluene	8330A	µg/L								
2,4-D	8151A	µg/L								
2,4-DB	8151A	µg/L								
2,4-Diamino-6-nitrotoluene	8330A	µg/L								
2,4-Dichlorophenol	8270D	µg/L								
2,4-Dimethylphenol	8270D	µg/L								
2,4-Dinitrophenol	8270D	µg/L								
2,4-Dinitrotoluene	8330A	µg/L								
2,6-Diamino-4-nitrotoluene	8330A	µg/L								
2,6-Dichlorophenol	8270D	µg/L								
2,6-Dinitrotoluene	8330A	µg/L								
2-Amino-4,6-Dinitrotoluene	8330A	µg/L								
2-Butanone (MEK)	8260B	µg/L	3	J	10	U	10	U	10	U
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L	5	U	5	U	5	U	5	U
2-Chloroethyl Vinyl Ether	8260B	µg/L	10	U	10	U	10	U	10	U
2-Chloronaphthalene	8270D	µg/L								
2-Chlorophenol	8270D	µg/L								
2-Chlorotoluene	8260B	µg/L	5	U	5	U	5	U	5	U
2-Hexanone	8260B	µg/L	10	U	10	U	10	U	10	U
2-Methylnaphthalene	8270D	µg/L								
2-Methylnaphthalene	8270D SIM	µg/L								
2-Methylphenol	8270D	µg/L								
2-Nitroaniline	8270D	µg/L								
2-Nitrophenol	8270D	µg/L								
2-Nitrotoluene	8330A	µg/L								
2-Phenylbutane	8260B	µg/L	5	U	5	U	5	U	5	U
3,3'-Dichlorobenzidine	8270D	µg/L								
3,5-Dimethylphenol	8270D	µg/L								
3-Nitroaniline	8270D	µg/L								
3-Nitrotoluene	8330A	µg/L								
4,4'-DDD	8081B	µg/L								
4,4'-DDE	8081B	µg/L								
4,4'-DDT	8081B	µg/L								
4,6-Dinitro-2-methylphenol	8270D	µg/L								
4-Amino-2,6-Dinitrotoluene	8330A	µg/L								
4-Bromophenyl-phenylether	8270D	µg/L								
4-Chloro-3-methylphenol	8270D	µg/L								
4-Chloroaniline	8270D	µg/L								
4-Chlorophenyl-phenylether	8270D	µg/L								
4-Chlorotoluene	8260B	µg/L	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	8260B	µg/L	10	U	10	U	10	U	10	U
4-Methylphenol	8270D	µg/L								
4-Nitroaniline	8270D	µg/L								
4-Nitrophenol	8270D	µg/L								
4-Nitrotoluene	8330A	µg/L								
Acenaphthene	8270D	µg/L								
Acenaphthene	8270D SIM	µg/L								
Acenaphthylene	8270D	µg/L								
Acenaphthylene	8270D SIM	µg/L								
Acetone	8260B	µg/L	20	U	20	U	20	U	20	U
Acrolein	8260B	µg/L	100	U	100	U	100	U	100	U
Acrylonitrile	8260B	µg/L	20	U	20	U	20	U	20	U
Aldrin	8081B	µg/L								
Alpha-Bhc	8081B	µg/L								
Aluminum	6010C	mg/L								
Aniline	8270D	µg/L								
Anthracene	8270D	µg/L								
Anthracene	8270D SIM	µg/L								
Antimony	6010C	mg/L								

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

			Sample Name:		EB3-061114		EB4-060414		EB4-061114		EB5-060414	
			Location:		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV	
			Sample Date:		06/11/2014		06/04/2014		06/11/2014		06/04/2014	
			Sample Type:		EB		EB		EB		EB	
			Lab:		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Aroclor 1016	8082A	µg/L								
Aroclor 1221	8082A	µg/L								
Aroclor 1232	8082A	µg/L								
Aroclor 1242	8082A	µg/L								
Aroclor 1248	8082A	µg/L								
Aroclor 1254	8082A	µg/L								
Aroclor 1260	8082A	µg/L								
Aroclor 1262	8082A	µg/L								
Aroclor 1268	8082A	µg/L								
Aroclor 5432	8082A	µg/L								
Aroclor 5442	8082A	µg/L								
Aroclor 5460	8082A	µg/L								
Arsenic	6010C	mg/L								
Barium	6010C	mg/L								
Benzene	8260B	µg/L	1	U	5	U	1	U	5	U
Benzidine	8270D	µg/L								
Benzo(a)anthracene	8270D	µg/L								
Benzo(a)anthracene	8270D SIM	µg/L								
Benzo(a)pyrene	8270D	µg/L								
Benzo(a)pyrene	8270D SIM	µg/L								
Benzo(b)fluoranthene	8270D	µg/L								
Benzo(b)fluoranthene	8270D SIM	µg/L								
Benzo(e)pyrene	8270D SIM	µg/L								
Benzo(g,h,i)perylene	8270D	µg/L								
Benzo(g,h,i)perylene	8270D SIM	µg/L								
Benzo(k)fluoranthene	8270D	µg/L								
Benzo(k)fluoranthene	8270D SIM	µg/L								
Benzoic Acid	8270D	µg/L								
Benzyl Alcohol	8270D	µg/L								
Beryllium	6010C	mg/L								
Beta-Bhc	8081B	µg/L								
bis(2-chloroethoxy)methane	8270D	µg/L								
bis(2-chloroethyl) ether	8270D	µg/L								
bis(2-chloroisopropyl) ether	8270D	µg/L								
Bis(2-ethylhexyl)phthalate	8270D	µg/L								
Bis(2-ethylhexyl)phthalate	8270D SIM	µg/L								
Boron	6010C	mg/L								
Bromobenzene	8260B	µg/L	5	U	5	U	5	U	5	U
Bromochloromethane	8260B	µg/L	5	U	5	U	5	U	5	U
Bromodichloromethane	8260B	µg/L	1	U	5	U	1	U	5	U
Bromoform	8260B	µg/L	4	U	5	U	4	U	5	U
Bromomethane	8260B	µg/L	1	U	5	U	1	U	5	U
Butylbenzylphthalate	8270D	µg/L								
Butylbenzylphthalate	8270D SIM	µg/L								
Cadmium	6010C	mg/L								
Calcium	6010C	mg/L								
Carbazole	8270D	µg/L								
Carbon Disulfide	8260B	µg/L	5	U	5	U	5	U	5	U
Carbon Tetrachloride	8260B	µg/L	1	U	5	U	1	U	5	U
Chlordane	8081B	µg/L								
Chlorobenzene	8260B	µg/L	1	U	5	U	1	U	5	U
Chloroethane	8260B	µg/L	1	U	5	U	1	U	5	U
Chloroform	8260B	µg/L	1	U	5	U	1	U	5	U
Chloromethane	8260B	µg/L	1	U	5	U	1	U	5	U
Chlorotrifluoroethylene	8260B	µg/L	5	U	5	U	5	U	5	U
Chromium	6010C	mg/L								
Chromium (Hexavalent Compounds)	7199	µg/L								
Chrysene	8270D	µg/L								
Chrysene	8270D SIM	µg/L								
cis-1,2-Dichloroethene	8260B	µg/L	1	U	5	U	1	U	5	U
cis-1,3-Dichloropropene	8260B	µg/L	1	U	5	U	1	U	5	U
Cobalt	6010C	mg/L								
Copper	6010C	mg/L								
Cymene	8260B	µg/L	5	U	5	U	5	U	5	U
Delta-Bhc	8081B	µg/L								
Di isopropyl Ether	8260B	µg/L	1	U	5	U	1	U	5	U
Dibenzo(a,h)anthracene	8270D	µg/L								
Dibenzo(a,h)anthracene	8270D SIM	µg/L								
Dibenzofuran	8270D	µg/L								
Dibromochloromethane	8260B	µg/L	1	U	5	U	1	U	5	U
Dibromomethane	8260B	µg/L	1	U	5	U	1	U	5	U
Dicamba	8151A	µg/L								
Dichlorodifluoromethane	8260B	µg/L	1	U	5	U	1	U	5	U
Dichlorprop	8151A	µg/L								
Dieldrin	8081B	µg/L								
Diethylene Glycol	8015C	mg/L								
Diethylphthalate	8270D	µg/L								
Diethylphthalate	8270D SIM	µg/L								
Dimethylphthalate	8270D	µg/L								
Dimethylphthalate	8270D SIM	µg/L								
Di-n-butylphthalate	8270D	µg/L								
Di-n-butylphthalate	8270D SIM	µg/L								
Dinitrobutyl Phenol	8151A	µg/L								
Di-n-octylphthalate	8270D	µg/L								
Di-n-octylphthalate	8270D SIM	µg/L								
Diphenylamine	8270D	µg/L								
EFH (C12-C14)	8015M	mg/L								
EFH (C12-C14) w/ Silica Gel	8015M	mg/L								
EFH (C15-C20)	8015M	mg/L								
EFH (C15-C20) w/ Silica Gel	8015M	mg/L								
EFH (C21-C30)	8015M	mg/L								
EFH (C21-C30) w/ Silica Gel	8015M	mg/L								
EFH (C30-C40)	8015M	mg/L								
EFH (C30-C40) w/ Silica Gel	8015M	mg/L								
EFH (C8-C11)	8015M	mg/L								
EFH (C8-C11) w/ Silica Gel	8015M	mg/L								
Endosulfan I	8081B	µg/L								
Endosulfan II	8081B	µg/L								
Endosulfan Sulfate	8081B	µg/L								
Endrin	8081B	µg/L								
Endrin Aldehyde	8081B	µg/L								
Endrin Ketone	8081B	µg/L								
Ethylbenzene	8260B	µg/L	1	U	5	U	1	U	5	U
Ethylene Glycol	8015C	mg/L								
Fluoranthene	8270D	µg/L								
Fluoranthene	8270D SIM	µg/L								
Fluorene	8270D	µg/L								
Fluorene	8270D SIM	µg/L								
Formaldehyde	8315A	µg/L								
Gamma-Bhc (Lindane)	8081B	µg/L								
Gasoline Range Organics (C5-C12)	8015M	µg/L								

Table C-2
Go-Backs, Trenches and Soil Vapor Locations - Equipment Blanks

			Sample Name:		EB3-061114		EB4-060414		EB4-061114		EB5-060414	
			Location:		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV		EQUIPMENT BLANK SV	
			Sample Date:		06/11/2014		06/04/2014		06/11/2014		06/04/2014	
			Sample Type:		EB		EB		EB		EB	
			Lab:		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Heptachlor	8081B	µg/L								
Heptachlor Epoxide	8081B	µg/L								
Hexachloro-1,3-butadiene	8260B	µg/L	5	U	5	U	5	U	5	U
Hexachlorobenzene	8270D	µg/L								
Hexachlorobutadiene	8270D	µg/L								
Hexachlorocyclopentadiene	8270D	µg/L								
Hexachloroethane	8270D	µg/L								
HMX	8330A	µg/L								
Indeno(1,2,3-cd)pyrene	8270D	µg/L								
Indeno(1,2,3-cd)pyrene	8270D SIM	µg/L								
Iron	6010C	mg/L								
Isophorone	8270D	µg/L								
Isopropylbenzene	8260B	µg/L	5	U	5	U	5	U	5	U
Lead	6010C	mg/L								
Lithium	6010C	mg/L								
m,p-Xylene	8260B	µg/L	1	U	5	U	1	U	5	U
Magnesium	6010C	mg/L								
Manganese	6010C	mg/L								
MCPA	8151A	µg/L								
MCPP	8151A	µg/L								
M-Dinitrobenzene	8330A	µg/L								
Mercury	7470A	mg/L								
Methoxychlor	8081B	µg/L								
Methyl Iodide	8260B	µg/L	1	U	5	U	1	U	5	U
Methyl Tert-Butyl Ether	8260B	µg/L	1	U	5	U	1	U	5	U
Methylene Chloride	8260B	µg/L	4		5	U	4		5	U
Mirex	8081B	µg/L								
Molybdenum	6010C	mg/L								
Morpholine	8270D SIM	µg/L								
m-Terphenyl	8015B	mg/L								
Naphthalene	8270D	µg/L								
Naphthalene	8270D SIM	µg/L								
n-Butylbenzene	8260B	µg/L	5	U	5	U	5	U	5	U
Nickel	6010C	mg/L								
Nitrobenzene	8270D	µg/L								
Nitrobenzene	8330A	µg/L								
Nitroglycerin	8330A	µg/kg								
N-Nitrosodimethylamine	8270D	µg/L								
N-Nitrosodimethylamine	8270D SIM	µg/L								
N-Nitroso-di-n-propylamine	8270D	µg/L								
N-Nitrosodiphenylamine	8270D	µg/L								
n-Propylbenzene	8260B	µg/L	5	U	5	U	5	U	5	U
OCDD	1613B	pg/L								
OCDF	1613B	pg/L								
o-Terphenyl	8015B	mg/L								
o-Xylene	8260B	µg/L	1	U	5	U	1	U	5	U
Pentachlorophenol	8270D	µg/L								
Perchlorate	6850	µg/L								
PETN	8330A	µg/kg								
pH	9040C	pH								
Phenanthrene	8270D	µg/L								
Phenanthrene	8270D SIM	µg/L								
Phenol	8270D	µg/L								
Phosphorus	6010C	mg/L								
Potassium	6010C	mg/L								
Propylene Glycol	8015C	mg/L								
p-Terphenyl	8015B	mg/L								
Pyrene	8270D	µg/L								
Pyrene	8270D SIM	µg/L								
Pyridine	8270D	µg/L								
RDX	8330A	µg/L								
Selenium	6020A	mg/L								
Silver	6020A	mg/L								
Silvex (2,4,5-TP)	8151A	µg/L								
Sodium	6010C	mg/L								
Strontium	6020A	mg/L								
Styrene	8260B	µg/L	5	U	5	U	5	U	5	U
Technical Toxaphene	8081B	µg/L								
tert-Butyl ethyl ether	8260B	µg/L	1	U	5	U	1	U	5	U
tert-Butylbenzene	8260B	µg/L	5	U	5	U	5	U	5	U
Tertiary amyl methyl ether	8260B	µg/L	1	U	5	U	1	U	5	U
Tertiary butyl alcohol	8260B	µg/L	50	U	50	U	50	U	50	U
Tetrachloroethene	8260B	µg/L	1	U	5	U	1	U	5	U
Tetryl	8330A	µg/L								
Thallium	6020A	mg/L								
Tin	6010C	mg/L								
Titanium	6010C	mg/L								
Toluene	8260B	µg/L	1	U	5	U	1	U	5	U
trans-1,2-Dichloroethene	8260B	µg/L	1	U	5	U	1	U	5	U
trans-1,3-Dichloropropene	8260B	µg/L	1	U	5	U	1	U	5	U
Trichloroethene	8260B	µg/L	1	U	5	U	1	U	5	U
Trichlorofluoromethane	8260B	µg/L	1	U	5	U	1	U	5	U
Triethylene Glycol	8015C	mg/L								
Vanadium	6010C	mg/L								
Vinyl Acetate	8260B	µg/L	10	U	10	U	10	U	10	U
Vinyl Chloride	8260B	µg/L	1	U	5	U	1	U	5	U
Zinc	6010C	mg/L								
Zirconium	6010C	mg/L								

Notes:
ug/L - microgram per liter
mg/L - milligram per liter
ng/L - nanogram per liter
pg/L - picogram per liter
U - Compound not detected above the reporting limit

Table C-3
Go-Backs, Trenches and Soil Vapor Locations - Field Blanks

			Sample Name:		FB-041613		FB-051314		FB-052114	
			Location:		FIELD BLANK		FIELD BLANK		FIELD BLANK	
			Sample Date:		04/16/2013		05/13/2014		05/21/2014	
			Sample Type:		FB		FB		FB	
			Lab:		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L	5	U	1	U	5	U
1,1,1-Trichloroethane	8260B	µg/L	5	U	1	U	5	U
1,1,2,2-Tetrachloroethane	8260B	µg/L	5	U	1	U	5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L	5	U	10	U	5	U
1,1,2-Trichloroethane	8260B	µg/L	5	U	1	U	5	U
1,1'-Biphenyl	8270D	µg/L	1	U			1	U
1,1-Dichloroethane	8260B	µg/L	5	U	1	U	5	U
1,1-Dichloroethene	8260B	µg/L	5	U	1	U	5	U
1,1-Dichloropropene	8260B	µg/L	5	U	5	U	5	U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,4,6,7,8-HPCDF	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,4,7,8,9-HPCDF	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,4,7,8-HXCDF	1613B	pg/L	0.257	J	9.9	U	9.9	U
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,6,7,8-HXCDF	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,7,8,9-HXCDF	1613B	pg/L	9.71	U	9.9	U	0.182	J
1,2,3,7,8-Pentachlorodibenzofuran	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1613B	pg/L	9.71	U	9.9	U	9.9	U
1,2,3-Trichlorobenzene	8260B	µg/L	5	U	5	U	5	U
1,2,3-Trichloropropane	8260B	µg/L	5	U	5	U	5	U
1,2,4-Trichlorobenzene	8260B	µg/L	5	U	5	U	5	U
1,2,4-Trichlorobenzene	8270D	µg/L	1	U			1	U
1,2,4-Trimethylbenzene	8260B	µg/L	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	8260B	µg/L	5	U	5	U	5	U
1,2-Dibromoethane	8260B	µg/L	5	U	1	U	5	U
1,2-Dichlorobenzene	8260B	µg/L	5	U	5	U	5	U
1,2-Dichlorobenzene	8270D	µg/L	1	U			1	U
1,2-Dichloroethane	8260B	µg/L	5	U	1	U	5	U
1,2-Dichloropropane	8260B	µg/L	5	U	1	U	5	U
1,2-Diphenylhydrazine	8270D	µg/L	1	U			1	U
1,3,5-Trimethylbenzene	8260B	µg/L	5	U	5	U	5	U
1,3,5-Trinitrobenzene	8330A	µg/L	0.6	U			0.6	U
1,3-Dichlorobenzene	8260B	µg/L	5	U	5	U	5	U
1,3-Dichlorobenzene	8270D	µg/L	1	U			1	U
1,3-Dichloropropane	8260B	µg/L	5	U	1	U	5	U
1,4-Dichlorobenzene	8260B	µg/L	5	U	5	U	5	U
1,4-Dichlorobenzene	8270D	µg/L	1	U			1	U
1,4-Dioxane	8260B SIM	µg/L	2	U			2	U
1-Chlorohexane	8260B	µg/L	5	U	5	U	5	U
1-Methylnaphthalene	8270D	µg/L	0.5	U			0.5	U
1-Methylnaphthalene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.022	J
2,2-Dichloropropane	8260B	µg/L	5	U	1	U	5	U
2,2-Dichlor-Propionic Acid	8151A	µg/L	1.2	UJ			1.3	U
2,3,4,6,7,8-HXCDF	1613B	pg/L	9.71	U	9.9	U	9.9	U
2,3,4,7,8-PECDF	1613B	pg/L	9.71	U	9.9	U	9.9	U
2,3,7,8-TCDD	1613B	pg/L	1.94	U	1.98	U	1.98	U
2,3,7,8-Tetrachlorodibenzofuran	1613B	pg/L	1.94	U	1.98	U	1.98	U
2,4,5-T	8151A	µg/L	0.049	UJ			0.051	U
2,4,5-Trichlorophenol	8270D	µg/L	1	U			1	U
2,4,6-Trichlorophenol	8270D	µg/L	1	U			1	U
2,4,6-Trinitrotoluene	8330A	µg/L	0.6	U			0.6	U
2,4-D	8151A	µg/L	0.49	U			0.51	U
2,4-DB	8151A	µg/L	0.98	U			1	U
2,4-Diamino-6-nitrotoluene	8330A	µg/L	0.6	U			0.6	U
2,4-Dichlorophenol	8270D	µg/L	1	U			1	U
2,4-Dimethylphenol	8270D	µg/L	1	U			1	U
2,4-Dinitrophenol	8270D	µg/L	31	U			32	U
2,4-Dinitrotoluene	8330A	µg/L	0.6	U			0.6	U
2,6-Diamino-4-nitrotoluene	8330A	µg/L	0.6	U			0.6	U
2,6-Dichlorophenol	8270D	µg/L	1	U			1	U
2,6-Dinitrotoluene	8330A	µg/L	0.6	U			0.6	U
2-Amino-4,6-Dinitrotoluene	8330A	µg/L	0.6	U			0.6	U
2-Butanone (MEK)	8260B	µg/L	10	U	10	U	10	U
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L	5	U	5	U	5	U
2-Chloroethyl Vinyl Ether	8260B	µg/L	10	U	10	U	10	U
2-Chloronaphthalene	8270D	µg/L	1	U			1	U
2-Chlorophenol	8270D	µg/L	1	U			1	U
2-Chlorotoluene	8260B	µg/L	5	U	5	U	5	U
2-Hexanone	8260B	µg/L	10	U	10	U	10	U
2-Methylnaphthalene	8270D	µg/L	0.5	U			0.5	U
2-Methylnaphthalene	8270D SIM	µg/L	0.012	J	0.048	UJ	0.032	J
2-Methylphenol	8270D	µg/L	1	U			1	U
2-Nitroaniline	8270D	µg/L	1	U			1	U
2-Nitrophenol	8270D	µg/L	1	U			1	U
2-Nitrotoluene	8330A	µg/L	0.6	U			0.6	U
2-Phenylbutane	8260B	µg/L	5	U	5	U	5	U
2-Propanol	8015C	µg/L	1000	UJ				
3,3'-Dichlorobenzidine	8270D	µg/L	5	U			5	U
3,5-Dimethylphenol	8270D	µg/L	10	U			11	U
3-Nitroaniline	8270D	µg/L	1	U			1	U
3-Nitrotoluene	8330A	µg/L	1.2	U			1.2	U
4,4'-DDD	8081B	µg/L	0.017	U			0.018	U
4,4'-DDE	8081B	µg/L	0.017	U			0.018	U
4,4'-DDT	8081B	µg/L	0.017	U			0.018	U
4,6-Dinitro-2-methylphenol	8270D	µg/L	16	U			16	U
4-Amino-2,6-Dinitrotoluene	8330A	µg/L	0.6	U			0.6	U
4-Bromophenyl-phenylether	8270D	µg/L	1	U			1	U
4-Chloro-3-methylphenol	8270D	µg/L	1	U			1	U
4-Chloroaniline	8270D	µg/L	1	U			1	U
4-Chlorophenyl-phenylether	8270D	µg/L	1	U			1	U
4-Chlorotoluene	8260B	µg/L	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	8260B	µg/L	10	U	10	U	10	U
4-Methylphenol	8270D	µg/L	1	U			1	U
4-Nitroaniline	8270D	µg/L	1	U			1	U
4-Nitrophenol	8270D	µg/L	31	U			32	U
4-Nitrotoluene	8330A	µg/L	1.2	U			1.2	U
Acenaphthene	8270D	µg/L	0.5	U			0.5	U
Acenaphthene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Acenaphthylene	8270D	µg/L	0.5	U			0.5	U
Acenaphthylene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Acetone	8260B	µg/L	20	U	20	U	20	U
Acrolein	8260B	µg/L	100	U	100	U	100	U
Acrylonitrile	8260B	µg/L	20	U	20	U	20	U
Aldrin	8081B	µg/L	0.0086	U			0.0089	U
Alpha-Bhc	8081B	µg/L	0.0086	U			0.0089	U
Aluminum	6010C	mg/L	0.4	U	0.4	U	0.4	U
Aniline	8270D	µg/L	1	U			1	U
Anthracene	8270D	µg/L	0.5	U			0.5	U
Anthracene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U

Table C-3
Go-Backs, Trenches and Soil Vapor Locations - Field Blanks

	Sample Name:		FB-041613		FB-051314		FB-052114	
	Location:		FIELD BLANK		FIELD BLANK		FIELD BLANK	
	Sample Date:		04/16/2013		05/13/2014		05/21/2014	
	Sample Type:		FB		FB		FB	
	Lab:		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Antimony	6010C	mg/L	0.04	U	0.04	U	0.04	U
Aroclor 1016	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1221	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1232	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1242	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1248	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1254	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1260	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1262	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 1268	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 5432	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 5442	8082A	µg/L	0.43	U	0.42	U	0.42	U
Aroclor 5460	8082A	µg/L	0.43	U	0.42	U	0.42	U
Arsenic	6010C	mg/L	0.04	U	0.04	U	0.04	U
Barium	6010C	mg/L	0.01	U	0.01	U	0.01	U
Benzene	8260B	µg/L	5	U	1	U	5	U
Benzidine	8270D	µg/L	62	U			63	U
Benzo(a)anthracene	8270D	µg/L	0.5	U			0.5	U
Benzo(a)anthracene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Benzo(a)pyrene	8270D	µg/L	0.5	U			0.5	U
Benzo(a)pyrene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Benzo(b)fluoranthene	8270D	µg/L	0.5	U			0.5	U
Benzo(b)fluoranthene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Benzo(e)pyrene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Benzo(g,h,i)perylene	8270D	µg/L	0.5	U			0.5	U
Benzo(g,h,i)perylene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Benzo(k)fluoranthene	8270D	µg/L	0.5	U			0.5	U
Benzo(k)fluoranthene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Benzoic Acid	8270D	µg/L	16	UJ			16	U
Benzyl Alcohol	8270D	µg/L	16	U			16	U
Beryllium	6010C	mg/L	0.01	U	0.01	U	0.01	U
Beta-Bhc	8081B	µg/L	0.0086	U			0.0089	U
bis(2-chloroethoxy)methane	8270D	µg/L	1	U			1	U
bis(2-chloroethyl) ether	8270D	µg/L	1	U			1	U
bis(2-chloroisopropyl) ether	8270D	µg/L	1	U			1	U
Bis(2-ethylhexyl)phthalate	8270D	µg/L	5	U			5	U
Bis(2-ethylhexyl)phthalate	8270D SIM	µg/L	1	U	0.97	UJ	1.1	UJ
Boron	6010C	mg/L	0.1	U	0.1	U	0.1	U
Bromide	300.0	mg/L	0.5	U			0.5	U
Bromobenzene	8260B	µg/L	5	U	5	U	5	U
Bromochloromethane	8260B	µg/L	5	U	5	U	5	U
Bromodichloromethane	8260B	µg/L	5	U	1	U	5	U
Bromoform	8260B	µg/L	5	U	4	U	5	U
Bromomethane	8260B	µg/L	5	U	1	U	5	U
Butylbenzylphthalate	8270D	µg/L	5	U			5	U
Butylbenzylphthalate	8270D SIM	µg/L	1	U	0.97	UJ	1.1	U
Cadmium	6010C	mg/L	0.01	U	0.01	U	0.01	U
Calcium	6010C	mg/L	0.4	U	0.4	U	0.4	U
Carbazole	8270D	µg/L	1	U			1	U
Carbon Disulfide	8260B	µg/L	5	U	5	U	5	U
Carbon Tetrachloride	8260B	µg/L	5	U	1	U	5	U
Chlordane	8081B	µg/L	0.43	U			0.44	U
Chloride	300.0	mg/L	0.4	U			0.4	U
Chlorobenzene	8260B	µg/L	5	U	1	U	5	U
Chloroethane	8260B	µg/L	5	U	1	U	5	U
Chloroform	8260B	µg/L	3	J	1	U	0.7	J
Chloromethane	8260B	µg/L	5	U	1	U	5	U
Chlorotrifluoroethylene	8260B	µg/L	5	U	5	UJ	5	UJ
Chromium	6010C	mg/L	0.03	U	0.03	U	0.03	U
Chromium (Hexavalent Compounds)	7199	µg/L	10	U			10	U
Chrysene	8270D	µg/L	0.5	U			0.5	U
Chrysene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
cis-1,2-Dichloroethene	8260B	µg/L	5	U	1	U	5	U
cis-1,3-Dichloropropene	8260B	µg/L	5	U	1	U	5	U
Cobalt	6010C	mg/L	0.01	U	0.01	U	0.01	U
Copper	6010C	mg/L	0.02	U	0.02	U	0.02	U
Cyanide	9012B	mg/L	0.01	U				
Cymene	8260B	µg/L	5	U	5	U	5	U
Delta-Bhc	8081B	µg/L	0.0086	U			0.0089	U
Di isopropyl Ether	8260B	µg/L	5	U	1	U	5	U
Dibenzo(a,h)anthracene	8270D	µg/L	0.5	U			0.5	U
Dibenzo(a,h)anthracene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Dibenzofuran	8270D	µg/L	1	U			1	U
Dibromochloromethane	8260B	µg/L	5	U	1	U	5	U
Dibromomethane	8260B	µg/L	5	U	1	U	5	U
Dicamba	8151A	µg/L	0.29	UJ			0.31	U
Dichlorodifluoromethane	8260B	µg/L	5	U	1	U	5	U
Dichlorprop	8151A	µg/L	0.49	UJ			0.51	U
Dieldrin	8081B	µg/L	0.017	U			0.018	U
Diethylene Glycol	8015C	mg/L	10	U			10	U
Diethylphthalate	8270D	µg/L	5	U			5	U
Diethylphthalate	8270D SIM	µg/L	1	U	0.47	J	1.1	U
Dimethylphthalate	8270D	µg/L	5	U			5	U
Dimethylphthalate	8270D SIM	µg/L	1	U	0.97	UJ	1.1	U
Di-n-butylphthalate	8270D	µg/L	5	U			5	U
Di-n-butylphthalate	8270D SIM	µg/L	0.11	J	0.22	J	0.089	J
Dinitrobutyl Phenol	8151A	µg/L	0.49	UJ			0.51	U
Di-n-octylphthalate	8270D	µg/L	5	U			5	U
Di-n-octylphthalate	8270D SIM	µg/L	1	UJ	0.97	UJ	1.1	U
Diphenylamine	8270D	µg/L	5	U			5	U
EFH (C12-C14)	8015M	mg/L	0.59	U	0.098	U	0.1	U
EFH (C12-C14) w/ Silica Gel	8015M	mg/L			0.098	UJ	0.1	U
EFH (C15-C20)	8015M	mg/L	0.59	U	0.098	U	0.1	U
EFH (C15-C20) w/ Silica Gel	8015M	mg/L			0.098	U	0.1	U
EFH (C21-C30)	8015M	mg/L	0.59	U	0.098	U	0.1	U
EFH (C21-C30) w/ Silica Gel	8015M	mg/L			0.098	UJ	0.1	U
EFH (C30-C40)	8015M	mg/L	0.59	UJ	0.49	U	0.5	U
EFH (C30-C40) w/ Silica Gel	8015M	mg/L			0.49	U	0.5	U
EFH (C8-C11)	8015M	mg/L	0.59	U	0.098	U	0.1	U
EFH (C8-C11) w/ Silica Gel	8015M	mg/L			0.098	UJ	0.1	U
Endosulfan I	8081B	µg/L	0.0086	U			0.0089	U
Endosulfan II	8081B	µg/L	0.017	U			0.018	U
Endosulfan Sulfate	8081B	µg/L	0.017	U			0.018	U
Endrin	8081B	µg/L	0.017	U			0.018	U
Endrin Aldehyde	8081B	µg/L	0.086	U			0.088	U
Endrin Ketone	8081B	µg/L	0.017	U			0.018	U
Ethanol	8015C	µg/L	1000	UJ				
Ethylbenzene	8260B	µg/L	5	U	1	U	5	U
Ethylene Glycol	8015C	mg/L	10	U			10	U
Fluoranthene	8270D	µg/L	0.5	U			0.5	U
Fluoranthene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U

Table C-3
Go-Backs, Trenches and Soil Vapor Locations - Field Blanks

	Sample Name:		FB-041613		FB-051314		FB-052114	
	Location:		FIELD BLANK		FIELD BLANK		FIELD BLANK	
	Sample Date:		04/16/2013		05/13/2014		05/21/2014	
	Sample Type:		FB		FB		FB	
	Lab:		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
Fluorene	8270D	µg/L	0.5	U			0.5	U
Fluorene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Fluoride	300.0	mg/L	0.1	U			0.1	U
Formaldehyde	8315A	µg/L	50	U			50	U
Gamma-Bhc (Lindane)	8081B	µg/L	0.0086	U			0.0089	U
Gasoline Range Organics (C5-C12)	8015M	µg/L	50	U	50	U	50	U
Heptachlor	8081B	µg/L	0.0086	U			0.0089	U
Heptachlor Epoxide	8081B	µg/L	0.0086	U			0.0089	U
Hexachloro-1,3-butadiene	8260B	µg/L	5	U	5	U	5	U
Hexachlorobenzene	8270D	µg/L	0.5	U			0.5	U
Hexachlorobutadiene	8270D	µg/L	1	U			1	U
Hexachlorocyclopentadiene	8270D	µg/L	16	U			16	U
Hexachloroethane	8270D	µg/L	5	U			5	U
HMX	8330A	µg/L	2	U			2	U
Indeno(1,2,3-cd)pyrene	8270D	µg/L	0.5	U			0.5	U
Indeno(1,2,3-cd)pyrene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Iron	6010C	mg/L	0.4	U	0.4	U	0.4	U
Isophorone	8270D	µg/L	1	U			1	U
Isopropylbenzene	8260B	µg/L	5	U	5	U	5	U
Lead	6010C	mg/L	0.03	U	0.03	U	0.03	U
Lithium	6010C	mg/L	0.04	U	0.04	U	0.04	U
m,p-Xylene	8260B	µg/L	5	U	1	U	5	U
Magnesium	6010C	mg/L	0.2	U	0.2	U	0.2	U
Manganese	6010C	mg/L	0.01	U	0.01	U	0.01	U
MCPA	8151A	µg/L	200	U			200	U
MCPP	8151A	µg/L	200	UJ			200	U
M-Dinitrobenzene	8330A	µg/L	0.6	U			0.6	U
Mercury	7470A	mg/L	0.0002	U	0.0002	U	0.0002	U
Methanol	8015C	µg/L	1000	UJ				
Methoxychlor	8081B	µg/L	0.086	U			0.088	U
Methyl Iodide	8260B	µg/L	5	U	1	U	5	U
Methyl Tert-Butyl Ether	8260B	µg/L	5	U	1	U	5	U
Methylene Chloride	8260B	µg/L	18		3	U	7	
Mirex	8081B	µg/L	0.22	U			0.05	U
Molybdenum	6010C	mg/L	0.02	U	0.02	U	0.02	U
Morpholine	8270D SIM	µg/L					21	U
m-Terphenyl	8015B	mg/L	0.0049	U			0.0051	U
Naphthalene	8270D	µg/L	0.5	U			0.2	J
Naphthalene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.11	
n-Butylbenzene	8260B	µg/L	5	U	5	U	5	U
Nickel	6010C	mg/L	0.02	U	0.02	U	0.02	U
Nitrate	300.0	mg/L	0.1	U			0.1	U
Nitrite-NO2	300.0	mg/L	0.1	U			0.1	U
Nitrobenzene	8270D	µg/L	1	U			1	U
Nitrobenzene	8330A	µg/L	0.6	U			0.6	U
Nitroglycerin	8330A	µg/kg	100000000	U			100000000	U
N-Nitrosodimethylamine	8270D	µg/L	5	U			5	U
N-Nitrosodimethylamine	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
N-Nitroso-di-n-propylamine	8270D	µg/L	1	U			1	U
N-Nitrosodiphenylamine	8270D	µg/L	1	U			1	U
n-Propylbenzene	8260B	µg/L	5	U	5	U	5	U
OCDD	1613B	pg/L	19.4	U	19.8	U	19.8	U
OCDF	1613B	pg/L	19.4	U	19.8	U	19.8	U
Orthophosphate	300.0	mg/L	0.5	U				
o-Terphenyl	8015B	mg/L	0.0049	U			0.0051	U
o-Xylene	8260B	µg/L	5	U	1	U	5	U
Pentachlorophenol	8270D	µg/L	5	U			5	U
Perchlorate	6850	µg/L	1	U	1	U	1	U
PETN	8330A	µg/kg	100000000	U			100000000	U
pH	9040C	pH	5.7		6.5		6.4	
Phenanthrene	8270D	µg/L	0.5	U			0.5	U
Phenanthrene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Phenol	8270D	µg/L	1	U			1	U
Phosphorus	6010C	mg/L	0.2	U	0.2	U	0.2	U
Potassium	6010C	mg/L	1	U	1	U	1	U
Propylene Glycol	8015C	mg/L	10	U			10	U
p-Terphenyl	8015B	mg/L	0.0049	U			0.0051	U
Pyrene	8270D	µg/L	0.5	U			0.5	U
Pyrene	8270D SIM	µg/L	0.052	U	0.048	UJ	0.053	U
Pyridine	8270D	µg/L	5	U			5	U
RDX	8330A	µg/L	0.6	U			0.6	U
Selenium	6020A	mg/L	0.004	U	0.004	U	0.004	U
Silver	6020A	mg/L	0.001	U	0.001	U	0.001	U
Silvex (2,4,5-TP)	8151A	µg/L	0.049	U			0.051	U
Sodium	6010C	mg/L	2	U	2	U	2	U
Strontium	6020A	mg/L	0.002	U	0.002	U	0.002	U
Styrene	8260B	µg/L	5	U	5	U	5	U
Sulfate	300.0	mg/L	1	U			1	U
Technical Toxaphene	8081B	µg/L	2.6	U			0.88	U
tert-Butyl ethyl ether	8260B	µg/L	5	U	1	U	5	U
tert-Butylbenzene	8260B	µg/L	5	U	5	U	5	U
Tertiary amyl methyl ether	8260B	µg/L	5	U	1	U	5	U
Tertiary butyl alcohol	8260B	µg/L	50	U	50	U	50	U
Tetrachloroethene	8260B	µg/L	5	U	1	U	5	U
Tetryl	8330A	µg/L	0.6	U			0.6	U
Thallium	6020A	mg/L	0.001	U	0.001	U	0.001	U
Tin	6010C	mg/L	0.0029	J	0.04	U	0.04	U
Titanium	6010C	mg/L	0.02	U	0.02	U	0.02	U
Toluene	8260B	µg/L	5	U	1	U	5	U
Total Organic Carbon	SM5310C	mg/L					1	U
trans-1,2-Dichloroethene	8260B	µg/L	5	U	1	U	5	U
trans-1,3-Dichloropropene	8260B	µg/L	5	U	1	U	5	U
Trichloroethene	8260B	µg/L	5	U	1	U	5	U
Trichlorofluoromethane	8260B	µg/L	5	U	1	U	5	U
Triethylene Glycol	8015C	mg/L	10	U			10	U
Vanadium	6010C	mg/L	0.01	U	0.01	U	0.01	U
Vinyl Acetate	8260B	µg/L	10	U	10	U	10	U
Vinyl Chloride	8260B	µg/L	5	U	1	U	5	U
Zinc	6010C	mg/L	0.04	U	0.04	U	0.04	U
Zirconium	6010C	mg/L	0.1	U	0.1	U	0.1	U

Notes:
ug/L - microgram per liter
mg/L - milligram per liter
ng/L - nanogram per liter
pg/L - picogram per liter
U - Compound not detected above the reporting limit

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

		Sample Name:	TB-011314		TB-011414		TB-051214		TB-051514		TB-051614		TB-060914		TB-061214		TB-061314		TB-061614		TB1-051314	
		Location:	TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG	
		Sample Date:	01/13/2014		01/14/2014		05/12/2014		05/15/2014		05/16/2014		06/09/2014		06/12/2014		06/13/2014		06/16/2014		05/13/2014	
		Sample Type:	TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
		Lab:	LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,1,1-Trichloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,1,2,2-Tetrachloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L					5	U	5	U	5	U	10	U	10	U			10	U		
1,1,2-Trichloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,1-Dichloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,1-Dichloroethene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,1-Dichloropropene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2,3-Trichlorobenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2,3-Trichloropropane	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2,4-Trichlorobenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2,4-Trimethylbenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2-Dibromo-3-chloropropane	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2-Dibromoethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,2-Dichlorobenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,2-Dichloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,2-Dichloropropane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,3,5-Trimethylbenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,3-Dichlorobenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,3-Dichloropropane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
1,4-Dichlorobenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
1,4-Dioxane	8260B SIM	µg/L																	2	U		
1-Chlorohexane	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
2,2-Dichloropropane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
2-Butanone (MEK)	8260B	µg/L					10	U	10	U	10	U	10	U	10	U			10	U		
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
2-Chloroethyl Vinyl Ether	8260B	µg/L					10	U	10	U	10	U	10	U	10	U			10	U		
2-Chlorotoluene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
2-Hexanone	8260B	µg/L					10	U	10	U	10	U	10	U	10	U			10	U		
2-Phenylbutane	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
4-Chlorotoluene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
4-Methyl-2-pentanone (MIBK)	8260B	µg/L					10	U	10	U	10	U	10	U	10	U			10	U		
Acetone	8260B	µg/L					20	U	20	U	20	U	20	U	20	U			20	U		
Acrolein	8260B	µg/L					100	U	100	U	100	U	100	U	100	U			100	U		
Acrylonitrile	8260B	µg/L					20	U	20	U	20	U	20	U	20	U			20	U		
Benzene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Bromobenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
Bromochloromethane	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
Bromodichloromethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Bromoform	8260B	µg/L					5	U	5	U	5	U	4	U	4	U			4	U		
Bromomethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Carbon Disulfide	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
Carbon Tetrachloride	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Chlorobenzene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Chloroethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Chloroform	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Chloromethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Chlorotrifluoroethylene	8260B	µg/L					5	UJ	5	UJ	5	UJ	5	U	5	U			5	U		
cis-1,2-Dichloroethene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
cis-1,3-Dichloropropene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Cymene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
Di isopropyl Ether	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Dibromochloromethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Dibromomethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Dichlorodifluoromethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Ethylbenzene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Gasoline Range Organics (C5-C12)	8015M	µg/L	50	U	50	U											50	U	50	U	50	U
Hexachloro-1,3-butadiene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
Isopropylbenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
m,p-Xylene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Methyl Iodide	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Methyl Tert-Butyl Ether	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Methylene Chloride	8260B	µg/L					5	U	5	U	5	U	3	U	3	U			3	U		

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

	Sample Name:	TB-011314		TB-011414		TB-051214		TB-051514		TB-051614		TB-060914		TB-061214		TB-061314		TB-061614		TB1-051314	
	Location:	TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG	
	Sample Date:	01/13/2014		01/14/2014		05/12/2014		05/15/2014		05/16/2014		06/09/2014		06/12/2014		06/13/2014		06/16/2014		05/13/2014	
	Sample Type:	TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
	Lab:	LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
n-Butylbenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
n-Propylbenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
o-Xylene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Styrene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
tert-Butyl ethyl ether	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
tert-Butylbenzene	8260B	µg/L					5	U	5	U	5	U	5	U	5	U			5	U		
Tertiary amyl methyl ether	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Tertiary butyl alcohol	8260B	µg/L					50	U	50	U	50	U	50	U	50	U			50	U		
Tetrachloroethene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Toluene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
trans-1,2-Dichloroethene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
trans-1,3-Dichloropropene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Trichloroethene	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Trichlorofluoromethane	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		
Vinyl Acetate	8260B	µg/L					10	U	10	U	10	U	10	U	10	U			10	UJ		
Vinyl Chloride	8260B	µg/L					5	U	5	U	5	U	1	U	1	U			1	U		

Notes:
ug/L - microgram per liter
U - Compound not detected above the reporting limit

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

			Sample Name:		TB1-051414		TB1-051914		TB1-052014		TB1-052114		TB1-052214		TB1-060314		TB1-060514		TB1-060614		TB1-061014		TB1-061114	
			Location:		TRIP BLANK FDG		TRIP BLANK SV		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK SV		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG	
			Sample Date:		05/14/2014		05/19/2014		05/20/2014		05/21/2014		05/22/2014		06/03/2014		06/05/2014		06/06/2014		06/10/2014		06/11/2014	
			Sample Type:		TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
			Lab:		LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units		Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L				5	U							5	U									
1,1,1-Trichloroethane	8260B	µg/L				5	U							5	U									
1,1,2,2-Tetrachloroethane	8260B	µg/L				5	U							5	U									
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L				5	U							5	U									
1,1,2-Trichloroethane	8260B	µg/L				5	U							5	U									
1,1-Dichloroethane	8260B	µg/L				5	U							5	U									
1,1-Dichloroethene	8260B	µg/L				5	U							5	U									
1,1-Dichloropropene	8260B	µg/L				5	U							5	U									
1,2,3-Trichlorobenzene	8260B	µg/L				5	U							5	U									
1,2,3-Trichloropropane	8260B	µg/L				5	U							5	U									
1,2,4-Trichlorobenzene	8260B	µg/L				5	U							5	U									
1,2,4-Trimethylbenzene	8260B	µg/L				5	U							5	U									
1,2-Dibromo-3-chloropropane	8260B	µg/L				5	U							5	U									
1,2-Dibromoethane	8260B	µg/L				5	U							5	U									
1,2-Dichlorobenzene	8260B	µg/L				5	U							5	U									
1,2-Dichloroethane	8260B	µg/L				5	U							5	U									
1,2-Dichloropropane	8260B	µg/L				5	U							5	U									
1,3,5-Trimethylbenzene	8260B	µg/L				5	U							5	U									
1,3-Dichlorobenzene	8260B	µg/L				5	U							5	U									
1,3-Dichloropropane	8260B	µg/L				5	U							5	U									
1,4-Dichlorobenzene	8260B	µg/L				5	U							5	U									
1,4-Dioxane	8260B SIM	µg/L																						
1-Chlorohexane	8260B	µg/L				5	U							5	U									
2,2-Dichloropropane	8260B	µg/L				5	U							5	U									
2-Butanone (MEK)	8260B	µg/L				10	U							10	U									
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L				5	U							5	U									
2-Chloroethyl Vinyl Ether	8260B	µg/L				10	U							10	U									
2-Chlorotoluene	8260B	µg/L				5	U							5	U									
2-Hexanone	8260B	µg/L				10	U							10	U									
2-Phenylbutane	8260B	µg/L				5	U							5	U									
4-Chlorotoluene	8260B	µg/L				5	U							5	U									
4-Methyl-2-pentanone (MIBK)	8260B	µg/L				10	U							10	U									
Acetone	8260B	µg/L				20	U							20	U									
Acrolein	8260B	µg/L				100	U							100	U									
Acrylonitrile	8260B	µg/L				20	U							20	U									
Benzene	8260B	µg/L				5	U							5	U									
Bromobenzene	8260B	µg/L				5	U							5	U									
Bromochloromethane	8260B	µg/L				5	U							5	U									
Bromodichloromethane	8260B	µg/L				5	U							5	U									
Bromoform	8260B	µg/L				5	U							5	U									
Bromomethane	8260B	µg/L				5	U							5	U									
Carbon Disulfide	8260B	µg/L				5	U							5	U									
Carbon Tetrachloride	8260B	µg/L				5	U							5	U									
Chlorobenzene	8260B	µg/L				5	U							5	U									
Chloroethane	8260B	µg/L				5	U							5	U									
Chloroform	8260B	µg/L				5	U							5	U									
Chloromethane	8260B	µg/L				5	U							5	U									
Chlorotrifluoroethylene	8260B	µg/L				5	UJ							5	U									
cis-1,2-Dichloroethene	8260B	µg/L				5	U							5	U									
cis-1,3-Dichloropropene	8260B	µg/L				5	U							5	U									
Cymene	8260B	µg/L				5	U							5	U									
Di isopropyl Ether	8260B	µg/L				5	U							5	U									
Dibromochloromethane	8260B	µg/L				5	U							5	U									
Dibromomethane	8260B	µg/L				5	U							5	U									
Dichlorodifluoromethane	8260B	µg/L				5	U							5	U									
Ethylbenzene	8260B	µg/L				5	U							5	U									
Gasoline Range Organics (C5-C12)	8015M	µg/L		50	U			50	U	50	U	50	U			50	U	50	U	50	U	50	U	50	U
Hexachloro-1,3-butadiene	8260B	µg/L				5	U							5	U									
Isopropylbenzene	8260B	µg/L				5	U							5	U									
m,p-Xylene	8260B	µg/L				5	U							5	U									
Methyl Iodide	8260B	µg/L				5	U							5	U									
Methyl Tert-Butyl Ether	8260B	µg/L				5	U							5	U									
Methylene Chloride	8260B	µg/L				5	U							5	U									

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

		Sample Name:	TB1-051414		TB1-051914		TB1-052014		TB1-052114		TB1-052214		TB1-060314		TB1-060514		TB1-060614		TB1-061014		TB1-061114	
		Location:	TRIP BLANK FDG		TRIP BLANK SV		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK SV		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG		TRIP BLANK FDG	
		Sample Date:	05/14/2014		05/19/2014		05/20/2014		05/21/2014		05/22/2014		06/03/2014		06/05/2014		06/06/2014		06/10/2014		06/11/2014	
		Sample Type:	TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
		Lab:	LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
n-Butylbenzene	8260B	µg/L			5	U							5	U								
n-Propylbenzene	8260B	µg/L			5	U							5	U								
o-Xylene	8260B	µg/L			5	U							5	U								
Styrene	8260B	µg/L			5	U							5	U								
tert-Butyl ethyl ether	8260B	µg/L			5	U							5	U								
tert-Butylbenzene	8260B	µg/L			5	U							5	U								
Tertiary amyl methyl ether	8260B	µg/L			5	U							5	U								
Tertiary butyl alcohol	8260B	µg/L			50	U							50	U								
Tetrachloroethene	8260B	µg/L			5	U							5	U								
Toluene	8260B	µg/L			5	U							5	U								
trans-1,2-Dichloroethene	8260B	µg/L			5	U							5	U								
trans-1,3-Dichloropropene	8260B	µg/L			5	U							5	U								
Trichloroethene	8260B	µg/L			5	U							5	U								
Trichlorofluoromethane	8260B	µg/L			5	U							5	U								
Vinyl Acetate	8260B	µg/L			10	U							10	U								
Vinyl Chloride	8260B	µg/L			5	U							5	U								

Notes:
ug/L - microgram per liter
U - Compound not detected above the reporting limit

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

			Sample Name:		TB2-051314		TB2-051414		TB2-051914		TB2-052014		TB2-052114		TB2-052214		TB2-052314		TB2-052714		TB2-052814		TB2-052914	
			Location:		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK TRENCH		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV	
			Sample Date:		05/13/2014		05/14/2014		05/19/2014		05/20/2014		05/21/2014		05/22/2014		05/23/2014		05/27/2014		05/28/2014		05/29/2014	
			Sample Type:		TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
			Lab:		LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,1,1-Trichloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,1,2,2-Tetrachloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	10	U	10	U	10	U		
1,1,2-Trichloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,1-Dichloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,1-Dichloroethene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,1-Dichloropropene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2,3-Trichlorobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2,3-Trichloropropane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2,4-Trichlorobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2,4-Trimethylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2-Dibromo-3-chloropropane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2-Dibromoethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,2-Dichlorobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,2-Dichloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,2-Dichloropropane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,3,5-Trimethylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,3-Dichlorobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,3-Dichloropropane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
1,4-Dichlorobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
1,4-Dioxane	8260B SIM	µg/L																						
1-Chlorohexane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
2,2-Dichloropropane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
2-Butanone (MEK)	8260B	µg/L	10	U	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U		
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
2-Chloroethyl Vinyl Ether	8260B	µg/L	10	U	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U		
2-Chlorotoluene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
2-Hexanone	8260B	µg/L	10	U	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U		
2-Phenylbutane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
4-Chlorotoluene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
4-Methyl-2-pentanone (MIBK)	8260B	µg/L	10	U	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U		
Acetone	8260B	µg/L	20	U	20	U			20	U	20	U	20	U	20	U	20	U	20	U	20	U		
Acrolein	8260B	µg/L	100	U	100	U			100	U	100	U	100	U	100	U	100	U	100	U	100	U		
Acrylonitrile	8260B	µg/L	20	U	20	U			20	U	20	U	20	U	20	U	20	U	20	U	20	U		
Benzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Bromobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
Bromochloromethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
Bromodichloromethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Bromoform	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	4	U	4	U	4	U		
Bromomethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Carbon Disulfide	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
Carbon Tetrachloride	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Chlorobenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Chloroethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Chloroform	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Chloromethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Chlorotrifluoroethylene	8260B	µg/L	5	UJ	5	UJ			5	UJ	5	UJ	5	UJ	5	UJ	5	U	5	U	5	U		
cis-1,2-Dichloroethene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
cis-1,3-Dichloropropene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Cymene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
Di isopropyl Ether	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Dibromochloromethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Dibromomethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Dichlorodifluoromethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Ethylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Gasoline Range Organics (C5-C12)	8015M	µg/L					50	U																
Hexachloro-1,3-butadiene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
Isopropylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U		
m,p-Xylene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Methyl Iodide	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Methyl Tert-Butyl Ether	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U		
Methylene Chloride	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	3	U	3	U	3	U		

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

			Sample Name:		TB2-051314		TB2-051414		TB2-051914		TB2-052014		TB2-052114		TB2-052214		TB2-052314		TB2-052714		TB2-052814		TB2-052914	
			Location:		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK TRENCH		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV	
			Sample Date:		05/13/2014		05/14/2014		05/19/2014		05/20/2014		05/21/2014		05/22/2014		05/23/2014		05/27/2014		05/28/2014		05/29/2014	
			Sample Type:		TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
			Lab:		LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
n-Butylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
n-Propylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
o-Xylene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Styrene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
tert-Butyl ethyl ether	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
tert-Butylbenzene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Tertiary amyl methyl ether	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Tertiary butyl alcohol	8260B	µg/L	50	U	50	U			50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U
Tetrachloroethene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Toluene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Trichloroethene	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U
Vinyl Acetate	8260B	µg/L	10	U	10	U			10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride	8260B	µg/L	5	U	5	U			5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U

Notes:
ug/L - microgram per liter
U - Compound not detected above the reporting limit

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

			Sample Name:		TB2-060414		TB2-060514		TB2-060614		TB2-061014		TB2-061114		TB3-052014		TB3-052114		TB3-052214		TB3-052314		TB3-052714	
			Location:		TRIP BLANK TRENCH		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH	
			Sample Date:		06/04/2014		06/05/2014		06/06/2014		06/10/2014		06/11/2014		05/20/2014		05/21/2014		05/22/2014		05/23/2014		05/27/2014	
			Sample Type:		TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
			Lab:		LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units		Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,1,1-Trichloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,1,2,2-Tetrachloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L				10	U	10	U	10	U	10	U												
1,1,2-Trichloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,1-Dichloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,1-Dichloroethene	8260B	µg/L				1	U	1	U	1	U	1	U												
1,1-Dichloropropene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2,3-Trichlorobenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2,3-Trichloropropane	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2,4-Trichlorobenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2,4-Trimethylbenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2-Dibromo-3-chloropropane	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2-Dibromoethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,2-Dichlorobenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,2-Dichloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,2-Dichloropropane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,3,5-Trimethylbenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,3-Dichlorobenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,3-Dichloropropane	8260B	µg/L				1	U	1	U	1	U	1	U												
1,4-Dichlorobenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
1,4-Dioxane	8260B SIM	µg/L																						
1-Chlorohexane	8260B	µg/L				5	U	5	U	5	U	5	U												
2,2-Dichloropropane	8260B	µg/L				1	U	1	U	1	U	1	U												
2-Butanone (MEK)	8260B	µg/L				10	U	10	U	10	U	10	U												
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L				5	U	5	U	5	U	5	U												
2-Chloroethyl Vinyl Ether	8260B	µg/L				10	U	10	U	10	U	10	U												
2-Chlorotoluene	8260B	µg/L				5	U	5	U	5	U	5	U												
2-Hexanone	8260B	µg/L				10	U	10	U	10	U	10	U												
2-Phenylbutane	8260B	µg/L				5	U	5	U	5	U	5	U												
4-Chlorotoluene	8260B	µg/L				5	U	5	U	5	U	5	U												
4-Methyl-2-pentanone (MIBK)	8260B	µg/L				10	U	10	U	10	U	10	U												
Acetone	8260B	µg/L				20	U	20	U	20	U	20	U												
Acrolein	8260B	µg/L				100	U	100	U	100	U	100	U												
Acrylonitrile	8260B	µg/L				20	U	20	U	20	U	20	U												
Benzene	8260B	µg/L				1	U	1	U	1	U	1	U												
Bromobenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
Bromochloromethane	8260B	µg/L				5	U	5	U	5	U	5	U												
Bromodichloromethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Bromoform	8260B	µg/L				4	U	4	U	4	U	4	U												
Bromomethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Carbon Disulfide	8260B	µg/L				5	U	5	U	5	U	5	U												
Carbon Tetrachloride	8260B	µg/L				1	U	1	U	1	U	1	U												
Chlorobenzene	8260B	µg/L				1	U	1	U	1	U	1	U												
Chloroethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Chloroform	8260B	µg/L				1	U	1	U	1	U	1	U												
Chloromethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Chlorotrifluoroethylene	8260B	µg/L				5	U	5	U	5	U	5	U												
cis-1,2-Dichloroethene	8260B	µg/L				1	U	1	U	1	U	1	U												
cis-1,3-Dichloropropene	8260B	µg/L				1	U	1	U	1	U	1	U												
Cymene	8260B	µg/L				5	U	5	U	5	U	5	U												
Di isopropyl Ether	8260B	µg/L				1	U	1	U	1	U	1	U												
Dibromochloromethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Dibromomethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Dichlorodifluoromethane	8260B	µg/L				1	U	1	U	1	U	1	U												
Ethylbenzene	8260B	µg/L				1	U	1	U	1	U	1	U												
Gasoline Range Organics (C5-C12)	8015M	µg/L		50	U									50	U	50	U	50	U	50	U	50	U		
Hexachloro-1,3-butadiene	8260B	µg/L				5	U	5	U	5	U	5	U												
Isopropylbenzene	8260B	µg/L				5	U	5	U	5	U	5	U												
m,p-Xylene	8260B	µg/L				1	U	1	U	1	U	1	U												
Methyl Iodide	8260B	µg/L				1	U	1	U	1	U	1	U												
Methyl Tert-Butyl Ether	8260B	µg/L				1	U	1	U	1	U	1	U												
Methylene Chloride	8260B	µg/L				3	U	3	U	3	U	3	U												

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

	Sample Name:	TB2-060414		TB2-060514		TB2-060614		TB2-061014		TB2-061114		TB3-052014		TB3-052114		TB3-052214		TB3-052314		TB3-052714	
	Location:	TRIP BLANK TRENCH		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH	
	Sample Date:	06/04/2014		06/05/2014		06/06/2014		06/10/2014		06/11/2014		05/20/2014		05/21/2014		05/22/2014		05/23/2014		05/27/2014	
	Sample Type:	TB		TB		TB		TB		TB		TB		TB		TB		TB		TB	
	Lab:	LL		LL		LL		LL		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
n-Butylbenzene	8260B	µg/L			5	U	5	U	5	U	5	U										
n-Propylbenzene	8260B	µg/L			5	U	5	U	5	U	5	U										
o-Xylene	8260B	µg/L			1	U	1	U	1	U	1	U										
Styrene	8260B	µg/L			5	U	5	U	5	U	5	U										
tert-Butyl ethyl ether	8260B	µg/L			1	U	1	U	1	U	1	U										
tert-Butylbenzene	8260B	µg/L			5	U	5	U	5	U	5	U										
Tertiary amyl methyl ether	8260B	µg/L			1	U	1	U	1	U	1	U										
Tertiary butyl alcohol	8260B	µg/L			50	U	50	U	50	U	50	U										
Tetrachloroethene	8260B	µg/L			1	U	1	U	1	U	1	U										
Toluene	8260B	µg/L			1	U	1	U	1	U	1	U										
trans-1,2-Dichloroethene	8260B	µg/L			1	U	1	U	1	U	1	U										
trans-1,3-Dichloropropene	8260B	µg/L			1	U	1	U	1	U	1	U										
Trichloroethene	8260B	µg/L			1	U	1	U	1	U	1	U										
Trichlorofluoromethane	8260B	µg/L			1	U	1	U	1	U	1	U										
Vinyl Acetate	8260B	µg/L			10	U	10	U	10	U	10	U										
Vinyl Chloride	8260B	µg/L			1	U	1	U	1	U	1	U										

Notes:
ug/L - microgram per liter
U - Compound not detected above the reporting limit

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

		Sample Name:	TB3-052814		TB3-052914		TB3-053014		TB3-060214		TB3-060414		TB4-060214	
		Location:	TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK TRENCH	
		Sample Date:	05/28/2014		05/29/2014		05/30/2014		06/02/2014		06/04/2014		06/02/2014	
		Sample Type:	TB		TB		TB		TB		TB		TB	
		Lab:	LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
1,1,1,2-Tetrachloroethane	8260B	µg/L							1	U	5	U		
1,1,1-Trichloroethane	8260B	µg/L							1	U	5	U		
1,1,2,2-Tetrachloroethane	8260B	µg/L							1	U	5	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	µg/L							10	U	5	U		
1,1,2-Trichloroethane	8260B	µg/L							1	U	5	U		
1,1-Dichloroethane	8260B	µg/L							1	U	5	U		
1,1-Dichloroethene	8260B	µg/L							1	U	5	U		
1,1-Dichloropropene	8260B	µg/L							5	U	5	U		
1,2,3-Trichlorobenzene	8260B	µg/L							5	U	5	U		
1,2,3-Trichloropropane	8260B	µg/L							5	U	5	U		
1,2,4-Trichlorobenzene	8260B	µg/L							5	U	5	U		
1,2,4-Trimethylbenzene	8260B	µg/L							5	U	5	U		
1,2-Dibromo-3-chloropropane	8260B	µg/L							5	U	5	U		
1,2-Dibromoethane	8260B	µg/L							1	U	5	U		
1,2-Dichlorobenzene	8260B	µg/L							5	U	5	U		
1,2-Dichloroethane	8260B	µg/L							1	U	5	U		
1,2-Dichloropropane	8260B	µg/L							1	U	5	U		
1,3,5-Trimethylbenzene	8260B	µg/L							5	U	5	U		
1,3-Dichlorobenzene	8260B	µg/L							5	U	5	U		
1,3-Dichloropropane	8260B	µg/L							1	U	5	U		
1,4-Dichlorobenzene	8260B	µg/L							5	U	5	U		
1,4-Dioxane	8260B SIM	µg/L												
1-Chlorohexane	8260B	µg/L							5	U	5	U		
2,2-Dichloropropane	8260B	µg/L							1	U	5	U		
2-Butanone (MEK)	8260B	µg/L							10	U	10	U		
2-Chloro-1,1,1-trifluoroethane	8260B	µg/L							5	U	5	U		
2-Chloroethyl Vinyl Ether	8260B	µg/L							10	U	10	U		
2-Chlorotoluene	8260B	µg/L							5	U	5	U		
2-Hexanone	8260B	µg/L							10	U	10	U		
2-Phenylbutane	8260B	µg/L							5	U	5	U		
4-Chlorotoluene	8260B	µg/L							5	U	5	U		
4-Methyl-2-pentanone (MIBK)	8260B	µg/L							10	U	10	U		
Acetone	8260B	µg/L							20	U	20	U		
Acrolein	8260B	µg/L							100	U	100	U		
Acrylonitrile	8260B	µg/L							20	U	20	U		
Benzene	8260B	µg/L							1	U	5	U		
Bromobenzene	8260B	µg/L							5	U	5	U		
Bromochloromethane	8260B	µg/L							5	U	5	U		
Bromodichloromethane	8260B	µg/L							1	U	5	U		
Bromoform	8260B	µg/L							4	U	5	U		
Bromomethane	8260B	µg/L							1	U	5	U		
Carbon Disulfide	8260B	µg/L							5	U	5	U		
Carbon Tetrachloride	8260B	µg/L							1	U	5	U		
Chlorobenzene	8260B	µg/L							1	U	5	U		
Chloroethane	8260B	µg/L							1	U	5	U		
Chloroform	8260B	µg/L							1	U	5	U		
Chloromethane	8260B	µg/L							1	U	5	U		
Chlorotrifluoroethylene	8260B	µg/L							5	U	5	U		
cis-1,2-Dichloroethene	8260B	µg/L							1	U	5	U		
cis-1,3-Dichloropropene	8260B	µg/L							1	U	5	U		
Cymene	8260B	µg/L							5	U	5	U		
Di isopropyl Ether	8260B	µg/L							1	U	5	U		
Dibromochloromethane	8260B	µg/L							1	U	5	U		
Dibromomethane	8260B	µg/L							1	U	5	U		
Dichlorodifluoromethane	8260B	µg/L							1	U	5	U		
Ethylbenzene	8260B	µg/L							1	U	5	U		
Gasoline Range Organics (C5-C12)	8015M	µg/L	50	U	50	U	50	U					50	U
Hexachloro-1,3-butadiene	8260B	µg/L							5	U	5	U		
Isopropylbenzene	8260B	µg/L							5	U	5	U		
m,p-Xylene	8260B	µg/L							1	U	5	U		
Methyl Iodide	8260B	µg/L							1	U	5	U		
Methyl Tert-Butyl Ether	8260B	µg/L							1	U	5	U		
Methylene Chloride	8260B	µg/L							3	U	5	U		

Table C-4
Go-Backs, Trenches and Soil Vapor Locations - Trip Blanks

			Sample Name:		TB3-052814		TB3-052914		TB3-053014		TB3-060214		TB3-060414		TB4-060214	
			Location:		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK TRENCH		TRIP BLANK SV		TRIP BLANK SV		TRIP BLANK TRENCH	
			Sample Date:		05/28/2014		05/29/2014		05/30/2014		06/02/2014		06/04/2014		06/02/2014	
			Sample Type:		TB		TB		TB		TB		TB		TB	
			Lab:		LL		LL		LL		LL		LL		LL	
Analyte	Analytic Method	Units	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer	Concentration	Final Qualifer
n-Butylbenzene	8260B	µg/L							5	U	5	U				
n-Propylbenzene	8260B	µg/L							5	U	5	U				
o-Xylene	8260B	µg/L							1	U	5	U				
Styrene	8260B	µg/L							5	U	5	U				
tert-Butyl ethyl ether	8260B	µg/L							1	U	5	U				
tert-Butylbenzene	8260B	µg/L							5	U	5	U				
Tertiary amyl methyl ether	8260B	µg/L							1	U	5	U				
Tertiary butyl alcohol	8260B	µg/L							50	U	50	U				
Tetrachloroethene	8260B	µg/L							1	U	5	U				
Toluene	8260B	µg/L							1	U	5	U				
trans-1,2-Dichloroethene	8260B	µg/L							1	U	5	U				
trans-1,3-Dichloropropene	8260B	µg/L							1	U	5	U				
Trichloroethene	8260B	µg/L							1	U	5	U				
Trichlorofluoromethane	8260B	µg/L							1	U	5	U				
Vinyl Acetate	8260B	µg/L							10	U	10	U				
Vinyl Chloride	8260B	µg/L							1	U	5	U				

Notes:
ug/L - microgram per liter
U - Compound not detected above the reporting limit

Table C-5
Field Duplicates for Go-Back Samples

				Location	NBZ_DG-558		NBZ_DG-558		RPD
				Sample Name:	FDG2-SL-858-NBZ-SB-0.0-0.5		FDG2-SL-558-NBZ-SB-0.0-0.5		
				Sample Date	06/09/2014		06/09/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
1,4-Dioxane	1,4-Dioxane	123-91-1	8260B SIM	µg/kg					--
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	8.57		5.59		42.09
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	1.69	J	1.05	J	46.72
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	4.92	U	5	U	--
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	0.255	J	0.164	J	43.44
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	4.92	U	5	U	--
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	0.442	J	0.359	J	20.72
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	4.92	UJ	5	UJ	--
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	0.448	J	0.248	J	57.47
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	4.92	U	5	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	4.92	U	5	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	0.297	J	5	UJ	200.00
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	4.92	UJ	5	UJ	--
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	4.92	U	5	U	--
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	0.0957	J	1	UJ	200.00
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	0.135	J	0.192	J	34.86
Dioxins	OCDD	3268-87-9	1613B	ng/kg	70.2		50.1		33.42
Dioxins	OCDF	39001-02-0	1613B	ng/kg	3.67	J	2.14	J	52.67
Formaldehyde	Formaldehyde	50-00-0	8315A	µg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg	460	U	92	U	--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg	8.7	U			--
Herbicides	2,4-D	94-75-7	8151A	µg/kg	180	U			--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg	100	J			--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg	61	U	12	U	--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg	87	U			--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg	120	U			--
Herbicides	MCPA	94-74-6	8151A	µg/kg	13000	U	2500	U	--
Herbicides	MCPP	93-65-2	8151A	µg/kg	13000	UJ	2500	U	--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg	8.7	U			--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.028		0.0199		33.82
Metals	Aluminum	7429-90-5	6010C	mg/kg	15600	J	15700	J	0.64
Metals	Antimony	7440-36-0	6010C	mg/kg	3.96	UJ	4.08	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	4.19		3.91	J	6.91
Metals	Barium	7440-39-3	6010C	mg/kg	111	J	106	J	4.61
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.674	J	0.672	J	0.30
Metals	Boron	7440-42-8	6010C	mg/kg	9.83	J	8.75	J	11.63
Metals	Cadmium	7440-43-9	6010C	mg/kg	0.382	J	0.356	J	7.05
Metals	Calcium	7440-70-2	6010C	mg/kg	4790	J	3950	J	19.22
Metals	Chromium	7440-47-3	6010C	mg/kg	19.5		19.2		1.55
Metals	Cobalt	7440-48-4	6010C	mg/kg	5.77		5.6		2.99
Metals	Copper	7440-50-8	6010C	mg/kg	10.4		9.55		8.52
Metals	Iron	7439-89-6	6010C	mg/kg	22500		21600		4.08
Metals	Lead	7439-92-1	6010C	mg/kg	12.5		9.97		22.52
Metals	Lithium	7439-93-2	6010C	mg/kg	34		33.2		2.38
Metals	Magnesium	7439-95-4	6010C	mg/kg	4760	J	4570	J	4.07
Metals	Manganese	7439-96-5	6010C	mg/kg	403		387		4.05
Metals	Molybdenum	7439-98-7	6010C	mg/kg	0.453	J	0.661	J	37.34
Metals	Nickel	7440-02-0	6010C	mg/kg	14.8	J	14.4	J	2.74
Metals	Phosphorus	7723-14-0	6010C	mg/kg	480		421		13.10
Metals	Potassium	7440-09-7	6010C	mg/kg	4500	J	4310	J	4.31
Metals	Selenium	7782-49-2	6020A	mg/kg	0.361	J	0.351	J	2.81
Metals	Silver	7440-22-4	6020A	mg/kg	0.0691	J	0.0524	J	27.49
Metals	Sodium	7440-23-5	6010C	mg/kg	81.5	J	80.3	J	1.48
Metals	Strontium	7440-24-6	6020A	mg/kg	32.9	J	27.2	J	18.97
Metals	Thallium	7440-28-0	6020A	mg/kg	0.297	J	0.277	J	6.97
Metals	Tin	7440-31-5	6010C	mg/kg	9.91	U	10.2	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	1060		1030		2.87
Metals	Vanadium	7440-62-2	6010C	mg/kg	37.1		36.3		2.18
Metals	Zinc	7440-66-6	6010C	mg/kg	70.8		62.2		12.93
Metals	Zirconium	7440-67-7	6010C	mg/kg	4.95	U	5.1	U	--
Moisture Content	Moisture	MOIST	160.3M	%	2		1.9		5.13
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.8	J	0.77	J	80.16
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	2.5	J	0.83	J	100.30
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	0.65	J	1.7	UJ	200.00
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	0.97	J	1.7	UJ	200.00
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	1.5	J	0.76	J	65.49
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	3	J	1.5	J	66.67
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	17	U	17	U	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	0.84	J	1.7	UJ	200.00
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	15	J	7.3	J	69.06
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	20		21		4.88
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	32	J	8.2	J	118.41
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	3.1	J	1.5	J	69.57
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	3.4	J	1.7	J	66.67
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.5	J	1.7	UJ	200.00
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	0.76	J	1.7	UJ	200.00
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	5.9	J	1.4	J	123.29
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.7	UJ	1.7	UJ	--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	2.8	J	1.4	J	66.67
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	3.1	J	1.4	J	75.56
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	17	U	17	U	--

Table C-5
Field Duplicates for Go-Back Samples

				Location	NBZ_DG-558		NBZ_DG-558		RPD
				Sample Name:	FDG2-SL-858-NBZ-SB-0.0-0.5		FDG2-SL-558-NBZ-SB-0.0-0.5		
				Sample Date	06/09/2014		06/09/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	33	U	33	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	33	U	33	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	33	U	33	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg	0.58	J	1.7	UJ	200.00
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg	1.2	J	0.99	J	19.18
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg	1.9		1.6	J	17.14
Pesticides	Aldrin	309-00-2	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg	1.9	U	1.9	U	--
Pesticides	Chlordane	57-74-9	8081B	µg/kg	17	U	17	U	--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg	1.7	U	1.7	U	--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg	1.7	U	1.7	U	--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg	1.7	U	1.7	U	--
Pesticides	Endrin	72-20-8	8081B	µg/kg	1.7	U	1.7	U	--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg	0.87	J	0.79	J	9.64
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg	0.84	U	0.83	U	--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg	6.8	U	6.7	U	--
Pesticides	Mirex	2385-85-5	8081B	µg/kg	0.53	J	1.7	UJ	200.00
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg	34	U	33	U	--
pH	pH	pH	9045M	pH	6.26		6.29		0.48
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.1	U	5.1	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.1	U	5.1	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	5.3		3.4	J	43.68
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	42		28	J	40.00
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	66		47	J	33.63
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.1	UJ	5.1	UJ	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC/	8015M	mg/kg	5.1	UJ	5.1	UJ	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC/	8015M	mg/kg	5.1	UJ	5.1	UJ	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC/	8015M	mg/kg	5	J	4.1	J	19.78
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC/	8015M	mg/kg	5.4	J	10	UJ	200.00
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg					--
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg					--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg					--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg					--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg					--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg					--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg					--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg					--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg					--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg					--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg					--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg					--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg					--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg					--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg					--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg					--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg					--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg					--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg					--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg					--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg					--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg					--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg					--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg					--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg					--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg					--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg					--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg					--
VOC	2-Hexanone	591-78-6	8260B	µg/kg					--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg					--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg					--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg					--
VOC	Acetone	67-64-1	8260B	µg/kg					--
VOC	Acrolein	107-02-8	8260B	µg/kg					--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg					--
VOC	Benzene	71-43-2	8260B	µg/kg					--
VOC	Bromobenzene	108-86-1	8260B	µg/kg					--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg					--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg					--
VOC	Bromoform	75-25-2	8260B	µg/kg					--
VOC	Bromomethane	74-83-9	8260B	µg/kg					--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg					--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg					--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg					--
VOC	Chloroethane	75-00-3	8260B	µg/kg					--
VOC	Chloroform	67-66-3	8260B	µg/kg					--
VOC	Chloromethane	74-87-3	8260B	µg/kg					--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg					--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg					--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg					--
VOC	Cymene	99-87-6	8260B	µg/kg					--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg					--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg					--
VOC	Dibromomethane	74-95-3	8260B	µg/kg					--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg					--

Table C-5
Field Duplicates for Go-Back Samples

				Location	NBZ_DG-558		NBZ_DG-558		RPD
				Sample Name:	FDG2-SL-858-NBZ-SB-0.0-0.5		FDG2-SL-558-NBZ-SB-0.0-0.5		
				Sample Date	06/09/2014		06/09/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
VOC	Ethylbenzene	100-41-4	8260B	µg/kg					--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg					--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg					--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg					--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg					--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg					--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg					--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg					--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg					--
VOC	o-Xylene	95-47-6	8260B	µg/kg					--
VOC	Styrene	100-42-5	8260B	µg/kg					--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg					--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg					--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg					--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg					--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg					--
VOC	Toluene	108-88-3	8260B	µg/kg					--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg					--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg					--
VOC	Trichloroethene	79-01-6	8260B	µg/kg					--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg					--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg					--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg					--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-5
Field Duplicates for Go-Back Samples

				Location	5D_DG-585		5D_DG-585		RPD
				Sample Name:	FDG2-SL-885-SA5D-SB-0.0-0.5		FDG2-SL-585-SA5D-SB-0.0-0.5		
				Sample Date	05/21/2014		05/21/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
1,4-Dioxane	1,4-Dioxane	123-91-1	8260B SIM	µg/kg					--
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	197		144	J	31.09
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	32.8	J	17.1	J	62.93
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	3.43	J	1.95	J	55.02
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	2.1	J	1.51	J	32.69
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	1.95	J	0.95	J	68.97
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	8.66		6.21		32.95
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	1.64	J	0.955	J	52.79
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	4.3	J	3.64	J	16.62
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	1.04	J	0.762	J	30.85
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	1.81	J	1.73	J	4.52
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	1.11	J	0.99	J	11.43
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	2.15	J	1.24	J	53.69
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	1.15	J	1.02	J	11.98
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	1.02	UJ	1.06	UJ	--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	0.69	J	0.835	J	19.02
Dioxins	OCDD	3268-87-9	1613B	ng/kg	2050		1670		20.43
Dioxins	OCDF	39001-02-0	1613B	ng/kg	104	J	50	J	70.13
Formaldehyde	Formaldehyde	50-00-0	8315A	µg/kg	21000	U	21000	U	--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.0627		0.0591		5.91
Metals	Aluminum	7429-90-5	6010C	mg/kg	17900	J	16300	J	9.36
Metals	Antimony	7440-36-0	6010C	mg/kg	4.11	UJ	4.23	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	8.49		6.33		29.15
Metals	Barium	7440-39-3	6010C	mg/kg	112	J	93.9	J	17.58
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.652	J	0.593	J	9.48
Metals	Boron	7440-42-8	6010C	mg/kg	10.3	U	10.6	U	--
Metals	Cadmium	7440-43-9	6010C	mg/kg	0.969	J	0.59	J	48.62
Metals	Calcium	7440-70-2	6010C	mg/kg	3770		3210		16.05
Metals	Chromium	7440-47-3	6010C	mg/kg	26.8	J	23.5	J	13.12
Metals	Cobalt	7440-48-4	6010C	mg/kg	6.64		5.16		25.08
Metals	Copper	7440-50-8	6010C	mg/kg	26.7		16.1		49.53
Metals	Iron	7439-89-6	6010C	mg/kg	23000	J	20100	J	13.46
Metals	Lead	7439-92-1	6010C	mg/kg	15	J	12	J	22.22
Metals	Lithium	7439-93-2	6010C	mg/kg	25.1		22.1		12.71
Metals	Magnesium	7439-95-4	6010C	mg/kg	5130		4300		17.60
Metals	Manganese	7439-96-5	6010C	mg/kg	290	J	218	J	28.35
Metals	Molybdenum	7439-98-7	6010C	mg/kg	0.331	J	0.424	J	24.64
Metals	Nickel	7440-02-0	6010C	mg/kg	17.3	J	14	J	21.09
Metals	Phosphorus	7723-14-0	6010C	mg/kg	448	J	350	J	24.56
Metals	Potassium	7440-09-7	6010C	mg/kg	4090	J	3600	J	12.74
Metals	Selenium	7782-49-2	6020A	mg/kg	0.189	J	0.183	J	3.23
Metals	Silver	7440-22-4	6020A	mg/kg	0.714	J	0.372	J	62.98
Metals	Sodium	7440-23-5	6010C	mg/kg	96.9	J	91.2	J	6.06
Metals	Strontium	7440-24-6	6020A	mg/kg	27	J	24.4	J	10.12
Metals	Thallium	7440-28-0	6020A	mg/kg	0.318		0.3		5.83
Metals	Tin	7440-31-5	6010C	mg/kg	10.3	U	10.6	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	1140		1030		10.14
Metals	Vanadium	7440-62-2	6010C	mg/kg	42.1	J	37.1	J	12.63
Metals	Zinc	7440-66-6	6010C	mg/kg	111	J	88.2	J	22.89
Metals	Zirconium	7440-67-7	6010C	mg/kg	5.14	U	5.29	U	--
Moisture Content	Moisture	MOIST	160.3M	%	4.6		5.4		16.00
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.3	J	1.6	J	20.69
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	2.4		2.5		4.08
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.7	U	1.8	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	0.49	J	0.35	J	33.33
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	2.5		1.7	J	38.10
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	7.4		5.7		25.95
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	9.1		7.5		19.28
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	24		18	J	28.57
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	18		13	J	32.26
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	20	J	11	J	58.06
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	6.2		4.8		25.45
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	22		34		42.86
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	20		14	J	35.29
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	3		2.1		35.29
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	19	UJ	7.1	J	200.00
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	15		11	J	30.77
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.7	U	1.8	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	22	J	13	J	51.43
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	2.6		2		26.09
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.7	U	1.8	U	--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	12		8.4	J	35.29
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	11		8.7		23.35
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	30		28		6.90

Table C-5
Field Duplicates for Go-Back Samples

				Location	5D_DG-585		5D_DG-585		RPD
				Sample Name:	FDG2-SL-885-SA5D-SB-0.0-0.5		FDG2-SL-585-SA5D-SB-0.0-0.5		
				Sample Date	05/21/2014		05/21/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	34	U	34	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	34	U	34	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	22	J	26	J	16.67
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg	1.6	J	2.4		40.00
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg	6.1		7.8	J	24.46
Pesticides	Aldrin	309-00-2	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg	2	U	2	U	--
Pesticides	Chlordane	57-74-9	8081B	µg/kg	18	U	18	U	--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg	1.2	J	1.8	UJ	200.00
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endrin	72-20-8	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg	1.9	U	1.9	U	--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg	0.86	U	0.86	U	--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg	6.9	U	7	U	--
Pesticides	Mirex	2385-85-5	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg	34	U	34	U	--
pH	pH	pH	9045M	pH	7.29		7.24		0.69
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	26	U	5.3	UJ	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	26	U	5.3	UJ	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	13	J	5.3	UJ	200.00
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	150	J	7.3	J	181.44
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	350	J	18	J	180.43
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	10	U	5.3	U	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC	8015M	mg/kg	10	U	5.3	U	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC	8015M	mg/kg	10	U	5.3	U	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC	8015M	mg/kg	55	J	2.7	J	181.28
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC	8015M	mg/kg	100	J	5.7	J	178.43
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg					--
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg					--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg					--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg					--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg					--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg					--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg					--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg					--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg					--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg					--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg					--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg					--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg					--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg					--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg					--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg					--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg					--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg					--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg					--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg					--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg					--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg					--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg					--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg					--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg					--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg					--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg					--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg					--
VOC	2-Hexanone	591-78-6	8260B	µg/kg					--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg					--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg					--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg					--
VOC	Acetone	67-64-1	8260B	µg/kg					--
VOC	Acrolein	107-02-8	8260B	µg/kg					--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg					--
VOC	Benzene	71-43-2	8260B	µg/kg					--
VOC	Bromobenzene	108-86-1	8260B	µg/kg					--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg					--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg					--
VOC	Bromoform	75-25-2	8260B	µg/kg					--
VOC	Bromomethane	74-83-9	8260B	µg/kg					--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg					--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg					--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg					--
VOC	Chloroethane	75-00-3	8260B	µg/kg					--
VOC	Chloroform	67-66-3	8260B	µg/kg					--
VOC	Chloromethane	74-87-3	8260B	µg/kg					--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg					--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg					--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg					--
VOC	Cymene	99-87-6	8260B	µg/kg					--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg					--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg					--
VOC	Dibromomethane	74-95-3	8260B	µg/kg					--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg					--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5D_DG-585		5D_DG-585		RPD
				Sample Name:	FDG2-SL-885-SA5D-SB-0.0-0.5		FDG2-SL-585-SA5D-SB-0.0-0.5		
				Sample Date	05/21/2014		05/21/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
VOC	Ethylbenzene	100-41-4	8260B	µg/kg					--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg					--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg					--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg					--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg					--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg					--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg					--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg					--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg					--
VOC	o-Xylene	95-47-6	8260B	µg/kg					--
VOC	Styrene	100-42-5	8260B	µg/kg					--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg					--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg					--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg					--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg					--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg					--
VOC	Toluene	108-88-3	8260B	µg/kg					--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg					--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg					--
VOC	Trichloroethene	79-01-6	8260B	µg/kg					--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg					--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg					--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg					--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-5
Field Duplicates for Go-Back Samples

				Location	8_DG-630		8_DG-630		RPD
				Sample Name:	FDG2-SL-930-SA8-SB-4.0-5.0		FDG2-SL-630-SA8-SB-4.0-5.0		
				Sample Date	06/10/2014		06/10/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
1,4-Dioxane	1,4-Dioxane	123-91-1	8260B SIM	µg/kg					--
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg					--
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg					--
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg					--
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg					--
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg					--
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg					--
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg					--
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg					--
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg					--
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg					--
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg					--
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg					--
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg					--
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg					--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg					--
Dioxins	OCDD	3268-87-9	1613B	ng/kg					--
Dioxins	OCDF	39001-02-0	1613B	ng/kg					--
Formaldehyde	Formaldehyde	50-00-0	8315A	µg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg					--
Metals	Aluminum	7429-90-5	6010C	mg/kg					--
Metals	Antimony	7440-36-0	6010C	mg/kg					--
Metals	Arsenic	7440-38-2	6010C	mg/kg					--
Metals	Barium	7440-39-3	6010C	mg/kg					--
Metals	Beryllium	7440-41-7	6010C	mg/kg					--
Metals	Boron	7440-42-8	6010C	mg/kg					--
Metals	Cadmium	7440-43-9	6010C	mg/kg					--
Metals	Calcium	7440-70-2	6010C	mg/kg					--
Metals	Chromium	7440-47-3	6010C	mg/kg					--
Metals	Cobalt	7440-48-4	6010C	mg/kg					--
Metals	Copper	7440-50-8	6010C	mg/kg					--
Metals	Iron	7439-89-6	6010C	mg/kg					--
Metals	Lead	7439-92-1	6010C	mg/kg					--
Metals	Lithium	7439-93-2	6010C	mg/kg					--
Metals	Magnesium	7439-95-4	6010C	mg/kg					--
Metals	Manganese	7439-96-5	6010C	mg/kg					--
Metals	Molybdenum	7439-98-7	6010C	mg/kg					--
Metals	Nickel	7440-02-0	6010C	mg/kg					--
Metals	Phosphorus	7723-14-0	6010C	mg/kg					--
Metals	Potassium	7440-09-7	6010C	mg/kg					--
Metals	Selenium	7782-49-2	6020A	mg/kg					--
Metals	Silver	7440-22-4	6020A	mg/kg					--
Metals	Sodium	7440-23-5	6010C	mg/kg					--
Metals	Strontium	7440-24-6	6020A	mg/kg					--
Metals	Thallium	7440-28-0	6020A	mg/kg					--
Metals	Tin	7440-31-5	6010C	mg/kg					--
Metals	Titanium	7440-32-6	6010C	mg/kg					--
Metals	Vanadium	7440-62-2	6010C	mg/kg					--
Metals	Zinc	7440-66-6	6010C	mg/kg					--
Metals	Zirconium	7440-67-7	6010C	mg/kg					--
Moisture Content	Moisture	MOIST	160.3M	%	8.8		8.5		3.47
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg					--
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg					--
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg					--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg					--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg					--
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg					--
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg					--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg					--
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg					--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg					--
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg					--
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg					--
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg					--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg					--
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg					--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg					--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg					--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg					--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg					--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg					--
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg					--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg					--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg					--
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg					--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg					--
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg					--
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg					--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg					--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg					--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg					--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg					--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg					--

Table C-5
Field Duplicates for Go-Back Samples

				Location	8_DG-630		8_DG-630		RPD
				Sample Name:	FDG2-SL-930-SA8-SB-4.0-5.0		FDG2-SL-630-SA8-SB-4.0-5.0		
				Sample Date	06/10/2014		06/10/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg					--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg					--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg					--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg					--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg					--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg					--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg					--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg					--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg					--
Pesticides	Aldrin	309-00-2	8081B	µg/kg					--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg					--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg					--
Pesticides	Chlordane	57-74-9	8081B	µg/kg					--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg					--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg					--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg					--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg					--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg					--
Pesticides	Endrin	72-20-8	8081B	µg/kg					--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg					--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg					--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg					--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg					--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg					--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg					--
Pesticides	Mirex	2385-85-5	8081B	µg/kg					--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg					--
pH	pH	pH	9045M	pH					--
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	4.8	J	3.7	J	25.88
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	35		26	J	29.51
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	61		42	J	36.89
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.5	UJ	5.5	UJ	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC/	8015M	mg/kg	5.5	UJ	5.5	UJ	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC/	8015M	mg/kg	5.5	UJ	5.5	UJ	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC/	8015M	mg/kg	19	J	14	J	30.30
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC/	8015M	mg/kg	21		14	J	40.00
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg	1.2	U	1.2	U	--
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg					--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg					--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg					--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg					--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg					--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg					--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg					--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg					--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg					--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg					--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg					--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg					--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg					--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg					--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg					--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg					--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg					--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg					--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg					--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg					--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg					--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg					--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg					--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg					--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg					--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg					--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg					--
VOC	2-Hexanone	591-78-6	8260B	µg/kg					--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg					--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg					--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg					--
VOC	Acetone	67-64-1	8260B	µg/kg					--
VOC	Acrolein	107-02-8	8260B	µg/kg					--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg					--
VOC	Benzene	71-43-2	8260B	µg/kg					--
VOC	Bromobenzene	108-86-1	8260B	µg/kg					--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg					--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg					--
VOC	Bromoform	75-25-2	8260B	µg/kg					--
VOC	Bromomethane	74-83-9	8260B	µg/kg					--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg					--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg					--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg					--
VOC	Chloroethane	75-00-3	8260B	µg/kg					--
VOC	Chloroform	67-66-3	8260B	µg/kg					--
VOC	Chloromethane	74-87-3	8260B	µg/kg					--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg					--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg					--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg					--
VOC	Cymene	99-87-6	8260B	µg/kg					--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg					--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg					--
VOC	Dibromomethane	74-95-3	8260B	µg/kg					--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg					--

Table C-5
Field Duplicates for Go-Back Samples

				Location	8_DG-630		8_DG-630		RPD
				Sample Name:	FDG2-SL-930-SA8-SB-4.0-5.0		FDG2-SL-630-SA8-SB-4.0-5.0		
				Sample Date	06/10/2014		06/10/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
VOC	Ethylbenzene	100-41-4	8260B	µg/kg					--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg					--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg					--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg					--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg					--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg					--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg					--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg					--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg					--
VOC	o-Xylene	95-47-6	8260B	µg/kg					--
VOC	Styrene	100-42-5	8260B	µg/kg					--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg					--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg					--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg					--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg					--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg					--
VOC	Toluene	108-88-3	8260B	µg/kg					--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg					--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg					--
VOC	Trichloroethene	79-01-6	8260B	µg/kg					--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg					--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg					--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg					--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-5
Field Duplicates for Go-Back Samples

				Location	5C_DG-749		5C_DG-749		RPD
				Sample Name:	FDG-SL-1049-SA5C-SB-0.0-0.5		FDG-SL-749-SA5C-SB-0.0-0.5		
				Sample Date	05/08/2014		05/08/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
1,4-Dioxane	1,4-Dioxane	123-91-1	8260B SIM	µg/kg					--
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	24.2	J	572	J	183.76
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	2.75	J	29.6	J	166.00
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	0.483	J	2.47	J	134.58
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	0.202	J	3.04	J	175.08
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	0.133	J	0.945	J	150.65
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	0.758	J	22.1	J	186.74
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	0.272	J	1.11	J	121.27
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	0.567	J	8.42	J	174.76
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	5.22	UJ	5.2	UJ	--
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	5.22	UJ	0.388	J	200.00
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	5.22	UJ	1.87	J	200.00
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	0.363	J	1.84	J	134.09
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	0.241	J	0.46	J	62.48
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	1.04	UJ	1.04	UJ	--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	1.04	UJ	0.15	J	200.00
Dioxins	OCDD	3268-87-9	1613B	ng/kg	161	J	3460	J	182.21
Dioxins	OCDF	39001-02-0	1613B	ng/kg	6.53	J	66.6	J	164.28
Formaldehyde	Formaldehyde	50-00-0	8315A	µg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.017	UJ	0.0139	J	200.00
Metals	Aluminum	7429-90-5	6010C	mg/kg	13800		13700		0.73
Metals	Antimony	7440-36-0	6010C	mg/kg	4.15	UJ	4.05	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	4.95		5.7		14.08
Metals	Barium	7440-39-3	6010C	mg/kg	70.2		74.6		6.08
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.562	J	0.572	J	1.76
Metals	Boron	7440-42-8	6010C	mg/kg	10.4	U	10.1	U	--
Metals	Cadmium	7440-43-9	6010C	mg/kg	1.04	U	1.01	U	--
Metals	Calcium	7440-70-2	6010C	mg/kg	5940	J	3330	J	56.31
Metals	Chromium	7440-47-3	6010C	mg/kg	17.1	J	16.7	J	2.37
Metals	Cobalt	7440-48-4	6010C	mg/kg	4.87		4.98		2.23
Metals	Copper	7440-50-8	6010C	mg/kg	10.6	J	11.8	J	10.71
Metals	Iron	7439-89-6	6010C	mg/kg	18100		19700		8.47
Metals	Lead	7439-92-1	6010C	mg/kg	7.07		8.82		22.03
Metals	Lithium	7439-93-2	6010C	mg/kg	20.9		22.7		8.26
Metals	Magnesium	7439-95-4	6010C	mg/kg	3830		4070		6.08
Metals	Manganese	7439-96-5	6010C	mg/kg	256	J	304	J	17.14
Metals	Molybdenum	7439-98-7	6010C	mg/kg	2.07	UJ	0.442	J	200.00
Metals	Nickel	7440-02-0	6010C	mg/kg	12.4		13.4		7.75
Metals	Phosphorus	7723-14-0	6010C	mg/kg	259	J	274	J	5.63
Metals	Potassium	7440-09-7	6010C	mg/kg	2160	J	2330	J	7.57
Metals	Selenium	7782-49-2	6020A	mg/kg	0.16	J	0.152	J	5.13
Metals	Silver	7440-22-4	6020A	mg/kg	0.0444	J	0.03	J	38.71
Metals	Sodium	7440-23-5	6010C	mg/kg	76.4	J	88.5	J	14.68
Metals	Strontium	7440-24-6	6020A	mg/kg	27.3	J	28.7	J	5.00
Metals	Thallium	7440-28-0	6020A	mg/kg	0.248		0.276		10.69
Metals	Tin	7440-31-5	6010C	mg/kg	10.4	U	10.1	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	925		972		4.96
Metals	Vanadium	7440-62-2	6010C	mg/kg	35.9		36.3		1.11
Metals	Zinc	7440-66-6	6010C	mg/kg	49.7	J	75.8	J	41.59
Metals	Zirconium	7440-67-7	6010C	mg/kg	3.13	J	3.11	J	0.64
Moisture Content	Moisture	MOIST	160.3M	%	5.5		5		9.52
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.1	J	4.1	J	115.38
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	1.7	UJ	3.4	J	200.00
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	1.1	J	2	J	58.06
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	0.95	J	1.2	J	23.26
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	1.7	UJ	0.89	J	200.00
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	1.7	UJ	1	J	200.00
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	9.8	J	12	J	20.18
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	7.1	J	6.8	J	4.32
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	0.46	J	1.3	J	95.45
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	19	UJ	9.3	J	200.00
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	0.8	J	1.9	J	81.48
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	1.7	UJ	1.1	J	200.00
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	9.7		8.6	J	12.02
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	1.2	J	2.1	J	54.55
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	18	U	18	U	--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5C_DG-749		5C_DG-749		RPD
				Sample Name:	FDG-SL-1049-SA5C-SB-0.0-0.5		FDG-SL-749-SA5C-SB-0.0-0.5		
				Sample Date	05/08/2014		05/08/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	35	U	35	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	35	U	35	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	35	U	35	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg	5.3	U	5.3	U	--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg					--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg					--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg					--
Pesticides	Aldrin	309-00-2	8081B	µg/kg					--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg					--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg					--
Pesticides	Chlordane	57-74-9	8081B	µg/kg					--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg					--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg					--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg					--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg					--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg					--
Pesticides	Endrin	72-20-8	8081B	µg/kg					--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg					--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg					--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg					--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg					--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg					--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg					--
Pesticides	Mirex	2385-85-5	8081B	µg/kg					--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg					--
pH	pH	pH	9045M	pH	8.15		8.17		0.25
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg					--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg					--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg					--
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg					--
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg					--
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg					--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC/	8015M	mg/kg					--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC/	8015M	mg/kg					--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC/	8015M	mg/kg					--
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC/	8015M	mg/kg					--
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg					--
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg					--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg					--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg					--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg					--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg					--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg					--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg					--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg					--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg					--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg					--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg					--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg					--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg					--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg					--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg					--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg					--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg					--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg					--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg					--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg					--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg					--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg					--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg					--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg					--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg					--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg					--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg					--
VOC	2-Hexanone	591-78-6	8260B	µg/kg					--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg					--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg					--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg					--
VOC	Acetone	67-64-1	8260B	µg/kg					--
VOC	Acrolein	107-02-8	8260B	µg/kg					--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg					--
VOC	Benzene	71-43-2	8260B	µg/kg					--
VOC	Bromobenzene	108-86-1	8260B	µg/kg					--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg					--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg					--
VOC	Bromoform	75-25-2	8260B	µg/kg					--
VOC	Bromomethane	74-83-9	8260B	µg/kg					--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg					--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg					--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg					--
VOC	Chloroethane	75-00-3	8260B	µg/kg					--
VOC	Chloroform	67-66-3	8260B	µg/kg					--
VOC	Chloromethane	74-87-3	8260B	µg/kg					--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg					--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg					--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg					--
VOC	Cymene	99-87-6	8260B	µg/kg					--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg					--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg					--
VOC	Dibromomethane	74-95-3	8260B	µg/kg					--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg					--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5C_DG-749		5C_DG-749		RPD
				Sample Name:	FDG-SL-1049-SA5C-SB-0.0-0.5		FDG-SL-749-SA5C-SB-0.0-0.5		
				Sample Date	05/08/2014		05/08/2014		
				Start Depth:	0		0		
				End Depth:	0.5		0.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
VOC	Ethylbenzene	100-41-4	8260B	µg/kg					--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg					--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg					--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg					--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg					--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg					--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg					--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg					--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg					--
VOC	o-Xylene	95-47-6	8260B	µg/kg					--
VOC	Styrene	100-42-5	8260B	µg/kg					--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg					--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg					--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg					--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg					--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg					--
VOC	Toluene	108-88-3	8260B	µg/kg					--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg					--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg					--
VOC	Trichloroethene	79-01-6	8260B	µg/kg					--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg					--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg					--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg					--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-5
Field Duplicates for Go-Back Samples

				Location	5A_DG-874		5A_DG-874		RPD
				Sample Name:	FDG2-SL-1174-SA5A-SB-4.0-5.0		FDG2-SL-874-SA5A-SB-4.0-5.0		
				Sample Date	05/20/2014		05/20/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
1,4-Dioxane	1,4-Dioxane	123-91-1	8260B SIM	µg/kg					--
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	0.842	J	1.76	J	70.56
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	5.38	UJ	0.386	J	200.00
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	5.38	UJ	0.0535	J	200.00
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	0.297	J	0.394	J	28.08
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	0.392	J	0.447	J	13.11
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	0.37	J	0.422	J	13.13
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	5.38	U	5.27	U	--
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	1.08	U	1.05	U	--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	0.122	J	1.05	UJ	200.00
Dioxins	OCDD	3268-87-9	1613B	ng/kg	6.72	J	14	J	70.27
Dioxins	OCDF	39001-02-0	1613B	ng/kg	0.5	J	0.953	J	62.35
Formaldehyde	Formaldehyde	50-00-0	8315A	µg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.0124	J	0.0118	J	4.96
Metals	Aluminum	7429-90-5	6010C	mg/kg	14900		16200		8.36
Metals	Antimony	7440-36-0	6010C	mg/kg	4.18	UJ	4.3	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	3.84	J	4.42		14.04
Metals	Barium	7440-39-3	6010C	mg/kg	106	J	247	J	79.89
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.529	J	0.604	J	13.24
Metals	Boron	7440-42-8	6010C	mg/kg	4.55	J	7.29	J	46.28
Metals	Cadmium	7440-43-9	6010C	mg/kg	0.565	J	0.59	J	4.33
Metals	Calcium	7440-70-2	6010C	mg/kg	3440		3140		9.12
Metals	Chromium	7440-47-3	6010C	mg/kg	18.4	J	22	J	17.82
Metals	Cobalt	7440-48-4	6010C	mg/kg	5.58	J	5.61	J	0.54
Metals	Copper	7440-50-8	6010C	mg/kg	10		11		9.52
Metals	Iron	7439-89-6	6010C	mg/kg	20100		20000		0.50
Metals	Lead	7439-92-1	6010C	mg/kg	5.67		7.41		26.61
Metals	Lithium	7439-93-2	6010C	mg/kg	23.1		23.3		0.86
Metals	Magnesium	7439-95-4	6010C	mg/kg	4420		4540		2.68
Metals	Manganese	7439-96-5	6010C	mg/kg	367		313		15.88
Metals	Molybdenum	7439-98-7	6010C	mg/kg	0.277	J	0.474	J	52.46
Metals	Nickel	7440-02-0	6010C	mg/kg	11		11.9		7.86
Metals	Phosphorus	7723-14-0	6010C	mg/kg	412	J	400	J	2.96
Metals	Potassium	7440-09-7	6010C	mg/kg	3450		3470		0.58
Metals	Selenium	7782-49-2	6020A	mg/kg	0.161	J	0.148	J	8.41
Metals	Silver	7440-22-4	6020A	mg/kg	0.209	UJ	0.0297	J	200.00
Metals	Sodium	7440-23-5	6010C	mg/kg	104		119		13.45
Metals	Strontium	7440-24-6	6020A	mg/kg	21.4		24.5		13.51
Metals	Thallium	7440-28-0	6020A	mg/kg	0.289		0.275		4.96
Metals	Tin	7440-31-5	6010C	mg/kg	10.4	U	10.8	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	1100		1160		5.31
Metals	Vanadium	7440-62-2	6010C	mg/kg	34.8		37.5		7.47
Metals	Zinc	7440-66-6	6010C	mg/kg	57.4		60.5		5.26
Metals	Zirconium	7440-67-7	6010C	mg/kg	5.22	U	5.38	U	--
Moisture Content	Moisture	MOIST	160.3M	%	7.9		7		12.08
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	1.8	UJ	1	J	200.00
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	0.93	J	1.2	J	25.35
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	1.2	J	1.4	J	15.38
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	1.7	J	1.8		5.71
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.8	U	1.8	U	--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	1.7	J	2.9	J	52.17
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	0.89	J	0.91	J	2.22
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	18	U	18	U	--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5A_DG-874		5A_DG-874		RPD
				Sample Name:	FDG2-SL-1174-SA5A-SB-4.0-5.0		FDG2-SL-874-SA5A-SB-4.0-5.0		
				Sample Date	05/20/2014		05/20/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	18	U	18	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	35	U	35	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	35	U	35	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	35	U	35	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg					--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg					--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg					--
Pesticides	Aldrin	309-00-2	8081B	µg/kg					--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg					--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg					--
Pesticides	Chlordane	57-74-9	8081B	µg/kg					--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg					--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg					--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg					--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg					--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg					--
Pesticides	Endrin	72-20-8	8081B	µg/kg					--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg					--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg					--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg					--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg					--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg					--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg					--
Pesticides	Mirex	2385-85-5	8081B	µg/kg					--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg					--
pH	pH	pH	9045M	pH	7.24		7		3.37
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	11		16	J	37.04
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	21		31	J	38.46
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC/	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC/	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC/	8015M	mg/kg	5.4	U	5.4	U	--
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC/	8015M	mg/kg	11	U	11	U	--
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg	1	U	1	U	--
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg					--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg					--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg					--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg					--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg					--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg					--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg					--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg					--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg					--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg					--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg					--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg					--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg					--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg					--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg					--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg					--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg					--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg					--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg					--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg					--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg					--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg					--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg					--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg					--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg					--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg					--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg					--
VOC	2-Hexanone	591-78-6	8260B	µg/kg					--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg					--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg					--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg					--
VOC	Acetone	67-64-1	8260B	µg/kg					--
VOC	Acrolein	107-02-8	8260B	µg/kg					--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg					--
VOC	Benzene	71-43-2	8260B	µg/kg					--
VOC	Bromobenzene	108-86-1	8260B	µg/kg					--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg					--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg					--
VOC	Bromoform	75-25-2	8260B	µg/kg					--
VOC	Bromomethane	74-83-9	8260B	µg/kg					--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg					--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg					--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg					--
VOC	Chloroethane	75-00-3	8260B	µg/kg					--
VOC	Chloroform	67-66-3	8260B	µg/kg					--
VOC	Chloromethane	74-87-3	8260B	µg/kg					--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg					--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg					--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg					--
VOC	Cymene	99-87-6	8260B	µg/kg					--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg					--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg					--
VOC	Dibromomethane	74-95-3	8260B	µg/kg					--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg					--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5A_DG-874		5A_DG-874		RPD
				Sample Name:	FDG2-SL-1174-SA5A-SB-4.0-5.0		FDG2-SL-874-SA5A-SB-4.0-5.0		
				Sample Date	05/20/2014		05/20/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
VOC	Ethylbenzene	100-41-4	8260B	µg/kg					--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg					--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg					--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg					--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg					--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg					--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg					--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg					--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg					--
VOC	o-Xylene	95-47-6	8260B	µg/kg					--
VOC	Styrene	100-42-5	8260B	µg/kg					--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg					--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg					--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg					--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg					--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg					--
VOC	Toluene	108-88-3	8260B	µg/kg					--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg					--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg					--
VOC	Trichloroethene	79-01-6	8260B	µg/kg					--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg					--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg					--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg					--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-5
Field Duplicates for Go-Back Samples

				Location	5A_DG-875		5A_DG-875		RPD
				Sample Name:	FDG2-SL-1175-SA5A-SB-2.0-3.0		FDG2-SL-875-SA5A-SB-2.0-3.0		
				Sample Date	06/16/2014		06/16/2014		
				Start Depth:	2		2		
				End Depth:	3		3		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
1,4-Dioxane	1,4-Dioxane	123-91-1	8260B SIM	µg/kg	15	UJ	16	UJ	--
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	104	J	35.5	J	98.21
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	8.99	J	3.21	J	94.75
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	0.366	J	5.01	UJ	200.00
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	0.59	J	0.225	J	89.57
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	0.529	J	0.252	J	70.93
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	2.81	J	1.31	J	72.82
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	0.29	J	0.219	J	27.90
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	1.8	J	1.19	J	40.80
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	0.505	J	0.406	J	21.73
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	0.359	J	5.01	U	200.00
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	4.88	UJ	5.01	UJ	--
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	0.491	J	0.304	J	47.04
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	0.31	J	0.162	J	62.71
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	0.976	U	1	U	--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	0.172	J	0.102	J	51.09
Dioxins	OCDD	3268-87-9	1613B	ng/kg	2800	J	980	J	96.30
Dioxins	OCDF	39001-02-0	1613B	ng/kg	32	J	10	J	104.76
Formaldehyde	Formaldehyde	50-00-0	8315A	µg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.0197		0.0206		4.47
Metals	Aluminum	7429-90-5	6010C	mg/kg	14600		15500		5.98
Metals	Antimony	7440-36-0	6010C	mg/kg	3.98	UJ	4.03	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	5.5		5.84		6.00
Metals	Barium	7440-39-3	6010C	mg/kg	96.4		107		10.42
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.548	J	0.581	J	5.85
Metals	Boron	7440-42-8	6010C	mg/kg	9.95	U	10.1	U	--
Metals	Cadmium	7440-43-9	6010C	mg/kg	0.995	U	1.01	U	--
Metals	Calcium	7440-70-2	6010C	mg/kg	2090		2270		8.26
Metals	Chromium	7440-47-3	6010C	mg/kg	18.4		19.5		5.80
Metals	Cobalt	7440-48-4	6010C	mg/kg	4.77		4.91		2.89
Metals	Copper	7440-50-8	6010C	mg/kg	11.5		11.9		3.42
Metals	Iron	7439-89-6	6010C	mg/kg	18600		19400		4.21
Metals	Lead	7439-92-1	6010C	mg/kg	13.1	J	10.7	J	20.17
Metals	Lithium	7439-93-2	6010C	mg/kg	19.9		20.7		3.94
Metals	Magnesium	7439-95-4	6010C	mg/kg	4010		4140		3.19
Metals	Manganese	7439-96-5	6010C	mg/kg	306		321		4.78
Metals	Molybdenum	7439-98-7	6010C	mg/kg	1.99	U	2.02	U	--
Metals	Nickel	7440-02-0	6010C	mg/kg	11.7		13.1		11.29
Metals	Phosphorus	7723-14-0	6010C	mg/kg	467		436		6.87
Metals	Potassium	7440-09-7	6010C	mg/kg	3440		3650		5.92
Metals	Selenium	7782-49-2	6020A	mg/kg	0.268	J	0.272	J	1.48
Metals	Silver	7440-22-4	6020A	mg/kg	0.0426	J	0.0425	J	0.24
Metals	Sodium	7440-23-5	6010C	mg/kg	76.3	J	78.1	J	2.33
Metals	Strontium	7440-24-6	6020A	mg/kg	19.8	J	22.6	J	13.21
Metals	Thallium	7440-28-0	6020A	mg/kg	0.284		0.274		3.58
Metals	Tin	7440-31-5	6010C	mg/kg	9.95	U	10.1	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	1000		1070		6.76
Metals	Vanadium	7440-62-2	6010C	mg/kg	32.5		36		10.22
Metals	Zinc	7440-66-6	6010C	mg/kg	57.5		58.7		2.07
Metals	Zirconium	7440-67-7	6010C	mg/kg	4.97	U	5.04	U	--
Moisture Content	Moisture	MOIST	160.3M	%	2.4		2.7		11.76
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	0.81	J	0.84	J	3.64
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	2.4		2		18.18
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	17	U	17	U	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	0.68	J	1.7	UJ	200.00
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	1.3	J	1.5	J	14.29
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	2.7	J	2.4	J	11.76
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	18	U	18	U	--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	1.3	J	1.4	J	7.41
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	1.7	UJ	0.7	J	200.00
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	1	J	1.2	J	18.18
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	17	U	17	U	--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5A_DG-875		5A_DG-875		RPD
				Sample Name:	FDG2-SL-1175-SA5A-SB-2.0-3.0		FDG2-SL-875-SA5A-SB-2.0-3.0		
				Sample Date	06/16/2014		06/16/2014		
				Start Depth:	2		2		
				End Depth:	3		3		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	17	U	17	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	34	U	34	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	34	U	34	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	34	U	34	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg					--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg					--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg					--
Pesticides	Aldrin	309-00-2	8081B	µg/kg					--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg					--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg					--
Pesticides	Chlordane	57-74-9	8081B	µg/kg					--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg					--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg					--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg					--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg					--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg					--
Pesticides	Endrin	72-20-8	8081B	µg/kg					--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg					--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg					--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg					--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg					--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg					--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg					--
Pesticides	Mirex	2385-85-5	8081B	µg/kg					--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg					--
pH	pH	pH	9045M	pH	5.86		6.11		4.18
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.1	U	10	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.1	U	10	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	5.1	U	10	U	--
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	13	J	33	J	86.96
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	36	J	85	J	80.99
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.1	U	5.1	U	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC/	8015M	mg/kg	5.1	U	5.1	U	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC/	8015M	mg/kg	5.1	U	5.1	U	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC/	8015M	mg/kg	3.6	J	26	J	151.35
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC/	8015M	mg/kg	14	J	67	J	130.86
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg	1	U	1.1	U	--
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg	5	U	5	U	--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg	5	U	5	U	--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg	5	U	5	U	--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg	5	U	5	U	--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg	10	U	10	U	--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg	10	U	10	U	--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg	5	U	5	U	--
VOC	2-Hexanone	591-78-6	8260B	µg/kg	10	U	10	U	--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg	5	U	5	U	--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg	5	U	5	U	--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg	10	U	10	U	--
VOC	Acetone	67-64-1	8260B	µg/kg	21	U	21	U	--
VOC	Acrolein	107-02-8	8260B	µg/kg	100	U	100	U	--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg	21	U	21	U	--
VOC	Benzene	71-43-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromobenzene	108-86-1	8260B	µg/kg	5	U	5	U	--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg	5	U	5	U	--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg	5	U	5	U	--
VOC	Bromoform	75-25-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromomethane	74-83-9	8260B	µg/kg	5	UJ	5	UJ	--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg	5	U	5	U	--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg	5	U	5	U	--
VOC	Chloroethane	75-00-3	8260B	µg/kg	5	UJ	5	UJ	--
VOC	Chloroform	67-66-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloromethane	74-87-3	8260B	µg/kg	5	U	5	U	--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg	5	U	5	U	--
VOC	Cymene	99-87-6	8260B	µg/kg	5	U	5	U	--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg	5	U	5	U	--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg	5	U	5	U	--
VOC	Dibromomethane	74-95-3	8260B	µg/kg	5	U	5	U	--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg	5	UJ	5	UJ	--

Table C-5
Field Duplicates for Go-Back Samples

				Location	5A_DG-875		5A_DG-875		RPD
				Sample Name:	FDG2-SL-1175-SA5A-SB-2.0-3.0		FDG2-SL-875-SA5A-SB-2.0-3.0		
				Sample Date	06/16/2014		06/16/2014		
				Start Depth:	2		2		
				End Depth:	3		3		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
VOC	Ethylbenzene	100-41-4	8260B	µg/kg	5	U	5	U	--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg	5	U	5	U	--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg	5	U	5	U	--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg	5	U	5	U	--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg	5	U	5	U	--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg	5	U	5	U	--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg	5	U	5	U	--
VOC	o-Xylene	95-47-6	8260B	µg/kg	5	U	5	U	--
VOC	Styrene	100-42-5	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg	52	U	51	U	--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg	5	U	5	U	--
VOC	Toluene	108-88-3	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichloroethene	79-01-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg	5	U	5	U	--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg	10	U	10	UJ	--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg	5	U	5	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-6
Field Duplicates for Trench Samples

				Location	8_DG-548		8_DG-548		RPD
				Sample Name:	SL-848-SA8-TR-5.0		SL-548-SA8-TR-5.0		
				Sample Date	05/19/2014		05/19/2014		
				Start Depth:	5		5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	5.59	U	5.77	U	--
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	5.59	UJ	5.77	UJ	--
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	5.59	U	5.77	U	--
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	0.0245	J	0.031	J	23.42
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	5.59	UJ	5.77	UJ	--
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	5.59	UJ	5.77	UJ	--
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	5.59	UJ	5.77	UJ	--
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	5.59	U	5.77	U	--
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	5.59	U	5.77	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	5.59	UJ	5.77	UJ	--
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	5.59	UJ	0.0232	J	200.00
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	5.59	UJ	5.77	UJ	--
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	5.59	U	5.77	U	--
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	1.12	U	1.15	U	--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	1.12	U	1.15	U	--
Dioxins	OCDD	3268-87-9	1613B	ng/kg	11.2	U	11.5	U	--
Dioxins	OCDF	39001-02-0	1613B	ng/kg	11.2	UJ	11.5	UJ	--
Energetics	1,3,5-Trinitrobenzene	99-35-4	8330A	µg/kg					--
Energetics	2,4,6-Trinitrotoluene	118-96-7	8330A	µg/kg					--
Energetics	2,4-Diamino-6-nitrotoluene	6629-29-4	8330A	µg/kg					--
Energetics	2,4-Dinitrotoluene	121-14-2	8330A	µg/kg					--
Energetics	2,6-Diamino-4-nitrotoluene	59229-75-3	8330A	µg/kg					--
Energetics	2,6-Dinitrotoluene	606-20-2	8330A	µg/kg					--
Energetics	2-Amino-4,6-Dinitrotoluene	35572-78-2	8330A	µg/kg					--
Energetics	2-Nitrotoluene	88-72-2	8330A	µg/kg					--
Energetics	3-Nitrotoluene	99-08-1	8330A	µg/kg					--
Energetics	4-Amino-2,6-Dinitrotoluene	19406-51-0	8330A	µg/kg					--
Energetics	4-Nitrotoluene	99-99-0	8330A	µg/kg					--
Energetics	HMX	2691-41-0	8330A	µg/kg					--
Energetics	M-Dinitrobenzene	99-65-0	8330A	µg/kg					--
Energetics	Nitrobenzene	98-95-3	8330A	µg/kg					--
Energetics	Nitroglycerin	55-63-0	8330A	µg/kg					--
Energetics	PETN	78-11-5	8330A	µg/kg					--
Energetics	RDX	121-82-4	8330A	µg/kg					--
Energetics	Tetryl	479-45-8	8330A	µg/kg					--
Glycols	Diethylene Glycol	111-46-6	8015B	mg/kg					--
Glycols	Ethylene Glycol	107-21-1	8015B	mg/kg					--
Glycols	Propylene Glycol	57-55-6	8015B	mg/kg					--
Glycols	Triethylene Glycol	112-27-6	8015B	mg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Hexavalent Chromium	Chromium (Hexavalent Compounds)	18540-29-9	7199	mg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.0125	J	0.0127	J	1.59
Metals	Aluminum	7429-90-5	6010C	mg/kg	27300		29100		6.38
Metals	Antimony	7440-36-0	6010C	mg/kg	4.38	UJ	4.53	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	2.99	J	2.92	J	2.37
Metals	Barium	7440-39-3	6010C	mg/kg	112		123		9.36
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.873	J	1	J	13.56
Metals	Boron	7440-42-8	6010C	mg/kg	12.9		12.6		2.35
Metals	Cadmium	7440-43-9	6010C	mg/kg	1.09	UJ	1.13	UJ	--
Metals	Calcium	7440-70-2	6010C	mg/kg	46300	J	18000	J	88.02
Metals	Chromium	7440-47-3	6010C	mg/kg	33		35.4		7.02
Metals	Cobalt	7440-48-4	6010C	mg/kg	7.31	J	7.01	J	4.19
Metals	Copper	7440-50-8	6010C	mg/kg	17.6		19.1		8.17
Metals	Iron	7439-89-6	6010C	mg/kg	29300		31900		8.50
Metals	Lead	7439-92-1	6010C	mg/kg	11.3	J	13.1	J	14.75
Metals	Lithium	7439-93-2	6010C	mg/kg	24.5		26.2		6.71
Metals	Magnesium	7439-95-4	6010C	mg/kg	6420		7090		9.92
Metals	Manganese	7439-96-5	6010C	mg/kg	260	J	261	J	0.38
Metals	Molybdenum	7439-98-7	6010C	mg/kg	2.19	U	2.27	U	--
Metals	Nickel	7440-02-0	6010C	mg/kg	15.5	J	17.1	J	9.82
Metals	Phosphorus	7723-14-0	6010C	mg/kg	239		240		0.42
Metals	Potassium	7440-09-7	6010C	mg/kg	2600	J	2740	J	5.24
Metals	Selenium	7782-49-2	6020A	mg/kg	0.438	U	0.453	U	--
Metals	Silver	7440-22-4	6020A	mg/kg	0.0509	J	0.0496	J	2.59
Metals	Sodium	7440-23-5	6010C	mg/kg	154		163		5.68
Metals	Strontium	7440-24-6	6020A	mg/kg	53.9		47.7		12.20
Metals	Thallium	7440-28-0	6020A	mg/kg	0.322		0.316		1.88
Metals	Tin	7440-31-5	6010C	mg/kg	10.9	U	11.3	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	1020		1020		0.00
Metals	Vanadium	7440-62-2	6010C	mg/kg	57.9		61.7		6.35
Metals	Zinc	7440-66-6	6010C	mg/kg	58.8		64.4		9.09
Metals	Zirconium	7440-67-7	6010C	mg/kg	5.6		6.04		7.56
Moisture Content	Moisture	MOIST	160.3M	%	12.1		13.5		10.94
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(a)anthracene	56-55-3	8270D	µg/kg					--
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(a)pyrene	50-32-8	8270D	µg/kg					--
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D	µg/kg					--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	1.9	UJ	1.9	UJ	--

Table C-6
Field Duplicates for Trench Samples

				Location	8_DG-548		8_DG-548		RPD
				Sample Name:	SL-848-SA8-TR-5.0		SL-548-SA8-TR-5.0		
				Sample Date	05/19/2014		05/19/2014		
				Start Depth:	5		5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	19	U	20	U	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	20	U	21	U	--
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	20	U	21	U	--
PAHs	Chrysene	218-01-9	8270D	µg/kg					--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	20	U	21	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	20	U	21	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	20	U	21	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	20	U	21	U	--
PAHs	Fluoranthene	206-44-0	8270D	µg/kg					--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Phenanthrene	85-01-8	8270D	µg/kg					--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Pyrene	129-00-0	8270D	µg/kg					--
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	1.9	U	1.9	U	--
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	19	U	20	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	38	U	38	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	38	U	38	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	38	U	38	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg					--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg					--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg					--
Pesticides	Aldrin	309-00-2	8081B	µg/kg					--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg					--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg					--
Pesticides	Chlordane	57-74-9	8081B	µg/kg					--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg					--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg					--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg					--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg					--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg					--
Pesticides	Endrin	72-20-8	8081B	µg/kg					--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg					--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg					--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg					--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg					--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg					--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg					--
Pesticides	Mirex	2385-85-5	8081B	µg/kg					--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg					--
pH	pH	pH	9045M	pH	8.11		8.19		0.98
SVOC	1,1'-Biphenyl	92-52-4	8270D	µg/kg					--
SVOC	1,2,4-Trichlorobenzene	120-82-1	8270D	µg/kg					--
SVOC	1,2-Dichlorobenzene	95-50-1	8270D	µg/kg					--
SVOC	1,2-Diphenylhydrazine	122-66-7	8270D	µg/kg					--
SVOC	1,3-Dichlorobenzene	541-73-1	8270D	µg/kg					--
SVOC	1,4-Dichlorobenzene	106-46-7	8270D	µg/kg					--
SVOC	2,4,5-Trichlorophenol	95-95-4	8270D	µg/kg					--
SVOC	2,4,6-Trichlorophenol	88-06-2	8270D	µg/kg					--
SVOC	2,4-Dichlorophenol	120-83-2	8270D	µg/kg					--
SVOC	2,4-Dimethylphenol	105-67-9	8270D	µg/kg					--
SVOC	2,4-Dinitrophenol	51-28-5	8270D	µg/kg					--
SVOC	2,6-Dichlorophenol	87-65-0	8270D	µg/kg					--
SVOC	2-Chloronaphthalene	91-58-7	8270D	µg/kg					--
SVOC	2-Chlorophenol	95-57-8	8270D	µg/kg					--
SVOC	2-Methylphenol	95-48-7	8270D	µg/kg					--
SVOC	2-Nitroaniline	88-74-4	8270D	µg/kg					--
SVOC	2-Nitrophenol	88-75-5	8270D	µg/kg					--
SVOC	3,3'-Dichlorobenzidine	91-94-1	8270D	µg/kg					--
SVOC	3,5-Dimethylphenol	108-68-9	8270D	µg/kg					--
SVOC	3-Nitroaniline	99-09-2	8270D	µg/kg					--
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	8270D	µg/kg					--
SVOC	4-Bromophenyl-phenylether	101-55-3	8270D	µg/kg					--
SVOC	4-Chloro-3-methylphenol	59-50-7	8270D	µg/kg					--
SVOC	4-Chloroaniline	106-47-8	8270D	µg/kg					--
SVOC	4-Chlorophenyl-phenylether	7005-72-3	8270D	µg/kg					--
SVOC	4-Methylphenol	106-44-5	8270D	µg/kg					--
SVOC	4-Nitroaniline	100-01-6	8270D	µg/kg					--
SVOC	4-Nitrophenol	100-02-7	8270D	µg/kg					--
SVOC	Aniline	62-53-3	8270D	µg/kg					--
SVOC	Benzidine	92-87-5	8270D	µg/kg					--
SVOC	Benzo(a)anthracene	56-55-3	8270D	µg/kg					--
SVOC	Benzo(a)pyrene	50-32-8	8270D	µg/kg					--
SVOC	Benzo(b)fluoranthene	205-99-2	8270D	µg/kg					--
SVOC	Benzoic Acid	65-85-0	8270D	µg/kg					--
SVOC	Benzyl Alcohol	100-51-6	8270D	µg/kg					--
SVOC	bis(2-chloroethoxy)methane	111-91-1	8270D	µg/kg					--
SVOC	bis(2-chloroethyl) ether	111-44-4	8270D	µg/kg					--

Table C-6
Field Duplicates for Trench Samples

				Location	8_DG-548		8_DG-548		RPD
				Sample Name:	SL-848-SA8-TR-5.0		SL-548-SA8-TR-5.0		
				Sample Date	05/19/2014		05/19/2014		
				Start Depth:	5		5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
SVOC	bis(2-chloroisopropyl) ether	39638-32-9	8270D	µg/kg					--
SVOC	Carbazole	86-74-8	8270D	µg/kg					--
SVOC	Chrysene	218-01-9	8270D	µg/kg					--
SVOC	Dibenzofuran	132-64-9	8270D	µg/kg					--
SVOC	Diphenylamine	NDPA122-39-4	8270D	µg/kg					--
SVOC	Fluoranthene	206-44-0	8270D	µg/kg					--
SVOC	Hexachlorobenzene	118-74-1	8270D	µg/kg					--
SVOC	Hexachlorobutadiene	87-68-3	8270D	µg/kg					--
SVOC	Hexachlorocyclopentadiene	77-47-4	8270D	µg/kg					--
SVOC	Hexachloroethane	67-72-1	8270D	µg/kg					--
SVOC	Isophorone	78-59-1	8270D	µg/kg					--
SVOC	Nitrobenzene	98-95-3	8270D	µg/kg					--
SVOC	N-Nitroso-di-n-propylamine	621-64-7	8270D	µg/kg					--
SVOC	N-Nitrosodiphenylamine	86-30-6	8270D	µg/kg					--
SVOC	Pentachlorophenol	87-86-5	8270D	µg/kg					--
SVOC	Phenanthrene	85-01-8	8270D	µg/kg					--
SVOC	Phenol	108-95-2	8270D	µg/kg					--
SVOC	Pyrene	129-00-0	8270D	µg/kg					--
SVOC	Pyridine	110-86-1	8270D	µg/kg					--
Terphenyls	m-Terphenyl	92-06-8	8015B	mg/kg					--
Terphenyls	o-Terphenyl	84-15-1	8015B	mg/kg					--
Terphenyls	p-Terphenyl	92-94-4	8015B	mg/kg					--
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.7	U	5.8	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.7	U	5.8	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	5.7	U	5.8	U	--
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	2.9	J	5.8	UJ	200.00
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	15	J	12	UJ	200.00
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.7	UJ	5.8	UJ	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILIC/	8015M	mg/kg	5.7	UJ	5.8	UJ	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILIC/	8015M	mg/kg	5.7	UJ	5.8	UJ	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILIC/	8015M	mg/kg	5.7	UJ	5.8	UJ	--
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILIC/	8015M	mg/kg	11	UJ	12	UJ	--
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg	1	U	1.1	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-6
Field Duplicates for Trench Samples

				Location	5A_DG-587		5A_DG-587		RPD
				Sample Name:	SL-887-SA5A-TR-5.5		SL-587-SA5A-TR-5.5		
				Sample Date	05/22/2014		05/22/2014		
				Start Depth:	5.5		5.5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	10.3	J	17.4	J	51.26
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	2.45	J	3.75	J	41.94
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	0.4	J	0.592	J	38.71
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	5.53	U	5.4	U	--
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	5.53	UJ	0.397	J	200.00
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	0.341	J	0.42	J	20.76
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	0.249	J	0.255	J	2.38
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	5.53	U	5.4	U	--
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	5.53	U	5.4	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	5.53	U	5.4	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	5.53	U	5.4	U	--
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	5.53	U	0.331	J	200.00
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	5.53	U	5.4	U	--
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	1.11	U	1.08	U	--
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	1.11	U	1.08	U	--
Dioxins	OCDD	3268-87-9	1613B	ng/kg	175	J	301	J	52.94
Dioxins	OCDF	39001-02-0	1613B	ng/kg	5.35	J	8.04	J	40.18
Energetics	1,3,5-Trinitrobenzene	99-35-4	8330A	µg/kg					--
Energetics	2,4,6-Trinitrotoluene	118-96-7	8330A	µg/kg					--
Energetics	2,4-Diamino-6-nitrotoluene	6629-29-4	8330A	µg/kg					--
Energetics	2,4-Dinitrotoluene	121-14-2	8330A	µg/kg					--
Energetics	2,6-Diamino-4-nitrotoluene	59229-75-3	8330A	µg/kg					--
Energetics	2,6-Dinitrotoluene	606-20-2	8330A	µg/kg					--
Energetics	2-Amino-4,6-Dinitrotoluene	35572-78-2	8330A	µg/kg					--
Energetics	2-Nitrotoluene	88-72-2	8330A	µg/kg					--
Energetics	3-Nitrotoluene	99-08-1	8330A	µg/kg					--
Energetics	4-Amino-2,6-Dinitrotoluene	19406-51-0	8330A	µg/kg					--
Energetics	4-Nitrotoluene	99-99-0	8330A	µg/kg					--
Energetics	HMX	2691-41-0	8330A	µg/kg					--
Energetics	M-Dinitrobenzene	99-65-0	8330A	µg/kg					--
Energetics	Nitrobenzene	98-95-3	8330A	µg/kg					--
Energetics	Nitroglycerin	55-63-0	8330A	µg/kg					--
Energetics	PETN	78-11-5	8330A	µg/kg					--
Energetics	RDX	121-82-4	8330A	µg/kg					--
Energetics	Tetryl	479-45-8	8330A	µg/kg					--
Glycols	Diethylene Glycol	111-46-6	8015B	mg/kg					--
Glycols	Ethylene Glycol	107-21-1	8015B	mg/kg					--
Glycols	Propylene Glycol	57-55-6	8015B	mg/kg					--
Glycols	Triethylene Glycol	112-27-6	8015B	mg/kg					--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg					--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg					--
Herbicides	2,4-D	94-75-7	8151A	µg/kg					--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg					--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg					--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg					--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg					--
Herbicides	MCPA	94-74-6	8151A	µg/kg					--
Herbicides	MCPP	93-65-2	8151A	µg/kg					--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg					--
Hexavalent Chromium	Chromium (Hexavalent Compounds)	18540-29-9	7199	mg/kg					--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.023	J	0.0123	J	60.62
Metals	Aluminum	7429-90-5	6010C	mg/kg	22000	J	19600	J	11.54
Metals	Antimony	7440-36-0	6010C	mg/kg	4.36	U	4.32	U	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	5.26		4.32		19.62
Metals	Barium	7440-39-3	6010C	mg/kg	98		94		4.17
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.948	J	0.836	J	12.56
Metals	Boron	7440-42-8	6010C	mg/kg	10.9	U	10.8	U	--
Metals	Cadmium	7440-43-9	6010C	mg/kg	0.262	J	0.193	J	30.33
Metals	Calcium	7440-70-2	6010C	mg/kg	2810	J	2560	J	9.31
Metals	Chromium	7440-47-3	6010C	mg/kg	23		20		13.95
Metals	Cobalt	7440-48-4	6010C	mg/kg	4.6	J	4.69	J	1.94
Metals	Copper	7440-50-8	6010C	mg/kg	9.48		7.98		17.18
Metals	Iron	7439-89-6	6010C	mg/kg	23500	J	22900	J	2.59
Metals	Lead	7439-92-1	6010C	mg/kg	6.55		5.45		18.33
Metals	Lithium	7439-93-2	6010C	mg/kg	28.1		26.3		6.62
Metals	Magnesium	7439-95-4	6010C	mg/kg	4300	J	4210	J	2.12
Metals	Manganese	7439-96-5	6010C	mg/kg	228	J	261	J	13.50
Metals	Molybdenum	7439-98-7	6010C	mg/kg	0.472	J	0.599	J	23.72
Metals	Nickel	7440-02-0	6010C	mg/kg	11.7		10.7		8.93
Metals	Phosphorus	7723-14-0	6010C	mg/kg	258		226		13.22
Metals	Potassium	7440-09-7	6010C	mg/kg	2240		2190		2.26
Metals	Selenium	7782-49-2	6020A	mg/kg	0.238	J	0.209	J	12.98
Metals	Silver	7440-22-4	6020A	mg/kg	0.0434	J	0.0419	J	3.52
Metals	Sodium	7440-23-5	6010C	mg/kg	159		147		7.84
Metals	Strontium	7440-24-6	6020A	mg/kg	21.9		21.4		2.31
Metals	Thallium	7440-28-0	6020A	mg/kg	0.24		0.242		0.83
Metals	Tin	7440-31-5	6010C	mg/kg	10.9	U	10.8	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	1180	J	1140	J	3.45
Metals	Vanadium	7440-62-2	6010C	mg/kg	44.1		39.9		10.00
Metals	Zinc	7440-66-6	6010C	mg/kg	46.4	J	45.8	J	1.30
Metals	Zirconium	7440-67-7	6010C	mg/kg	5.45	U	5.4	U	--
Moisture Content	Moisture	MOIST	160.3M	%	11		10.1		8.53
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(a)anthracene	56-55-3	8270D	µg/kg					--
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(a)pyrene	50-32-8	8270D	µg/kg					--
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D	µg/kg					--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg	1.9	U	1.9	U	--

Table C-6
Field Duplicates for Trench Samples

				Location	5A_DG-587		5A_DG-587		RPD
				Sample Name:	SL-887-SA5A-TR-5.5		SL-587-SA5A-TR-5.5		
				Sample Date	05/22/2014		05/22/2014		
				Start Depth:	5.5		5.5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	19	UJ	19	UJ	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	20	U	20	U	--
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	20	U	20	U	--
PAHs	Chrysene	218-01-9	8270D	µg/kg					--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	20	U	20	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	20	U	20	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	20	U	20	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	20	U	20	U	--
PAHs	Fluoranthene	206-44-0	8270D	µg/kg					--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Phenanthrene	85-01-8	8270D	µg/kg					--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	1.9	U	1.9	U	--
PAHs	Pyrene	129-00-0	8270D	µg/kg					--
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	1.9	U	1.9	U	--
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	19	U	19	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	36	U	36	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	36	U	36	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	36	U	36	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg					--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg					--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg					--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg					--
Pesticides	Aldrin	309-00-2	8081B	µg/kg					--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg					--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg					--
Pesticides	Chlordane	57-74-9	8081B	µg/kg					--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg					--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg					--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg					--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg					--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg					--
Pesticides	Endrin	72-20-8	8081B	µg/kg					--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg					--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg					--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg					--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg					--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg					--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg					--
Pesticides	Mirex	2385-85-5	8081B	µg/kg					--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg					--
pH	pH	pH	9045M	pH	7.55		7.72		2.23
SVOC	1,1'-Biphenyl	92-52-4	8270D	µg/kg					--
SVOC	1,2,4-Trichlorobenzene	120-82-1	8270D	µg/kg					--
SVOC	1,2-Dichlorobenzene	95-50-1	8270D	µg/kg					--
SVOC	1,2-Diphenylhydrazine	122-66-7	8270D	µg/kg					--
SVOC	1,3-Dichlorobenzene	541-73-1	8270D	µg/kg					--
SVOC	1,4-Dichlorobenzene	106-46-7	8270D	µg/kg					--
SVOC	2,4,5-Trichlorophenol	95-95-4	8270D	µg/kg					--
SVOC	2,4,6-Trichlorophenol	88-06-2	8270D	µg/kg					--
SVOC	2,4-Dichlorophenol	120-83-2	8270D	µg/kg					--
SVOC	2,4-Dimethylphenol	105-67-9	8270D	µg/kg					--
SVOC	2,4-Dinitrophenol	51-28-5	8270D	µg/kg					--
SVOC	2,6-Dichlorophenol	87-65-0	8270D	µg/kg					--
SVOC	2-Chloronaphthalene	91-58-7	8270D	µg/kg					--
SVOC	2-Chlorophenol	95-57-8	8270D	µg/kg					--
SVOC	2-Methylphenol	95-48-7	8270D	µg/kg					--
SVOC	2-Nitroaniline	88-74-4	8270D	µg/kg					--
SVOC	2-Nitrophenol	88-75-5	8270D	µg/kg					--
SVOC	3,3'-Dichlorobenzidine	91-94-1	8270D	µg/kg					--
SVOC	3,5-Dimethylphenol	108-68-9	8270D	µg/kg					--
SVOC	3-Nitroaniline	99-09-2	8270D	µg/kg					--
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	8270D	µg/kg					--
SVOC	4-Bromophenyl-phenylether	101-55-3	8270D	µg/kg					--
SVOC	4-Chloro-3-methylphenol	59-50-7	8270D	µg/kg					--
SVOC	4-Chloroaniline	106-47-8	8270D	µg/kg					--
SVOC	4-Chlorophenyl-phenylether	7005-72-3	8270D	µg/kg					--
SVOC	4-Methylphenol	106-44-5	8270D	µg/kg					--
SVOC	4-Nitroaniline	100-01-6	8270D	µg/kg					--
SVOC	4-Nitrophenol	100-02-7	8270D	µg/kg					--
SVOC	Aniline	62-53-3	8270D	µg/kg					--
SVOC	Benzidine	92-87-5	8270D	µg/kg					--
SVOC	Benzo(a)anthracene	56-55-3	8270D	µg/kg					--
SVOC	Benzo(a)pyrene	50-32-8	8270D	µg/kg					--
SVOC	Benzo(b)fluoranthene	205-99-2	8270D	µg/kg					--
SVOC	Benzoic Acid	65-85-0	8270D	µg/kg					--
SVOC	Benzyl Alcohol	100-51-6	8270D	µg/kg					--
SVOC	bis(2-chloroethoxy)methane	111-91-1	8270D	µg/kg					--
SVOC	bis(2-chloroethyl) ether	111-44-4	8270D	µg/kg					--

Table C-6
Field Duplicates for Trench Samples

				Location	5A_DG-587		5A_DG-587		RPD
				Sample Name:	SL-887-SA5A-TR-5.5		SL-587-SA5A-TR-5.5		
				Sample Date	05/22/2014		05/22/2014		
				Start Depth:	5.5		5.5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
SVOC	bis(2-chloroisopropyl) ether	39638-32-9	8270D	µg/kg					--
SVOC	Carbazole	86-74-8	8270D	µg/kg					--
SVOC	Chrysene	218-01-9	8270D	µg/kg					--
SVOC	Dibenzofuran	132-64-9	8270D	µg/kg					--
SVOC	Diphenylamine	NDPA122-39-4	8270D	µg/kg					--
SVOC	Fluoranthene	206-44-0	8270D	µg/kg					--
SVOC	Hexachlorobenzene	118-74-1	8270D	µg/kg					--
SVOC	Hexachlorobutadiene	87-68-3	8270D	µg/kg					--
SVOC	Hexachlorocyclopentadiene	77-47-4	8270D	µg/kg					--
SVOC	Hexachloroethane	67-72-1	8270D	µg/kg					--
SVOC	Isophorone	78-59-1	8270D	µg/kg					--
SVOC	Nitrobenzene	98-95-3	8270D	µg/kg					--
SVOC	N-Nitroso-di-n-propylamine	621-64-7	8270D	µg/kg					--
SVOC	N-Nitrosodiphenylamine	86-30-6	8270D	µg/kg					--
SVOC	Pentachlorophenol	87-86-5	8270D	µg/kg					--
SVOC	Phenanthrene	85-01-8	8270D	µg/kg					--
SVOC	Phenol	108-95-2	8270D	µg/kg					--
SVOC	Pyrene	129-00-0	8270D	µg/kg					--
SVOC	Pyridine	110-86-1	8270D	µg/kg					--
Terphenyls	m-Terphenyl	92-06-8	8015B	mg/kg					--
Terphenyls	o-Terphenyl	84-15-1	8015B	mg/kg					--
Terphenyls	p-Terphenyl	92-94-4	8015B	mg/kg					--
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	11	U	11	U	--
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILICA	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILICA	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILICA	8015M	mg/kg	5.5	U	5.5	U	--
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILICA	8015M	mg/kg	11	U	11	U	--
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg	1.1	U	1	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-6
Field Duplicates for Trench Samples

				Location	5C_DG-651		5C_DG-651		RPD
				Sample Name:	SL-951-SA5C-TR-5.0		SL-651-SA5C-TR-5.0		
				Sample Date	05/30/2014		05/30/2014		
				Start Depth:	5		5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Dioxins	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	35822-46-9	1613B	ng/kg	1.55	J	2.1	J	30.14
Dioxins	1,2,3,4,6,7,8-HPCDF	67562-39-4	1613B	ng/kg	5.18	U	0.321	J	200.00
Dioxins	1,2,3,4,7,8,9-HPCDF	55673-89-7	1613B	ng/kg	5.18	U	5.11	U	--
Dioxins	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	39227-28-6	1613B	ng/kg	5.18	U	5.11	U	--
Dioxins	1,2,3,4,7,8-HXCDF	70648-26-9	1613B	ng/kg	5.18	U	5.11	U	--
Dioxins	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	57653-85-7	1613B	ng/kg	5.18	UJ	5.11	UJ	--
Dioxins	1,2,3,6,7,8-HXCDF	57117-44-9	1613B	ng/kg	5.18	U	5.11	U	--
Dioxins	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	19408-74-3	1613B	ng/kg	5.18	UJ	5.11	UJ	--
Dioxins	1,2,3,7,8,9-HXCDF	72918-21-9	1613B	ng/kg	5.18	UJ	5.11	UJ	--
Dioxins	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1613B	ng/kg	5.18	U	5.11	U	--
Dioxins	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	40321-76-4	1613B	ng/kg	5.18	UJ	5.11	UJ	--
Dioxins	2,3,4,6,7,8-HXCDF	60851-34-5	1613B	ng/kg	5.18	U	5.11	U	--
Dioxins	2,3,4,7,8-PECDF	57117-31-4	1613B	ng/kg	5.18	UJ	5.11	UJ	--
Dioxins	2,3,7,8-TCDD	1746-01-6	1613B	ng/kg	1.04	UJ	0.061	J	200.00
Dioxins	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1613B	ng/kg	1.04	U	1.02	U	--
Dioxins	OCDD	3268-87-9	1613B	ng/kg	11.1		13.8		21.69
Dioxins	OCDF	39001-02-0	1613B	ng/kg	10.4	U	10.2	U	--
Energetics	1,3,5-Trinitrobenzene	99-35-4	8330A	µg/kg	310	U	310	U	--
Energetics	2,4,6-Trinitrotoluene	118-96-7	8330A	µg/kg	310	U	310	UJ	--
Energetics	2,4-Diamino-6-nitrotoluene	6629-29-4	8330A	µg/kg	420	U	420	U	--
Energetics	2,4-Dinitrotoluene	121-14-2	8330A	µg/kg	310	U	310	U	--
Energetics	2,6-Diamino-4-nitrotoluene	59229-75-3	8330A	µg/kg	420	U	420	U	--
Energetics	2,6-Dinitrotoluene	606-20-2	8330A	µg/kg	310	U	310	U	--
Energetics	2-Amino-4,6-Dinitrotoluene	35572-78-2	8330A	µg/kg	310	U	310	U	--
Energetics	2-Nitrotoluene	88-72-2	8330A	µg/kg	310	U	310	U	--
Energetics	3-Nitrotoluene	99-08-1	8330A	µg/kg	310	U	310	U	--
Energetics	4-Amino-2,6-Dinitrotoluene	19406-51-0	8330A	µg/kg	310	U	310	U	--
Energetics	4-Nitrotoluene	99-99-0	8330A	µg/kg	310	U	310	U	--
Energetics	HMX	2691-41-0	8330A	µg/kg	420	U	420	U	--
Energetics	M-Dinitrobenzene	99-65-0	8330A	µg/kg	310	U	310	U	--
Energetics	Nitrobenzene	98-95-3	8330A	µg/kg	310	U	310	U	--
Energetics	Nitroglycerin	55-63-0	8330A	µg/kg	2100	U	2100	U	--
Energetics	PETN	78-11-5	8330A	µg/kg	2100	U	2100	U	--
Energetics	RDX	121-82-4	8330A	µg/kg	310	U	310	U	--
Energetics	Tetryl	479-45-8	8330A	µg/kg	310	U	310	U	--
Glycols	Diethylene Glycol	111-46-6	8015B	mg/kg	10	U	10	UJ	--
Glycols	Ethylene Glycol	107-21-1	8015B	mg/kg	10	U	10	U	--
Glycols	Propylene Glycol	57-55-6	8015B	mg/kg	10	U	10	U	--
Glycols	Triethylene Glycol	112-27-6	8015B	mg/kg	10	U	10	UJ	--
Herbicides	2,2-Dichlor-Propionic Acid	75-99-0	8151A	µg/kg	93	U			--
Herbicides	2,4,5-T	93-76-5	8151A	µg/kg	1.8	U	1.8	U	--
Herbicides	2,4-D	94-75-7	8151A	µg/kg	37	U	38	U	--
Herbicides	2,4-DB	94-82-6	8151A	µg/kg	18	U	18	U	--
Herbicides	Dicamba	1918-00-9	8151A	µg/kg	12	U	13	U	--
Herbicides	Dichlorprop	120-36-5	8151A	µg/kg	18	U	18	U	--
Herbicides	Dinitrobutyl Phenol	88-85-7	8151A	µg/kg	25	U	25	U	--
Herbicides	MCPA	94-74-6	8151A	µg/kg	2600	U	2600	U	--
Herbicides	MCPP	93-65-2	8151A	µg/kg	2600	U	2600	U	--
Herbicides	Silvex (2,4,5-TP)	93-72-1	8151A	µg/kg	1.8	U	1.8	U	--
Hexavalent Chromium	Chromium (Hexavalent Compounds)	18540-29-9	7199	mg/kg	0.43	U	0.42	U	--
Mercury	Mercury	7439-97-6	7471B	mg/kg	0.0166	U	0.0165	U	--
Metals	Aluminum	7429-90-5	6010C	mg/kg	12300		9500		25.69
Metals	Antimony	7440-36-0	6010C	mg/kg	4.02	UJ	4.15	UJ	--
Metals	Arsenic	7440-38-2	6010C	mg/kg	3.57	J	3.17	J	11.87
Metals	Barium	7440-39-3	6010C	mg/kg	71.2		60.7		15.92
Metals	Beryllium	7440-41-7	6010C	mg/kg	0.559	J	0.448	J	22.05
Metals	Boron	7440-42-8	6010C	mg/kg	1.62	J	1.75	J	7.72
Metals	Cadmium	7440-43-9	6010C	mg/kg	1.01	U	1.04	U	--
Metals	Calcium	7440-70-2	6010C	mg/kg	2320	J	2130	J	8.54
Metals	Chromium	7440-47-3	6010C	mg/kg	11.8		9.38		22.85
Metals	Cobalt	7440-48-4	6010C	mg/kg	4.04		3.45		15.75
Metals	Copper	7440-50-8	6010C	mg/kg	5.43		4.42		20.51
Metals	Iron	7439-89-6	6010C	mg/kg	18400		16200		12.72
Metals	Lead	7439-92-1	6010C	mg/kg	5.64		4.95		13.03
Metals	Lithium	7439-93-2	6010C	mg/kg	23.5		22.4		4.79
Metals	Magnesium	7439-95-4	6010C	mg/kg	3660	J	3340	J	9.14
Metals	Manganese	7439-96-5	6010C	mg/kg	272		248		9.23
Metals	Molybdenum	7439-98-7	6010C	mg/kg	2.01	UJ	2.08	UJ	--
Metals	Nickel	7440-02-0	6010C	mg/kg	7.18		5.79		21.43
Metals	Phosphorus	7723-14-0	6010C	mg/kg	318	J	334	J	4.91
Metals	Potassium	7440-09-7	6010C	mg/kg	2910	J	2840	J	2.43
Metals	Selenium	7782-49-2	6020A	mg/kg	0.143	J	0.415	UJ	200.00
Metals	Silver	7440-22-4	6020A	mg/kg	0.201	U	0.208	U	--
Metals	Sodium	7440-23-5	6010C	mg/kg	71.2	J	71.3	J	0.14
Metals	Strontium	7440-24-6	6020A	mg/kg	14.7		9.45		43.48
Metals	Thallium	7440-28-0	6020A	mg/kg	0.263		0.227		14.69
Metals	Tin	7440-31-5	6010C	mg/kg	10.1	U	10.4	U	--
Metals	Titanium	7440-32-6	6010C	mg/kg	943		878		7.14
Metals	Vanadium	7440-62-2	6010C	mg/kg	25.8		20.9		20.99
Metals	Zinc	7440-66-6	6010C	mg/kg	58.5		56.7		3.13
Metals	Zirconium	7440-67-7	6010C	mg/kg	5.03	U	5.19	U	--
Moisture Content	Moisture	MOIST	160.3M	%	4.4		4.6		4.44
PAHs	1-Methylnaphthalene	90-12-0	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	2-Methylnaphthalene	91-57-6	8270D SIM	µg/kg	0.81	J	0.83	J	2.44
PAHs	Acenaphthene	83-32-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Acenaphthylene	208-96-8	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Anthracene	120-12-7	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Benzo(a)anthracene	56-55-3	8270D	µg/kg			4	J	--
PAHs	Benzo(a)anthracene	56-55-3	8270D SIM	µg/kg	1.7	U			--
PAHs	Benzo(a)pyrene	50-32-8	8270D	µg/kg	4	J	4	J	0.00
PAHs	Benzo(a)pyrene	50-32-8	8270D SIM	µg/kg					--
PAHs	Benzo(b)fluoranthene	205-99-2	8270D	µg/kg	5	J	5	J	0.00
PAHs	Benzo(b)fluoranthene	205-99-2	8270D SIM	µg/kg					--

Table C-6
Field Duplicates for Trench Samples

				Location	5C_DG-651		5C_DG-651		RPD
				Sample Name:	SL-951-SA5C-TR-5.0		SL-651-SA5C-TR-5.0		
				Sample Date	05/30/2014		05/30/2014		
				Start Depth:	5		5		
				End Depth:					
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
PAHs	Benzo(e)pyrene	192-97-2	8270D SIM	µg/kg	18	UJ	18	UJ	--
PAHs	Benzo(g,h,i)perylene	191-24-2	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Benzo(k)fluoranthene	207-08-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Bis(2-ethylhexyl)phthalate	117-81-7	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Butylbenzylphthalate	85-68-7	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Chrysene	218-01-9	8270D	µg/kg	4	J			--
PAHs	Chrysene	218-01-9	8270D SIM	µg/kg			1.7	U	--
PAHs	Dibenzo(a,h)anthracene	53-70-3	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Diethylphthalate	84-66-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Dimethylphthalate	131-11-3	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-butylphthalate	84-74-2	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Di-n-octylphthalate	117-84-0	8270D SIM	µg/kg	19	U	19	U	--
PAHs	Fluoranthene	206-44-0	8270D	µg/kg			4	J	--
PAHs	Fluoranthene	206-44-0	8270D SIM	µg/kg	1.7	U			--
PAHs	Fluorene	86-73-7	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Indeno(1,2,3-cd)pyrene	193-39-5	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Naphthalene	91-20-3	8270D SIM	µg/kg	0.89	J	1.7	UJ	200.00
PAHs	N-Nitrosodimethylamine	62-75-9	8270D SIM	µg/kg	1.7	U	1.7	U	--
PAHs	Phenanthrene	85-01-8	8270D	µg/kg			4	J	--
PAHs	Phenanthrene	85-01-8	8270D SIM	µg/kg	1.7	U			--
PAHs	Pyrene	129-00-0	8270D	µg/kg			4	J	--
PAHs	Pyrene	129-00-0	8270D SIM	µg/kg	1.7	U			--
PCBPCTs	Aroclor 1016	12674-11-2	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1221	11104-28-2	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1232	11141-16-5	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1242	53469-21-9	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1248	12672-29-6	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1254	11097-69-1	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1260	11096-82-5	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1262	37324-23-5	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 1268	11100-14-4	8082A	µg/kg	17	U	18	U	--
PCBPCTs	Aroclor 5432	63496-31-1	8082A	µg/kg	34	U	34	U	--
PCBPCTs	Aroclor 5442	12642-23-8	8082A	µg/kg	34	U	34	U	--
PCBPCTs	Aroclor 5460	11126-42-4	8082A	µg/kg	34	U	34	U	--
Perchlorate	Perchlorate	14797-73-0	6850	µg/kg	5.2	U	5.2	U	--
Pesticides	4,4'-DDD	72-54-8	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	4,4'-DDE	72-55-9	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	4,4'-DDT	50-29-3	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Aldrin	309-00-2	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Alpha-Bhc	319-84-6	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Beta-Bhc	319-85-7	8081B	µg/kg	2	U	2	U	--
Pesticides	Chlordane	57-74-9	8081B	µg/kg	18	U	18	U	--
Pesticides	Delta-Bhc	319-86-8	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Dieldrin	60-57-1	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endosulfan I	959-98-8	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Endosulfan II	33213-65-9	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endosulfan Sulfate	1031-07-8	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endrin	72-20-8	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endrin Aldehyde	7421-93-4	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Endrin Ketone	53494-70-5	8081B	µg/kg	1.9	U	1.9	U	--
Pesticides	Gamma-Bhc (Lindane)	58-89-9	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Heptachlor	76-44-8	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Heptachlor Epoxide	1024-57-3	8081B	µg/kg	0.87	U	0.87	U	--
Pesticides	Methoxychlor	72-43-5	8081B	µg/kg	7	U	7	U	--
Pesticides	Mirex	2385-85-5	8081B	µg/kg	1.8	U	1.8	U	--
Pesticides	Technical Toxaphene	8001-35-2	8081B	µg/kg	35	U	35	U	--
pH	pH	pH	9045M	pH	7.63		7.85		2.84
SVOC	1,1'-Biphenyl	92-52-4	8270D	µg/kg	35	U	35	U	--
SVOC	1,2,4-Trichlorobenzene	120-82-1	8270D	µg/kg	35	U	35	U	--
SVOC	1,2-Dichlorobenzene	95-50-1	8270D	µg/kg	35	U	35	U	--
SVOC	1,2-Diphenylhydrazine	122-66-7	8270D	µg/kg	35	U	35	U	--
SVOC	1,3-Dichlorobenzene	541-73-1	8270D	µg/kg	35	U	35	U	--
SVOC	1,4-Dichlorobenzene	106-46-7	8270D	µg/kg	35	U	35	U	--
SVOC	2,4,5-Trichlorophenol	95-95-4	8270D	µg/kg	35	U	35	U	--
SVOC	2,4,6-Trichlorophenol	88-06-2	8270D	µg/kg	35	U	35	U	--
SVOC	2,4-Dichlorophenol	120-83-2	8270D	µg/kg	35	U	35	U	--
SVOC	2,4-Dimethylphenol	105-67-9	8270D	µg/kg	35	U	35	U	--
SVOC	2,4-Dinitrophenol	51-28-5	8270D	µg/kg	1000	U	1000	U	--
SVOC	2,6-Dichlorophenol	87-65-0	8270D	µg/kg	35	U			--
SVOC	2-Chloronaphthalene	91-58-7	8270D	µg/kg	35	U	35	U	--
SVOC	2-Chlorophenol	95-57-8	8270D	µg/kg	35	U	35	U	--
SVOC	2-Methylphenol	95-48-7	8270D	µg/kg	35	U	35	U	--
SVOC	2-Nitroaniline	88-74-4	8270D	µg/kg	35	U	35	U	--
SVOC	2-Nitrophenol	88-75-5	8270D	µg/kg	35	U	35	U	--
SVOC	3,3'-Dichlorobenzidine	91-94-1	8270D	µg/kg	350	U	350	U	--
SVOC	3,5-Dimethylphenol	108-68-9	8270D	µg/kg	170	U	170	U	--
SVOC	3-Nitroaniline	99-09-2	8270D	µg/kg	170	U	170	U	--
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	8270D	µg/kg	520	UJ	520	UJ	--
SVOC	4-Bromophenyl-phenylether	101-55-3	8270D	µg/kg	35	U	35	U	--
SVOC	4-Chloro-3-methylphenol	59-50-7	8270D	µg/kg	35	U	35	U	--
SVOC	4-Chloroaniline	106-47-8	8270D	µg/kg	35	U	35	U	--
SVOC	4-Chlorophenyl-phenylether	7005-72-3	8270D	µg/kg	35	U	35	U	--
SVOC	4-Methylphenol	106-44-5	8270D	µg/kg	35	U	35	U	--
SVOC	4-Nitroaniline	100-01-6	8270D	µg/kg	170	UJ	170	UJ	--
SVOC	4-Nitrophenol	100-02-7	8270D	µg/kg	520	U	520	U	--
SVOC	Aniline	62-53-3	8270D	µg/kg	520	U	520	U	--
SVOC	Benzidine	92-87-5	8270D	µg/kg	3500	U	3500	UJ	--
SVOC	Benzo(a)anthracene	56-55-3	8270D	µg/kg			4	J	--
SVOC	Benzo(a)pyrene	50-32-8	8270D	µg/kg	4	J	4	J	0.00
SVOC	Benzo(b)fluoranthene	205-99-2	8270D	µg/kg	5	J	5	J	0.00
SVOC	Benzoic Acid	65-85-0	8270D	µg/kg	520	U	520	U	--
SVOC	Benzyl Alcohol	100-51-6	8270D	µg/kg	520	U	520	U	--
SVOC	bis(2-chloroethoxy)methane	111-91-1	8270D	µg/kg	35	U	35	U	--
SVOC	bis(2-chloroethyl) ether	111-44-4	8270D	µg/kg	35	U	35	U	--

Table C-6
Field Duplicates for Trench Samples

					Location		5C_DG-651		RPD
					Sample Name:		SL-951-SA5C-TR-5.0	SL-651-SA5C-TR-5.0	
					Sample Date		05/30/2014	05/30/2014	
					Start Depth:		5	5	
					End Depth:				
					Area:		Go Back	Go Back	
					Matrix:		SO	SO	
					Sample Type:		FD	N	
SVOC	bis(2-chloroisopropyl) ether	39638-32-9	8270D	µg/kg	35	U	35	U	--
SVOC	Carbazole	86-74-8	8270D	µg/kg	35	U	35	U	--
SVOC	Chrysene	218-01-9	8270D	µg/kg	4	J			--
SVOC	Dibenzofuran	132-64-9	8270D	µg/kg	35	U	35	U	--
SVOC	Diphenylamine	NDPA122-39-4	8270D	µg/kg	170	U	170	U	--
SVOC	Fluoranthene	206-44-0	8270D	µg/kg			4	J	--
SVOC	Hexachlorobenzene	118-74-1	8270D	µg/kg	18	U	18	U	--
SVOC	Hexachlorobutadiene	87-68-3	8270D	µg/kg	35	U	35	U	--
SVOC	Hexachlorocyclopentadiene	77-47-4	8270D	µg/kg	520	U	520	U	--
SVOC	Hexachloroethane	67-72-1	8270D	µg/kg	170	U	170	U	--
SVOC	Isophorone	78-59-1	8270D	µg/kg	35	U	35	U	--
SVOC	Nitrobenzene	98-95-3	8270D	µg/kg	35	U	35	U	--
SVOC	N-Nitroso-di-n-propylamine	621-64-7	8270D	µg/kg	35	U	35	U	--
SVOC	N-Nitrosodiphenylamine	86-30-6	8270D	µg/kg	35	U	35	U	--
SVOC	Pentachlorophenol	87-86-5	8270D	µg/kg	180	U	180	U	--
SVOC	Phenanthrene	85-01-8	8270D	µg/kg			4	J	--
SVOC	Phenol	108-95-2	8270D	µg/kg	35	U	35	U	--
SVOC	Pyrene	129-00-0	8270D	µg/kg			4	J	--
SVOC	Pyridine	110-86-1	8270D	µg/kg	170	U	170	U	--
Terphenyls	m-Terphenyl	92-06-8	8015B	mg/kg	0.18	U	0.18	U	--
Terphenyls	o-Terphenyl	84-15-1	8015B	mg/kg	0.18	U	0.18	U	--
Terphenyls	p-Terphenyl	92-94-4	8015B	mg/kg	0.18	U	0.18	U	--
TPH-EFH	EFH (C8-C11)	PHCC8C11	8015M	mg/kg	5.2	U	5.2	U	--
TPH-EFH	EFH (C12-C14)	PHCC12C14	8015M	mg/kg	5.2	U	5.2	U	--
TPH-EFH	EFH (C15-C20)	PHCC15C20	8015M	mg/kg	5.2	U	5.2	U	--
TPH-EFH	EFH (C21-C30)	PHCC21C30	8015M	mg/kg	5.2	UJ	4.6	J	200.00
TPH-EFH	EFH (C30-C40)	PHCC30C40	8015M	mg/kg	10	UJ	8.8	J	200.00
TPH-EFH w/ Silica Gel	EFH (C8-C11) w/ Silica Gel	PHCC8C11SILICA	8015M	mg/kg	5.2	UJ	5.2	UJ	--
TPH-EFH w/ Silica Gel	EFH (C12-C14) w/ Silica Gel	PHCC12C14SILICA	8015M	mg/kg	5.2	U	5.2	U	--
TPH-EFH w/ Silica Gel	EFH (C15-C20) w/ Silica Gel	PHCC15C20SILICA	8015M	mg/kg	5.2	U	5.2	U	--
TPH-EFH w/ Silica Gel	EFH (C21-C30) w/ Silica Gel	PHCC21C30SILICA	8015M	mg/kg	5.2	U	5.2	U	--
TPH-EFH w/ Silica Gel	EFH (C30-C40) w/ Silica Gel	PHCC30C40SILICA	8015M	mg/kg	10	U	10	U	--
TPH-GRO	Gasoline Range Organics (C5-C12)	GROC5C12	8015M	mg/kg	1	U	1	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-7
Field Duplicates for Soil Vapor Location Samples

				Location	5DSV_DG-511		5DSV_DG-511		RPD
				Sample Name:	SVL-811-SA5D-SB-4.5-5.5		SVL-511-SA5D-SB-4.5-5.5		
				Sample Date	05/22/2014		05/22/2014		
				Start Depth:	4.5		4.5		
				End Depth:	5.5		5.5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Moisture Content	Moisture	MOIST	160.3M	%	11.5		11.6		0.87
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg	5	U	5	U	--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg	5	U	5	U	--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg	5	U	5	U	--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg	5	U	5	U	--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg	11	U	10	U	--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg	11	U	10	U	--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg	5	U	5	U	--
VOC	2-Hexanone	591-78-6	8260B	µg/kg	11	U	10	U	--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg	5	U	5	U	--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg	5	U	5	U	--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg	11	U	10	U	--
VOC	Acetone	67-64-1	8260B	µg/kg	21	U	20	U	--
VOC	Acrolein	107-02-8	8260B	µg/kg	110	U	100	U	--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg	21	U	20	U	--
VOC	Benzene	71-43-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromobenzene	108-86-1	8260B	µg/kg	5	U	5	U	--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg	5	U	5	U	--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg	5	U	5	U	--
VOC	Bromoform	75-25-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromomethane	74-83-9	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg	5	U	5	U	--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg	5	U	5	U	--
VOC	Chloroethane	75-00-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloroform	67-66-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloromethane	74-87-3	8260B	µg/kg	5	U	5	U	--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg	5	U	5	U	--
VOC	Cymene	99-87-6	8260B	µg/kg	5	U	5	U	--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg	5	U	5	U	--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg	5	U	5	U	--
VOC	Dibromomethane	74-95-3	8260B	µg/kg	5	U	5	U	--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg	5	U	5	U	--
VOC	Ethylbenzene	100-41-4	8260B	µg/kg	5	U	5	U	--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg	5	U	5	U	--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg	5	U	5	U	--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg	5	U	5	U	--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg	5	U	5	U	--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg	5	U	5	U	--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg	5	U	5	U	--
VOC	o-Xylene	95-47-6	8260B	µg/kg	5	U	5	U	--
VOC	Styrene	100-42-5	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg	53	U	50	U	--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg	5	U	5	U	--
VOC	Toluene	108-88-3	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichloroethene	79-01-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg	5	U	5	U	--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg	11	U	10	U	--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg	5	U	5	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-7
Field Duplicates for Soil Vapor Location Samples

				Location	5BSV_DG-532		5BSV_DG-532		RPD
				Sample Name:	SVL-832-SA5B-SB-4.0-5.0		SVL-532-SA5B-SB-4.0-5.0		
				Sample Date	05/13/2014		05/13/2014		
				Start Depth:	4		4		
				End Depth:	5		5		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Moisture Content	Moisture	MOIST	160.3M	%	7.3		8.1		10.39
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg	5	U	5	U	--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg	5	U	5	U	--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg	5	U	5	U	--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg	5	U	5	U	--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg	9	U	9	U	--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg	9	U	9	U	--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg	5	U	5	U	--
VOC	2-Hexanone	591-78-6	8260B	µg/kg	9	U	9	U	--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg	5	U	5	U	--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg	5	U	5	U	--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg	9	U	9	U	--
VOC	Acetone	67-64-1	8260B	µg/kg	19	U	19	U	--
VOC	Acrolein	107-02-8	8260B	µg/kg	93	U	93	U	--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg	19	U	19	U	--
VOC	Benzene	71-43-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromobenzene	108-86-1	8260B	µg/kg	5	U	5	U	--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg	5	U	5	U	--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg	5	U	5	U	--
VOC	Bromoform	75-25-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromomethane	74-83-9	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg	5	U	5	U	--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg	5	U	5	U	--
VOC	Chloroethane	75-00-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloroform	67-66-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloromethane	74-87-3	8260B	µg/kg	5	U	5	U	--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg	5	U	5	U	--
VOC	Cymene	99-87-6	8260B	µg/kg	5	U	5	U	--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg	5	U	5	U	--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg	5	U	5	U	--
VOC	Dibromomethane	74-95-3	8260B	µg/kg	5	U	5	U	--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg	5	U	5	U	--
VOC	Ethylbenzene	100-41-4	8260B	µg/kg	5	U	5	U	--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg	5	U	5	U	--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg	5	U	5	U	--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg	5	U	5	U	--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg	5	U	5	U	--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg	5	U	5	U	--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg	5	U	5	U	--
VOC	o-Xylene	95-47-6	8260B	µg/kg	5	U	5	U	--
VOC	Styrene	100-42-5	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg	47	U	46	U	--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg	5	U	5	U	--
VOC	Toluene	108-88-3	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichloroethene	79-01-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg	5	U	5	U	--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg	9	U	9	U	--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg	5	U	5	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-7
Field Duplicates for Soil Vapor Location Samples

				Location	8SV_DG-546		8SV_DG-546		RPD
				Sample Name:	SVL-846-SA8-SB-4.4-4.9		SVL-546-SA8-SB-4.4-4.9		
				Sample Date	06/12/2014		06/12/2014		
				Start Depth:	4.4		4.4		
				End Depth:	4.9		4.9		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Moisture Content	Moisture	MOIST	160.3M	%	4.5		4.5		0.00
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg	5	U	5	U	--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg	5	U	5	U	--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg	5	U	5	U	--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg	5	U	5	U	--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg	10	U	10	U	--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg	10	U	10	U	--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg	5	U	5	U	--
VOC	2-Hexanone	591-78-6	8260B	µg/kg	10	U	10	U	--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg	5	U	5	U	--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg	5	U	5	U	--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg	10	U	10	U	--
VOC	Acetone	67-64-1	8260B	µg/kg	20	U	21	U	--
VOC	Acrolein	107-02-8	8260B	µg/kg	100	U	100	U	--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg	20	U	21	U	--
VOC	Benzene	71-43-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromobenzene	108-86-1	8260B	µg/kg	5	U	5	U	--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg	5	U	5	U	--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg	5	U	5	U	--
VOC	Bromoform	75-25-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromomethane	74-83-9	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg	5	U	5	U	--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg	5	U	5	U	--
VOC	Chloroethane	75-00-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloroform	67-66-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloromethane	74-87-3	8260B	µg/kg	5	U	5	U	--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg	5	U	5	U	--
VOC	Cymene	99-87-6	8260B	µg/kg	5	U	5	U	--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg	5	U	5	U	--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg	5	U	5	U	--
VOC	Dibromomethane	74-95-3	8260B	µg/kg	5	U	5	U	--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg	5	U	5	U	--
VOC	Ethylbenzene	100-41-4	8260B	µg/kg	5	U	5	U	--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg	5	U	5	U	--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg	5	U	5	U	--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg	5	U	5	U	--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg	5	U	5	U	--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg	5	U	5	U	--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg	5	U	5	U	--
VOC	o-Xylene	95-47-6	8260B	µg/kg	5	U	5	U	--
VOC	Styrene	100-42-5	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg	50	U	51	U	--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg	5	U	5	U	--
VOC	Toluene	108-88-3	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichloroethene	79-01-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg	5	U	5	U	--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg	10	U	10	UJ	--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg	5	U	5	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
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FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-7
Field Duplicates for Soil Vapor Location Samples

				Location	5BSV_DG-586		5BSV_DG-586		RPD
				Sample Name:	SVL-986-SA5B-SB-3.75-4.25		SVL-586-SA5B-SB-3.75-4.25		
				Sample Date	06/04/2014		06/04/2014		
				Start Depth:	3.75		3.75		
				End Depth:	4.25		4.25		
				Area:	Go Back		Go Back		
				Matrix:	SO		SO		
				Sample Type:	FD		N		
MAG:	Chemical Name:	CAS No.:	Lab Method:	Result Unit					
Moisture Content	Moisture	MOIST	160.3M	%	4.4		4.6		4.44
VOC	1,1,1,2-Tetrachloroethane	630-20-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,1-Trichloroethane	71-55-6	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2,2-Tetrachloroethane	79-34-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260B	µg/kg	5	U	5	U	--
VOC	1,1,2-Trichloroethane	79-00-5	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethane	75-34-3	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloroethene	75-35-4	8260B	µg/kg	5	U	5	U	--
VOC	1,1-Dichloropropene	563-58-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichlorobenzene	87-61-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2,3-Trichloropropane	96-18-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trichlorobenzene	120-82-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2,4-Trimethylbenzene	95-63-6	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromo-3-chloropropane	96-12-8	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dibromoethane	106-93-4	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichlorobenzene	95-50-1	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloroethane	107-06-2	8260B	µg/kg	5	U	5	U	--
VOC	1,2-Dichloropropane	78-87-5	8260B	µg/kg	5	U	5	U	--
VOC	1,3,5-Trimethylbenzene	108-67-8	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichlorobenzene	541-73-1	8260B	µg/kg	5	U	5	U	--
VOC	1,3-Dichloropropane	142-28-9	8260B	µg/kg	5	U	5	U	--
VOC	1,4-Dichlorobenzene	106-46-7	8260B	µg/kg	5	U	5	U	--
VOC	1-Chlorohexane	544-10-5	8260B	µg/kg	5	U	5	U	--
VOC	2,2-Dichloropropane	594-20-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Butanone (MEK)	78-93-3	8260B	µg/kg	11	U	11	U	--
VOC	2-Chloro-1,1,1-trifluoroethane	75-88-7	8260B	µg/kg	5	U	5	U	--
VOC	2-Chloroethyl Vinyl Ether	110-75-8	8260B	µg/kg	11	U	11	U	--
VOC	2-Chlorotoluene	95-49-8	8260B	µg/kg	5	U	5	U	--
VOC	2-Hexanone	591-78-6	8260B	µg/kg	11	U	11	U	--
VOC	2-Phenylbutane	135-98-8	8260B	µg/kg	5	U	5	U	--
VOC	4-Chlorotoluene	106-43-4	8260B	µg/kg	5	U	5	U	--
VOC	4-Methyl-2-pentanone (MIBK)	108-10-1	8260B	µg/kg	11	U	11	U	--
VOC	Acetone	67-64-1	8260B	µg/kg	22	U	22	U	--
VOC	Acrolein	107-02-8	8260B	µg/kg	110	U	110	U	--
VOC	Acrylonitrile	107-13-1	8260B	µg/kg	22	U	22	U	--
VOC	Benzene	71-43-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromobenzene	108-86-1	8260B	µg/kg	5	U	5	U	--
VOC	Bromochloromethane	74-97-5	8260B	µg/kg	5	U	5	U	--
VOC	Bromodichloromethane	75-27-4	8260B	µg/kg	5	U	5	U	--
VOC	Bromoform	75-25-2	8260B	µg/kg	5	U	5	U	--
VOC	Bromomethane	74-83-9	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Disulfide	75-15-0	8260B	µg/kg	5	U	5	U	--
VOC	Carbon Tetrachloride	56-23-5	8260B	µg/kg	5	U	5	U	--
VOC	Chlorobenzene	108-90-7	8260B	µg/kg	5	U	5	U	--
VOC	Chloroethane	75-00-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloroform	67-66-3	8260B	µg/kg	5	U	5	U	--
VOC	Chloromethane	74-87-3	8260B	µg/kg	5	U	5	U	--
VOC	Chlorotrifluoroethylene	79-38-9	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,2-Dichloroethene	156-59-2	8260B	µg/kg	5	U	5	U	--
VOC	cis-1,3-Dichloropropene	10061-01-5	8260B	µg/kg	5	U	5	U	--
VOC	Cymene	99-87-6	8260B	µg/kg	5	U	5	U	--
VOC	Di isopropyl Ether	108-20-3	8260B	µg/kg	5	U	5	U	--
VOC	Dibromochloromethane	124-48-1	8260B	µg/kg	5	U	5	U	--
VOC	Dibromomethane	74-95-3	8260B	µg/kg	5	U	5	U	--
VOC	Dichlorodifluoromethane	75-71-8	8260B	µg/kg	5	U	5	U	--
VOC	Ethylbenzene	100-41-4	8260B	µg/kg	5	U	5	U	--
VOC	Hexachloro-1,3-butadiene	87-68-3	8260B	µg/kg	5	U	5	U	--
VOC	Isopropylbenzene	98-82-8	8260B	µg/kg	5	U	5	U	--
VOC	m,p-Xylene	179601-23-1	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Iodide	74-88-4	8260B	µg/kg	5	U	5	U	--
VOC	Methyl Tert-Butyl Ether	1634-04-4	8260B	µg/kg	5	U	5	U	--
VOC	Methylene Chloride	75-09-2	8260B	µg/kg	5	U	5	U	--
VOC	n-Butylbenzene	104-51-8	8260B	µg/kg	5	U	5	U	--
VOC	n-Propylbenzene	103-65-1	8260B	µg/kg	5	U	5	U	--
VOC	o-Xylene	95-47-6	8260B	µg/kg	5	U	5	U	--
VOC	Styrene	100-42-5	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butyl ethyl ether	637-92-3	8260B	µg/kg	5	U	5	U	--
VOC	tert-Butylbenzene	98-06-6	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary amyl methyl ether	994-05-8	8260B	µg/kg	5	U	5	U	--
VOC	Tertiary butyl alcohol	75-65-0	8260B	µg/kg	55	U	54	U	--
VOC	Tetrachloroethene	127-18-4	8260B	µg/kg	5	U	5	U	--
VOC	Toluene	108-88-3	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,2-Dichloroethene	156-60-5	8260B	µg/kg	5	U	5	U	--
VOC	trans-1,3-Dichloropropene	10061-02-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichloroethene	79-01-6	8260B	µg/kg	5	U	5	U	--
VOC	Trichlorofluoromethane	75-69-4	8260B	µg/kg	5	U	5	U	--
VOC	Vinyl Acetate	108-05-4	8260B	µg/kg	11	U	11	U	--
VOC	Vinyl Chloride	75-01-4	8260B	µg/kg	5	U	5	U	--

ug/kg - microgram per kilogram
mg/kg - milligram per kilogram
ng/g - nanogram per kilogram
FD - field duplicate sample
N - normal sample
RPD - relative percent difference
SO - soil
-- - RPD not caluculated when both field duplicate and normal samples are nondetect or only one sample result is reported
200* - When one result is nondetect a 200% RPD is given and sample results are qualified as estimated "J" or "UJ" in the field duplicate samples only
Limit - 50% - If RPD is above 50% detected field duplicate results only were estimated "J"

Table C-8
Go-Backs, Trenches and Soil Vapor Locations – Summary of Data Completeness Following Data Validation

	Number of Analyte Detections Without Qualifiers	Number of Estimated Results	Number of Rejected Results	Number of Nondetect Results	Number of Estimated Nondetect Results	Total Analytes Detect and Nondetect	Percent of Analyte Results Judged Valid Versus Total Analyte Results Collected
Dioxins – 1613B	145	587	--	917	34	1,683	100
Metals - 6010C	1,840	828	--	437	93	3,198	100
Metals – 6020A	212	229	--	48	3	492	100
Perchlorate - 6850	--	--	--	27	--	27	100
Hexavalent Chromium – 7199	1	5	--	6	--	12	100
Mercury – 7471B	43	35	--	45	--	123	100
Glycols and Terphenyls – 8015B	--	2	--	48	2	52	100
Glycols – 8015C	--	--	1	16	15	32	96.87
TPH-EFH/GRO – 8015M	209	165	--	837	345	1,556	100
Pesticides – 8081B	5	31	--	577	17	630	100
PCB/PCTs – 8082A	15	31	--	1,513	1	1,560	100
Herbicides – 8151A	2	3	15	120	--	140	89.29
VOCs – 8260B	1	3	--	5,221	11	5,236	100
VOC SIM – 8260B SIM	--	--	--	--	1	1	100
SVOC – 8270D	--	19	1	577	22	619	99.83
SVOC SIM – 8270D SIM	333	420	--	2.370	64	3,187	100
Formaldehyde – 8315A	--	--	--	6	--	6	100
Energetics – 8330A	--	--	--	208	8	216	100
Completeness Total for Phase 3 Go-Backs, Trenches and Soil Vapor Location Samples Collected and Judged Valid							**99.90**

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

March 27, 2014

SUBJECT: Santa Susana Field Laboratory, Subrea Study Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on February 27, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 31413:

SDG #	Fraction
PH158, PH159	Semivolatile Organic Compunds, Polychlorinated Biphenyls, Metals, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Perchlorate

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, CLPNFG, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

2,113 pages-CD

Attachment 1

90/10 ADR/IV

LDC #31413 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Go Backs)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D -SIM)		PCBs (8082A)		Metals & Hg (SW846)		TPH-G (8015B)		TPH-E (8015B)		Dioxins (1613B)		CLO_4 (6850)																					
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH158	02/27/14	03/27/14	0	6	0	6	0	6	1	4	0	6	0	6	-	-																		
B	PH159	02/27/14	03/27/14	1	8	1	8	1	8	2	6	1	8	1	8	1	0																		
Total	T/SM			1	14	1	14	1	14	3	10	1	14	1	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs

SDG: PH158

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

March 26, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on January 13, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015B Modified
TPH as Extractables by EPA SW 846 Method 8015B Modified
Polychlorinated Dioxins/Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. Level IV DVRs are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, field blanks, field duplicate samples, and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the initial and continuing calibrations, ICB/CCBs, interference check samples, internal standards (except dioxins/dibenzofurans), and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for metals and dioxins/dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the exception of several metals. The associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks, therefore no data were qualified. The details are presented in Enclosure II.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one duplicate pair for calcium. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosures I and II.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the exception of several metals. The details regarding the qualification of data are provided in Enclosure II.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag
All samples in SDG PH158	All compounds reported as detected below the RL.	J (all detects)

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, TPH as extractables, TPH as gasoline, and dioxins/dibenzofurans. All RPDs were within QC limits with the exception of SVOCs, PCBs, metals, and dioxins/dibenzofurans. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosures I and II.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No volatile contaminants were found in the trip blank.

One equipment blank (from SDG PH159) was collected and analyzed for SVOCs, PCBs, metals, TPH as extractables, TPH as gasoline, and dioxins/dibenzofurans. The equipment blank had detections for SVOCs, metals and dioxins/dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment

blanks, therefore no data were qualified. The details are provided in Enclosure II.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, PCBs, metals, TPH as extractables, TPH as gasoline, and dioxins/dibenzofurans. The field blank had detections for SVOCs, metals and dioxins/dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Jan-2014	TB-011314	7335024	TB	5030B	8015M	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	3050B	6010C	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	3050B	6020A	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	3546	8015M	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	3546	8082A	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	3546	8270D SIM	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	METHOD	1613B	IV
13-Jan-2014	SL-840-SA5B-SB-0.0-0.5	7335015	N	METHOD	7471B	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	3050B	6010C	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	3050B	6020A	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	3546	8015M	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	3546	8082A	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	3546	8270D SIM	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	5035A	8015M	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	METHOD	1613B	IV
13-Jan-2014	SL-840-SA5B-SB-4.0-5.0	7335016	N	METHOD	7471B	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	3050B	6010C	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	3050B	6020A	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	3546	8015M	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	3546	8082A	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	3546	8270D SIM	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	5035A	8015M	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	METHOD	1613B	IV
13-Jan-2014	SL-840-SA5B-SB-7.0-8.0	7335017	N	METHOD	7471B	IV
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	3050B	6010C	IV
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	3050B	6020A	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	3546	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	3546	8082A	IV
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	3546	8270D SIM	IV
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	METHOD	1613B	IV
13-Jan-2014	SL-838-SA5B-SB-0.0-0.5	7335018	N	METHOD	7471B	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	3050B	6010C	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	3050B	6020A	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	3546	8015M	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	3546	8082A	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	3546	8270D SIM	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	5035A	8015M	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	METHOD	1613B	IV
13-Jan-2014	SL-1138-SA5B-SB-4.0-5.0	7335023	FD	METHOD	7471B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	3050B	6010C	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	3050B	6020A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	3546	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	3546	8082A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	3546	8270D SIM	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	5035A	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	METHOD	1613B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0	7335019	N	METHOD	7471B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	3050B	6010C	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	3050B	6020A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	3546	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	3546	8082A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	3546	8270D SIM	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	5035A	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	METHOD	1613B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MS	7335020	MS	METHOD	7471B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	3050B	6010C	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	3050B	6020A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	3546	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	3546	8082A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	3546	8270D SIM	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	5035A	8015M	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	METHOD	1613B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0MSD	7335021	MSD	METHOD	7471B	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0DUP	7335022	DUP	3050B	6010C	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0DUP	7335022	DUP	3050B	6020A	IV
13-Jan-2014	SL-838-SA5B-SB-4.0-5.0DUP	7335022	DUP	METHOD	7471B	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-1138-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 1:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	17500		7.95	MDL	44.1	PQL	mg/Kg	J	A
ANTIMONY	4.41	U	0.816	MDL	4.41	PQL	mg/Kg	UJ	Q
ARSENIC	4.29	J	0.772	MDL	4.41	PQL	mg/Kg	J	Z
BARIUM	106		0.0364	MDL	1.10	PQL	mg/Kg	J	A
BERYLLIUM	0.664	J	0.0739	MDL	1.10	PQL	mg/Kg	J	Z
BORON	0.989	J	0.926	MDL	11.0	PQL	mg/Kg	J	Z
CALCIUM	2460		3.68	MDL	22.1	PQL	mg/Kg	J	E, FD, A
IRON	19800		3.99	MDL	44.1	PQL	mg/Kg	J	A
LITHIUM	19.4		0.37	MDL	4.4	PQL	mg/Kg	J	A
MAGNESIUM	3770		1.84	MDL	11.0	PQL	mg/Kg	J	A
MANGANESE	277		0.0915	MDL	1.10	PQL	mg/Kg	J	A
MOLYBDENUM	0.217	J	0.187	MDL	2.21	PQL	mg/Kg	UJ	FD, F
NICKEL	10.8		0.143	MDL	2.21	PQL	mg/Kg	J	A
PHOSPHORUS	149		3.19	MDL	11.0	PQL	mg/Kg	J	Q, A
POTASSIUM	1660		9.20	MDL	110	PQL	mg/Kg	J	A
SODIUM	96.2	J	18.4	MDL	110	PQL	mg/Kg	J	Z
TIN	3.09	J	0.243	MDL	11.0	PQL	mg/Kg	U	B
TITANIUM	1100		0.187	MDL	1.10	PQL	mg/Kg	J	A
VANADIUM	36.7		0.143	MDL	1.10	PQL	mg/Kg	J	A
ZINC	43.8		0.221	MDL	4.41	PQL	mg/Kg	J	A
Zirconium	1.39	J	0.926	MDL	5.51	PQL	mg/Kg	J	Z
CHROMIUM	18.5		0.176	MDL	3.31	PQL	mg/Kg	J	A

Sample ID: **SL-838-SA5B-SB-0.0-0.5** ***Collected:*** **1/13/2014 1:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14000		7.49	MDL	41.5	PQL	mg/Kg	J	A
ANTIMONY	4.15	U	0.769	MDL	4.15	PQL	mg/Kg	UJ	Q
BARIUM	89.8		0.0343	MDL	1.04	PQL	mg/Kg	J	A
BERYLLIUM	0.534	J	0.0696	MDL	1.04	PQL	mg/Kg	J	Z
CALCIUM	4010		3.47	MDL	20.8	PQL	mg/Kg	J	E, A
CHROMIUM	20.0		0.166	MDL	3.12	PQL	mg/Kg	J	A
IRON	21300		3.76	MDL	41.5	PQL	mg/Kg	J	A
LITHIUM	25.3		0.35	MDL	4.2	PQL	mg/Kg	J	A

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-838-SA5B-SB-0.0-0.5 **Collected: 1/13/2014 1:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	4910		1.73	MDL	10.4	PQL	mg/Kg	J	A
MANGANESE	324		0.0862	MDL	1.04	PQL	mg/Kg	J	A
MOLYBDENUM	0.255	J	0.177	MDL	2.08	PQL	mg/Kg	U	F
NICKEL	12.2		0.135	MDL	2.08	PQL	mg/Kg	J	A
PHOSPHORUS	442		3.00	MDL	10.4	PQL	mg/Kg	J	Q, A
POTASSIUM	2830		8.66	MDL	104	PQL	mg/Kg	J	A
TIN	2.87	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
TITANIUM	1170		0.177	MDL	1.04	PQL	mg/Kg	J	A
VANADIUM	38.9		0.135	MDL	1.04	PQL	mg/Kg	J	A
ZINC	55.8		0.208	MDL	4.15	PQL	mg/Kg	J	A
Zirconium	0.890	J	0.872	MDL	5.19	PQL	mg/Kg	J	Z

Sample ID: SL-838-SA5B-SB-4.0-5.0 **Collected: 1/13/2014 2:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	16400		7.91	MDL	43.9	PQL	mg/Kg	J	A
ANTIMONY	4.39	U	0.812	MDL	4.39	PQL	mg/Kg	UJ	Q
BARIUM	108		0.0362	MDL	1.10	PQL	mg/Kg	J	A
BERYLLIUM	0.610	J	0.0735	MDL	1.10	PQL	mg/Kg	J	Z
BORON	1.17	J	0.922	MDL	11.0	PQL	mg/Kg	J	Z
CALCIUM	4330		3.67	MDL	22.0	PQL	mg/Kg	J	E, FD, A
CHROMIUM	19.3		0.176	MDL	3.29	PQL	mg/Kg	J	A
IRON	20300		3.97	MDL	43.9	PQL	mg/Kg	J	A
LITHIUM	21.4		0.37	MDL	4.4	PQL	mg/Kg	J	A
MAGNESIUM	4070		1.83	MDL	11.0	PQL	mg/Kg	J	A
MANGANESE	271		0.0911	MDL	1.10	PQL	mg/Kg	J	A
MOLYBDENUM	0.660	J	0.187	MDL	2.20	PQL	mg/Kg	UJ	FD, F
NICKEL	10.8		0.143	MDL	2.20	PQL	mg/Kg	J	A
PHOSPHORUS	227		3.17	MDL	11.0	PQL	mg/Kg	J	Q, A
POTASSIUM	2330		9.15	MDL	110	PQL	mg/Kg	J	A
TIN	2.98	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
TITANIUM	1150		0.187	MDL	1.10	PQL	mg/Kg	J	A
VANADIUM	37.5		0.143	MDL	1.10	PQL	mg/Kg	J	A
ZINC	47.0		0.220	MDL	4.39	PQL	mg/Kg	J	A

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-838-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 2:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	1.89	J	0.922	MDL	5.49	PQL	mg/Kg	J	Z

Sample ID: **SL-840-SA5B-SB-0.0-0.5** ***Collected:*** **1/13/2014 10:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	14600		7.62	MDL	42.3	PQL	mg/Kg	J	A
ANTIMONY	4.23	U	0.782	MDL	4.23	PQL	mg/Kg	UJ	Q
BARIUM	99.7		0.0349	MDL	1.06	PQL	mg/Kg	J	A
BERYLLIUM	0.588	J	0.0708	MDL	1.06	PQL	mg/Kg	J	Z
BORON	1.51	J	0.888	MDL	10.6	PQL	mg/Kg	J	Z
CALCIUM	2170		3.53	MDL	21.1	PQL	mg/Kg	J	E, A
CHROMIUM	17.2		0.169	MDL	3.17	PQL	mg/Kg	J	A
IRON	18200		3.83	MDL	42.3	PQL	mg/Kg	J	A
LITHIUM	17.8		0.36	MDL	4.2	PQL	mg/Kg	J	A
MAGNESIUM	3430		1.76	MDL	10.6	PQL	mg/Kg	J	A
MANGANESE	304		0.0877	MDL	1.06	PQL	mg/Kg	J	A
MOLYBDENUM	0.592	J	0.180	MDL	2.11	PQL	mg/Kg	U	F
NICKEL	11.2		0.137	MDL	2.11	PQL	mg/Kg	J	A
PHOSPHORUS	259		3.05	MDL	10.6	PQL	mg/Kg	J	Q, A
POTASSIUM	2620		8.81	MDL	106	PQL	mg/Kg	J	A
TIN	2.68	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
TITANIUM	1020		0.180	MDL	1.06	PQL	mg/Kg	J	A
VANADIUM	31.9		0.137	MDL	1.06	PQL	mg/Kg	J	A
ZINC	60.1		0.211	MDL	4.23	PQL	mg/Kg	J	A
Zirconium	2.07	J	0.888	MDL	5.28	PQL	mg/Kg	J	Z

Sample ID: **SL-840-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	17800		7.90	MDL	43.8	PQL	mg/Kg	J	A
ANTIMONY	4.38	U	0.810	MDL	4.38	PQL	mg/Kg	UJ	Q
BARIUM	117		0.0361	MDL	1.10	PQL	mg/Kg	J	A
BERYLLIUM	0.671	J	0.0734	MDL	1.10	PQL	mg/Kg	J	Z
BORON	0.927	J	0.920	MDL	11.0	PQL	mg/Kg	J	Z
CALCIUM	2900		3.66	MDL	21.9	PQL	mg/Kg	J	E, A

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-840-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	21.2		0.175	MDL	3.29	PQL	mg/Kg	J	A
IRON	21100		3.96	MDL	43.8	PQL	mg/Kg	J	A
LITHIUM	22.5		0.37	MDL	4.4	PQL	mg/Kg	J	A
MAGNESIUM	4000		1.83	MDL	11.0	PQL	mg/Kg	J	A
MANGANESE	206		0.0909	MDL	1.10	PQL	mg/Kg	J	A
MOLYBDENUM	0.571	J	0.186	MDL	2.19	PQL	mg/Kg	U	F
NICKEL	11.3		0.142	MDL	2.19	PQL	mg/Kg	J	A
PHOSPHORUS	142		3.17	MDL	11.0	PQL	mg/Kg	J	Q, A
POTASSIUM	1760		9.13	MDL	110	PQL	mg/Kg	J	A
SODIUM	78.5	J	18.3	MDL	110	PQL	mg/Kg	J	Z
TIN	2.69	J	0.241	MDL	11.0	PQL	mg/Kg	U	B
TITANIUM	1150		0.186	MDL	1.10	PQL	mg/Kg	J	A
VANADIUM	39.8		0.142	MDL	1.10	PQL	mg/Kg	J	A
ZINC	46.3		0.219	MDL	4.38	PQL	mg/Kg	J	A
Zirconium	1.87	J	0.920	MDL	5.48	PQL	mg/Kg	J	Z

Sample ID: **SL-840-SA5B-SB-7.0-8.0** ***Collected:*** **1/13/2014 10:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	16300		8.14	MDL	45.2	PQL	mg/Kg	J	A
ANTIMONY	4.52	U	0.836	MDL	4.52	PQL	mg/Kg	UJ	Q
BARIUM	98.3		0.0373	MDL	1.13	PQL	mg/Kg	J	A
BERYLLIUM	0.697	J	0.0757	MDL	1.13	PQL	mg/Kg	J	Z
CALCIUM	4570		3.77	MDL	22.6	PQL	mg/Kg	J	E, A
CHROMIUM	24.6		0.181	MDL	3.39	PQL	mg/Kg	J	A
IRON	27600		4.09	MDL	45.2	PQL	mg/Kg	J	A
LITHIUM	31.0		0.38	MDL	4.5	PQL	mg/Kg	J	A
MAGNESIUM	5880		1.89	MDL	11.3	PQL	mg/Kg	J	A
MANGANESE	257		0.0937	MDL	1.13	PQL	mg/Kg	J	A
MOLYBDENUM	0.322	J	0.192	MDL	2.26	PQL	mg/Kg	U	F
NICKEL	14.2		0.147	MDL	2.26	PQL	mg/Kg	J	A
PHOSPHORUS	499		3.26	MDL	11.3	PQL	mg/Kg	J	Q, A
POTASSIUM	1820		9.42	MDL	113	PQL	mg/Kg	J	A
SODIUM	72.8	J	18.9	MDL	113	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-840-SA5B-SB-7.0-8.0** *Collected:* **1/13/2014 10:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TIN	3.16	J	0.248	MDL	11.3	PQL	mg/Kg	U	B
TITANIUM	1300		0.192	MDL	1.13	PQL	mg/Kg	J	A
VANADIUM	49.3		0.147	MDL	1.13	PQL	mg/Kg	J	A
ZINC	65.0		0.226	MDL	4.52	PQL	mg/Kg	J	A
Zirconium	1.04	J	0.949	MDL	5.65	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-1138-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 1:40:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.148	J	0.110	MDL	0.441	PQL	mg/Kg	J	Z

Sample ID: **SL-1138-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 1:40:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0540	J	0.0287	MDL	0.221	PQL	mg/Kg	J	Z

Sample ID: **SL-838-SA5B-SB-0.0-0.5** *Collected:* **1/13/2014 1:30:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.145	J	0.104	MDL	0.415	PQL	mg/Kg	J	Z

Sample ID: **SL-838-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 2:10:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.141	J	0.110	MDL	0.439	PQL	mg/Kg	J	Z

Sample ID: **SL-838-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 2:10:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0415	J	0.0285	MDL	0.220	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-840-SA5B-SB-0.0-0.5 **Collected: 1/13/2014 10:00:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.161	J	0.106	MDL	0.423	PQL	mg/Kg	J	Z

Sample ID: SL-840-SA5B-SB-0.0-0.5 **Collected: 1/13/2014 10:00:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0423	J	0.0275	MDL	0.211	PQL	mg/Kg	J	Z

Sample ID: SL-840-SA5B-SB-4.0-5.0 **Collected: 1/13/2014 10:40:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.123	J	0.110	MDL	0.438	PQL	mg/Kg	J	Z

Sample ID: SL-840-SA5B-SB-4.0-5.0 **Collected: 1/13/2014 10:40:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0545	J	0.0285	MDL	0.219	PQL	mg/Kg	J	Z

Sample ID: SL-840-SA5B-SB-7.0-8.0 **Collected: 1/13/2014 10:45:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.157	J	0.113	MDL	0.452	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-1138-SA5B-SB-4.0-5.0 **Collected: 1/13/2014 1:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.649	JBQ	0.0442	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.190	JBQ	0.0180	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.166	JBQ	0.0260	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.142	JBQ	0.0358	MDL	5.40	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.169	JB	0.0288	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.125	JBQ	0.0386	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.151	JBQ	0.0274	MDL	5.40	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-1138-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 1:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDD	0.207	JBQ	0.0376	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.174	JB	0.0313	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.314	JQ	0.0506	MDL	5.40	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.272	JBQ	0.0340	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.131	JBQ	0.0283	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.206	JB	0.0309	MDL	5.40	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.173	JB	0.0860	MDL	1.08	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	1.08	U	0.0637	MDL	1.08	PQL	ng/Kg	UJ	FD
OCDF	0.518	JBQ	0.0537	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: **SL-838-SA5B-SB-0.0-0.5** ***Collected:*** **1/13/2014 1:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.430	JB	0.0376	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.142	JB	0.0134	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0764	JB	0.0181	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0413	JBQ	0.0355	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0916	JB	0.0271	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.230	JBQ	0.0370	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.118	JB	0.0263	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.253	JB	0.0333	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.138	JBQ	0.0295	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.189	J	0.0489	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.157	JB	0.0284	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0979	JB	0.0267	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0885	JBQ	0.0264	MDL	5.06	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.131	JQ	0.0762	MDL	1.01	PQL	ng/Kg	J	Z
OCDD	4.59	JB	0.0282	MDL	10.1	PQL	ng/Kg	J	Z
OCDF	0.382	JBQ	0.0417	MDL	10.1	PQL	ng/Kg	U	B

Sample ID: **SL-838-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 2:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.807	JBQ	0.0338	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.212	JB	0.0143	MDL	5.28	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-838-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 2:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.109	JBQ	0.0196	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0389	JBQ	0.0291	MDL	5.28	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.183	JB	0.0292	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.188	JB	0.0304	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.122	JBQ	0.0278	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.250	JBQ	0.0287	MDL	5.28	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.193	JBQ	0.0304	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.184	J	0.0436	MDL	5.28	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.206	JB	0.0229	MDL	5.28	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0918	JBQ	0.0272	MDL	5.28	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.198	JBQ	0.0214	MDL	5.28	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0707	JBQ	0.0650	MDL	1.06	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	0.0752	JQ	0.0491	MDL	1.06	PQL	ng/Kg	J	Z, FD
OCDD	9.67	JB	0.0230	MDL	10.6	PQL	ng/Kg	J	Z
OCDF	0.438	JB	0.0449	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: **SL-840-SA5B-SB-0.0-0.5** ***Collected:*** **1/13/2014 10:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.84	JB	0.0374	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.537	JB	0.0156	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0569	JBQ	0.0197	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0638	JBQ	0.0319	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0733	JB	0.0238	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.321	JBQ	0.0334	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0938	JB	0.0230	MDL	5.17	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.391	JB	0.0324	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.293	JB	0.0247	MDL	5.17	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.0435	JQ	0.0331	MDL	5.17	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0809	JBQ	0.0237	MDL	5.17	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0637	JBQ	0.0209	MDL	5.17	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0530	JBQ	0.0518	MDL	1.03	PQL	ng/Kg	U	B
OCDF	1.40	JB	0.0330	MDL	10.3	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-840-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.578	JBQ	0.0433	MDL	5.41	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.115	JB	0.0154	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0519	JBQ	0.0209	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0589	JBQ	0.0213	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0623	JB	0.0275	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0528	JBQ	0.0200	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.113	JBQ	0.0249	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.134	JBQ	0.0224	MDL	5.41	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0694	JBQ	0.0246	MDL	5.41	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0212	JBQ	0.0210	MDL	5.41	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0375	JBQ	0.0237	MDL	5.41	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0790	JBQ	0.0722	MDL	1.08	PQL	ng/Kg	U	B
OCDD	4.65	JB	0.0258	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.301	JB	0.0441	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: **SL-840-SA5B-SB-7.0-8.0** ***Collected:*** **1/13/2014 10:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.285	JB	0.0333	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0857	JBQ	0.0124	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0633	JBQ	0.0158	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0392	JBQ	0.0210	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0671	JBQ	0.0287	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0507	JBQ	0.0204	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0327	JB	0.0268	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0556	JB	0.0208	MDL	5.66	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0439	JBQ	0.0262	MDL	5.66	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0443	JBQ	0.0195	MDL	5.66	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0265	JB	0.0231	MDL	5.66	PQL	ng/Kg	U	B
OCDD	1.77	JB	0.0287	MDL	11.3	PQL	ng/Kg	J	Z
OCDF	0.177	JBQ	0.0429	MDL	11.3	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: **SL-1138-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 1:40:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	7.9	J	3.6	MDL	18	PQL	ug/Kg	J	Z, FD

Sample ID: **SL-838-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 2:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	18	U	3.6	MDL	18	PQL	ug/Kg	UJ	FD

Sample ID: **SL-840-SA5B-SB-0.0-0.5** *Collected:* **1/13/2014 10:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	12	J	3.5	MDL	18	PQL	ug/Kg	J	Z
AROCLOR 1254	8.4	J	4.6	MDL	18	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-1138-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 1:40:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	1.8	U	0.36	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(A)ANTHRACENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(A)PYRENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(B)FLUORANTHENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(G,H,I)PERYLENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(K)FLUORANTHENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
CHRYSENE	1.8	U	0.36	MDL	1.8	PQL	ug/Kg	UJ	FD
FLUORANTHENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
INDENO(1,2,3-CD)PYRENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
PHENANTHRENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
PYRENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD

Sample ID: **SL-838-SA5B-SB-4.0-5.0** *Collected:* **1/13/2014 2:10:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.49	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-838-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 2:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	3.5		0.72	MDL	1.8	PQL	ug/Kg	J	FD
BENZO(A)PYRENE	3.5		0.72	MDL	1.8	PQL	ug/Kg	J	FD
BENZO(B)FLUORANTHENE	5.7		0.72	MDL	1.8	PQL	ug/Kg	J	FD
BENZO(G,H,I)PERYLENE	1.9		0.72	MDL	1.8	PQL	ug/Kg	J	FD
BENZO(K)FLUORANTHENE	2.2		0.72	MDL	1.8	PQL	ug/Kg	J	FD
CHRYSENE	5.0		0.36	MDL	1.8	PQL	ug/Kg	J	FD
FLUORANTHENE	3.7		0.72	MDL	1.8	PQL	ug/Kg	J	FD
INDENO(1,2,3-CD)PYRENE	1.8	J	0.72	MDL	1.8	PQL	ug/Kg	J	FD
PHENANTHRENE	1.4	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, FD
PYRENE	4.7		0.72	MDL	1.8	PQL	ug/Kg	J	FD

Sample ID: **SL-840-SA5B-SB-0.0-0.5** ***Collected:*** **1/13/2014 10:00:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.75	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.83	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.3	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.95	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.0	J	6.3	MDL	19	PQL	ug/Kg	J	Z
PHENANTHRENE	1.4	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-840-SA5B-SB-4.0-5.0** ***Collected:*** **1/13/2014 10:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	0.58	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.93	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.99	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH158

Method Blank Outlier Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK0170B371419	1/20/2014 2:19:00 PM	1,2,3,4,6,7,8-HPCDD	0.104 ng/Kg	SL-1138-SA5B-SB-4.0-5.0
		1,2,3,4,6,7,8-HPCDF	0.0794 ng/Kg	SL-838-SA5B-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0738 ng/Kg	SL-838-SA5B-SB-4.0-5.0
		1,2,3,4,7,8-HxCDD	0.0344 ng/Kg	SL-840-SA5B-SB-0.0-0.5
		1,2,3,4,7,8-HXCDF	0.0591 ng/Kg	SL-840-SA5B-SB-4.0-5.0
		1,2,3,6,7,8-HXCDD	0.0345 ng/Kg	SL-840-SA5B-SB-7.0-8.0
		1,2,3,6,7,8-HXCDF	0.0455 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0671 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0371 ng/Kg	
		1,2,3,7,8-PECDF	0.0576 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0389 ng/Kg	
		2,3,4,7,8-PECDF	0.0516 ng/Kg	
		2,3,7,8-TCDD	0.126 ng/Kg	
		OCDD	0.219 ng/Kg	
		OCDF	0.191 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.190 ng/Kg	0.190U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.166 ng/Kg	0.166U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.142 ng/Kg	0.142U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.169 ng/Kg	0.169U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.125 ng/Kg	0.125U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.151 ng/Kg	0.151U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.207 ng/Kg	0.207U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.174 ng/Kg	0.174U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.272 ng/Kg	0.272U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.131 ng/Kg	0.131U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.206 ng/Kg	0.206U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.173 ng/Kg	0.173U ng/Kg
SL-1138-SA5B-SB-4.0-5.0(RES)	OCDF	0.518 ng/Kg	0.518U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.430 ng/Kg	0.430U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.142 ng/Kg	0.142U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0764 ng/Kg	0.0764U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0413 ng/Kg	0.0413U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0916 ng/Kg	0.0916U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.118 ng/Kg	0.118U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDD	0.253 ng/Kg	0.253U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.138 ng/Kg	0.138U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.157 ng/Kg	0.157U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0979 ng/Kg	0.0979U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0885 ng/Kg	0.0885U ng/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	OCDF	0.382 ng/Kg	0.382U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.212 ng/Kg	0.212U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.109 ng/Kg	0.109U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0389 ng/Kg	0.0389U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.183 ng/Kg	0.183U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Method Blank Outlier Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.122 ng/Kg	0.122U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.250 ng/Kg	0.250U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.206 ng/Kg	0.206U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0918 ng/Kg	0.0918U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.198 ng/Kg	0.198U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0707 ng/Kg	0.0707U ng/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	OCDF	0.438 ng/Kg	0.438U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0569 ng/Kg	0.0569U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0638 ng/Kg	0.0638U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0733 ng/Kg	0.0733U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0938 ng/Kg	0.0938U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0809 ng/Kg	0.0809U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.0637 ng/Kg	0.0637U ng/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.0530 ng/Kg	0.0530U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.115 ng/Kg	0.115U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0519 ng/Kg	0.0519U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0589 ng/Kg	0.0589U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0623 ng/Kg	0.0623U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0528 ng/Kg	0.0528U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDD	0.113 ng/Kg	0.113U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.134 ng/Kg	0.134U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.0694 ng/Kg	0.0694U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0212 ng/Kg	0.0212U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0375 ng/Kg	0.0375U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	2,3,7,8-TCDD	0.0790 ng/Kg	0.0790U ng/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	OCDF	0.301 ng/Kg	0.301U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,4,6,7,8-HPCDD	0.285 ng/Kg	0.285U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0857 ng/Kg	0.0857U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0633 ng/Kg	0.0633U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,4,7,8-HXCDF	0.0392 ng/Kg	0.0392U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,6,7,8-HXCDD	0.0671 ng/Kg	0.0671U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,6,7,8-HXCDF	0.0507 ng/Kg	0.0507U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,7,8,9-HXCDD	0.0327 ng/Kg	0.0327U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,7,8,9-HXCDF	0.0556 ng/Kg	0.0556U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	1,2,3,7,8-PECDF	0.0439 ng/Kg	0.0439U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	2,3,4,6,7,8-HXCDF	0.0443 ng/Kg	0.0443U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	2,3,4,7,8-PECDF	0.0265 ng/Kg	0.0265U ng/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	OCDF	0.177 ng/Kg	0.177U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P01437AB220653	1/15/2014 6:53:00 AM	CALCIUM	4.67 mg/Kg	SL-1138-SA5B-SB-4.0-5.0
		MAGNESIUM	4.40 mg/Kg	SL-838-SA5B-SB-0.0-0.5
		TIN	1.59 mg/Kg	SL-838-SA5B-SB-4.0-5.0
		ZINC	0.462 mg/Kg	SL-840-SA5B-SB-0.0-0.5
				SL-840-SA5B-SB-4.0-5.0
				SL-840-SA5B-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1138-SA5B-SB-4.0-5.0(RES)	TIN	3.09 mg/Kg	3.09U mg/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	TIN	2.87 mg/Kg	2.87U mg/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	TIN	2.98 mg/Kg	2.98U mg/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	TIN	2.68 mg/Kg	2.68U mg/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	TIN	2.69 mg/Kg	2.69U mg/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	TIN	3.16 mg/Kg	3.16U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-1138-SA5B-SB-4.0-5.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1138-SA5B-SB-4.0-5.0(RES)	MOLYBDENUM	0.217 mg/Kg	0.217U mg/Kg
SL-838-SA5B-SB-0.0-0.5(RES)	MOLYBDENUM	0.255 mg/Kg	0.255U mg/Kg
SL-838-SA5B-SB-4.0-5.0(RES)	MOLYBDENUM	0.660 mg/Kg	0.660U mg/Kg
SL-840-SA5B-SB-0.0-0.5(RES)	MOLYBDENUM	0.592 mg/Kg	0.592U mg/Kg
SL-840-SA5B-SB-4.0-5.0(RES)	MOLYBDENUM	0.571 mg/Kg	0.571U mg/Kg
SL-840-SA5B-SB-7.0-8.0(RES)	MOLYBDENUM	0.322 mg/Kg	0.322U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **6010C**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-838-SA5B-SB-4.0-5.0MS (TOT) **SL-838-SA5B-SB-4.0-5.0MSD (TOT)** (SL-1138-SA5B-SB-4.0-5.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0)	ALUMINUM CALCIUM MAGNESIUM MANGANESE PHOSPHORUS TITANIUM	1606 223 180 135 128 266	1545 - 142 - - 264	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - - -	ALUMINUM CALCIUM MAGNESIUM MANGANESE PHOSPHORUS TITANIUM	J (all detects) Al, Ca, Mg, Mn, Ti, No Qual, >4x
SL-838-SA5B-SB-4.0-5.0MS (TOT) **SL-838-SA5B-SB-4.0-5.0MSD (TOT)** (SL-1138-SA5B-SB-4.0-5.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0)	IRON	51	-112	75.00-125.00	-	IRON	No Qual, >4x
SL-838-SA5B-SB-4.0-5.0MS (TOT) **SL-838-SA5B-SB-4.0-5.0MSD (TOT)** (SL-1138-SA5B-SB-4.0-5.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0)	ANTIMONY	70	72	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-838-SA5B-SB-4.0-5.0DUP (TOT) (SL-1138-SA5B-SB-4.0-5.0 SL -838-SA5B-SB-0.0-0.5 SL -838-SA5B-SB-4.0-5.0 SL -840-SA5B-SB-0.0-0.5 SL -840-SA5B-SB-4.0-5.0 SL -840-SA5B-SB-7.0-8.0)	CALCIUM	78	20.00	
	MOLYBDENUM	46	20.00	J (all detects)
	Zirconium	51	20.00	UJ (all non-detects)
				Mo, Zr, No Qual, OK by Difference

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
MOISTURE	8.9	9.3	4		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
1,2,3,4,6,7,8-HPCDD	0.807	0.649	22	50.00	
1,2,3,4,6,7,8-HPCDF	0.212	0.190	11	50.00	
1,2,3,4,7,8,9-HPCDF	0.109	0.166	41	50.00	
1,2,3,4,7,8-HXCDF	0.183	0.169	8	50.00	
1,2,3,6,7,8-HXCDD	0.188	0.125	40	50.00	
1,2,3,6,7,8-HXCDF	0.122	0.151	21	50.00	
1,2,3,7,8,9-HXCDD	0.250	0.207	19	50.00	
1,2,3,7,8,9-HXCDF	0.193	0.174	10	50.00	No Qualifiers Applied
1,2,3,7,8-PECDF	0.206	0.272	28	50.00	
2,3,4,6,7,8-HXCDF	0.0918	0.131	35	50.00	
2,3,4,7,8-PECDF	0.198	0.206	4	50.00	
OCDD	9.67	11.1	14	50.00	
OCDF	0.438	0.518	17	50.00	
1,2,3,4,7,8-HxCDD	0.0389	0.142	114	50.00	
1,2,3,7,8-PECDD	0.184	0.314	52	50.00	J(all detects)
2,3,7,8-TCDD	0.0707	0.173	84	50.00	UJ(all non-detects)
2,3,7,8-TCDF	0.0752	1.08 U	200	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0 (TOT)	SL-1138-SA5B-SB-4.0-5.0 (TOT)			
ALUMINUM	16400	17500	6	50.00	
ARSENIC	5.05	4.29	16	50.00	
BARIUM	108	106	2	50.00	
BERYLLIUM	0.610	0.664	8	50.00	
BORON	1.17	0.989	17	50.00	
CHROMIUM	19.3	18.5	4	50.00	
COBALT	4.50	3.93	14	50.00	
COPPER	9.30	8.18	13	50.00	
IRON	20300	19800	2	50.00	
LEAD	7.81	7.75	1	50.00	
LITHIUM	21.4	19.4	10	50.00	
MAGNESIUM	4070	3770	8	50.00	No Qualifiers Applied
MANGANESE	271	277	2	50.00	
NICKEL	10.8	10.8	0	50.00	
PHOSPHORUS	227	149	41	50.00	
POTASSIUM	2330	1660	34	50.00	
SODIUM	148	96.2	42	50.00	
TIN	2.98	3.09	4	50.00	
TITANIUM	1150	1100	4	50.00	
VANADIUM	37.5	36.7	2	50.00	
ZINC	47.0	43.8	7	50.00	
Zirconium	1.89	1.39	30	50.00	
CALCIUM	4330	2460	55	50.00	J(all detects)
MOLYBDENUM	0.660	0.217	101	50.00	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0 (TOT)	SL-1138-SA5B-SB-4.0-5.0 (TOT)			
SELENIUM	0.141	0.148	5	50.00	No Qualifiers Applied
SILVER	0.0415	0.0540	26	50.00	
STRONTIUM	23.2	22.8	2	50.00	
THALLIUM	0.245	0.237	3	50.00	

Method: 8082A
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
AROCLOR 1248	18 U	7.9	200	50.00	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
ANTHRACENE	0.49	1.8 U	200	50.00	J(all detects) UJ(all non-detects)
BENZO(A)ANTHRACENE	3.5	1.8 U	200	50.00	
BENZO(A)PYRENE	3.5	1.8 U	200	50.00	
BENZO(B)FLUORANTHENE	5.7	1.8 U	200	50.00	
BENZO(G,H,I)PERYLENE	1.9	1.8 U	200	50.00	
BENZO(K)FLUORANTHENE	2.2	1.8 U	200	50.00	
CHRYSENE	5.0	1.8 U	200	50.00	
FLUORANTHENE	3.7	1.8 U	200	50.00	
INDENO(1,2,3-CD)PYRENE	1.8	1.8 U	200	50.00	
PHENANTHRENE	1.4	1.8 U	200	50.00	
PYRENE	4.7	1.8 U	200	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
PH	7.32	7.24	1	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-1138-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.649	5.40	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.190	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.166	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.142	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.169	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.125	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.151	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.207	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.174	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.314	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.272	5.40	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.131	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.206	5.40	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.173	1.08	PQL	ng/Kg	
	OCDF	JBQ	0.518	10.8	PQL	ng/Kg	
SL-838-SA5B-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.430	5.06	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.142	5.06	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0764	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0413	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0916	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.230	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.118	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.253	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.138	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.189	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.157	5.06	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0979	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0885	5.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.131	1.01	PQL	ng/Kg	
	OCDD	JB	4.59	10.1	PQL	ng/Kg	
	OCDF	JBQ	0.382	10.1	PQL	ng/Kg	
SL-838-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.807	5.28	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.212	5.28	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.109	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0389	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.183	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.188	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.122	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.250	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.193	5.28	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.184	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.206	5.28	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0918	5.28	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.198	5.28	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0707	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0752	1.06	PQL	ng/Kg	
	OCDD	JB	9.67	10.6	PQL	ng/Kg	
	OCDF	JB	0.438	10.6	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-840-SA5B-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.84	5.17	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.537	5.17	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0569	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0638	5.17	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0733	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.321	5.17	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0938	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.391	5.17	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.293	5.17	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0435	5.17	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0809	5.17	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0637	5.17	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0530	1.03	PQL	ng/Kg	
	OCDF	JB	1.40	10.3	PQL	ng/Kg	
SL-840-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.578	5.41	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.115	5.41	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0519	5.41	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0589	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0623	5.41	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0528	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.113	5.41	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.134	5.41	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0694	5.41	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0212	5.41	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0375	5.41	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0790	1.08	PQL	ng/Kg	
	OCDD	JB	4.65	10.8	PQL	ng/Kg	
	OCDF	JB	0.301	10.8	PQL	ng/Kg	
SL-840-SA5B-SB-7.0-8.0	1,2,3,4,6,7,8-HPCDD	JB	0.285	5.66	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0857	5.66	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0633	5.66	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0392	5.66	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0671	5.66	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0507	5.66	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0327	5.66	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0556	5.66	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0439	5.66	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0443	5.66	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0265	5.66	PQL	ng/Kg	
	OCDD	JB	1.77	11.3	PQL	ng/Kg	
	OCDF	JBQ	0.177	11.3	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1138-SA5B-SB-4.0-5.0	ARSENIC	J	4.29	4.41	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.664	1.10	PQL	mg/Kg	
	BORON	J	0.989	11.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.217	2.21	PQL	mg/Kg	
	SODIUM	J	96.2	110	PQL	mg/Kg	
	TIN	J	3.09	11.0	PQL	mg/Kg	
	Zirconium	J	1.39	5.51	PQL	mg/Kg	
SL-838-SA5B-SB-0.0-0.5	BERYLLIUM	J	0.534	1.04	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.255	2.08	PQL	mg/Kg	
	TIN	J	2.87	10.4	PQL	mg/Kg	
	Zirconium	J	0.890	5.19	PQL	mg/Kg	
SL-838-SA5B-SB-4.0-5.0	BERYLLIUM	J	0.610	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	1.17	11.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.660	2.20	PQL	mg/Kg	
	TIN	J	2.98	11.0	PQL	mg/Kg	
	Zirconium	J	1.89	5.49	PQL	mg/Kg	
SL-840-SA5B-SB-0.0-0.5	BERYLLIUM	J	0.588	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	1.51	10.6	PQL	mg/Kg	
	MOLYBDENUM	J	0.592	2.11	PQL	mg/Kg	
	TIN	J	2.68	10.6	PQL	mg/Kg	
	Zirconium	J	2.07	5.28	PQL	mg/Kg	
SL-840-SA5B-SB-4.0-5.0	BERYLLIUM	J	0.671	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	0.927	11.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.571	2.19	PQL	mg/Kg	
	SODIUM	J	78.5	110	PQL	mg/Kg	
	TIN	J	2.69	11.0	PQL	mg/Kg	
	Zirconium	J	1.87	5.48	PQL	mg/Kg	
SL-840-SA5B-SB-7.0-8.0	BERYLLIUM	J	0.697	1.13	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.322	2.26	PQL	mg/Kg	
	SODIUM	J	72.8	113	PQL	mg/Kg	
	TIN	J	3.16	11.3	PQL	mg/Kg	
	Zirconium	J	1.04	5.65	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1138-SA5B-SB-4.0-5.0	SELENIUM	J	0.148	0.441	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0540	0.221	PQL	mg/Kg	
SL-838-SA5B-SB-0.0-0.5	SELENIUM	J	0.145	0.415	PQL	mg/Kg	J (all detects)
SL-838-SA5B-SB-4.0-5.0	SELENIUM	J	0.141	0.439	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0415	0.220	PQL	mg/Kg	
SL-840-SA5B-SB-0.0-0.5	SELENIUM	J	0.161	0.423	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0423	0.211	PQL	mg/Kg	
SL-840-SA5B-SB-4.0-5.0	SELENIUM	J	0.123	0.438	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0545	0.219	PQL	mg/Kg	
SL-840-SA5B-SB-7.0-8.0	SELENIUM	J	0.157	0.452	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH158 **Laboratory: LL**

EDD Filename: PH158_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1138-SA5B-SB-4.0-5.0	AROCLOR 1248	J	7.9	18	PQL	ug/Kg	J (all detects)
SL-840-SA5B-SB-0.0-0.5	AROCLOR 1248	J	12	18	PQL	ug/Kg	J (all detects)
	AROCLOR 1254	J	8.4	18	PQL	ug/Kg	

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-838-SA5B-SB-4.0-5.0	ANTHRACENE	J	0.49	1.8	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	1.4	1.8	PQL	ug/Kg	
SL-840-SA5B-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	0.75	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	0.83	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.3	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.95	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.0	19	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.7	PQL	ug/Kg	
SL-840-SA5B-SB-4.0-5.0	CHRYSENE	J	0.58	1.8	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.93	1.8	PQL	ug/Kg	
	PYRENE	J	0.99	1.8	PQL	ug/Kg	

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	January 13, 2014
LDC Report Date:	March 25, 2014
Matrix:	Soil
Parameters:	Semivolatile Organic Compounds
Validation Level:	Level IV
Laboratory:	Eurofins
Sample Delivery Group (SDG):	PH158

Sample Identification

SL-840-SA5B-SB-0.0-0.5
SL-840-SA5B-SB-4.0-5.0
SL-840-SA5B-SB-7.0-8.0
SL-838-SA5B-SB-0.0-0.5
SL-838-SA5B-SB-4.0-5.0
SL-1138-SA5B-SB-4.0-5.0
SL-838-SA5B-SB-4.0-5.0MS
SL-838-SA5B-SB-4.0-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Semivolatile Organic Carbons.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile organic compounds were found in the method blanks.

Sample EB-011414 (from SDG PH159) was identified as an equipment blank. No semivolatile organic compounds were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-01141	1/14/14	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate	0.090 ug/L 0.17 ug/L 0.44 ug/L	All samples in SDG PH158

Sample FB-041613 (from SDG PH032) was identified as a field blank. No semivolatile organic compounds were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041613	4/16/13	2-Methylnaphthalene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate	0.012 ug/L 0.25 ug/L 0.11 ug/L	All samples in SDG PH158

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH158	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SL-838-SA5B-SB-4.0-5.0 and SL-1138-SA5B-SB-4.0-5.0 were identified as field duplicates. No semivolatile organic compounds were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flags	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
Anthracene	0.49	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Benzo(a)anthracene	3.5	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Benzo(a)pyrene	3.5	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Benzo(b)fluoranthene	5.7	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Benzo(g,h,i)perylene	1.9	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Benzo(k)fluoranthene	2.2	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A

Compound	Concentration (ug/Kg)		RPD (Limits)	Flags	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
Chrysene	5.0	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Fluoranthene	3.7	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Indeno(1,2,3-cd)pyrene	1.8	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Phenanthrene	1.4	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Pyrene	4.7	1.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A

Santa Susana Field Laboratory
Semivolatile Organic Compounds - Data Qualification Summary - SDG PH158

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (Z)
PH158	SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Fluoranthene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Semivolatile organic compounds - Laboratory Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatile Organic Compounds - Field Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

LDC #: 31413A2b **VALIDATION COMPLETENESS WORKSHEET** Date: 3/25/14
SDG #: PH158 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ SVOCs (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/13/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|CV| |CW| ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD = 5 + 6

XVII.	Field blanks	SW	EB = EB-011414 (SDG # PH159)
			FB = FB-091613 (SDG # PH032)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: SOIL

1	SL-840-SA5B-SB-0.0-0.5	11		21		31	SBLKLC016-MB
2	SL-840-SA5B-SB-4.0-5.0	12		22		32	
3	SL-840-SA5B-SB-7.0-8.0	13		23		33	
4	SL-838-SA5B-SB-0.0-0.5	14		24		34	
5	SL-838-SA5B-SB-4.0-5.0	15		25		35	
6	SL-1138-SA5B-SB-4.0-5.0	16		26		36	
7	SL-838-SA5B-SB-4.0-5.0MS	17		27		37	
8	SL-838-SA5B-SB-4.0-5.0MSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 31413A26

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: Semivolatiles (EPA SW 846 Method 8270D)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

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VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

PB = FB-041613 (SDG# PH032)

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 4/16/13
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All (ND + 75x)

Compound	Blank ID	Sample Identification								
	FB									
5x/10x										
0.06 W	0.012									
2.5 EEE	0.25									
1.1 XX	0.11									

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 1/14/14
Field blank type: (circle one) Field Blank / Rinsate / ~~Other:~~ EB Associated Samples: All (ND + 75x)

EB = EB-011414 (SDG# PH159)

Compound	Blank ID	Sample Identification								
	EB									
5x/10x										
0.90 EEE	0.090									
1.7 XX	0.17									
4.4 LL	0.44									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC#: 31413A2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BK
2nd Reviewer: SM

METHOD: GC MS SVOCs (EPA SW 846 Method 8270D)

(Y) N NA Were field duplicate pairs identified in this SDG?
(Y) N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		RPD (≤50%)	Qualifications (Parent Only)
	5	6		
VV	0.49	1.8U	200	J/UJ/A (CODE: FD)
CCC	3.5	1.8U	200	J/UJ/A (CODE: FD)
III	3.5	1.8U	200	J/UJ/A (CODE: FD)
GGG	5.7	1.8U	200	J/UJ/A (CODE: FD)
LLL	1.9	1.8U	200	J/UJ/A (CODE: FD)
HHH	2.2	1.8U	200	J/UJ/A (CODE: FD)
DDD	5.0	1.8U	200	J/UJ/A (CODE: FD)
YY	3.7	1.8U	200	J/UJ/A (CODE: FD)
JJJ	1.8	1.8U	200	J/UJ/A (CODE: FD)
UU	1.4	1.8U	200	J/UJ/A (CODE: FD)
ZZ	4.7	1.8U	200	J/UJ/A (CODE: FD)

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VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer BR
2nd Reviewer

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (1 std)	Recalculated RRF (1 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	HP07166	1/2/2014	N-Nitrosodimethylamine (IS1)	0.866	0.866	0.845	0.846	5	5.5
			Naphthalene (IS2)	1.219	1.219	1.225	1.225	6	6
			Fluorene (IS3)	1.571	1.571	1.565	1.565	5	5
			Anthracene (IS4)	1.386	1.386	1.359	1.359	6	6
			Chrysene (IS5)	1.458	1.458	1.425	1.425	2	2
			Benzo(a)pyrene (IS6)	1.364	1.364	1.369	1.369	4	4

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC# 31413A2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	fa0221b	01/21/14	N-Nitrosodimethylamine (IS1)	0.845	0.745	0.745	12	12
			Naphthalene (IS2)	1.225	1.210	1.210	1	1
			Fluorene (IS3)	1.565	1.412	1.412	10	10
			Anthracene (IS4)	1.359	1.360	1.360	0	0
			Chrysene (IS5)	1.425	1.354	1.354	5	5
			Benzo(a)pyrene (IS6)	1.369	1.268	1.268	7	7

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5 Fluoranthene-d10	1.00	0.759 ~~0.745~~ SM	76	76	0
2-Fluorobiphenyl Benzo(a)pyrene-d12		0.745	75	75	0
Terphenyl-d14 1-Methylnaphthalene-d10	↓	0.862	86	86	0
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 31413A2L

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SR

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified belc using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 7/8

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene	32.79		0	34.58	32.35	105	105	99	99	7	7
Pentachlorophenol											
Pyrene	32.79		4.31	35.18	35.43	94	94	95	95	1	0.7

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

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VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for th compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 616LCLS

Compound	Spike Added (µg/kg)		Spike Concentration (µg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	33.33	-	34.71	-	104	104	-	-	-	-
Pentachlorophenol										
Pyrene	33.33	-	34.76	-	104	104	-	-	-	-

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reporte results do not agree within 10.0% of the recalculated results.

LDC #: 31413A26

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?
(Y) N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example: 000 = 1.7

Sample I.D. 1, 000:

Conc. = $\frac{(7264)(1.00)(1000)(\quad)(\quad)}{(105968)(1.425)(30.5)(0.94)(\quad)}$

= 1.677997574 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	January 13, 2014
LDC Report Date:	March 25, 2014
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH158

Sample Identification

SL-840-SA5B-SB-0.0-0.5
SL-840-SA5B-SB-4.0-5.0
SL-840-SA5B-SB-7.0-8.0
SL-838-SA5B-SB-0.0-0.5
SL-838-SA5B-SB-4.0-5.0
SL-1138-SA5B-SB-4.0-5.0
SL-838-SA5B-SB-4.0-5.0MS
SL-838-SA5B-SB-4.0-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample EB-011414 (From SDG PH159) was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

Sample FB-041613 (from SDG PH032) was identified as a field blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH158	All compounds reported below the RL.	J (all detects)	A

XIV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples SL-838-SA5B-SB-4.0-5.0 and SL-1138-SA5B-SB-4.0-5.0 were identified as field duplicates. No polychlorinated biphenyl contaminants were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flags	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
PCB-1248	18U	7.9	200 (≤50)	J (all detects) UJ (all non-detects)	A

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Data Qualification Summary - SDG PH158

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH158	SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	PCB-1248	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

LDC #: 31413A3b **VALIDATION COMPLETENESS WORKSHEET** Date: 3/25/14
SDG #: PH158 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/13/14
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤20%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	SW	FD = 5+6
XVI.	Field blanks	ND	EB = EB-011414 (SDG # PH159) FB = FB-041613 (SDG # PH032)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-840-SA5B-SB-0.0-0.5	11		21		31	PBLK 15016
2	SL-840-SA5B-SB-4.0-5.0	12		22		32	
3	SL-840-SA5B-SB-7.0-8.0	13		23		33	
4	SL-838-SA5B-SB-0.0-0.5	14		24		34	
5	SL-838-SA5B-SB-4.0-5.0	15		25		35	
6	SL-1138-SA5B-SB-4.0-5.0	16		26		36	
7	SL-838-SA5B-SB-4.0-5.0MS	17		27		37	
8	SL-838-SA5B-SB-4.0-5.0MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31413A35

VALIDATION FINDINGS CHECKLIST

Reviewer: SR
2nd Reviewer: SM

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?			✓	
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
Were the required standard concentrations analyzed in the initial calibration?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or ____%R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis?			✓	
Were endrin and 4,4'-DDT breakdowns ≤ 15%.0 for individual breakdown in the Evaluation mix standards?			✓	
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recovieries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Were extract cleanup blanks analyzed with every batch requiring clean-up?			✓	
Was there contamination in the method blanks or clean-up blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	

Validation Area	Yes	No	NA	Findings/Comments
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 31413A36

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BR
2nd reviewer: SM

METHOD: X **GC** ___ **HPLC**

X N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		%RPD Limit 50	Qualification Parent only / All Samples
	5	6		
PCB-1248	18 U	7.9	200	J / UJ / A (FD)

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

LDC#: 31413A3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC PCBs (EPA SW 846 Method 8082A)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (500 std)	Recalculated CF (500 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 17342A	1/20/2014	PCB1260-1 (ZB-MultiR1)	35529	35529	37781	37781	9	9
			PCB1260-1 (ZB-MultiR2I)	4253	4253	4921	4921	17	17

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31413A3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC PCBs (EPA SW 846 Method 8082)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Conc	Reported Conc (CCV)	Recalculated Conc (CCV)	Reported % D	Recalculated %D
1	ICV - IC16XAA	1/20/2014	PCB1260 (ZB-MultiR1)	200	180.82	180.82	10	10
		19:19	PCB1260 (ZB-MultiR2)	200	173.28	173.29	14	13.4

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A2L

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	ZB-multiR1	9.93	11.09282	112	112	0
Decachlorobiphenyl	↓	10.03	10.19077	102	102	0
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes: _____

LDC #: 31413A36

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I MS - MSD I * 2/(MS + MSD)

MS = Matrix spike percent recovery
MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 7 | 8

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
gamma-BHC											
4,4'-DDT											
Aroclor 1260	164	164	0	150.7	159.53	92	92	97	97	6	5.7

Comments: Refer ot Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A3b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCSID 15016

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC										
4,4'-DDT										
Aroclor 1260	167	-	165.22	-	99	99	-	-	-	-

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A3L

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Colum: ZB multi R2 (B)

Aroclor 1248-1 $= \frac{(76606.02)(10)}{(2109)(30.5)}$

$= 11.909\,30672$

1248-2 = 10.684272

1248-3 = 12.082084

Average = 11.55855424

Example: ~~8.4~~ 12 ug/g

Sample I.D. 1 Aroclor 1248

Conc. = $\frac{11.5585524}{0.937}$

= 12.33570016 ug/g

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: January 13, 2014

LDC Report Date: March 23, 2014

Matrix: Soil

Parameters: Metals

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH158

Sample Identification

SL-840-SA5B-SB-0.0-0.5
SL-840-SA5B-SB-4.0-5.0
SL-840-SA5B-SB-7.0-8.0
SL-838-SA5B-SB-0.0-0.5
SL-838-SA5B-SB-4.0-5.0
SL-1138-SA5B-SB-4.0-5.0
SL-838-SA5B-SB-4.0-5.0MS
SL-838-SA5B-SB-4.0-5.0MSD
SL-838-SA5B-SB-4.0-5.0DUP

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C, 6020A, and 7471B for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium Magnesium Tin Zinc	4.67 mg/Kg 4.40 mg/Kg 1.59 mg/Kg 0.462 mg/Kg	All samples in SDG PH158
ICB/CCB	Titanium	1.1 ug/L	All samples in SDG PH158
ICB/CCB	Aluminum Calcium Magnesium	60.6 ug/L 34.4 ug/L 44.0 ug/L	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-838-SA5B-SB-0.0-0.5
ICB/CCB	Calcium Magnesium Nickel	47.4 ug/L 39.3 ug/L 1.1 ug/L	SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-840-SA5B-SB-0.0-0.5	Tin	2.68 mg/Kg	2.68U mg/Kg
SL-840-SA5B-SB-4.0-5.0	Tin	2.69 mg/Kg	2.69U mg/Kg
SL-840-SA5B-SB-7.0-8.0	Tin	3.16 mg/Kg	3.16U mg/Kg
SL-838-SA5B-SB-0.0-0.5	Tin	2.87 mg/Kg	2.87U mg/Kg
SL-838-SA5B-SB-4.0-5.0	Tin	2.98 mg/Kg	2.98U mg/Kg
SL-1138-SA5B-SB-4.0-5.0	Tin	3.09 mg/Kg	3.09U mg/Kg

Sample EB-0111414 (from SDG PH159) was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-0111414	1/14/14	Barium	0.00036 mg/L	All samples in SDG PH158

Sample FB-041613 (from SDG PH032) was identified as a field blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-041613	4/16/13	Molybdenum Tin	0.0132 mg/L 0.0029 mg/L	All samples in SDG PH158

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-840-SA5B-SB-0.0-0.5	Molybdenum	0.592 mg/Kg	0.592U mg/Kg
SL-840-SA5B-SB-4.0-5.0	Molybdenum	0.571 mg/Kg	0.571U mg/Kg
SL-840-SA5B-SB-7.0-8.0	Molybdenum	0.322 mg/Kg	0.322U mg/Kg

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-838-SA5B-SB-0.0-0.5	Molybdenum	0.255 mg/Kg	0.255U mg/Kg
SL-838-SA5B-SB-4.0-5.0	Molybdenum	0.660 mg/Kg	0.660U mg/Kg
SL-1138-SA5B-SB-4.0-5.0	Molybdenum	0.217 mg/Kg	0.217U mg/Kg

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-838-SA5B-SB-4.0-5.0MS/MSD (All samples in SDG PH158)	Antimony	70 (75-125)	72 (75-125)	-	J (all detects) UJ (all non-detects)	A
SL-838-SA5B-SB-4.0-5.0MS/MSD (All samples in SDG PH158)	Phosphorus	128 (75-125)	-	-	J (all detects)	A

For SL-838-SA5B-SB-4.0-5.0MS/MSD, no data were qualified for Aluminum, Calcium, Iron, Magnesium, Manganese, and Titanium percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
SL-838-SA5B-SB-4.0-5.0DUP (All samples in SDG PH158)	Calcium	78 (≤20)	-	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

X. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-838-SA5B-SB-4.0-5.0	Aluminum Barium Calcium Chromium Iron Lithium Magnesium Manganese Nickel Phosphorus Potassium Titanium Vanadium Zinc	28 (≤10) 28 (≤10) 28 (≤10) 28 (≤10) 31 (≤10) 33 (≤10) 28 (≤10) 28 (≤10) 26 (≤10) 31 (≤10) 31 (≤10) 28 (≤10) 30 (≤10) 30 (≤10)	All samples in SDG PH158	J (all detects) UJ (all non-detects)	A

XI. Sample Result Verification

All sample result verifications were acceptable.

All metals reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG PH158	All analytes reported below the RL and above the MDL.	J (all detects)	A

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples SL-838-SA5B-SB-4.0-5.0 and SL-1138-SA5B-SB-4.0-5.0 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
Aluminum	16400	17500	6 (≤50)	-	-
Arsenic	5.05	4.29	16 (≤50)	-	-
Barium	108	106	2 (≤50)	-	-
Beryllium	0.610	0.664	8 (≤50)	-	-
Boron	1.17	0.989	17 (≤50)	-	-
Calcium	4330	2460	55 (≤50)	J (all detects)	A
Chromium	19.3	18.5	4 (≤50)	-	-
Cobalt	4.50	3.93	14 (≤50)	-	-
Copper	9.30	8.18	13 (≤50)	-	-
Iron	20300	19800	2 (≤50)	-	-
Lead	7.81	7.75	1 (≤50)	-	-
Lithium	21.4	19.4	10 (≤50)	-	-
Magnesium	4070	3770	8 (≤50)	-	-
Manganese	271	277	2 (≤50)	-	-
Molybdenum	0.660	0.217	101 (≤50)	J (all detects)	A
Nickel	10.8	10.8	0 (≤50)	-	-
Phosphorus	227	149	41 (≤50)	-	-
Potassium	2330	1660	34 (≤50)	-	-
Selenium	0.141	0.148	5 (≤50)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
Silver	0.0415	0.0540	26 (≤50)	-	-
Sodium	148	96.2	42 (≤50)	-	-
Strontium	23.2	22.8	2 (≤50)	-	-
Tin	2.98	3.09	4 (≤50)	-	-
Thallium	0.245	0.237	3 (≤50)	-	-
Titanium	1150	1100	4 (≤50)	-	-
Vanadium	37.5	36.7	2 (≤50)	-	-
Zinc	47.0	43.8	7 (≤50)	-	-
Zirconium	1.89	1.39	30 (≤50)	-	-

Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG PH158

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	Antimony	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	Phosphorus	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	Calcium	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD) (E)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	Aluminum Barium Calcium Chromium Iron Lithium Magnesium Manganese Nickel Phosphorus Potassium Titanium Vanadium Zinc	J (all detects) UJ (all non-detects)	A	ICP serial dilution (%D) (A)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)
PH158	SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	Calcium Molybdenum	J (all detects) J (all detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG PH158

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH158	SL-840-SA5B-SB-0.0-0.5	Tin	2.68U mg/Kg	A	B

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH158	SL-840-SA5B-SB-4.0-5.0	Tin	2.69U mg/Kg	A	B
PH158	SL-840-SA5B-SB-7.0-8.0	Tin	3.16U mg/Kg	A	B
PH158	SL-838-SA5B-SB-0.0-0.5	Tin	2.87U mg/Kg	A	B
PH158	SL-838-SA5B-SB-4.0-5.0	Tin	2.98U mg/Kg	A	B
PH158	SL-1138-SA5B-SB-4.0-5.0	Tin	3.09U mg/Kg	A	B

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PH158

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH158	SL-840-SA5B-SB-0.0-0.5	Molybdenum	0.592U mg/Kg	A	F
PH158	SL-840-SA5B-SB-4.0-5.0	Molybdenum	0.571U mg/Kg	A	F
PH158	SL-840-SA5B-SB-7.0-8.0	Molybdenum	0.322U mg/Kg	A	F
PH158	SL-838-SA5B-SB-0.0-0.5	Molybdenum	0.255U mg/Kg	A	F
PH158	SL-838-SA5B-SB-4.0-5.0	Molybdenum	0.660U mg/Kg	A	F
PH158	SL-1138-SA5B-SB-4.0-5.0	Molybdenum	0.217U mg/Kg	A	F

LDC #: 31413A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/11/14
SDG #: PH158 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: CA
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/13/14
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	SW	
VII.	Duplicate Sample Analysis	SW	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	A	
X.	ICP Serial Dilution	SW	
XI.	Sample Result Verification	A	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	(5,6)
XIV.	Field Blanks	SW	EB= EB-011414 (PH158) FB = FB-041613 (PH032)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-840-SA5B-SB-0.0-0.5	11		21		31	
2	SL-840-SA5B-SB-4.0-5.0	12		22		32	
3	SL-840-SA5B-SB-7.0-8.0	13		23		33	
4	SL-838-SA5B-SB-0.0-0.5	14		24		34	
5	SL-838-SA5B-SB-4.0-5.0	15		25		35	
6	SL-1138-SA5B-SB-4.0-5.0	16		26		36	
7	SL-838-SA5B-SB-4.0-5.0MS	17		27		37	
8	SL-838-SA5B-SB-4.0-5.0MSD	18		28		38	
9	SL-838-SA5B-SB-4.0-5.0DUP	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 31413A4

VALIDATION FINDINGS CHECKLIST

Reviewer: QR
2nd Reviewer: SM

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.				
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients > 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓	✓		
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?				

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			✓	
Do all applicable analysies have duplicate injections? (Level IV only)			✓	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			✓	
Were analytical spike recoveries within the 85-115% QC limits?				✓
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?		✓		
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 31413A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC 7-9		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

LDC #: 31413A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: CL
2nd Reviewer: SM

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x Code: B
Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	1	2	3	4	5	6					
Ca	4.67			23.36											
Mg	~~4.397~~ 4.40			21.99											
Sn	1.59			7.95	2.68	2.69	3.16	2.87	2.98	3.09					
Zn	0.462			2.31											
Ti			1.1	0.55											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1, 2, 4

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No Qualifiers (>5x)										
Al			60.6	30.3											
Ca			34.4	17.2											
Mg			44.0	22											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 3, 5, 6

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No Qualifiers (>5x)										
Ca			47.4	23.7											
Mg			39.3	19.65											
Ni			1.1	0.55											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 31413A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: OR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 1/14/14 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB-011414 (SDG: PH159)	Action Limit	No qualifiers (>5x)									
Ba	0.00036	0.18										

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification										
	FB-041613 (SDG: PH032)	Action Limit	1	2	3	4	5	6				
Mo	0.0132	6.6	0.592	0.571	0.322	0.255	0.660	0.217				
Sn	0.0029	1.45										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31463H7

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: CR
2nd Reviewer: SW

METHOD: Trace metals (EPA SW 846 Method 6010B/6020A/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a fac of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	7/8	S	Sb	70	72		All	J/UJ/A (Q)
			P	128				J det/A J

LDC #: 26125M

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: CL
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y (N) N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤ 35% for soil samples? If no, see qualifications below. A contr limit of ±R.L. (±2X R.L. for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values wa <5X R.L.. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Difference (Limits)	Associated Samples	Qualifications
		9	S	Ca	78 (≤20)		All	J/UJ/A (E)

Comments: Cd, Mo, Zn ok by difference

DUP.4SW

LDC #: 31453A1

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Reviewer: QR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A If analyte concentrations were > 50X the MDL (ICP) ,or >100X the MDL (ICP/MS), was a serial dilution analyzed?
Y (N) N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y (N) N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Diluted Sample ID	Matrix	Analyte	%D (Limits)	Associated Samples	Qualifications
	5	S	Al	28	All	J/UJ/A (A)
			Ba	28		
			Ca	28		
			Cr	28		
			Fe	31		
			Li	33		
			Mg	28		
			Mn	28		
			Ni	26		
			P	31		
			K	31		
			Ti	28		
			V	30		
			Zn	30		

Comments:

LDC: 31413A4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CA
2nd Reviewer: SM

Method: Metals

Analyte	Concentration (mg/Kg)		RPD (≤ 50)	Qualifiers (Parents Only)
	5	6		
Aluminum	16400	17500	6	
Arsenic	5.05	4.29	16	
Barium	108	106	2	
Beryllium	0.610	0.664	8	
Boron	1.17	0.989	17	
Calcium	4330	2460	55	Jdet/A (FD)
Chromium	19.3	18.5	4	
Cobalt	4.50	3.93	14	
Copper	9.30	8.18	13	
Iron	20300	19800	2	
Lead	7.81	7.75	1	
Lithium	21.4	19.4	10	
Magnesium	4070	3770	8	
Manganese	271	277	2	
Molybdenum	0.660	0.217	101	Jdet/A (FD)
Nickel	10.8	10.8	0	
Phosphorus	227	149	41	
Potassium	2330	1660	34	
Selenium	0.141	0.148	5	
Silver	0.0415	0.0540	26	
Sodium	148	96.2	42	
Strontium	23.2	22.8	2	
Tin	2.98	3.09	4	
Thallium	0.245	0.237	3	
Titanium	1150	1100	4	
Vanadium	37.5	36.7	2	
Zinc	47.0	43.8	7	
Zirconium	1.89	1.39	30	

LDC #: 31413A4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: QR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
ICV	ICP (Initial calibration)	Cr	583.74	600	97.3	97.3	Y
ICV	ICP/MS (Initial calibration)	Se	52.81	50	105.6	105.6	
ICV	CVAA (Initial calibration)	Hg	2.35	2.5	94.0	94.0	
CCV (07:32)	ICP (Continuing calibration)	V	494.76	500	99.0	99.0	
CCV (16:36)	ICP/MS (Continuing calibration)	Ag	26.38	25	105.5	105.5	
CCV (11:33)	CVAA (Continuing calibration)	Hg	1.05	1.0	105.0	105.0	✓
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31473A5

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Co	458.9	500	91.8	91.8	Y
LCS	Laboratory control sample	Ni	526.19	50000	105	105	
7	Matrix spike	Cd	(SSR-SR) 4.574	5	91	91	
9	Duplicate	Ba	98.7540	87.9510	12	12	
5	ICP serial dilution	Fe	184756.17	187805.65	31	31	

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3143A1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: CR
2nd reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Ni were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$1 = \frac{100\,mL\ (0.10611\,mg/L)}{0.937\,(1.01g)} = 1121\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Ni	11.2	11.2	Y
	2	Zn	46.3	46.3	
	3	Cr	24.6	24.6	
	4	Se	18.7	18.7	
	5	Ag	0.045	0.045	
	6	~~Hg~~ Al	~~0.199~~ 17500	17500	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	January 13, 2014
LDC Report Date:	March 25, 2014
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH158

Sample Identification

SL-840-SA5B-SB-4.0-5.0
SL-840-SA5B-SB-7.0-8.0
SL-838-SA5B-SB-4.0-5.0
SL-1138-SA5B-SB-4.0-5.0
TB-011314
SL-838-SA5B-SB-4.0-5.0MS
SL-838-SA5B-SB-4.0-5.0MSD

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B Modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample TB-011314 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample EB-011414 (from SDG PH159) was identified as an equipment blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample FB-041613 (from SDG PH033) was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH158	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-838-SA5B-SB-4.0-5.0 and SL-1138-SA5B-SB-4.0-5.0 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG PH158

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH158	SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0 TB-011314	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

LDC #: 31413A7 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/25/14

SDG #: PH158 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: BR

2nd Reviewer: SM

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B) Mod

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/13/14
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	FD = 3 + 4
XIII.	Field blanks	ND	TB = 5 FB = FB-041613 (SDG # PH032) EB = EB-011414 (SDG # PH159 PH159)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil + Water

1	SL-840-SA5B-SB-4.0-5.0	11		21		31	BLK F1
2	SL-840-SA5B-SB-7.0-8.0	12		22		32	BLK 1°B
3	SL-838-SA5B-SB-4.0-5.0	13		23		33	
4	SL-1138-SA5B-SB-4.0-5.0	14		24		34	
5	TB-011314 W	15		25		35	
6	SL-838-SA5B-SB-4.0-5.0MS	16		26		36	
7	SL-838-SA5B-SB-4.0-5.0MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 31413A7

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? %D or __%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓	✓	B2
Target compounds were detected in the field blanks.			✓	

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (550 std)	Recalculated CF (550 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 11379F J&W DB-MTB	9/27/2013	GRO	53902	53902	55635	55635	4	4

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (550 std)	Recalculated CF (550 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 16394F Restek VRX	10/8/2013	GRO	28604	28604	28046	28046	6	6

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC_____HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	SGCKXIY	1/17/2014	GRO	220.00	197.64	197.64	10	10
	11379F	14:42						
2	WGCCXDW	1/17/2014	GRO	550.00	521.15	521.15	5	5
	16394F	12:47						
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: X GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Trifluorotoluene - F	JW-PB-MTB	622	535.0893	86	86	0

Sample ID: 5

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Trifluorotoluene - F	Restek-VRX	30	25.4566	85	85	0

Sample ID: ___

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 6|7

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	10.1	10.1	0	8.55	8.25	85	85	81	81	4	3.9
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: KR

2nd Reviewer: SM

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCSW1 / LCSD1Q

Compound	Spike Added (mg/kg or ug/L)		Spike Sample Concentration (mg/kg or ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	1100	1100	1239.96	1233.26	113	113	112	112	1	0.5
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 1-5 Compound Name GRO

Concentration = ND

LCSUA: GRO = 9.23 mg/kg

$$= \frac{(23813390 - 3262292)(25)}{(55635)(1)(1000)} = 9.234788838 \text{ mg/k}$$

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	January 13, 2014
LDC Report Date:	March 25, 2014
Matrix:	Soil
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH158

Sample Identification

SL-840-SA5B-SB-0.0-0.5
SL-840-SA5B-SB-4.0-5.0
SL-840-SA5B-SB-7.0-8.0
SL-838-SA5B-SB-0.0-0.5
SL-838-SA5B-SB-4.0-5.0
SL-1138-SA5B-SB-4.0-5.0
SL-838-SA5B-SB-4.0-5.0MS
SL-838-SA5B-SB-4.0-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B Modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractables contaminants were found in the method blanks.

Sample EB-011414 (from SDG PH159) was identified as an equipment blank. No total petroleum hydrocarbons as extractables contaminants were found.

Sample FB-041613 (from SDG PH032) was identified as a field blank. No total petroleum hydrocarbons as extractables contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH158	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-838-SA5B-SB-4.0-5.0 and SL-1138-SA5B-SB-4.0-5.0 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG PH158

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

LDC #: 31413A8 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/25/14
SDG #: PH158 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B) Mod

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/13/14
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	ICV/CCV ≤20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	FD = 5+6
XIII.	Field blanks	ND	FB = FB-041613 (SDG # PH032) EB = EB-011414 (SDG # PH159)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-840-SA5B-SB-0.0-0.5	11		21		31	PBLK020717
2	SL-840-SA5B-SB-4.0-5.0	12		22		32	
3	SL-840-SA5B-SB-7.0-8.0	13		23		33	
4	SL-838-SA5B-SB-0.0-0.5	14		24		34	
5	SL-838-SA5B-SB-4.0-5.0	15		25		35	
6	SL-1138-SA5B-SB-4.0-5.0	16		26		36	
7	SL-838-SA5B-SB-4.0-5.0MS	17		27		37	
8	SL-838-SA5B-SB-4.0-5.0MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31473A8

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	✓		✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 31413A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (144 std)	Recalculated CF (144 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CP23-19879B ZB-5	1/13/2014	C8-C40	23861	23861	23780	23780	3%	3%

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC_____HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	TPH_3KV	1/18/2014	C8-C40	288.01	278.61	278.62	3	3
2								
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3141368

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: X GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Chlorobenzene	ZB-5	2.00	1.8231	91	91	0
ortho-terphenyl	↓	↓	1.8007	90	90	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 31413A8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 7 / 8

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
EFH (C30-C40	15	15	0	12.24	10.86	82	82	72	72	12	12

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3141388

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SM

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS02017

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
EFH C30-C40	15	-	10.69	-	71	71	-	-	-	-

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413B8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SR

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

C30-C40=15

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 1 Compound Name EPH C30-C40

Concentration = $\frac{(9708908)(1000)}{(23780)(30)(0.937)(1000)}$

$= 14.52438241 mg/kg$

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: January 13, 2014

LDC Report Date: March 24, 2014

Matrix: Soil

Parameters: Dioxins/Dibenzofurans

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH158

Sample Identification

SL-840-SA5B-SB-0.0-0.5
SL-840-SA5B-SB-4.0-5.0
SL-840-SA5B-SB-7.0-8.0
SL-838-SA5B-SB-0.0-0.5
SL-838-SA5B-SB-4.0-5.0
SL-1138-SA5B-SB-4.0-5.0
SL-838-SA5B-SB-4.0-5.0MS
SL-838-SA5B-SB-4.0-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1613B for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

PFK and static resolving power were within validation criteria.

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 35.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio was greater than or equal to 2.5 for target compounds and 10 for recovery and internal standard compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within QC limits.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
BLK017001	1/17/14	2,3,7,8-TCDD	0.126 ng/Kg	All samples in SDG PH158
		1,2,3,4,7,8-HxCDD	0.0344 ng/Kg	
		1,2,3,6,7,8-HxCDD	0.0345 ng/Kg	
		1,2,3,7,8,9-HxCDD	0.0671 ng/Kg	
		1,2,3,4,6,7,8-HpCDD	0.104 ng/Kg	
		OCDD	0.219 ng/Kg	
		1,2,3,7,8-PeCDF	0.0576 ng/Kg	
		2,3,4,7,8-PeCDF	0.0516 ng/Kg	
		1,2,3,4,7,8-HxCDF	0.0591 ng/Kg	
		1,2,3,6,7,8-HxCDF	0.0455 ng/Kg	
		2,3,4,6,7,8-HxCDF	0.0389 ng/Kg	
		1,2,3,7,8,9-HxCDF	0.0371 ng/Kg	
		1,2,3,4,6,7,8-HpCDF	0.0794 ng/Kg	
		1,2,3,4,7,8,9-HpCDF	0.0738 ng/Kg	
		OCDF	0.191 ng/Kg	

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-840-SA5B-SB-0.0-0.5	2,3,7,8-TCDD	0.0530 ng/Kg	0.0530U ng/Kg
	1,2,3,4,7,8-HxCDD	0.0638 ng/Kg	0.0638U ng/Kg
	2,3,4,7,8-PeCDF	0.0637 ng/Kg	0.0637U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0733 ng/Kg	0.0733U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0938 ng/Kg	0.0938U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0809 ng/Kg	0.0809U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0569 ng/Kg	0.0569U ng/Kg
SL-840-SA5B-SB-4.0-5.0	2,3,7,8-TCDD	0.0790 ng/Kg	0.0790U ng/Kg
	1,2,3,6,7,8-HxCDD	0.0623 ng/Kg	0.0623U ng/Kg
	1,2,3,7,8,9-HxCDD	0.113 ng/Kg	0.113U ng/Kg
	1,2,3,7,8-PeCDF	0.0694 ng/Kg	0.0694U ng/Kg
	2,3,4,7,8-PeCDF	0.0375 ng/Kg	0.0375U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0589 ng/Kg	0.0589U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0528 ng/Kg	0.0528U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0212 ng/Kg	0.0212U ng/Kg
	1,2,3,7,8,9-HxCDF	0.134 ng/Kg	0.134U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.115 ng/Kg	0.115U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0519 ng/Kg	0.0519U ng/Kg
	OCDF	0.301 ng/Kg	0.301U ng/Kg
SL-840-SA5B-SB-7.0-8.0	1,2,3,6,7,8-HxCDD	0.0671 ng/Kg	0.0671U ng/Kg
	1,2,3,7,8,9-HxCDD	0.0327 ng/Kg	0.0327U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.285 ng/Kg	0.285U ng/Kg
	1,2,3,7,8-PeCDF	0.0439 ng/Kg	0.0439U ng/Kg
	2,3,4,7,8-PeCDF	0.0265 ng/Kg	0.0265U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0392 ng/Kg	0.0392U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0507 ng/Kg	0.0507U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0443 ng/Kg	0.0443U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0556 ng/Kg	0.0556U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0857 ng/Kg	0.0857U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0633 ng/Kg	0.0633U ng/Kg
	OCDF	0.177 ng/Kg	0.177U ng/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-838-SA5B-SB-0.0-0.5	1,2,3,4,7,8-HxCDD	0.0413 ng/Kg	0.0413U ng/Kg
	1,2,3,7,8,9-HxCDD	0.253 ng/Kg	0.253U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.430 ng/Kg	0.430U ng/Kg
	1,2,3,7,8-PeCDF	0.157 ng/Kg	0.157U ng/Kg
	2,3,4,7,8-PeCDF	0.0885 ng/Kg	0.0885U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0916 ng/Kg	0.0916U ng/Kg
	1,2,3,6,7,8-HxCDF	0.118 ng/Kg	0.118U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0979 ng/Kg	0.0979U ng/Kg
	1,2,3,7,8,9-HxCDF	0.138 ng/Kg	0.138U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.142 ng/Kg	0.142U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0764 ng/Kg	0.0764U ng/Kg
	OCDF	0.382 ng/Kg	0.382U ng/Kg
SL-838-SA5B-SB-4.0-5.0	2,3,7,8-TCDD	0.0707 ng/Kg	0.0707U ng/Kg
	1,2,3,4,7,8-HxCDD	0.0389 ng/Kg	0.0389U ng/Kg
	1,2,3,7,8,9-HxCDD	0.250 ng/Kg	0.250U ng/Kg
	1,2,3,7,8-PeCDF	0.206 ng/Kg	0.206U ng/Kg
	2,3,4,7,8-PeCDF	0.198 ng/Kg	0.198U ng/Kg
	1,2,3,4,7,8-HxCDF	0.183 ng/Kg	0.183U ng/Kg
	1,2,3,6,7,8-HxCDF	0.122 ng/Kg	0.122U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0918 ng/Kg	0.0918U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.212 ng/Kg	0.212U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.109 ng/Kg	0.109U ng/Kg
	OCDF	0.438 ng/Kg	0.438U ng/Kg
SL-1138-SA5B-SB-4.0-5.0	2,3,7,8-TCDD	0.173 ng/Kg	0.173U ng/Kg
	1,2,3,4,7,8-HxCDD	0.142 ng/Kg	0.142U ng/Kg
	1,2,3,6,7,8-HxCDD	0.125 ng/Kg	0.125U ng/Kg
	1,2,3,7,8,9-HxCDD	0.207 ng/Kg	0.207U ng/Kg
	1,2,3,7,8-PeCDF	0.272 ng/Kg	0.272U ng/Kg
	2,3,4,7,8-PeCDF	0.206 ng/Kg	0.206U ng/Kg
	1,2,3,4,7,8-HxCDF	0.169 ng/Kg	0.169U ng/Kg
	1,2,3,6,7,8-HxCDF	0.151 ng/Kg	0.151U ng/Kg
	2,3,4,6,7,8-HxCDF	0.131 ng/Kg	0.131U ng/Kg
	1,2,3,7,8,9-HxCDF	0.174 ng/Kg	0.174U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.190 ng/Kg	0.190U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.166 ng/Kg	0.166U ng/Kg
	OCDF	0.518 ng/Kg	0.518U ng/Kg

Sample EB-011414 (from SDG PH159) was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-011414	1/14/14	1,2,3,4,7,8-HxCDD	0.537 pg/L	All samples in SDG PH158
		1,2,3,6,7,8-HxCDD	0.852 pg/L	
		1,2,3,4,6,7,8-HpCDD	0.524 pg/L	
		OCDD	0.900 pg/L	
		1,2,3,7,8-PeCDF	0.459 pg/L	
		1,2,3,4,7,8-HxCDF	0.302 pg/L	
		1,2,3,6,7,8-HxCDF	0.501 pg/L	
		2,3,4,6,7,8-HxCDF	0.404 pg/L	
		1,2,3,4,6,7,8-HpCDF	0.280 pg/L	
		1,2,3,4,7,8,9-HpCDF	0.352 pg/L	
		OCDF	1.27 pg/L	

Sample FB-041613 (from SDG PH032) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-041613	4/16/13	1,2,3,7,8-PeCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,7,8,9-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	0.434 pg/L 0.309 pg/L 0.838 pg/L 0.324 pg/L 0.429 pg/L 0.257 pg/L 0.241 pg/L 0.284 pg/L 0.314 pg/L 0.357 pg/L	All samples in SDG PH158

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation

All compound quantitations were within validation criteria.

The 2,3,7,8-TCDF confirmation was performed with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0	2,3,7,8-TCDF	2nd column confirmation was not performed for this compound.	2,3,7,8-TCDF must be confirmed on the 2nd column per the method.	None	P

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH158	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SL-838-SA5B-SB-4.0-5.0 and SL-1138-SA5B-SB-4.0-5.0 were identified as field duplicates. No polychlorinated dioxins/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
2,3,7,8-TCDD	0.0707	0.173	84 (≤50)	J (all detects)	A
1,2,3,7,8-PeCDD	0.184	0.314	52 (≤50)	J (all detects)	A
1,2,3,4,7,8-HxCDD	0.0389	0.142	114 (≤50)	J (all detects)	A
1,2,3,6,7,8-HxCDD	0.188	0.125	40 (≤50)	-	-
1,2,3,7,8,9-HxCDD	0.250	0.207	19 (≤50)	-	-
1,2,3,4,6,7,8-HpCDD	0.807	0.649	22 (≤50)	-	-
OCDD	9.67	11.1	14 (≤50)	-	-
2,3,7,8-TCDF	0.0752	1.08U	200 (≤50)	J (all detects) UJ (all non-detects)	A

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	SL-838-SA5B-SB-4.0-5.0	SL-1138-SA5B-SB-4.0-5.0			
1,2,3,7,8-PeCDF	0.206	0.272	28 (≤50)	-	-
2,3,4,7,8-PeCDF	0.198	0.206	4 (≤50)	-	-
1,2,3,4,7,8-HxCDF	0.183	0.169	8 (≤50)	-	-
1,2,3,6,7,8-HxCDF	0.122	0.151	21 (≤50)	-	-
2,3,4,6,7,8-HxCDF	0.0918	0.131	35 (≤50)	-	-
1,2,3,7,8,9-HxCDF	0.193	0.174	10 (≤50)	-	-
1,2,3,4,6,7,8-HpCDF	0.212	0.190	11 (≤50)	-	-
1,2,3,4,7,8,9-HpCDF	0.109	0.166	41 (≤50)	-	-
OCDF	0.438	0.518	17 (≤50)	-	-

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Data Qualification Summary - SDG PH158

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH158	SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0	2,3,7,8-TCDF	None	P	Compound quantitation (2nd column confirmation) (Z)
PH158	SL-840-SA5B-SB-0.0-0.5 SL-840-SA5B-SB-4.0-5.0 SL-840-SA5B-SB-7.0-8.0 SL-838-SA5B-SB-0.0-0.5 SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH158	SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	2,3,7,8-TCDD 1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD	J (all detects) J (all detects) J (all detects)	A	Field duplicates (RPD) (FD)
PH158	SL-838-SA5B-SB-4.0-5.0 SL-1138-SA5B-SB-4.0-5.0	2,3,7,8-TCDF	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG PH158

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH158	SL-840-SA5B-SB-0.0-0.5	2,3,7,8-TCDD 1,2,3,4,7,8-HxCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.0530U ng/Kg 0.0638U ng/Kg 0.0637U ng/Kg 0.0733U ng/Kg 0.0938U ng/Kg 0.0809U ng/Kg 0.0569U ng/Kg	A	B
PH158	SL-840-SA5B-SB-4.0-5.0	2,3,7,8-TCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0790U ng/Kg 0.0623U ng/Kg 0.113U ng/Kg 0.0694U ng/Kg 0.0375U ng/Kg 0.0589U ng/Kg 0.0528U ng/Kg 0.0212U ng/Kg 0.134U ng/Kg 0.115U ng/Kg 0.0519U ng/Kg 0.301U ng/Kg	A	B

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH158	SL-840-SA5B-SB-7.0-8.0	1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0671U ng/Kg 0.0327U ng/Kg 0.285U ng/Kg 0.0439U ng/Kg 0.0265U ng/Kg 0.0392U ng/Kg 0.0507U ng/Kg 0.0443U ng/Kg 0.0556U ng/Kg 0.0857U ng/Kg 0.0633U ng/Kg 0.177U ng/Kg	A	B
PH158	SL-838-SA5B-SB-0.0-0.5	1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0413U ng/Kg 0.253U ng/Kg 0.430U ng/Kg 0.157U ng/Kg 0.0885U ng/Kg 0.0916U ng/Kg 0.118U ng/Kg 0.0979U ng/Kg 0.138U ng/Kg 0.142U ng/Kg 0.0764U ng/Kg 0.382U ng/Kg	A	B
PH158	SL-838-SA5B-SB-4.0-5.0	2,3,7,8-TCDD 1,2,3,4,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0707U ng/Kg 0.0389U ng/Kg 0.250U ng/Kg 0.206U ng/Kg 0.198U ng/Kg 0.183U ng/Kg 0.122U ng/Kg 0.0918U ng/Kg 0.212U ng/Kg 0.109U ng/Kg 0.438U ng/Kg	A	B
PH158	SL-1138-SA5B-SB-4.0-5.0	2,3,7,8-TCDD 1,2,3,4,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.173U ng/Kg 0.142U ng/Kg 0.125U ng/Kg 0.207U ng/Kg 0.272U ng/Kg 0.206U ng/Kg 0.169U ng/Kg 0.151U ng/Kg 0.131U ng/Kg 0.174U ng/Kg 0.190U ng/Kg 0.166U ng/Kg 0.518U ng/Kg	A	B

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH158

No Sample Data Qualified in this SDG

LDC #: 31413A21 **VALIDATION COMPLETENESS WORKSHEET** Date: 3-1-14
SDG #: PH158 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: JM
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/13/14
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	≤20/35
IV.	Continuing Calibration	A	QC limits
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation/RL/~~LOQ/LODs~~	SW	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D=5+6
XV.	Field blanks	SW	EB=EB-011414(PH159); FB=FB-041613(PH032)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-840-SA5B-SB-0.0-0.5	11		21		31	
2	SL-840-SA5B-SB-4.0-5.0	12		22		32	
3	SL-840-SA5B-SB-7.0-8.0	13		23		33	
4	SL-838-SA5B-SB-0.0-0.5	14		24		34	
5	SL-838-SA5B-SB-4.0-5.0	15		25		35	
6	SL-1138-SA5B-SB-4.0-5.0	16		26		36	
7	SL-838-SA5B-SB-4.0-5.0MS	17		27		37	
8	SL-838-SA5B-SB-4.0-5.0MSD	18		28		38	
9		19		29		39	
10		20	BLK017001	30		40	

Notes:

LDC #: 31413A21

VALIDATION FINDINGS CHECKLIST

Reviewer: AM
2nd Reviewer: SM

Method: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	✓			
Were the retention time windows established for all homologues?	✓			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers ≤ 25% ?	✓			
Is the static resolving power at least 10,000 (10% valley definition)?	✓			
Was the mass resolution adequately check with PFK?	✓			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	✓			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled compounds and ≤ 35% for labeled compounds ?	✓			
Did all calibration standards meet the Ion Abundance Ratio criteria?	✓			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard ≥ 10?	✓			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	✓			
Were all the concentrations for the unlabeled compounds and labeled compounds within the QC limits (Method 1613B, Table 6)?	✓			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank performed for each matrix and concentration?			✓	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?			✓	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 25-150% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks ≥ 10?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?			/	
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?		/		
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5?	/			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal (S/N ≥ 2.5, at ± seconds RT) detected in the corresponding PCDPE channel?		/		
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/ /			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?				
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data	/			
Overall assessment of data was found to be acceptable.				
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:_____

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: TM
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all samples associated with a method blank?

Y N (N/A) Was a method blank performed for each matrix and whenever a sample extraction was performed?

(Y) N N/A Was the method blank contaminated?

Blank extraction date: 01/17/14 **Blank analysis date:** 01/20/14 **Associated samples:** All Qual U (B)

Conc. units: ng/kg

Compound	Blank ID	Sample Identification								
	BLK017001	5x	1	2	3	4	5	6		
A	0.126*	0.630	0.0530*	0.0790*			0.0707*	0.173		
C	0.0344*	0.172	0.0638*			0.0413*	0.0389*	0.142*		
D	0.0345*	0.173		0.0623	0.0671*			0.125*		
E	0.0671*	0.336		0.113*	0.0327	0.253	0.250*	0.207*		
F	0.104	0.520			0.285	0.430				
G	0.219	1.10								
I	0.0576*	0.288		0.0694*	0.0439*	0.157	0.206	0.272*		
J	0.0516*	0.258	0.0637*	0.0375*	0.0265	0.0885*	0.198*	0.206		
K	0.0591*	0.296	0.0733	0.0589*	0.0392*	0.0916	0.183	0.169		
L	0.0455	0.228	0.0938	0.0528*	0.0507*	0.118	0.122*	0.151*		
M	0.0389*	0.195	0.0809*	0.0212*	0.0443*	0.0979	0.0918*	0.131*		
N	0.0371*	0.186		0.134*	0.0556	0.138*		0.174		
O	0.0794*	0.397		0.115	0.0857*	0.142	0.212	0.190*		
P	0.0738	0.369	0.0569*	0.0519*	0.0633*	0.0764	0.109*	0.166*		
Q	0.191*	0.955		0.301	0.177*	0.382*	0.438	0.518*		

*EMPC

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: TM
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 01/14/14
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All >5x

Compound	Blank ID	Sample Identification								
	EB-011414	5X								
C	0.537	0.00269								
D	0.852*	0.00426								
F	0.524	0.00262								
G	0.900	0.00450								
I	0.459*	0.00230								
K	0.302*	0.00151								
L	0.501*	0.00251								
M	0.404	0.00202								
O	0.280*	0.00140								
P	0.352*	0.00176								
Q	1.27*	0.00635								

* EMPC

EB-011414 (PH159)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Dioxins (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 04/16/13
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All >5x

Compound	Blank ID	Sample Identification								
	FB-041613	5X								
B	0.434*	0.00217								
F	0.309*	0.00155								
G	0.838*	0.00419								
I	0.324	0.00162								
J	0.429*	0.00215								
K	0.257	0.00129								
N	0.241*	0.00121								
M	0.284*	0.00142								
O	0.314*	0.00157								
Q	0.357*	0.00179								

* EMPC

FB-041613 (PH032)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported RLs

Reviewer: 7h
2nd Reviewer: SM

METHOD: GC/MS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y)N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?
(Y)N N/A Compound quantitation and RLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compund	Finding	Associated Samples	Qualifications
			No 2,3,7,8-TCDF confirmation analysis	4-5	None/P

Comments: See sample calculation verification worksheet for recalculations

Method: HRGC/HRMS (EPA Method 1613B)

Analyte	Concentration (ng/kg)		RPD (≤ 50)	Qualifiers (Parents Only)
	5	6		
A	0.0707	0.173	84	Jdets/A (FD)
B	0.184	0.314	52	Jdets/A (FD)
C	0.0389	0.142	114	Jdets/A (FD)
D	0.188	0.125	40	--
E	0.250	0.207	19	--
F	0.807	0.649	22	--
G	9.67	11.1	14	--
H	0.0752	1.08U	~~174~~ 200	J/UJ/A SM ~~Jdets/A~~ (FD)
I	0.206	0.272	28	--
J	0.198	0.206	4	--
K	0.183	0.169	8	--
L	0.122	0.151	21	--
M	0.0918	0.131	35	--
N	0.193	0.174	10	--
O	0.212	0.190	11	--
P	0.109	0.166	41	--
Q	0.438	0.518	17	--

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9m
2nd Reviewer: Em

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported RRF (CS3 std)	Recalculated RRF (CS3 std)	Reported %RSD	Recalculated %RSD
1	ICAL	09/22/2013	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	1.008	1.008	1.043	1.043	4.15	4.14
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	1.109	1.109	1.125	1.125	1.62	1.60
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	0.949	0.949	0.995	0.995	4.48	4.48
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	1.056	1.056	1.079	1.079	1.66	1.66
			OCDF (^{13}C-OCDF)	0.963	0.963	0.998	0.998	2.75	2.75
2			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: TH
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported Conc (ng/mL)	Recalculated Conc (ng/mL)	Reported %R	Recalculated %R
1	CS3C02	1-20-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.683	9.681	97	97
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.839	9.842	98	98
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	49.941	49.939	100	100
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	49.905	49.894	100	100
			OCDF (^{13}C-OCDF)	100	100.143	100.176	100	100
2			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10				
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10				
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50				
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50				
			OCDF (^{13}C-OCDF)	100				
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10				
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10				
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50				
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50				
			OCDF (^{13}C-OCDF)	100				

Comments: Refer to Routine Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 9m
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSR - SR)/SA Where: SSR = Spiked sample result, SR = Sample result
SA = Spike added

RPD = | MSR - MSDR | * 2/(MSR + MSDR) MSR = Matrix spike percent recovery MSDR = Matrix spike duplicate percent recovery

MS/MSD samples: 7/8

Compound	Spike Added (ng/kg)		Sample Concentration (ng/kg)	Spiked Sample Concentration (ng/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		Reported RPD	Recalculated RPD
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	----	----
2,3,7,8-TCDD	21.5	21.7	0.0707	20.4	20.2	94	94.5	93	93	1	1
1,2,3,7,8-PeCDD	108	109	0.184	105	102	97	97	93	93	3	3
1,2,3,4,7,8-HxCDD	108	109	0.0389	107	106	100	99	97	97	2	1
1,2,3,4,7,8,9-HpCDF	108	109	0.109	109	111	101	101	102	102	2	2
OCDF	215	217	0.438	212	211	98	98	97	97	Ø	0.5

Comments: Refer to Matrix Spike/Matrix Spike Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: Qm
2nd Reviewer: SM

METHOD: GC/MS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: OPR017001

Compound	Spike Added (ng/kg)		Spiked Sample Concentration (ng/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
2,3,7,8-TCDD	20.0	NA	19.0	NA	95	95				
1,2,3,7,8-PeCDD	100		98.7		99	99				
1,2,3,4,7,8-HxCDD	100		98.2		98	98				
1,2,3,4,7,8,9-HpCDF	100		105		105	105				
OCDF	200		200		100	100				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31413A21

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: YM
2nd reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

(N) N N/A Were all reported results recalculated and verified for all level IV samples?
(N) N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

RRF = Relative Response Factor (average) from the initial calibration

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

Example:

Sample I.D. 1, F:

Conc. = $\frac{(6415+6396)(2000)(1)}{(428322+454908)(1.056)(10.32)(.937)}$

= 2.84ng/Kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

LDC #: 31442B2c **VALIDATION COMPLETENESS WORKSHEET** Date: 3/18/14
SDG #: 320-5060-1 Stage 2B Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: FF
2nd Reviewer:

METHOD: GC/MS Semivolatiles Screen (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 11/20/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30
IV.	Continuing calibration/ICV	SW	1W/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	*
VII.	Matrix spike/Matrix spike duplicates	SW	*320-5095-2 MS/D (NO Ass samples)
VIII.	Laboratory control samples	SW	* LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	SW	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	ER = 7 → 9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water * from full scan - text

1 3	PRI4-006-SW01-112013	11	MB 320-30743	21		31	
2 1	PRI7-001-SW01-112013	12	MB 320-34316	22		32	
3 2	PRI7-001-SW01-112013RE	13	MB 320-30784	23		33	
4 3	PRI7-001-SW01-112013RA	14		24		34	
5 1	PRI7-003-SW01-112013	15		25		35	
6 2	PRI7-003-SW01-112013RE	16		26		36	
7 1	PRI7-003-SW22-112013	17		27		37	
8 2	PRI7-003-SW22-112013RE	18		28		38	
9 3	PRI7-003-SW22-112013RA	19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

LDC #: 31442 B2C

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: FT
2nd Reviewer:

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD : GC/MS BNA (EPA SW 846 Method 8270C) code = 1

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
4, 9	water		11/20/13	11/26/13	1/17/14	52	J-/UJ/A
				extraction			
3, 6, 8	water		11/20/13	1/21/14	1/23/14	62	J-/R/A

TECHNICAL HOLDING TIME CRITERIA

Water: Extracted within 7 days, analyzed within 40 days.
Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 31442B2C

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

code = 12

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	1/17/14	CCV	U	22.3		4, 9	J+/Pdet
	9:39		TT	24.7		↓	J-/UJ/P
	1/22/14	CCV	U	32.2		3, 6, 8	J+/Adet
	13:49		Y	29.0		MB 320-30784	J+/Adet

LDC #: 31442B2C

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

code = X

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	2FP	69 (24-68)	J+/Pdet qual Y, TT
			PHL	64 (10-50)	↓ ↓
				( )	
		2	↓	77 (↓)	J+/A det ↓
			↓	71 (↓)	↓
				( )	
				( )	
		3	↓	74 (↓)	J+/A det ↓
			↓	70 (↓)	↓
				( )	
				( )	
		5	↓	70 (↓)	J+/A det ↓
			↓	66 (↓)	↓
				( )	
				( )	
		6	PHL	60 (10-50)	no qual
				( )	
				( )	
				( )	
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				( )	

(NBZ) = Nitrobenzene-d5
(FBP) = 2-Fluorobiphenyl
(TPH) = Terphenyl-d14
(PHL) = Phenol-d5
(2FP)= 2-Fluorophenol
(TBP) = 2,4,6-Tribromophenol
(2CP) = 2-Chlorophenol-d4
(DCB) = 1,2-Dichlorobenzene-d4

LDC #: 31442B2C

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: _____

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

Code = 5

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS 320-30743	N	26 (39-91)	( )	( )	2, 4, 5, 7, 9,	J-/UJ/P
			( )	( )	( )	MB 320-30743	
			( )	( )	( )		
			( )	( )	( )		
	LCS 320-34316	Y	118 (67-116)	( )	( )	3, 6, 8,	J+/P det
		SS	115 (71-111)	( )	( )	MB 320-34316	↓
			( )	( )	( )		
			( )	( )	( )		
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LDC #: 31442B2C

VALIDATION FINDINGS WORKSHEET
Internal Standards

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

code = 14

Y N N/A Were all internal standard area counts within -50 to +100 of the associated calibration standard?

Y N N/A Were the retention times of the internal standards within +/- 30 seconds of the retention times of the associated calibration standard?

#	Date	Sample ID	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		2	DCB	68389 (69969 - 279876)		J/UJ/A qual 000 only

* QC limits are advisory

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10
IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

LDC #: 31442B2C

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: P
2nd Reviewer: _____

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y)/N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		All	analyzed outside H.T.	4, 9	X
		All	extracted outside H.T	3, 6, 8	X

Comments: _____

OVRcpd.wpd

Data Validation Report
Santa Susana Field Laboratory

Go Backs

SDG: PH159

Prepared for

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Prepared by

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March 26, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on January 14, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015B Modified
TPH as Extractables by EPA SW 846 Method 8015B Modified
Polychlorinated Dioxins/Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Perchlorate by EPA Method SW 846 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins/dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, equipment blanks, field blanks and field duplicate samples. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals and dioxins/dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for PCBs. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs, metals, and TPH as extractables. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for SVOC. The associated sample results were qualified as detected estimated (J) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins/dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag
SL-839-SA5B-SB-4.0-5.0	Strontium	12 (≤10)	All soil samples in SDG PH159	J (all detects) UJ (all non-detects)

The associated sample results were qualified as detected estimated (J).

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag
All samples in SDG PH159	All compounds reported as detected below the RL.	J (all detects)

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins/dibenzofurans. All RPDs were within QC limits with the exception of several SVOCs, PCBs, metals, and dioxins/dibenzofurans. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, dioxins/dibenzofurans and perchlorate. The equipment blanks had detections for SVOCs, metals and dioxins/dibenzofurans. The sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no

data were qualified.

One field blank (from SDG PH032) was collected and analyzed for SVOCs, pesticides, PCBs, metals, herbicides, TPH as extractables, dioxins/dibenzofurans and cyanide. The field blank had detections for SVOCs, metals and dioxins. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Jan-2014	TB-011414	7336150	TB	5030B	8015M	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	3546	8015M	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	3546	8082A	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	3546	8270D SIM	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	METHOD	1613B	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5	7336139	N	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5DUP	P336139D221104	DUP	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5MSD	P336139M221108	MSD	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-0.0-0.5MS	P336139R221106	MS	METHOD	7471B	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	3050B	6010C	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	3050B	6020A	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	3546	8015M	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	3546	8082A	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	3546	8270D SIM	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	5035A	8015M	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	METHOD	1613B	III
14-Jan-2014	SL-1139-SA5B-SB-4.0-5.0	7336144	FD	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	3546	8015M	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	3546	8082A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	3546	8270D SIM	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	5035A	8015M	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0	7336140	N	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	3546	8015M	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	3546	8082A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	3546	8270D SIM	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	5035A	8015M	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	METHOD	1613B	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MS	7336141	MS	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	3546	8015M	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	3546	8082A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	3546	8270D SIM	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	5035A	8015M	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	METHOD	1613B	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0MSD	7336142	MSD	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0DUP	7336143	DUP	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0DUP	7336143	DUP	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-4.0-5.0DUP	7336143	DUP	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	3546	8015M	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	3546	8082A	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	3546	8270D SIM	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	5035A	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	METHOD	1613B	III
14-Jan-2014	SL-839-SA5B-SB-9.0-10.0	7336145	N	METHOD	7471B	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	3050B	6010C	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	3050B	6020A	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	3546	8015M	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	3546	8082A	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	3546	8270D SIM	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	5035A	8015M	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	METHOD	1613B	III
14-Jan-2014	SL-839-SA5B-SB-15.5-16.5	7336146	N	METHOD	7471B	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	3050B	6010C	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	3050B	6020A	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	3546	8015M	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	3546	8082A	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	3546	8270D SIM	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	METHOD	1613B	III
14-Jan-2014	SL-843-SA5B-SB-0.0-0.5	7336147	N	METHOD	7471B	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	3050B	6010C	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	3050B	6020A	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	3546	8015M	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	3546	8082A	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	3546	8270D SIM	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	5035A	8015M	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	METHOD	1613B	III
14-Jan-2014	SL-843-SA5B-SB-4.0-5.0	7336148	N	METHOD	7471B	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	3050B	6010C	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	3050B	6020A	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	3546	8015M	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	3546	8082A	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	3546	8270D SIM	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	5035A	8015M	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	METHOD	1613B	III
14-Jan-2014	SL-843-SA5B-SB-7.0-8.0	7336149	N	METHOD	7471B	III
14-Jan-2014	EB-011414	7336151	EB	3005A	6010C	III
14-Jan-2014	EB-011414	7336151	EB	3510C	8015M	III
14-Jan-2014	EB-011414	7336151	EB	3510C	8082A	III
14-Jan-2014	EB-011414	7336151	EB	3510C	8270D SIM	III
14-Jan-2014	EB-011414	7336151	EB	5030B	8015M	III
14-Jan-2014	EB-011414	7336151	EB	Gen Prep	6850	III
14-Jan-2014	EB-011414	7336151	EB	M3010A	6020A	III
14-Jan-2014	EB-011414	7336151	EB	METHOD	1613B	III
14-Jan-2014	EB-011414	7336151	EB	METHOD	7470A	III
14-Jan-2014	EB-011414MSD	P336151M241345A	MSD	Gen Prep	6850	III
14-Jan-2014	EB-011414MS	P336151R241332A	MS	Gen Prep	6850	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: **EB-011414** *Collected:* **1/14/2014 3:00:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.00036	J	0.00033	MDL	0.0100	PQL	mg/L	J	Z

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-1139-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.29	U	0.794	MDL	4.29	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.717	J	0.0719	MDL	1.07	PQL	mg/Kg	J	Z
BORON	1.30	J	0.901	MDL	10.7	PQL	mg/Kg	J	Z
MOLYBDENUM	1.65	J	0.182	MDL	2.15	PQL	mg/Kg	U	F
TIN	3.22	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	2.96	J	0.901	MDL	5.36	PQL	mg/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 9:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.22	U	0.781	MDL	4.22	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.725	J	0.0707	MDL	1.06	PQL	mg/Kg	J	Z
BORON	1.26	J	0.887	MDL	10.6	PQL	mg/Kg	J	Z
MOLYBDENUM	0.264	J	0.179	MDL	2.11	PQL	mg/Kg	U	F
TIN	3.22	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.38	J	0.887	MDL	5.28	PQL	mg/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-15.5-16.5** *Collected:* **1/14/2014 10:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.47	U	0.826	MDL	4.47	PQL	mg/Kg	UJ	Q
ARSENIC	3.37	J	0.782	MDL	4.47	PQL	mg/Kg	J	Z
BERYLLIUM	0.462	J	0.0748	MDL	1.12	PQL	mg/Kg	J	Z
BORON	1.98	J	0.938	MDL	11.2	PQL	mg/Kg	J	Z
MOLYBDENUM	0.271	J	0.190	MDL	2.23	PQL	mg/Kg	U	F
TIN	2.99	J	0.246	MDL	11.2	PQL	mg/Kg	U	B
Zirconium	4.55	J	0.938	MDL	5.58	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-839-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.36	U	0.807	MDL	4.36	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.712	J	0.0731	MDL	1.09	PQL	mg/Kg	J	Z
BORON	1.66	J	0.916	MDL	10.9	PQL	mg/Kg	J	Z
MOLYBDENUM	2.13	J	0.185	MDL	2.18	PQL	mg/Kg	U	F
TIN	3.30	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
Zirconium	3.37	J	0.916	MDL	5.45	PQL	mg/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-9.0-10.0** *Collected:* **1/14/2014 10:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.32	U	0.799	MDL	4.32	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.730	J	0.0723	MDL	1.08	PQL	mg/Kg	J	Z
BORON	1.03	J	0.907	MDL	10.8	PQL	mg/Kg	J	Z
MOLYBDENUM	0.542	J	0.184	MDL	2.16	PQL	mg/Kg	U	F
TIN	3.23	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.22	J	0.907	MDL	5.40	PQL	mg/Kg	J	Z

Sample ID: **SL-843-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 1:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.33	U	0.801	MDL	4.33	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.890	J	0.0725	MDL	1.08	PQL	mg/Kg	J	Z
MOLYBDENUM	0.485	J	0.184	MDL	2.16	PQL	mg/Kg	U	F
TIN	3.28	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	3.78	J	0.909	MDL	5.41	PQL	mg/Kg	J	Z

Sample ID: **SL-843-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 1:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.51	U	0.834	MDL	4.51	PQL	mg/Kg	UJ	Q
BERYLLIUM	1.01	J	0.0755	MDL	1.13	PQL	mg/Kg	J	Z
BORON	3.71	J	0.946	MDL	11.3	PQL	mg/Kg	J	Z
MOLYBDENUM	0.349	J	0.191	MDL	2.25	PQL	mg/Kg	U	F
TIN	3.37	J	0.248	MDL	11.3	PQL	mg/Kg	U	B
Zirconium	4.02	J	0.946	MDL	5.63	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-843-SA5B-SB-7.0-8.0** *Collected:* **1/14/2014 1:40:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.41	U	0.815	MDL	4.41	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.765	J	0.0738	MDL	1.10	PQL	mg/Kg	J	Z
BORON	1.10	J	0.925	MDL	11.0	PQL	mg/Kg	J	Z
MOLYBDENUM	0.243	J	0.187	MDL	2.20	PQL	mg/Kg	U	F
TIN	3.19	J	0.242	MDL	11.0	PQL	mg/Kg	U	B
Zirconium	3.43	J	0.925	MDL	5.51	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-1139-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:10:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.124	J	0.107	MDL	0.429	PQL	mg/Kg	J	Z, FD

Sample ID: **SL-1139-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:10:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0306	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z
STRONTIUM	23.6		0.0729	MDL	0.429	PQL	mg/Kg	J	Q, A

Sample ID: **SL-839-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 9:00:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.145	J	0.106	MDL	0.422	PQL	mg/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 9:00:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0715	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z
STRONTIUM	28.5		0.0718	MDL	0.422	PQL	mg/Kg	J	Q, A

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-839-SA5B-SB-15.5-16.5** ***Collected:*** **1/14/2014 10:30:00** ***Analysis Type:*** **REA** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.188	J	0.0335	MDL	0.223	PQL	mg/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-15.5-16.5** ***Collected:*** **1/14/2014 10:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0323	J	0.0290	MDL	0.223	PQL	mg/Kg	J	Z
STRONTIUM	70.4		0.0759	MDL	0.447	PQL	mg/Kg	J	Q, A

Sample ID: **SL-839-SA5B-SB-4.0-5.0** ***Collected:*** **1/14/2014 9:15:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.436	U	0.109	MDL	0.436	PQL	mg/Kg	UJ	FD

Sample ID: **SL-839-SA5B-SB-4.0-5.0** ***Collected:*** **1/14/2014 9:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0355	J	0.0284	MDL	0.218	PQL	mg/Kg	J	Z
STRONTIUM	24.3		0.0741	MDL	0.436	PQL	mg/Kg	J	Q, A

Sample ID: **SL-839-SA5B-SB-9.0-10.0** ***Collected:*** **1/14/2014 10:15:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.122	J	0.108	MDL	0.432	PQL	mg/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-9.0-10.0** ***Collected:*** **1/14/2014 10:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0466	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z
STRONTIUM	27.3		0.0734	MDL	0.432	PQL	mg/Kg	J	Q, A

Sample ID: **SL-843-SA5B-SB-0.0-0.5** ***Collected:*** **1/14/2014 1:10:00** ***Analysis Type:*** **REA2** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.184	J	0.108	MDL	0.433	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-843-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 1:10:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0418	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z
STRONTIUM	24.5		0.0736	MDL	0.433	PQL	mg/Kg	J	Q, A

Sample ID: **SL-843-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 1:30:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.130	J	0.113	MDL	0.451	PQL	mg/Kg	J	Z

Sample ID: **SL-843-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 1:30:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0956	J	0.0293	MDL	0.225	PQL	mg/Kg	J	Z
STRONTIUM	68.8		0.0766	MDL	0.451	PQL	mg/Kg	J	Q, A

Sample ID: **SL-843-SA5B-SB-7.0-8.0** *Collected:* **1/14/2014 1:40:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0573	J	0.0286	MDL	0.220	PQL	mg/Kg	J	Z
STRONTIUM	19.0		0.0749	MDL	0.441	PQL	mg/Kg	J	Q, A

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-843-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 1:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0129	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB-011414** *Collected:* **1/14/2014 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.524	JB	0.456	MDL	10.1	PQL	pg/L	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB-011414** *Collected:* **1/14/2014 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.280	JBQ	0.162	MDL	10.1	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.352	JBQ	0.204	MDL	10.1	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.537	J	0.358	MDL	10.1	PQL	pg/L	J	Z
1,2,3,4,7,8-HXCDF	0.302	JBQ	0.233	MDL	10.1	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.852	JBQ	0.379	MDL	10.1	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.501	JBQ	0.238	MDL	10.1	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.459	JBQ	0.299	MDL	10.1	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.404	J	0.242	MDL	10.1	PQL	pg/L	J	Z
OCDD	0.900	JB	0.380	MDL	20.1	PQL	pg/L	U	B
OCDF	1.27	JBQ	0.536	MDL	20.1	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-1139-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.397	JB	0.0231	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.171	JB	0.0138	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0790	JBQ	0.0180	MDL	5.23	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	0.0806	JBQ	0.0299	MDL	5.23	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HXCDF	0.163	JB	0.0273	MDL	5.23	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.260	JBQ	0.0322	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.152	JB	0.0272	MDL	5.23	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.424	JBQ	0.0295	MDL	5.23	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.399	JB	0.0261	MDL	5.23	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0499	J	0.0405	MDL	5.23	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.153	JBQ	0.0283	MDL	5.23	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.158	JB	0.0257	MDL	5.23	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.336	JB	0.0255	MDL	5.23	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	0.0983	JQ	0.0613	MDL	1.05	PQL	ng/Kg	J	Z, FD
OCDD	3.41	JB	0.0292	MDL	10.5	PQL	ng/Kg	J	Z
OCDF	0.373	JBQ	0.0376	MDL	10.5	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-839-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 9:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.448	JBQ	0.0290	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.143	JBQ	0.0111	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0755	JBQ	0.0139	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0681	JBQ	0.0233	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.175	JBQ	0.0304	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0935	JBQ	0.0234	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.261	JB	0.0288	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.219	JB	0.0253	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0469	JQ	0.0386	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0263	JBQ	0.0222	MDL	5.18	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0752	JB	0.0242	MDL	5.18	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.103	JBQ	0.0206	MDL	5.18	PQL	ng/Kg	U	B
OCDD	4.52	JB	0.0563	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.408	JB	0.0464	MDL	10.4	PQL	ng/Kg	U	B

Sample ID: **SL-839-SA5B-SB-15.5-16.5** *Collected:* **1/14/2014 10:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.733	JB	0.0270	MDL	5.65	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.203	JB	0.0101	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.111	JB	0.0137	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.121	JB	0.0234	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0755	JBQ	0.0226	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0405	JB	0.0272	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0988	JB	0.0231	MDL	5.65	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0717	JB	0.0236	MDL	5.65	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0712	JBQ	0.0230	MDL	5.65	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.118	JBQ	0.0227	MDL	5.65	PQL	ng/Kg	U	B
OCDD	3.21	JB	0.0315	MDL	11.3	PQL	ng/Kg	J	Z
OCDF	0.332	JB	0.0345	MDL	11.3	PQL	ng/Kg	U	B

Sample ID: **SL-839-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.258	JBQ	0.0321	MDL	5.42	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-839-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.105	JBQ	0.0144	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0310	JBQ	0.0178	MDL	5.42	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8-HxCDD	5.42	U	0.0372	MDL	5.42	PQL	ng/Kg	UJ	FD
1,2,3,4,7,8-HXCDF	0.0493	JBQ	0.0271	MDL	5.42	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.175	JBQ	0.0399	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0734	JBQ	0.0264	MDL	5.42	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDD	0.299	JB	0.0366	MDL	5.42	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.254	JB	0.0308	MDL	5.42	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0930	JQ	0.0567	MDL	5.42	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.110	JBQ	0.0383	MDL	5.42	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0581	JB	0.0263	MDL	5.42	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0880	JBQ	0.0357	MDL	5.42	PQL	ng/Kg	UJ	B, FD
2,3,7,8-TCDF	1.08	U	0.0710	MDL	1.08	PQL	ng/Kg	UJ	FD
OCDD	2.31	JBQ	0.0968	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.257	JBQ	0.0631	MDL	10.8	PQL	ng/Kg	U	B

Sample ID: **SL-839-SA5B-SB-9.0-10.0** *Collected:* **1/14/2014 10:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	4.26	JB	0.0265	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	1.24	JB	0.0128	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.107	JBQ	0.0159	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0509	JBQ	0.0280	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0887	JBQ	0.0229	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.316	JBQ	0.0286	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.107	JBQ	0.0220	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.385	JB	0.0274	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.277	JB	0.0226	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0711	JQ	0.0370	MDL	5.13	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0974	JBQ	0.0231	MDL	5.13	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0936	JBQ	0.0207	MDL	5.13	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.129	JB	0.0216	MDL	5.13	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0640	JQ	0.0590	MDL	1.03	PQL	ng/Kg	J	Z
OCDF	6.51	JB	0.0285	MDL	10.3	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-843-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 1:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.08	JB	0.0274	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.449	JB	0.0112	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.114	JB	0.0158	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0643	JBQ	0.0303	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.177	JB	0.0246	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.665	JB	0.0313	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.203	JBQ	0.0233	MDL	5.49	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	1.01	JB	0.0291	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.717	JBQ	0.0284	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.242	JQ	0.0490	MDL	5.49	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.332	JBQ	0.0272	MDL	5.49	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.128	JBQ	0.0239	MDL	5.49	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.138	JBQ	0.0260	MDL	5.49	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0867	JQ	0.0691	MDL	1.10	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.134	JQ	0.0639	MDL	1.10	PQL	ng/Kg	J	Z
OCDF	0.932	JB	0.0344	MDL	11.0	PQL	ng/Kg	U	B

Sample ID: **SL-843-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 1:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.18	JB	0.0244	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.253	JBQ	0.0123	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.131	JB	0.0163	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.146	JBQ	0.0286	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.222	JB	0.0220	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.275	JB	0.0309	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.247	JBQ	0.0213	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.366	JBQ	0.0279	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.377	JB	0.0230	MDL	5.63	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.311	J	0.0386	MDL	5.63	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.444	JBQ	0.0226	MDL	5.63	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.138	JBQ	0.0207	MDL	5.63	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.316	JB	0.0214	MDL	5.63	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.137	JQ	0.0613	MDL	1.13	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-843-SA5B-SB-4.0-5.0 *Collected:* 1/14/2014 1:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	0.149	JQ	0.0467	MDL	1.13	PQL	ng/Kg	J	Z
OCDD	10.6	JB	0.0255	MDL	11.3	PQL	ng/Kg	J	Z
OCDF	0.709	JB	0.0340	MDL	11.3	PQL	ng/Kg	U	B

Sample ID: SL-843-SA5B-SB-7.0-8.0 *Collected:* 1/14/2014 1:40:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.30	JB	0.0291	MDL	5.56	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.631	JB	0.0141	MDL	5.56	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.136	JBQ	0.0175	MDL	5.56	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0693	JBQ	0.0302	MDL	5.56	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.161	JB	0.0245	MDL	5.56	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.187	JB	0.0313	MDL	5.56	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.134	JB	0.0238	MDL	5.56	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.194	JBQ	0.0299	MDL	5.56	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.160	JB	0.0255	MDL	5.56	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.105	JQ	0.0387	MDL	5.56	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.242	JB	0.0212	MDL	5.56	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.130	JB	0.0235	MDL	5.56	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.185	JBQ	0.0208	MDL	5.56	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0741	JQ	0.0457	MDL	1.11	PQL	ng/Kg	J	Z
OCDF	1.46	JB	0.0324	MDL	11.1	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-839-SA5B-SB-15.5-16.5 *Collected:* 1/14/2014 10:30:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.6	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z
EFH (C30-C40)	7.4	J	4.6	MDL	12	PQL	mg/Kg	J	Z
EFH (C8-C11)	4.5	J	2.3	MDL	5.8	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-839-SA5B-SB-9.0-10.0 *Collected:* 1/14/2014 10:15:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.2	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z

Sample ID: SL-843-SA5B-SB-4.0-5.0 *Collected:* 1/14/2014 1:30:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.8	J	2.3	MDL	5.7	PQL	mg/Kg	J	Z

Sample ID: SL-843-SA5B-SB-7.0-8.0 *Collected:* 1/14/2014 1:40:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.1	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-1139-SA5B-SB-4.0-5.0 *Collected:* 1/14/2014 9:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	19		3.6	MDL	19	PQL	ug/Kg	J	FD

Sample ID: SL-839-SA5B-SB-4.0-5.0 *Collected:* 1/14/2014 9:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	7.8	J	3.6	MDL	19	PQL	ug/Kg	J	Z, FD

Sample ID: SL-843-SA5B-SB-0.0-0.5 *Collected:* 1/14/2014 1:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	6.7	J	3.7	MDL	19	PQL	ug/Kg	J	Z, S
AROCLOR 1254	7.7	J	4.9	MDL	19	PQL	ug/Kg	J	Z, S

Sample ID: SL-843-SA5B-SB-4.0-5.0 *Collected:* 1/14/2014 1:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	8.6	J	3.8	MDL	19	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: **SL-843-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 1:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	6.5	J	5.0	MDL	19	PQL	ug/Kg	J	Z

Sample ID: **SL-843-SA5B-SB-7.0-8.0** *Collected:* **1/14/2014 1:40:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1248	14	J	3.7	MDL	19	PQL	ug/Kg	J	Z
AROCLOR 1254	11	J	4.9	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: **EB-011414** *Collected:* **1/14/2014 3:00:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	0.090	J	0.053	MDL	1.1	PQL	ug/L	U	B
Diethylphthalate	0.44	J	0.053	MDL	1.1	PQL	ug/L	J	Z
Di-n-butylphthalate	0.17	J	0.053	MDL	1.1	PQL	ug/L	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-1139-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:10:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	2.2		0.73	MDL	1.8	PQL	ug/Kg	J	FD
2-METHYLNAPHTHALENE	3.4		0.73	MDL	1.8	PQL	ug/Kg	J	FD
ANTHRACENE	0.67	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	3.0		0.73	MDL	1.8	PQL	ug/Kg	J	FD
BENZO(G,H,I)PERYLENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(K)FLUORANTHENE	1.3	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z, FD
CHRYSENE	3.4		0.36	MDL	1.8	PQL	ug/Kg	J	FD
INDENO(1,2,3-CD)PYRENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD
NAPHTHALENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-839-SA5B-SB-0.0-0.5** *Collected:* **1/14/2014 9:00:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	7.2	J	3.6	MDL	18	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	0.99	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-15.5-16.5** *Collected:* **1/14/2014 10:30:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.87	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
2-METHYLNAPHTHALENE	1.2	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	1.1	J	0.77	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-839-SA5B-SB-4.0-5.0** *Collected:* **1/14/2014 9:15:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD
2-METHYLNAPHTHALENE	1.8	U	0.73	MDL	1.8	PQL	ug/Kg	UJ	FD
ANTHRACENE	0.75	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	6.0		0.73	MDL	1.8	PQL	ug/Kg	J	FD
BENZO(G,H,I)PERYLENE	0.96	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z, FD
BENZO(K)FLUORANTHENE	2.5		0.73	MDL	1.8	PQL	ug/Kg	J	FD
CHRYSENE	14		0.37	MDL	1.8	PQL	ug/Kg	J	FD
INDENO(1,2,3-CD)PYRENE	1.1	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	0.76	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z, FD
PYRENE	7.0		0.73	MDL	1.8	PQL	ug/Kg	J	Q

Sample ID: **SL-839-SA5B-SB-9.0-10.0** *Collected:* **1/14/2014 10:15:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	1.6	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	4.7	J	3.7	MDL	19	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.5	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	22		6.6	MDL	20	PQL	ug/Kg	J	L
INDENO(1,2,3-CD)PYRENE	1.7	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **SVOA**

Method: **8270D SIM** ***Matrix:*** **SO**

Sample ID: **SL-843-SA5B-SB-0.0-0.5** ***Collected:*** **1/14/2014 1:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ANTHRACENE	0.55	J	0.37	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.7	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.5	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	1.8	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-843-SA5B-SB-4.0-5.0** ***Collected:*** **1/14/2014 1:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(A)PYRENE	0.95	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.1	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
CHRYSENE	1.6	J	0.38	MDL	1.9	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
NAPHTHALENE	0.91	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z
PYRENE	1.4	J	0.76	MDL	1.9	PQL	ug/Kg	J	Z

Sample ID: **SL-843-SA5B-SB-7.0-8.0** ***Collected:*** **1/14/2014 1:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(A)ANTHRACENE	1.4	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.7	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	0.74	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.3	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z
PHENANTHRENE	1.7	J	0.74	MDL	1.9	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Field Blank Contamination
FD	Field Duplicate Precision
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH159

Method Blank Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK0210B371905	1/22/2014 7:05:00 PM	1,2,3,4,6,7,8-HPCDD	1.72 pg/L	EB-011414
		1,2,3,4,6,7,8-HPCDF	0.834 pg/L	
		1,2,3,4,7,8,9-HPCDF	1.32 pg/L	
		1,2,3,4,7,8-HXCDF	0.849 pg/L	
		1,2,3,6,7,8-HXCDD	0.798 pg/L	
		1,2,3,6,7,8-HXCDF	0.507 pg/L	
		1,2,3,7,8,9-HXCDD	0.671 pg/L	
		1,2,3,7,8,9-HXCDF	1.39 pg/L	
		1,2,3,7,8-PECDD	0.845 pg/L	
		1,2,3,7,8-PECDF	0.852 pg/L	
		2,3,4,7,8-PECDF	0.413 pg/L	
		OCDD	3.47 pg/L	
		OCDF	2.37 pg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-011414(RES)	1,2,3,4,6,7,8-HPCDD	0.524 pg/L	0.524U pg/L
EB-011414(RES)	1,2,3,4,6,7,8-HPCDF	0.280 pg/L	0.280U pg/L
EB-011414(RES)	1,2,3,4,7,8,9-HPCDF	0.352 pg/L	0.352U pg/L
EB-011414(RES)	1,2,3,4,7,8-HXCDF	0.302 pg/L	0.302U pg/L
EB-011414(RES)	1,2,3,6,7,8-HXCDD	0.852 pg/L	0.852U pg/L
EB-011414(RES)	1,2,3,6,7,8-HXCDF	0.501 pg/L	0.501U pg/L
EB-011414(RES)	1,2,3,7,8-PECDF	0.459 pg/L	0.459U pg/L
EB-011414(RES)	OCDD	0.900 pg/L	0.900U pg/L
EB-011414(RES)	OCDF	1.27 pg/L	1.27U pg/L

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK0210B371900	1/23/2014 7:00:00 PM	1,2,3,4,6,7,8-HPCDD	0.121 ng/Kg	SL-1139-SA5B-SB-4.0-5.0
		1,2,3,4,6,7,8-HPCDF	0.0573 ng/Kg	SL-839-SA5B-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0611 ng/Kg	SL-839-SA5B-SB-15.5-16.5
		1,2,3,4,7,8-HxCDD	0.0478 ng/Kg	SL-839-SA5B-SB-4.0-5.0
		1,2,3,4,7,8-HXCDF	0.0277 ng/Kg	SL-839-SA5B-SB-9.0-10.0
		1,2,3,6,7,8-HXCDD	0.0467 ng/Kg	SL-843-SA5B-SB-0.0-0.5
		1,2,3,6,7,8-HXCDF	0.0458 ng/Kg	SL-843-SA5B-SB-4.0-5.0
		1,2,3,7,8,9-HXCDD	0.0330 ng/Kg	SL-843-SA5B-SB-7.0-8.0
		1,2,3,7,8,9-HXCDF	0.0999 ng/Kg	
		1,2,3,7,8-PECDF	0.0637 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0497 ng/Kg	
		2,3,4,7,8-PECDF	0.0767 ng/Kg	
		OCDD	0.267 ng/Kg	
		OCDF	0.235 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.397 ng/Kg	0.397U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.171 ng/Kg	0.171U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0790 ng/Kg	0.0790U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.0806 ng/Kg	0.0806U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.152 ng/Kg	0.152U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.399 ng/Kg	0.399U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.153 ng/Kg	0.153U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.158 ng/Kg	0.158U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.336 ng/Kg	0.336U ng/Kg
SL-1139-SA5B-SB-4.0-5.0(RES)	OCDF	0.373 ng/Kg	0.373U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.448 ng/Kg	0.448U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.143 ng/Kg	0.143U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0755 ng/Kg	0.0755U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0681 ng/Kg	0.0681U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.175 ng/Kg	0.175U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0935 ng/Kg	0.0935U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.219 ng/Kg	0.219U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0263 ng/Kg	0.0263U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0752 ng/Kg	0.0752U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.103 ng/Kg	0.103U ng/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	OCDF	0.408 ng/Kg	0.408U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,4,6,7,8-HPCDF	0.203 ng/Kg	0.203U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,4,7,8,9-HPCDF	0.111 ng/Kg	0.111U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,4,7,8-HXCDF	0.121 ng/Kg	0.121U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,6,7,8-HXCDF	0.0755 ng/Kg	0.0755U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,7,8,9-HXCDD	0.0405 ng/Kg	0.0405U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,7,8,9-HXCDF	0.0988 ng/Kg	0.0988U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	1,2,3,7,8-PECDF	0.0717 ng/Kg	0.0717U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	2,3,4,6,7,8-HXCDF	0.0712 ng/Kg	0.0712U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	2,3,4,7,8-PECDF	0.118 ng/Kg	0.118U ng/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	OCDF	0.332 ng/Kg	0.332U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.258 ng/Kg	0.258U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.105 ng/Kg	0.105U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0310 ng/Kg	0.0310U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0493 ng/Kg	0.0493U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDD	0.175 ng/Kg	0.175U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0734 ng/Kg	0.0734U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.254 ng/Kg	0.254U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.110 ng/Kg	0.110U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0581 ng/Kg	0.0581U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.0880 ng/Kg	0.0880U ng/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	OCDF	0.257 ng/Kg	0.257U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	1,2,3,4,7,8,9-HPCDF	0.107 ng/Kg	0.107U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-839-SA5B-SB-9.0-10.0(RES)	1,2,3,4,7,8-HxCDD	0.0509 ng/Kg	0.0509U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	1,2,3,4,7,8-HXCDF	0.0887 ng/Kg	0.0887U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	1,2,3,6,7,8-HXCDF	0.107 ng/Kg	0.107U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	1,2,3,7,8,9-HXCDF	0.277 ng/Kg	0.277U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	1,2,3,7,8-PECDF	0.0974 ng/Kg	0.0974U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	2,3,4,6,7,8-HXCDF	0.0936 ng/Kg	0.0936U ng/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	2,3,4,7,8-PECDF	0.129 ng/Kg	0.129U ng/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.114 ng/Kg	0.114U ng/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0643 ng/Kg	0.0643U ng/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDF	0.203 ng/Kg	0.203U ng/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	2,3,4,6,7,8-HXCDF	0.128 ng/Kg	0.128U ng/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	2,3,4,7,8-PECDF	0.138 ng/Kg	0.138U ng/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	OCDF	0.932 ng/Kg	0.932U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.253 ng/Kg	0.253U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.131 ng/Kg	0.131U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	1,2,3,4,7,8-HxCDD	0.146 ng/Kg	0.146U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8,9-HXCDF	0.377 ng/Kg	0.377U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.138 ng/Kg	0.138U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.316 ng/Kg	0.316U ng/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	OCDF	0.709 ng/Kg	0.709U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	1,2,3,4,7,8,9-HPCDF	0.136 ng/Kg	0.136U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	1,2,3,4,7,8-HxCDD	0.0693 ng/Kg	0.0693U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	1,2,3,6,7,8-HXCDD	0.187 ng/Kg	0.187U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	1,2,3,6,7,8-HXCDF	0.134 ng/Kg	0.134U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	1,2,3,7,8,9-HXCDF	0.160 ng/Kg	0.160U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	1,2,3,7,8-PECDF	0.242 ng/Kg	0.242U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	2,3,4,6,7,8-HXCDF	0.130 ng/Kg	0.130U ng/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	2,3,4,7,8-PECDF	0.185 ng/Kg	0.185U ng/Kg

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P02135BB220304	1/24/2014 3:04:00 AM	CALCIUM MAGNESIUM	0.0510 mg/L 0.0191 mg/L	EB-011414

Method Blank Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P02037AB221330	1/21/2014 1:30:00 PM	LITHIUM TIN ZINC	0.44 mg/Kg 1.72 mg/Kg 1.24 mg/Kg	SL-1139-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-0.0-0.5 SL-839-SA5B-SB-15.5-16.5 SL-839-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-9.0-10.0 SL-843-SA5B-SB-0.0-0.5 SL-843-SA5B-SB-4.0-5.0 SL-843-SA5B-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1139-SA5B-SB-4.0-5.0(RES)	TIN	3.22 mg/Kg	3.22U mg/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	TIN	3.22 mg/Kg	3.22U mg/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	TIN	2.99 mg/Kg	2.99U mg/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	TIN	3.30 mg/Kg	3.30U mg/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	TIN	3.23 mg/Kg	3.23U mg/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	TIN	3.28 mg/Kg	3.28U mg/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	TIN	3.37 mg/Kg	3.37U mg/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	TIN	3.19 mg/Kg	3.19U mg/Kg

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWH02B261809	1/24/2014 6:09:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE	0.18 ug/L	EB-011414

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-011414(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.090 ug/L	1.1U ug/L

Field Blank Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-041613(REA2/TOT)	4/16/2013 3:15:00 PM	MOLYBDENUM TIN	0.0132 mg/L 0.0029 mg/L	SL-1139-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-0.0-0.5 SL-839-SA5B-SB-15.5-16.5 SL-839-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-9.0-10.0 SL-843-SA5B-SB-0.0-0.5 SL-843-SA5B-SB-4.0-5.0 SL-843-SA5B-SB-7.0-8.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-1139-SA5B-SB-4.0-5.0(RES)	MOLYBDENUM	1.65 mg/Kg	1.65U mg/Kg
SL-839-SA5B-SB-0.0-0.5(RES)	MOLYBDENUM	0.264 mg/Kg	0.264U mg/Kg
SL-839-SA5B-SB-15.5-16.5(RES)	MOLYBDENUM	0.271 mg/Kg	0.271U mg/Kg
SL-839-SA5B-SB-4.0-5.0(RES)	MOLYBDENUM	2.13 mg/Kg	2.13U mg/Kg
SL-839-SA5B-SB-9.0-10.0(RES)	MOLYBDENUM	0.542 mg/Kg	0.542U mg/Kg
SL-843-SA5B-SB-0.0-0.5(RES)	MOLYBDENUM	0.485 mg/Kg	0.485U mg/Kg
SL-843-SA5B-SB-4.0-5.0(RES)	MOLYBDENUM	0.349 mg/Kg	0.349U mg/Kg
SL-843-SA5B-SB-7.0-8.0(RES)	MOLYBDENUM	0.243 mg/Kg	0.243U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8082A**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-843-SA5B-SB-0.0-0.5	TETRACHLORO-M-XYLENE	125	45-120	All Target Analytes	J (all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-839-SA5B-SB-4.0-5.0MS (TOT) SL-839-SA5B-SB-4.0-5.0MSD (TOT) (SL-1139-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-0.0-0.5 SL-839-SA5B-SB-15.5-16.5 SL-839-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-9.0-10.0 SL-843-SA5B-SB-0.0-0.5 SL-843-SA5B-SB-4.0-5.0 SL-843-SA5B-SB-7.0-8.0)	ALUMINUM CALCIUM IRON MAGNESIUM MANGANESE TITANIUM	1856 177 1232 238 213 233	1826 150 1208 236 136 267	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - - -	ALUMINUM CALCIUM IRON MAGNESIUM MANGANESE TITANIUM	No Qual, >4x
SL-839-SA5B-SB-4.0-5.0MS (TOT) SL-839-SA5B-SB-4.0-5.0MSD (TOT) (SL-1139-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-0.0-0.5 SL-839-SA5B-SB-15.5-16.5 SL-839-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-9.0-10.0 SL-843-SA5B-SB-0.0-0.5 SL-843-SA5B-SB-4.0-5.0 SL-843-SA5B-SB-7.0-8.0)	ANTIMONY	69	68	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-839-SA5B-SB-4.0-5.0MS (TOT) SL-839-SA5B-SB-4.0-5.0MSD (TOT) (SL-1139-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-0.0-0.5 SL-839-SA5B-SB-15.5-16.5 SL-839-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-9.0-10.0 SL-843-SA5B-SB-0.0-0.5 SL-843-SA5B-SB-4.0-5.0 SL-843-SA5B-SB-7.0-8.0)	STRONTIUM	132	158	75.00-125.00	-	STRONTIUM	J(all detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-839-SA5B-SB-4.0-5.0MS SL-839-SA5B-SB-4.0-5.0MSD (SL-839-SA5B-SB-4.0-5.0)	Di-n-octylphthalate PYRENE	173 -	175 149	52.00-162.00 26.00-143.00	- -	Di-n-octylphthalate PYRENE	J(all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8015M**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-839-SA5B-SB-4.0-5.0MSD	EFH (C21-C30)	-	151	49.00-123.00	33 (20.00)	EFH (C21-C30)	
(SL-839-SA5B-SB-4.0-5.0)	EFH (C30-C40)	-	194	49.00-123.00	68 (20.00)	EFH (C30-C40)	J(all detects)
	EFH (C8-C11)	-	-	49.00-123.00	25 (20.00)	EFH (C8-C11)	

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 7471B
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-839-SA5B-SB-0.0-0.5DUP (TOT) (SL-839-SA5B-SB-0.0-0.5 SL -843-SA5B-SB-0.0-0.5)	MERCURY	86	20.00	No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P2LCLCSQ260334	BIS(2-ETHYLHEXYL)PHTHALAT	132	-	79.00-121.00	-	BIS(2-ETHYLHEXYL)PHTHALA	
(SL-1139-SA5B-SB-4.0-5.0	Butylbenzylphthalate	128	-	77.00-123.00	-	Butylbenzylphthalate	
SL-839-SA5B-SB-0.0-0.5 SL-839-SA5B-SB-15.5-16.5 SL-839-SA5B-SB-4.0-5.0 SL-839-SA5B-SB-9.0-10.0 SL-843-SA5B-SB-0.0-0.5 SL-843-SA5B-SB-4.0-5.0 SL-843-SA5B-SB-7.0-8.0)							J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-839-SA5B-SB-4.0-5.0	SL-1139-SA5B-SB-4.0-5.0			
MOISTURE	9.2	8.6	7		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-839-SA5B-SB-4.0-5.0	SL-1139-SA5B-SB-4.0-5.0			
1,2,3,4,6,7,8-HPCDD	0.258	0.397	42	50.00	
1,2,3,4,6,7,8-HPCDF	0.105	0.171	48	50.00	
1,2,3,6,7,8-HXCDD	0.175	0.260	39	50.00	
1,2,3,7,8,9-HXCDD	0.299	0.424	35	50.00	
1,2,3,7,8,9-HXCDF	0.254	0.399	44	50.00	No Qualifiers Applied
1,2,3,7,8-PECDF	0.110	0.153	33	50.00	
OCDD	2.31	3.41	38	50.00	
OCDF	0.257	0.373	37	50.00	
1,2,3,4,7,8,9-HPCDF	0.0310	0.0790	87	50.00	
1,2,3,4,7,8-HxCDD	5.42 U	0.0806	200	50.00	
1,2,3,4,7,8-HXCDF	0.0493	0.163	107	50.00	
1,2,3,6,7,8-HXCDF	0.0734	0.152	70	50.00	J(all detects)
1,2,3,7,8-PECDD	0.0930	0.0499	60	50.00	UJ(all non-detects)
2,3,4,6,7,8-HXCDF	0.0581	0.158	92	50.00	
2,3,4,7,8-PECDF	0.0880	0.336	117	50.00	
2,3,7,8-TCDF	1.08 U	0.0983	200	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-839-SA5B-SB-4.0-5.0 (TOT)	SL-1139-SA5B-SB-4.0-5.0 (TOT)			
ALUMINUM	15800	15000	5	50.00	
ARSENIC	4.40	4.48	2	50.00	
BARIUM	99.0	102	3	50.00	
BERYLLIUM	0.712	0.717	1	50.00	
BORON	1.66	1.30	24	50.00	
CALCIUM	3510	3650	4	50.00	
CHROMIUM	24.4	23.6	3	50.00	
COBALT	5.36	5.77	7	50.00	
COPPER	17.3	17.6	2	50.00	
IRON	22200	23200	4	50.00	
LEAD	6.13	6.30	3	50.00	
LITHIUM	26.6	25.2	5	50.00	
MAGNESIUM	4750	4850	2	50.00	No Qualifiers Applied
MANGANESE	319	329	3	50.00	
MOLYBDENUM	2.13	1.65	25	50.00	
NICKEL	12.5	13.2	5	50.00	
PHOSPHORUS	345	351	2	50.00	
POTASSIUM	2770	2710	2	50.00	
SODIUM	175	171	2	50.00	
TIN	3.30	3.22	2	50.00	
TITANIUM	1220	1110	9	50.00	
VANADIUM	38.9	39.2	1	50.00	
ZINC	55.6	55.2	1	50.00	
Zirconium	3.37	2.96	13	50.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg) SL-839-SA5B-SB-4.0-5.0 (TOT)	Concentration (mg/Kg) SL-1139-SA5B-SB-4.0-5.0 (TOT)	Sample RPD	eQAPP RPD	Flag
SILVER	0.0355	0.0306	15	50.00	No Qualifiers Applied
STRONTIUM	24.3	23.6	3	50.00	
THALLIUM	0.260	0.266	2	50.00	
SELENIUM	0.436 U	0.124	200	50.00	J(all detects) UJ(all non-detects)

Method: 8082A
Matrix: SO

Analyte	Concentration (ug/Kg) SL-839-SA5B-SB-4.0-5.0	Concentration (ug/Kg) SL-1139-SA5B-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
AROCLOR 1248	7.8	19	84	50.00	J(all detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg) SL-839-SA5B-SB-4.0-5.0	Concentration (ug/Kg) SL-1139-SA5B-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
ANTHRACENE	0.75	0.67	11	50.00	No Qualifiers Applied
BENZO(A)ANTHRACENE	4.1	2.7	41	50.00	
BENZO(A)PYRENE	2.4	1.8	29	50.00	
FLUORANTHENE	5.8	6.2	7	50.00	
PHENANTHRENE	2.1	3.1	38	50.00	
PYRENE	7.0	8.3	17	50.00	
1-METHYLNAPHTHALENE	1.8 U	2.2	200	50.00	J(all detects) UJ(all non-detects)
2-METHYLNAPHTHALENE	1.8 U	3.4	200	50.00	
BENZO(B)FLUORANTHENE	6.0	3.0	67	50.00	
BENZO(G,H,I)PERYLENE	0.96	1.8 U	200	50.00	
BENZO(K)FLUORANTHENE	2.5	1.3	63	50.00	
CHRYSENE	14	3.4	122	50.00	
INDENO(1,2,3-CD)PYRENE	1.1	1.8 U	200	50.00	
NAPHTHALENE	0.76	1.8 U	200	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit) SL-839-SA5B-SB-4.0-5.0	Concentration (pH unit) SL-1139-SA5B-SB-4.0-5.0	Sample RPD	eQAPP RPD	Flag
PH	7.42	7.77	5	50.00	No Qualifiers Applied

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-011414	1,2,3,4,6,7,8-HPCDD	JB	0.524	10.1	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.280	10.1	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.352	10.1	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	J	0.537	10.1	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.302	10.1	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.852	10.1	PQL	pg/L	J (all detects)
	1,2,3,6,7,8-HXCDF	JBQ	0.501	10.1	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.459	10.1	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	J	0.404	10.1	PQL	pg/L	
	OCDD	JB	0.900	20.1	PQL	pg/L	
	OCDF	JBQ	1.27	20.1	PQL	pg/L	

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-011414	BARIUM	J	0.00036	0.0100	PQL	mg/L	J (all detects)

Method: 8270D SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-011414	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.090	1.1	PQL	ug/L	
	Diethylphthalate	J	0.44	1.1	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.17	1.1	PQL	ug/L	

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1139-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.397	5.23	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.171	5.23	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0790	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0806	5.23	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.163	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.260	5.23	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.152	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.424	5.23	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.399	5.23	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.0499	5.23	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.153	5.23	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.158	5.23	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.336	5.23	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0983	1.05	PQL	ng/Kg	
	OCDD	JB	3.41	10.5	PQL	ng/Kg	
	OCDF	JBQ	0.373	10.5	PQL	ng/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-839-SA5B-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.448	5.18	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.143	5.18	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0755	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0681	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.175	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0935	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.261	5.18	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.219	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0469	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0263	5.18	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0752	5.18	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.103	5.18	PQL	ng/Kg	
	OCDD	JB	4.52	10.4	PQL	ng/Kg	
	OCDF	JB	0.408	10.4	PQL	ng/Kg	
SL-839-SA5B-SB-15.5-16.5	1,2,3,4,6,7,8-HPCDD	JB	0.733	5.65	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.203	5.65	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.111	5.65	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.121	5.65	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0755	5.65	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0405	5.65	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0988	5.65	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0717	5.65	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0712	5.65	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.118	5.65	PQL	ng/Kg	
	OCDD	JB	3.21	11.3	PQL	ng/Kg	
	OCDF	JB	0.332	11.3	PQL	ng/Kg	
SL-839-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.258	5.42	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.105	5.42	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0310	5.42	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0493	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.175	5.42	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0734	5.42	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.299	5.42	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.254	5.42	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0930	5.42	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.110	5.42	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0581	5.42	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0880	5.42	PQL	ng/Kg	
	OCDD	JBQ	2.31	10.8	PQL	ng/Kg	
	OCDF	JBQ	0.257	10.8	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-839-SA5B-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JB	4.26	5.13	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	1.24	5.13	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.107	5.13	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0509	5.13	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0887	5.13	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.316	5.13	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.107	5.13	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.385	5.13	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.277	5.13	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0711	5.13	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0974	5.13	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0936	5.13	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.129	5.13	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0640	1.03	PQL	ng/Kg	
	OCDF	JB	6.51	10.3	PQL	ng/Kg	
SL-843-SA5B-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.08	5.49	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.449	5.49	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.114	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0643	5.49	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.177	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.665	5.49	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.203	5.49	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	1.01	5.49	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.717	5.49	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.242	5.49	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.332	5.49	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.128	5.49	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.138	5.49	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0867	1.10	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.134	1.10	PQL	ng/Kg	
	OCDF	JB	0.932	11.0	PQL	ng/Kg	
SL-843-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	1.18	5.63	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.253	5.63	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.131	5.63	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.146	5.63	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.222	5.63	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.275	5.63	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.247	5.63	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.366	5.63	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.377	5.63	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.311	5.63	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.444	5.63	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.138	5.63	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.316	5.63	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.137	1.13	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.149	1.13	PQL	ng/Kg	
	OCDD	JB	10.6	11.3	PQL	ng/Kg	
	OCDF	JB	0.709	11.3	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-843-SA5B-SB-7.0-8.0	1,2,3,4,6,7,8-HPCDD	JB	3.30	5.56	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.631	5.56	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.136	5.56	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0693	5.56	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.161	5.56	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.187	5.56	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.134	5.56	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.194	5.56	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.160	5.56	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.105	5.56	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.242	5.56	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.130	5.56	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.185	5.56	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0741	1.11	PQL	ng/Kg	
	OCDF	JB	1.46	11.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1139-SA5B-SB-4.0-5.0	BERYLLIUM	J	0.717	1.07	PQL	mg/Kg	
	BORON	J	1.30	10.7	PQL	mg/Kg	
	MOLYBDENUM	J	1.65	2.15	PQL	mg/Kg	J (all detects)
	TIN	J	3.22	10.7	PQL	mg/Kg	
	Zirconium	J	2.96	5.36	PQL	mg/Kg	
SL-839-SA5B-SB-0.0-0.5	BERYLLIUM	J	0.725	1.06	PQL	mg/Kg	
	BORON	J	1.26	10.6	PQL	mg/Kg	
	MOLYBDENUM	J	0.264	2.11	PQL	mg/Kg	J (all detects)
	TIN	J	3.22	10.6	PQL	mg/Kg	
	Zirconium	J	3.38	5.28	PQL	mg/Kg	
SL-839-SA5B-SB-15.5-16.5	ARSENIC	J	3.37	4.47	PQL	mg/Kg	
	BERYLLIUM	J	0.462	1.12	PQL	mg/Kg	
	BORON	J	1.98	11.2	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.271	2.23	PQL	mg/Kg	
	TIN	J	2.99	11.2	PQL	mg/Kg	
	Zirconium	J	4.55	5.58	PQL	mg/Kg	
SL-839-SA5B-SB-4.0-5.0	BERYLLIUM	J	0.712	1.09	PQL	mg/Kg	
	BORON	J	1.66	10.9	PQL	mg/Kg	
	MOLYBDENUM	J	2.13	2.18	PQL	mg/Kg	J (all detects)
	TIN	J	3.30	10.9	PQL	mg/Kg	
	Zirconium	J	3.37	5.45	PQL	mg/Kg	
SL-839-SA5B-SB-9.0-10.0	BERYLLIUM	J	0.730	1.08	PQL	mg/Kg	
	BORON	J	1.03	10.8	PQL	mg/Kg	
	MOLYBDENUM	J	0.542	2.16	PQL	mg/Kg	J (all detects)
	TIN	J	3.23	10.8	PQL	mg/Kg	
	Zirconium	J	3.22	5.40	PQL	mg/Kg	
SL-843-SA5B-SB-0.0-0.5	BERYLLIUM	J	0.890	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.485	2.16	PQL	mg/Kg	J (all detects)
	TIN	J	3.28	10.8	PQL	mg/Kg	
	Zirconium	J	3.78	5.41	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-843-SA5B-SB-4.0-5.0	BERYLLIUM	J	1.01	1.13	PQL	mg/Kg	J (all detects)
	BORON	J	3.71	11.3	PQL	mg/Kg	
	MOLYBDENUM	J	0.349	2.25	PQL	mg/Kg	
	TIN	J	3.37	11.3	PQL	mg/Kg	
	Zirconium	J	4.02	5.63	PQL	mg/Kg	
SL-843-SA5B-SB-7.0-8.0	BERYLLIUM	J	0.765	1.10	PQL	mg/Kg	J (all detects)
	BORON	J	1.10	11.0	PQL	mg/Kg	
	MOLYBDENUM	J	0.243	2.20	PQL	mg/Kg	
	TIN	J	3.19	11.0	PQL	mg/Kg	
	Zirconium	J	3.43	5.51	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1139-SA5B-SB-4.0-5.0	SELENIUM	J	0.124	0.429	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0306	0.215	PQL	mg/Kg	
SL-839-SA5B-SB-0.0-0.5	SELENIUM	J	0.145	0.422	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0715	0.211	PQL	mg/Kg	
SL-839-SA5B-SB-15.5-16.5	SILVER	J	0.0323	0.223	PQL	mg/Kg	J (all detects)
	THALLIUM	J	0.188	0.223	PQL	mg/Kg	
SL-839-SA5B-SB-4.0-5.0	SILVER	J	0.0355	0.218	PQL	mg/Kg	J (all detects)
SL-839-SA5B-SB-9.0-10.0	SELENIUM	J	0.122	0.432	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0466	0.216	PQL	mg/Kg	
SL-843-SA5B-SB-0.0-0.5	SELENIUM	J	0.184	0.433	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0418	0.216	PQL	mg/Kg	
SL-843-SA5B-SB-4.0-5.0	SELENIUM	J	0.130	0.451	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0956	0.225	PQL	mg/Kg	
SL-843-SA5B-SB-7.0-8.0	SILVER	J	0.0573	0.220	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-843-SA5B-SB-4.0-5.0	MERCURY	J	0.0129	0.0178	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-839-SA5B-SB-15.5-16.5	EFH (C21-C30) EFH (C30-C40) EFH (C8-C11)	J J J	4.6 7.4 4.5	5.8 12 5.8	PQL PQL PQL	mg/Kg mg/Kg mg/Kg	J (all detects)
SL-839-SA5B-SB-9.0-10.0	EFH (C21-C30)	J	4.2	5.5	PQL	mg/Kg	J (all detects)
SL-843-SA5B-SB-4.0-5.0	EFH (C21-C30)	J	4.8	5.7	PQL	mg/Kg	J (all detects)
SL-843-SA5B-SB-7.0-8.0	EFH (C21-C30)	J	5.1	5.6	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-839-SA5B-SB-4.0-5.0	AROCLOR 1248	J	7.8	19	PQL	ug/Kg	J (all detects)
SL-843-SA5B-SB-0.0-0.5	AROCLOR 1248 AROCLOR 1254	J J	6.7 7.7	19 19	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-843-SA5B-SB-4.0-5.0	AROCLOR 1248 AROCLOR 1254	J J	8.6 6.5	19 19	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-843-SA5B-SB-7.0-8.0	AROCLOR 1248 AROCLOR 1254	J J	14 11	19 19	PQL PQL	ug/Kg ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-1139-SA5B-SB-4.0-5.0	ANTHRACENE BENZO(K)FLUORANTHENE	J J	0.67 1.3	1.8 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-839-SA5B-SB-0.0-0.5	BENZO(E)PYRENE DIBENZO(A,H)ANTHRACENE	J J	7.2 0.99	18 1.8	PQL PQL	ug/Kg ug/Kg	J (all detects)
SL-839-SA5B-SB-15.5-16.5	1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE NAPHTHALENE	J J J	0.87 1.2 1.1	1.9 1.9 1.9	PQL PQL PQL	ug/Kg ug/Kg ug/Kg	J (all detects)
SL-839-SA5B-SB-4.0-5.0	ANTHRACENE BENZO(G,H,I)PERYLENE INDENO(1,2,3-CD)PYRENE NAPHTHALENE	J J J J	0.75 0.96 1.1 0.76	1.8 1.8 1.8 1.8	PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-839-SA5B-SB-9.0-10.0	ANTHRACENE BENZO(E)PYRENE BENZO(G,H,I)PERYLENE INDENO(1,2,3-CD)PYRENE	J J J J	1.6 4.7 1.5 1.7	1.8 19 1.8 1.8	PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)
SL-843-SA5B-SB-0.0-0.5	ANTHRACENE BENZO(A)PYRENE BENZO(K)FLUORANTHENE PHENANTHRENE	J J J J	0.55 1.7 1.5 1.8	1.9 1.9 1.9 1.9	PQL PQL PQL PQL	ug/Kg ug/Kg ug/Kg ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH159 **Laboratory: LL**

EDD Filename: PH159_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-843-SA5B-SB-4.0-5.0	BENZO(A)PYRENE	J	0.95	1.9	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.1	1.9	PQL	ug/Kg	
	CHRYSENE	J	1.6	1.9	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.9	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.91	1.9	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.9	PQL	ug/Kg	
	PYRENE	J	1.4	1.9	PQL	ug/Kg	
SL-843-SA5B-SB-7.0-8.0	BENZO(A)ANTHRACENE	J	1.4	1.9	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.7	1.9	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	0.74	1.9	PQL	ug/Kg	J (all detects)
	BENZO(K)FLUORANTHENE	J	1.3	1.9	PQL	ug/Kg	
	PHENANTHRENE	J	1.7	1.9	PQL	ug/Kg	

LDC #: 31413B4 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/14/14
SDG #: PH159 ADR Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: CL
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 1/14/14
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	A	Dup (Hg ok by difference)
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	ICP Serial Dilution	SW	
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	N	
XIII.	Field Duplicates	—	(2,3)
XIV.	Field Blanks	SW	EB= 9 FB = FB-041613 (SDG PH032)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil/water

1	SL-839-SA5B-SB-0.0-0.5	11	SL-839-SA5B-SB-4.0-5.0MSD	21		31	
2	SL-839-SA5B-SB-4.0-5.0	12	SL-839-SA5B-SB-4.0-5.0DUP	22		32	
3	SL-1139-SA5B-SB-4.0-5.0	13	(All) MS (Hg)	23		33	
4	SL-839-SA5B-SB-9.0-10.0	14	MSD	24		34	
5	SL-839-SA5B-SB-15.5-16.5	15	DUP	25		35	
6	SL-843-SA5B-SB-0.0-0.5	16		26		36	
7	SL-843-SA5B-SB-4.0-5.0	17		27		37	
8	SL-843-SA5B-SB-7.0-8.0	18		28		38	
9	EB-011414 W	19		29		39	
10	SL-839-SA5B-SB-4.0-5.0MS	20		30		40	

Notes:

LDC #: 31413B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 1/14/14 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	EB-011414 (SDG: PH159)	Action Limit	No qualifiers (>5x)									
Ba	0.00036	0.18										

Blank units: mg/L **Associated sample units:** mg/Kg
Sampling date: 4/16/13 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	FB-041613 (SDG: PH032)	Action Limit	1	2	3	4	5	6	7	8		
Mo	0.0132	6.6	0.264 -	2.13 -	1.65 -	0.542 -	0.271 -	0.485 -	0.349 -	0.243 -		
Sn	0.0029	1.45										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

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74x: no qualifiers

QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH159
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7336140BKG Matrix Spike Lab Sample ID: 7336141MS Matrix Spike Duplicate Lab Sample ID: 7336142MSD
Batch Id(s): P02037A, P01538A

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		14331.2287		18005.5099		17947.6455		198.0198	198.0198	MG/KG	1856		1826		0			20	P
Antimony		0.7327	U	34.3238		33.6426		49.5050	49.5050	MG/KG	69	N	68	N	2		75 - 125	20	P
Arsenic		3.9960		19.3485		19.4881		14.8515	14.8515	MG/KG	103		104		1		75 - 125	20	P
Barium		89.9129		295.0198		284.7703		198.0198	198.0198	MG/KG	104		98		4		75 - 125	20	P
Beryllium		0.6465	B	5.6505		5.6485		4.9505	4.9505	MG/KG	101		101		0		75 - 125	20	P
Boron		1.5040	B	188.4188		189.2079		198.0198	198.0198	MG/KG	94		95		0		75 - 125	20	P
Cadmium		0.0752	U	4.1772		4.1614		4.9505	4.9505	MG/KG	84		84		0		75 - 125	20	P
Calcium		3187.0594		3887.2921		3782.6950		396.0396	396.0396	MG/KG	177		150		3			20	P
Chromium		22.1495		42.1693		43.0881		19.8020	19.8020	MG/KG	101		106		2		75 - 125	20	P
Cobalt		4.8653		51.8743		50.5653		49.5050	49.5050	MG/KG	95		92		3		75 - 125	20	P
Copper		15.6772		41.8832		42.4069		24.7525	24.7525	MG/KG	106		108		1		75 - 125	20	P
Iron		20148.9505		21369.1366		21345.1139		99.0099	99.0099	MG/KG	1232		1208		0			20	P
Lead		5.5624		20.0446		19.9297		14.8515	14.8515	MG/KG	98		97		1		75 - 125	20	P
Lithium		24.1733		122.9604		121.7208		99.0099	99.0099	MG/KG	100		99		1		75 - 125	20	P
Magnesium		4311.7426		4783.2752		4779.4485		198.0198	198.0198	MG/KG	238		236		0			20	P
Manganese		289.4842		394.6891		356.9188		49.5050	49.5050	MG/KG	213		136		10			20	P
Mercury		0.0099	U	0.1708		0.1743		0.1583	0.1585	MG/KG	108		110		2		65 - 135	20	CV
Molybdenum		1.9327	B	185.3921		184.6050		198.0198	198.0198	MG/KG	93		92		0		75 - 125	20	P
Nickel		11.3842		59.7485		59.2010		49.5050	49.5050	MG/KG	98		97		1		75 - 125	20	P
Phosphorus		313.3564		397.3218		411.8495		99.0099	99.0099	MG/KG	85		99		4		75 - 125	20	P
Potassium		2519.5713		3622.0228		3746.2267		990.0990	990.0990	MG/KG	111		124		3		75 - 125	20	P
Selenium	78	0.0990	U	2.1960		2.3802		1.9802	1.9802	MG/KG	111		120		8		75 - 125	20	MS
Silver	107	0.0322	B	10.7960		11.1307		9.9010	9.9010	MG/KG	109		112		3		75 - 125	20	MS
Sodium		159.1188		1121.0129		1115.8030		990.0990	990.0990	MG/KG	97		97		0		75 - 125	20	P
Strontium	88	22.0792		32.4950		34.6139		7.9208	7.9208	MG/KG	131	N	158	N	6		75 - 125	20	MS
Thallium	203	0.2360		0.6715		0.6760		0.3960	0.3960	MG/KG	110		111		1		75 - 125	20	MS
Tin		3.0000	B	349.1802		346.3465		396.0396	396.0396	MG/KG	87		87		1		75 - 125	20	P
Titanium		1104.2287		1334.9554		1368.9802		99.0099	99.0099	MG/KG	233		267		3			20	P
Vanadium		35.3337		88.3030		88.3000		49.5050	49.5050	MG/KG	107		107		0		75 - 125	20	P
Zinc		50.4871		96.7525		97.4901		49.5050	49.5050	MG/KG	93		95		1		75 - 125	20	P
Zirconium		3.0634	B	97.9950		97.5257		99.0099	99.0099	MG/KG	96		95		0		75 - 125	20	P

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
CV = Cold Vapor
MS = ICP Mass Spectrometry
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH159
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7336140BKG Serial Dilution Lab Sample ID: 7336140L
Batch ID(s): P02037A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		144745.4100		149168.7000		3		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		40.3600		35.3000	B	13		P
Barium		908.1200		948.2000		4		P
Beryllium		6.5300	B	6.9000	B	6		P
Boron		15.1900	B	42.0000	U	100		P
Cadmium		0.7600	U	3.8000	U			P
Calcium		32189.3000		33359.5500		4		P
Chromium		223.7100		234.4000		5		P
Cobalt		49.1400		52.3000		6		P
Copper		158.3400		168.4000		6		P
Iron		203504.4000		197045.3000		3		P
Lead		56.1800		43.7000	B	22		P
Lithium		244.1500		256.2000		5		P
Magnesium		43548.6000		44760.0000		3		P
Manganese		2923.7900		3085.0500		6		P
Molybdenum		19.5200	B	22.0000	B	13		P
Nickel		114.9800		121.6000		6		P
Phosphorus		3164.9000		3190.6500		1		P
Potassium		25447.6700		26172.2000		3		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.1627	B	0.6500	U	100		MS
Sodium		1607.1000		1629.5000	B	1		P
Strontium	88	111.5000		98.2000		12	E	MS
Thallium	203	1.1920		1.3020	B	9		MS
Tin		30.3000	B	32.8500	B	8		P
Titanium		11152.7100		11791.1500		6		P
Vanadium		356.8700		364.6000		2		P
Zinc		509.9200		520.1500		2		P
Zirconium		30.9400	B	42.0000	U	100		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

J/05/A (A): All Soil

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 10, 2014

SUBJECT: Santa Susana Field Laboratory, FDG Block 1, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on June 11, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #31964:

SDG #	Fraction
PH172, PH173	Semivolatiles, Polychlorinated Biphenyls, Metals, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins/Dibenzofurans, Perchlorate

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, January 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

2,827 pages-CD

Attachment 1

90/10 ADR/IV

LDC #31964 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, FDG Block 1)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D -SIM)		PCBs (8082A)		Metals & Hg (SW846)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		CLO_4 (6850)																							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH172	06/11/14	07/09/14	0	1	0	1	0	1	-	-	0	2	0	1	-	-																				
B	PH173	06/11/14	07/09/14	1	4	1	4	1	4	1	0	2	0	1	4	1	4																				
Total	T/SM			1	5	1	5	1	5	1	0	2	2	1	5	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 1

SDG: PH172

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 10, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 7, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B.
Total Petroleum Hydrocarbons (TPH) as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, interference check samples, and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two MS/MSD pairs for TPH as extractables and metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
FDG-SL-749-SA5C-SB-0.0-0.5 (SDG PH173)	Manganese	11 (≤10)	All soil samples in SDG PH172	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compound quantitations were within validation criteria with the following exceptions:

Method	Sample	Compound	Finding	Flag
1613B	FDG-SL-798-SA5B-SB-0.0-0.5	OCDD	Sample result exceeded calibration range	J (all detects)

The associated sample results were qualified as detected estimated (J).

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH172	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

No trip blank was collected for this SDG.

One equipment blank (from SDG PH173) was collected and analyzed for SVOCs, PCBs, metals, TPH as extractables, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH176) was collected and analyzed for SVOCs, PCBs, metals, TPH as extractables, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	3050B	6010C	III
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	3050B	6020A	III
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	3546	8015M	III
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	3546	8082A	III
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	3546	8270D SIM	III
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	METHOD	1613B	III
07-May-2014	FDG-SL-798-SA5B-SB-0.0-0.	7457065	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.10	U	0.759	MDL	4.10	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.473	J	0.0687	MDL	1.03	PQL	mg/Kg	J	Z
BORON	4.85	J	0.862	MDL	10.3	PQL	mg/Kg	U	B
CADMIUM	0.450	J	0.0779	MDL	1.03	PQL	mg/Kg	J	Z
COPPER	17.6		0.297	MDL	2.05	PQL	mg/Kg	J	Q
MANGANESE	380		0.0851	MDL	1.03	PQL	mg/Kg	J	E
MOLYBDENUM	0.330	J	0.174	MDL	2.05	PQL	mg/Kg	J	Z
PHOSPHORUS	297		2.96	MDL	10.3	PQL	mg/Kg	J	Q
POTASSIUM	2620		8.55	MDL	103	PQL	mg/Kg	J	Q
TIN	2.82	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
ZINC	157		0.205	MDL	4.10	PQL	mg/Kg	J	Q, E
Zirconium	2.32	J	0.862	MDL	5.13	PQL	mg/Kg	J	Z
CHROMIUM	18.7		0.164	MDL	3.08	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.215	J	0.103	MDL	0.410	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	25.8		0.0697	MDL	0.410	PQL	mg/Kg	J	A, Q

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	3.56	JB	0.109	MDL	4.90	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	3.98	JB	0.105	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	4.30	JQ	0.158	MDL	4.90	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	4.15	J	0.0873	MDL	4.90	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	2.16	JB	0.0844	MDL	4.90	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.173	J	0.0931	MDL	0.980	PQL	ng/Kg	J	Z
OCDD	9400	BE	0.120	MDL	9.80	PQL	ng/Kg	J	*XI

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30) SG	8.5		2.0	MDL	5.1	PQL	mg/Kg	J	Q, Q
EFH (C30-C40) SG	8.9	J	4.1	MDL	10	PQL	mg/Kg	J	Z, Q, Q

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	19		2.0	MDL	5.1	PQL	mg/Kg	J	Q, Q
EFH (C30-C40)	38		4.1	MDL	10	PQL	mg/Kg	J	Q

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: FDG-SL-798-SA5B-SB-0.0-0.5 *Collected:* 5/7/2014 12:29:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Aroclor 5460	30	J	10	MDL	34	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **SVOA**

Method: **8270D SIM** ***Matrix:*** **SO**

Sample ID: **FDG-SL-798-SA5B-SB-0.0-0.5** ***Collected:*** **5/7/2014 12:29:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ACENAPHTHENE	0.98	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
Butylbenzylphthalate	9.0	J	6.1	MDL	18	PQL	ug/Kg	J	Z
Di-n-octylphthalate	10	J	6.1	MDL	18	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
*XI	Exceeded Calibration Range
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH172

Method Blank Outlier Report

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1320B371105	5/14/2014 11:05:00 AM	1,2,3,4,6,7,8-HPCDD	0.0581 ng/Kg	FDG-SL-798-SA5B-SB-0.0-0.5
		1,2,3,4,7,8,9-HPCDF	0.0343 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0389 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0350 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0250 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0308 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0281 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0270 ng/Kg	
		2,3,4,7,8-PECDF	0.0180 ng/Kg	
		OCDD	0.466 ng/Kg	
		OCDF	0.146 ng/Kg	

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB222025	5/15/2014 8:25:00 PM	BORON	1.15 mg/Kg	FDG-SL-798-SA5B-SB-0.0-0.5
		CALCIUM	13.6 mg/Kg	
		TIN	1.35 mg/Kg	
		ZINC	0.568 mg/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-798-SA5B-SB-0.0-0.5(RES)	BORON	4.85 mg/Kg	4.85U mg/Kg
FDG-SL-798-SA5B-SB-0.0-0.5(RES)	TIN	2.82 mg/Kg	2.82U mg/Kg

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB220455A	5/16/2014 4:55:00 AM	STRONTIUM	0.0750 mg/Kg	FDG-SL-798-SA5B-SB-0.0-0.5

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PrepPH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FDG-SL-798-SA5B-SB-0.0-0.5MS **FDG-SL-798-SA5B-SB-0.0-0.5MSD** (FDG-SL-798-SA5B-SB-0.0-0.5)	EFH (C15-C20) EFH (C21-C30) EFH (C30-C40)	- 250 134	130 137 185	49.00-123.00 49.00-123.00 49.00-123.00	- 33 (20.00) -	EFH (C15-C20) EFH (C21-C30) EFH (C30-C40)	J (all detects)
FDG-SL-798-SA5B-SB-0.0-0.5MS **FDG-SL-798-SA5B-SB-0.0-0.5MSD** (FDG-SL-798-SA5B-SB-0.0-0.5)	EFH (C21-C30) SG EFH (C30-C40) SG	182 -	- 149	49.00-123.00 49.00-123.00	30 (20.00) 22 (20.00)	EFH (C21-C30) EFH (C30-C40)	J(all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PrepPH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-798-SA5B-SB-0.0-0.5	1,2,3,4,7,8-HXCDF	JB	3.56	4.90	PQL	ng/Kg	J (all detects)
	1,2,3,6,7,8-HXCDF	JB	3.98	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	4.30	4.90	PQL	ng/Kg	
	1,2,3,7,8-PECDF	J	4.15	4.90	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	2.16	4.90	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.173	0.980	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-798-SA5B-SB-0.0-0.5	BERYLLIUM	J	0.473	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	4.85	10.3	PQL	mg/Kg	
	CADMIUM	J	0.450	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.330	2.05	PQL	mg/Kg	
	TIN	J	2.82	10.3	PQL	mg/Kg	
	Zirconium	J	2.32	5.13	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-798-SA5B-SB-0.0-0.5	SELENIUM	J	0.215	0.410	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-798-SA5B-SB-0.0-0.5	EFH (C30-C40) SG	J	8.9	10	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-798-SA5B-SB-0.0-0.5	Aroclor 5460	J	30	34	PQL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH172 **Laboratory: LL**

EDD Filename: PrepPH172_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FDG-SL-798-SA5B-SB-0.0-0.5	ACENAPHTHENE	J	0.98	1.7	PQL	ug/Kg	
	Butylbenzylphthalate	J	9.0	18	PQL	ug/Kg	J (all detects)
	Di-n-octylphthalate	J	10	18	PQL	ug/Kg	

LDC #: 31964A4
SDG #: PH172
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 6/16/14
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/7/14
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	no quals based off ICB/CCB
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	SW	MS/D (see PH173)
VII.	Duplicate Sample Analysis	SW	DUP ↓
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	(see PH173) S6: 11% : J/UJ/A (A)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB= EB-050814 (PH173) FB= FB-051314 (PH176)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: soil

1	FDG-SL-SA5B-SB-0.0-0.5	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 31964A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: OR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW846 6010C)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 5/8/14 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	1	Action Limit	No Qualifiers									
B	0.0084	0.0042										
Mn	0.0013	0.0007										
Zn	0.0031	0.00155										

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 5/13/14 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification										
	FB-051314	Action Limit	No Qualifiers									
Mn	0.0012	0.0006										
Zn	0.0030	0.0015										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 1

SDG: PH173

Prepared for

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Prepared by

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July 10, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on May 8, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B
Perchlorate by EPA Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Please note that the field sample IDs had to be truncated due to database limitations. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I. Level IV DVRs are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, field blanks, field duplicate samples, and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the initial and continuing calibrations, ICB/CCBs, interference check samples, internal standards (except dioxins), and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met with the exception of several SVOCs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure II.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the exception of several metals. The associated sample results were not detected or were significantly greater than the concentrations found in the associated blanks, therefore no data were qualified. The details are presented in Enclosure II.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for manganese. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosures I and II.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for SVOCs, metals, and PCBs. The associated sample results were qualified as detected estimated (J) or non-detected estimates (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

X. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the exception of strontium. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure II.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compound quantitations were within validation criteria with the exception of two dioxins which exceeded their calibration ranges in two samples. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure II.

The RPD between columns for Aroclor-1254 for one sample was not within QC limits. The sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure II.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag
All samples in SDG PH173	All compounds reported as detected below the RL.	J (all detects)

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, dioxins and dibenzofurans, and perchlorate. All RPDs were within QC limits with the exception of SVOCs,

metals, and dioxins and dibenzofurans. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosures I and II.

XIV. Field Blank Samples

No trip blank was collected for this SDG.

One equipment blank was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, dioxins and dibenzofurans, and perchlorate. The equipment blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosures I and II.

One field blank (from SDG PH176) was collected and analyzed for SVOCs, PCBs, metals, dioxins and dibenzofurans and perchlorate. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	3050B	6010C	IV
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	3050B	6020A	IV
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	3546	8082A	IV
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	3546	8270D SIM	IV
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	METHOD	1613B	IV
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	METHOD	6850	IV
08-May-2014	SL-511-SA5C-SB-0.0-0.5	7457969	N	METHOD	7471B	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	3050B	6010C	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	3050B	6020A	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	3546	8082A	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	3546	8270D SIM	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	METHOD	1613B	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	METHOD	6850	IV
08-May-2014	SL-511-SA5C-SB-2.0-3.0	7457970	N	METHOD	7471B	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	3050B	6010C	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	3050B	6020A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	3546	8082A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	3546	8270D SIM	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	METHOD	1613B	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	METHOD	6850	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5	7457971	N	METHOD	7471B	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	3050B	6010C	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	3050B	6020A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	3546	8082A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	3546	8270D SIM	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	METHOD	1613B	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	METHOD	6850	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MS	7457972	MS	METHOD	7471B	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	3050B	6010C	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	3050B	6020A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	3546	8082A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	3546	8270D SIM	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	METHOD	1613B	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	METHOD	6850	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5MSD	7457973	MSD	METHOD	7471B	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5DUP	7457974	DUP	3050B	6010C	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5DUP	7457974	DUP	3050B	6020A	IV
08-May-2014	SL-749-SA5C-SB-0.0-0.5DUP	7457974	DUP	METHOD	7471B	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	3050B	6010C	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	3050B	6020A	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	3546	8082A	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	3546	8270D SIM	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	METHOD	1613B	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	METHOD	6850	IV
08-May-2014	SL-1049-SA5C-SB-0.0-0.5	7457975	FD	METHOD	7471B	IV
08-May-2014	EB-050814	7457968	EB	3005A	6010C	IV
08-May-2014	EB-050814	7457968	EB	3510C	8015M	IV
08-May-2014	EB-050814	7457968	EB	3510C	8082A	IV
08-May-2014	EB-050814	7457968	EB	3510C	8270D SIM	IV
08-May-2014	EB-050814	7457968	EB	5030B	8015M	IV
08-May-2014	EB-050814	7457968	EB	Gen Prep	6850	IV
08-May-2014	EB-050814	7457968	EB	M3010A	6020A	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-May-2014	EB-050814	7457968	EB	METHOD	1613B	IV
08-May-2014	EB-050814	7457968	EB	METHOD	7470A	IV
08-May-2014	EB-050814MSD	P457968M241844A	MSD	Gen Prep	6850	IV
08-May-2014	EB-050814MS	P457968R241831A	MS	Gen Prep	6850	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: **EB-050814** *Collected:* **5/8/2014 3:00:00 PM** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	0.0084	J	0.0084	MDL	0.100	PQL	mg/L	J	Z
ZINC	0.0031	J	0.0020	MDL	0.0400	PQL	mg/L	U	B
MANGANESE	0.0013	J	0.00083	MDL	0.0100	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **FDG-SL-1049-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 2:00:00 PM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.768	MDL	4.15	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.562	J	0.0695	MDL	1.04	PQL	mg/Kg	J	Z
BORON	1.59	J	0.871	MDL	10.4	PQL	mg/Kg	U	B, F
CALCIUM	5940		3.47	MDL	20.7	PQL	mg/Kg	J	FD
CHROMIUM	17.1		0.166	MDL	3.11	PQL	mg/Kg	J	Q
COPPER	10.6		0.301	MDL	2.07	PQL	mg/Kg	J	Q
MANGANESE	256		0.0861	MDL	1.04	PQL	mg/Kg	J	E
MOLYBDENUM	2.07	U	0.176	MDL	2.07	PQL	mg/Kg	UJ	FD
PHOSPHORUS	259		3.00	MDL	10.4	PQL	mg/Kg	J	Q
POTASSIUM	2160		8.65	MDL	104	PQL	mg/Kg	J	Q
SODIUM	76.4	J	17.3	MDL	104	PQL	mg/Kg	J	Z
TIN	2.73	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
ZINC	49.7		0.207	MDL	4.15	PQL	mg/Kg	J	Q, E
Zirconium	3.13	J	0.871	MDL	5.19	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-511-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 9:40:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.23	U	0.783	MDL	4.23	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.814	J	0.0709	MDL	1.06	PQL	mg/Kg	J	Z
BORON	3.72	J	0.888	MDL	10.6	PQL	mg/Kg	U	B, F
CADMIUM	0.403	J	0.0804	MDL	1.06	PQL	mg/Kg	J	Z
CHROMIUM	21.7		0.169	MDL	3.17	PQL	mg/Kg	J	Q
COPPER	25.5		0.307	MDL	2.12	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **FDG-SL-511-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2014 9:40:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	387		0.0878	MDL	1.06	PQL	mg/Kg	J	E
MOLYBDENUM	0.399	J	0.180	MDL	2.12	PQL	mg/Kg	J	Z
PHOSPHORUS	373		3.06	MDL	10.6	PQL	mg/Kg	J	Q
POTASSIUM	2630		8.82	MDL	106	PQL	mg/Kg	J	Q
SODIUM	95.9	J	17.7	MDL	106	PQL	mg/Kg	J	Z
TIN	3.04	J	0.233	MDL	10.6	PQL	mg/Kg	U	B
ZINC	178		0.212	MDL	4.23	PQL	mg/Kg	J	Q, E
Zirconium	3.76	J	0.888	MDL	5.29	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-511-SA5C-SB-2.0-3.0** ***Collected:*** **5/8/2014 11:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.08	U	0.755	MDL	4.08	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.400	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
BORON	1.16	J	0.857	MDL	10.2	PQL	mg/Kg	U	B, F
CADMIUM	0.247	J	0.0775	MDL	1.02	PQL	mg/Kg	J	Z
CHROMIUM	11.9		0.163	MDL	3.06	PQL	mg/Kg	J	Q
COPPER	10.2		0.296	MDL	2.04	PQL	mg/Kg	J	Q
MANGANESE	377		0.0847	MDL	1.02	PQL	mg/Kg	J	E
MOLYBDENUM	0.209	J	0.173	MDL	2.04	PQL	mg/Kg	J	Z
PHOSPHORUS	210		2.95	MDL	10.2	PQL	mg/Kg	J	Q
POTASSIUM	1290		8.51	MDL	102	PQL	mg/Kg	J	Q
SODIUM	64.9	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	2.38	J	0.224	MDL	10.2	PQL	mg/Kg	U	B
ZINC	90.6		0.204	MDL	4.08	PQL	mg/Kg	J	Q, E
Zirconium	2.15	J	0.857	MDL	5.10	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-749-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2014 1:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.05	U	0.749	MDL	4.05	PQL	mg/Kg	UJ	Q
BERYLLIUM	0.572	J	0.0678	MDL	1.01	PQL	mg/Kg	J	Z
BORON	1.77	J	0.850	MDL	10.1	PQL	mg/Kg	U	B, F
CALCIUM	3330		3.38	MDL	20.2	PQL	mg/Kg	J	FD
CHROMIUM	16.7		0.162	MDL	3.04	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG-SL-749-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 1:30:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	11.8		0.294	MDL	2.02	PQL	mg/Kg	J	Q
MANGANESE	304		0.0840	MDL	1.01	PQL	mg/Kg	J	E
MOLYBDENUM	0.442	J	0.172	MDL	2.02	PQL	mg/Kg	J	Z, FD
PHOSPHORUS	274		2.93	MDL	10.1	PQL	mg/Kg	J	Q
POTASSIUM	2330		8.44	MDL	101	PQL	mg/Kg	J	Q
SODIUM	88.5	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	2.99	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
ZINC	75.8		0.202	MDL	4.05	PQL	mg/Kg	J	Q, E
Zirconium	3.11	J	0.850	MDL	5.06	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG-SL-1049-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 2:00:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.160	J	0.104	MDL	0.415	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-1049-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 2:00:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0444	J	0.0270	MDL	0.207	PQL	mg/Kg	J	Z
STRONTIUM	27.3		0.0705	MDL	0.415	PQL	mg/Kg	J	Q, A

Sample ID: FDG-SL-511-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 9:40:00 AM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.270	J	0.106	MDL	0.423	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-511-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 9:40:00 AM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.137	J	0.0275	MDL	0.212	PQL	mg/Kg	J	Z
STRONTIUM	58.4		0.0719	MDL	0.423	PQL	mg/Kg	J	Q, A

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG-SL-511-SA5C-SB-2.0-3.0 *Collected:* 5/8/2014 11:05:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.127	J	0.102	MDL	0.408	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-511-SA5C-SB-2.0-3.0 *Collected:* 5/8/2014 11:05:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0375	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z
STRONTIUM	26.7		0.0694	MDL	0.408	PQL	mg/Kg	J	Q, A
THALLIUM	0.126	J	0.0306	MDL	0.204	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-749-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 1:30:00 PM *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.152	J	0.101	MDL	0.405	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-749-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 1:30:00 PM *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0300	J	0.0263	MDL	0.202	PQL	mg/Kg	J	Z
STRONTIUM	28.7		0.0688	MDL	0.405	PQL	mg/Kg	J	Q, A

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: FDG-SL-1049-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 2:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0170	U	0.0102	MDL	0.0170	PQL	mg/Kg	UJ	FD

Sample ID: FDG-SL-749-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 1:30:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0139	J	0.0101	MDL	0.0168	PQL	mg/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB-050814** *Collected:* **5/8/2014 3:00:00 PM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.216	JBQ	0.0954	MDL	9.70	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.224	JB	0.0496	MDL	9.70	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.205	JB	0.0554	MDL	9.70	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.146	JQ	0.142	MDL	9.70	PQL	pg/L	J	Z
1,2,3,4,7,8-HXCDF	0.131	JBQ	0.0872	MDL	9.70	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.146	JBQ	0.0839	MDL	9.70	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.312	JBQ	0.0880	MDL	9.70	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.114	JQ	0.0799	MDL	9.70	PQL	pg/L	J	Z
OCDD	1.06	JBQ	0.132	MDL	19.4	PQL	pg/L	U	B
OCDF	0.824	JB	0.134	MDL	19.4	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **FDG-SL-1049-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 2:00:00 PM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	24.2	B	0.0709	MDL	5.22	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	2.75	JB	0.0271	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.483	JB	0.0371	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	0.202	J	0.0686	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.133	J	0.0515	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.758	JB	0.0697	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDF	0.272	JQ	0.0491	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	0.567	JB	0.0704	MDL	5.22	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDF	0.138	JBQ	0.0572	MDL	5.22	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDD	0.131	JB	0.0801	MDL	5.22	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDF	0.0849	JBQ	0.0307	MDL	5.22	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.363	JQ	0.0495	MDL	5.22	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.241	JB	0.0285	MDL	5.22	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	1.04	U	0.0604	MDL	1.04	PQL	ng/Kg	UJ	FD
2,3,7,8-TCDF	1.04	U	0.0394	MDL	1.04	PQL	ng/Kg	UJ	FD
OCDD	161	B	0.0632	MDL	10.4	PQL	ng/Kg	J	FD
OCDF	6.53	JB	0.0471	MDL	10.4	PQL	ng/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **FDG-SL-511-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 9:40:00 AM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2670	BE	0.283	MDL	5.30	PQL	ng/Kg	J	*XI
1,2,3,7,8-PECDF	1.75	JB	0.0897	MDL	5.30	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	3.07	JB	0.0814	MDL	5.30	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.630	J	0.146	MDL	1.06	PQL	ng/Kg	J	Z
OCDD	26100	BE	0.171	MDL	10.6	PQL	ng/Kg	J	*XI

Sample ID: **FDG-SL-511-SA5C-SB-2.0-3.0** *Collected:* **5/8/2014 11:05:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	3.42	J	0.103	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	4.44	J	0.0971	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	4.52	JB	0.236	MDL	5.04	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.761	JB	0.0713	MDL	5.04	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.50	JB	0.0672	MDL	5.04	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.353	JBQ	0.127	MDL	1.01	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.264	J	0.101	MDL	1.01	PQL	ng/Kg	J	Z
OCDD	10200	BE	0.138	MDL	10.1	PQL	ng/Kg	J	*XI

Sample ID: **FDG-SL-749-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 1:30:00 PM** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	572	B	0.137	MDL	5.20	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	29.6	B	0.0637	MDL	5.20	PQL	ng/Kg	J	Q, Q, FD
1,2,3,4,7,8,9-HPCDF	2.47	JB	0.0724	MDL	5.20	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HxCDD	3.04	J	0.106	MDL	5.20	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.945	J	0.0755	MDL	5.20	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	22.1	B	0.104	MDL	5.20	PQL	ng/Kg	J	FD
1,2,3,6,7,8-HXCDF	1.11	JQ	0.0702	MDL	5.20	PQL	ng/Kg	J	Z, FD
1,2,3,7,8,9-HXCDD	8.42	B	0.102	MDL	5.20	PQL	ng/Kg	J	FD
1,2,3,7,8,9-HXCDF	0.322	JBQ	0.0749	MDL	5.20	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8-PECDD	1.87	JB	0.162	MDL	5.20	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.388	JBQ	0.0468	MDL	5.20	PQL	ng/Kg	J	Z, FD
2,3,4,6,7,8-HXCDF	1.84	J	0.0698	MDL	5.20	PQL	ng/Kg	J	Z, FD
2,3,4,7,8-PECDF	0.460	JBQ	0.0422	MDL	5.20	PQL	ng/Kg	J	Z, FD
2,3,7,8-TCDD	0.176	JB	0.104	MDL	1.04	PQL	ng/Kg	UJ	B, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-749-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 1:30:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	0.150	JQ	0.0612	MDL	1.04	PQL	ng/Kg	J	Z, FD
OCDD	3460	B	0.0854	MDL	10.4	PQL	ng/Kg	J	FD
OCDF	66.6	B	0.0480	MDL	10.4	PQL	ng/Kg	J	Q, Q, FD

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: EB-050814 *Collected:* 5/8/2014 3:00:00 PM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1242	0.41	U	0.081	MDL	0.41	PQL	ug/L	UJ	L, E
AROCLOR 1248	0.41	U	0.081	MDL	0.41	PQL	ug/L	UJ	L, E
AROCLOR 1254	0.41	U	0.081	MDL	0.41	PQL	ug/L	UJ	L, E
AROCLOR 1260	0.41	U	0.12	MDL	0.41	PQL	ug/L	UJ	L, E

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: FDG-SL-511-SA5C-SB-0.0-0.5 *Collected:* 5/8/2014 9:40:00 AM *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	11	J	4.7	MDL	18	PQL	ug/Kg	J	Z, *XIII
AROCLOR 1260	11	J	4.2	MDL	18	PQL	ug/Kg	J	Z
Aroclor 5460	19	J	11	MDL	36	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: EB-050814 *Collected:* 5/8/2014 3:00:00 PM *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHENE	0.016	J	0.010	MDL	0.051	PQL	ug/L	J	Z
ACENAPHTHYLENE	0.021	J	0.010	MDL	0.051	PQL	ug/L	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	L, E

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: **EB-050814** *Collected:* **5/8/2014 3:00:00 PM** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Diethylphthalate	0.48	J	0.051	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.16	J	0.051	MDL	1.0	PQL	ug/L	U	B

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **FDG-SL-1049-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 2:00:00 PM** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.1	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
2-METHYLNAPHTHALENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD
ANTHRACENE	1.1	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z, FD
BENZO(A)ANTHRACENE	0.95	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD
BENZO(B)FLUORANTHENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD, C
BIS(2-ETHYLHEXYL)PHTHALATE	9.8	J	6.3	MDL	19	PQL	ug/Kg	J	Z, C
Butylbenzylphthalate	7.1	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.46	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z, FD
Di-n-octylphthalate	19	U	6.3	MDL	19	PQL	ug/Kg	UJ	FD, C
FLUORANTHENE	0.80	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
NAPHTHALENE	1.7	U	0.70	MDL	1.7	PQL	ug/Kg	UJ	FD
PYRENE	1.2	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD

Sample ID: **FDG-SL-511-SA5C-SB-0.0-0.5** *Collected:* **5/8/2014 9:40:00 AM** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	14		0.72	MDL	1.8	PQL	ug/Kg	J	C
BENZO(E)PYRENE	13	J	3.6	MDL	18	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	25		6.5	MDL	19	PQL	ug/Kg	J	C
Butylbenzylphthalate	11	J	6.5	MDL	19	PQL	ug/Kg	J	Z
Di-n-octylphthalate	19	U	6.5	MDL	19	PQL	ug/Kg	UJ	C

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **SVOA**

Method: **8270D SIM** ***Matrix:*** **SO**

Sample ID: **FDG-SL-511-SA5C-SB-2.0-3.0** ***Collected:*** **5/8/2014 11:05:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ANTHRACENE	1.4	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	5.8		0.69	MDL	1.7	PQL	ug/Kg	J	C
BENZO(E)PYRENE	6.7	J	3.5	MDL	18	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.2	MDL	19	PQL	ug/Kg	J	Z, C
DIBENZO(A,H)ANTHRACENE	1.0	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
Di-n-octylphthalate	19	U	6.2	MDL	19	PQL	ug/Kg	UJ	C
INDENO(1,2,3-CD)PYRENE	0.88	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.69	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **FDG-SL-749-SA5C-SB-0.0-0.5** ***Collected:*** **5/8/2014 1:30:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1-METHYLNAPHTHALENE	4.1		0.70	MDL	1.7	PQL	ug/Kg	J	Q, Q, FD
2-METHYLNAPHTHALENE	3.4		0.70	MDL	1.7	PQL	ug/Kg	J	Q, Q, FD
ANTHRACENE	2.0		0.35	MDL	1.7	PQL	ug/Kg	J	Q, FD
BENZO(A)ANTHRACENE	1.2	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.89	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD
BENZO(B)FLUORANTHENE	1.0	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, FD, C
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.3	MDL	19	PQL	ug/Kg	J	Z, Q, C, Q
Butylbenzylphthalate	6.8	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	1.3	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z, FD
Di-n-octylphthalate	9.3	J	6.3	MDL	19	PQL	ug/Kg	J	Z, FD, C
FLUORANTHENE	1.9		0.70	MDL	1.7	PQL	ug/Kg	J	Q, FD
NAPHTHALENE	1.1	J	0.70	MDL	1.7	PQL	ug/Kg	J	Z, Q, FD
PHENANTHRENE	8.6		0.70	MDL	1.7	PQL	ug/Kg	J	Q, Q
PYRENE	2.1		0.70	MDL	1.7	PQL	ug/Kg	J	Q, Q, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PrepPH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
*XI, *XIII	Exceeded Calibration Range, RPD between Columns
A	ICP Serial Dilution
B	Method Blank Contamination
C	Continuing Calibration Verification Percent Difference Lower Estimation
C	Initial Calibration Verification Percent Difference Lower Estimation
E	Laboratory Control Precision
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
FD	Field Duplicate Precision
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH173

Method Blank Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1330B370458	5/15/2014 4:58:00 AM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDF 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDF 2,3,4,7,8-PECDF OCDD OCDF	0.535 pg/L 0.256 pg/L 0.404 pg/L 0.329 pg/L 0.278 pg/L 0.306 pg/L 0.438 pg/L 0.173 pg/L 1.07 pg/L 1.22 pg/L	EB-050814

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-050814(RES)	1,2,3,4,6,7,8-HPCDD	0.216 pg/L	0.216U pg/L
EB-050814(RES)	1,2,3,4,6,7,8-HPCDF	0.224 pg/L	0.224U pg/L
EB-050814(RES)	1,2,3,4,7,8,9-HPCDF	0.205 pg/L	0.205U pg/L
EB-050814(RES)	1,2,3,4,7,8-HXCDF	0.131 pg/L	0.131U pg/L
EB-050814(RES)	1,2,3,6,7,8-HXCDF	0.146 pg/L	0.146U pg/L
EB-050814(RES)	1,2,3,7,8-PECDF	0.312 pg/L	0.312U pg/L
EB-050814(RES)	OCDD	1.06 pg/L	1.06U pg/L
EB-050814(RES)	OCDF	0.824 pg/L	0.824U pg/L

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1340B372031	5/15/2014 8:31:00 PM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,4,7,8,9-HPCDF 1,2,3,6,7,8-HXCDD 1,2,3,7,8,9-HXCDD 1,2,3,7,8,9-HXCDF 1,2,3,7,8-PECDD 1,2,3,7,8-PECDF 2,3,4,7,8-PECDF 2,3,7,8-TCDD OCDD OCDF	0.0539 ng/Kg 0.0286 ng/Kg 0.0418 ng/Kg 0.0254 ng/Kg 0.0340 ng/Kg 0.0835 ng/Kg 0.0398 ng/Kg 0.0374 ng/Kg 0.0307 ng/Kg 0.0966 ng/Kg 0.208 ng/Kg 0.129 ng/Kg	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-1049-SA5C-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.138 ng/Kg	0.138U ng/Kg
FDG-SL-1049-SA5C-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.131 ng/Kg	0.131U ng/Kg
FDG-SL-1049-SA5C-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0849 ng/Kg	0.0849U ng/Kg
FDG-SL-511-SA5C-SB-2.0-3.0(RES)	2,3,7,8-TCDD	0.353 ng/Kg	0.353U ng/Kg
FDG-SL-749-SA5C-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.322 ng/Kg	0.322U ng/Kg
FDG-SL-749-SA5C-SB-0.0-0.5(RES)	2,3,7,8-TCDD	0.176 ng/Kg	0.176U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13535AB221726	5/16/2014 5:26:00 PM	MANGANESE ZINC	0.0016 mg/L 0.0038 mg/L	EB-050814

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-050814(REA)	MANGANESE	0.0013 mg/L	0.0013U mg/L
EB-050814(REA)	ZINC	0.0031 mg/L	0.0031U mg/L

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB222025	5/15/2014 8:25:00 PM	BORON CALCIUM TIN ZINC	1.15 mg/Kg 13.6 mg/Kg 1.35 mg/Kg 0.568 mg/Kg	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-1049-SA5C-SB-0.0-0.5(RES)	BORON	1.59 mg/Kg	1.59U mg/Kg
FDG-SL-1049-SA5C-SB-0.0-0.5(RES)	TIN	2.73 mg/Kg	2.73U mg/Kg
FDG-SL-511-SA5C-SB-0.0-0.5(RES)	BORON	3.72 mg/Kg	3.72U mg/Kg
FDG-SL-511-SA5C-SB-0.0-0.5(RES)	TIN	3.04 mg/Kg	3.04U mg/Kg
FDG-SL-511-SA5C-SB-2.0-3.0(RES)	BORON	1.16 mg/Kg	1.16U mg/Kg
FDG-SL-511-SA5C-SB-2.0-3.0(RES)	TIN	2.38 mg/Kg	2.38U mg/Kg
FDG-SL-749-SA5C-SB-0.0-0.5(RES)	BORON	1.77 mg/Kg	1.77U mg/Kg
FDG-SL-749-SA5C-SB-0.0-0.5(RES)	TIN	2.99 mg/Kg	2.99U mg/Kg

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB220455A	5/16/2014 4:55:00 AM	STRONTIUM	0.0750 mg/Kg	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5

Method Blank Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWE13B261335	5/20/2014 1:35:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE Di-n-butylphthalate	0.075 ug/L 0.064 ug/L	EB-050814

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-050814(RES)	Di-n-butylphthalate	0.16 ug/L	1.0U ug/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB-050814(REA)	5/8/2014 3:00:00 PM	BORON MANGANESE ZINC	0.0084 mg/L 0.0013 mg/L 0.0031 mg/L	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-1049-SA5C-SB-0.0-0.5(RES)	BORON	1.59 mg/Kg	1.59U mg/Kg
FDG-SL-511-SA5C-SB-0.0-0.5(RES)	BORON	3.72 mg/Kg	3.72U mg/Kg
FDG-SL-511-SA5C-SB-2.0-3.0(RES)	BORON	1.16 mg/Kg	1.16U mg/Kg
FDG-SL-749-SA5C-SB-0.0-0.5(RES)	BORON	1.77 mg/Kg	1.77U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FDG-SL-749-SA5C-SB-0.0-0.5MS FDG-SL-749-SA5C-SB-0.0-0.5MSD (FDG-SL-749-SA5C-SB-0.0-0.5)	1-METHYLNAPHTHALENE	-	247	59.00-139.00	74 (30.00)	1-METHYLNAPHTHALENE	J (all detects)
	2-METHYLNAPHTHALENE	-	219	46.00-147.00	67 (30.00)	2-METHYLNAPHTHALENE	
	ANTHRACENE	-	127	52.00-126.00	-	ANTHRACENE	
	BIS(2-ETHYLHEXYL)PHTHALAT	-	166	48.00-164.00	39 (30.00)	BIS(2-ETHYLHEXYL)PHTHALA	
	FLUORANTHENE	-	-	38.00-153.00	42 (30.00)	FLUORANTHENE	
	NAPHTHALENE	-	-	52.00-136.00	40 (30.00)	NAPHTHALENE	
	PHENANTHRENE	154	399	50.00-137.00	82 (30.00)	PHENANTHRENE	
	PYRENE	-	144	26.00-143.00	40 (30.00)	PYRENE	

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FDG-SL-749-SA5C-SB-0.0-0.5MS (TOT) FDG-SL-749-SA5C-SB-0.0-0.5MSD (TOT) (FDG-SL-1049-SA5C-SB-0.0-0.5 FDG -SL-511-SA5C-SB-0.0-0.5 FDG -SL-511-SA5C-SB-2.0-3.0 FDG -SL-749-SA5C-SB-0.0-0.5)	ALUMINUM	3014	2861	75.00-125.00	-	ALUMINUM	J(all detects) Al, Ca, Fe, Mg, Mn, Ti, No Qual, >4x
	CALCIUM	369	365	75.00-125.00	-	CALCIUM	
	CHROMIUM	127	128	75.00-125.00	-	CHROMIUM	
	COPPER	-	136	75.00-125.00	-	COPPER	
	IRON	3011	3164	75.00-125.00	-	IRON	
	MAGNESIUM	468	442	75.00-125.00	-	MAGNESIUM	
	MANGANESE	198	-	75.00-125.00	-	MANGANESE	
	PHOSPHORUS	-	154	75.00-125.00	-	PHOSPHORUS	
	POTASSIUM	155	150	75.00-125.00	-	POTASSIUM	
	TITANIUM	363	380	75.00-125.00	-	TITANIUM	
FDG-SL-749-SA5C-SB-0.0-0.5MS (TOT) FDG-SL-749-SA5C-SB-0.0-0.5MSD (TOT) (FDG-SL-1049-SA5C-SB-0.0-0.5 FDG -SL-511-SA5C-SB-0.0-0.5 FDG -SL-511-SA5C-SB-2.0-3.0 FDG -SL-749-SA5C-SB-0.0-0.5)	ANTIMONY	47	45	75.00-125.00	-	ANTIMONY	J(all detects) UJ(all non-detects)
	ZINC	161	237	75.00-125.00	22 (20.00)	ZINC	

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FDG-SL-749-SA5C-SB-0.0-0.5MS (TOT) FDG-SL-749-SA5C-SB-0.0-0.5MSD (TOT) (FDG-SL-1049-SA5C-SB-0.0-0.5 FDG -SL-511-SA5C-SB-0.0-0.5 FDG -SL-511-SA5C-SB-2.0-3.0 FDG -SL-749-SA5C-SB-0.0-0.5)	STRONTIUM	221	184	75.00-125.00	-	STRONTIUM	J(all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FDG-SL-749-SA5C-SB-0.0-0.5MS	1,2,3,4,6,7,8-HPCDD	429	656	40.00-135.00	21 (20.00)	1,2,3,4,6,7,8-HPCDD	J(all detects)
	1,2,3,4,6,7,8-HPCDF	-	142	40.00-135.00	30 (20.00)	1,2,3,4,6,7,8-HPCDF	
FDG-SL-749-SA5C-SB-0.0-0.5MSD (FDG-SL-749-SA5C-SB-0.0-0.5)	OCDD	255	1840	40.00-135.00	58 (20.00)	OCDD	1,2,3,4,6,7,8-HPCDD, OCDD, No Qual, >4x
	OCDF	-	153	40.00-135.00	31 (20.00)	OCDF	

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
FDG-SL-749-SA5C-SB-0.0-0.5DUP (TOT) (FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5)	MANGANESE MOLYBDENUM	24 65	20.00 20.00	J (all detects) UJ (all non-detects) Mo, No Qual, OK by Difference

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P4WELCSQ261404 P4WELCSY261433 (EB-050814)	BIS(2-ETHYLHEXYL)PHTHALAT	58	-	70.00-143.00	33 (30.00)	BIS(2-ETHYLHEXYL)PHTHALA	J (all detects) UJ (all non-detects)

Method: 6020A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P13539AY221932B (TOT) (EB-050814)	SELENIUM	-	133	80.00-120.00	-	SELENIUM	J(all detects)

Method: 8082A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P41348AQ242324A P41348AY242342A (EB-050814)	AROCLOR 1260	59	82	67.00-128.00	33 (30.00)	AROCLOR 1242 AROCLOR 1248 AROCLOR 1254 AROCLOR 1260	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-050814	1,2,3,4,6,7,8-HPCDD	JBQ	0.216	9.70	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JB	0.224	9.70	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.205	9.70	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JQ	0.146	9.70	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.131	9.70	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.146	9.70	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.312	9.70	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JQ	0.114	9.70	PQL	pg/L	
	OCDD	JBQ	1.06	19.4	PQL	pg/L	
	OCDF	JB	0.824	19.4	PQL	pg/L	

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-050814	BORON	J	0.0084	0.100	PQL	mg/L	J (all detects)
	MANGANESE	J	0.0013	0.0100	PQL	mg/L	
	ZINC	J	0.0031	0.0400	PQL	mg/L	

Method: 8270D SIM
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-050814	ACENAPHTHENE	J	0.016	0.051	PQL	ug/L	J (all detects)
	ACENAPHTHYLENE	J	0.021	0.051	PQL	ug/L	
	Diethylphthalate	J	0.48	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.16	1.0	PQL	ug/L	

Method: 1613B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-1049-SA5C-SB-0.0 -0.5	1,2,3,4,6,7,8-HPCDF	JB	2.75	5.22	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JB	0.483	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.202	5.22	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.133	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.758	5.22	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.272	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.567	5.22	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.138	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.131	5.22	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0849	5.22	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.363	5.22	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.241	5.22	PQL	ng/Kg	
	OCDF	JB	6.53	10.4	PQL	ng/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-511-SA5C-SB-0.0-0.5	1,2,3,7,8-PECDF	JB	1.75	5.30	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	3.07	5.30	PQL	ng/Kg	J (all detects)
	2,3,7,8-TCDF	J	0.630	1.06	PQL	ng/Kg	
FDG-SL-511-SA5C-SB-2.0-3.0	1,2,3,4,7,8-HXCDF	J	3.42	5.04	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	4.44	5.04	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	4.52	5.04	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.761	5.04	PQL	ng/Kg	J (all detects)
	2,3,4,7,8-PECDF	JB	1.50	5.04	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.353	1.01	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.264	1.01	PQL	ng/Kg	
FDG-SL-749-SA5C-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JB	2.47	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	3.04	5.20	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.945	5.20	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	1.11	5.20	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.322	5.20	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	1.87	5.20	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JBQ	0.388	5.20	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	1.84	5.20	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.460	5.20	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.176	1.04	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.150	1.04	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-1049-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.562	1.04	PQL	mg/Kg	
	BORON	J	1.59	10.4	PQL	mg/Kg	
	SODIUM	J	76.4	104	PQL	mg/Kg	J (all detects)
	TIN	J	2.73	10.4	PQL	mg/Kg	
	Zirconium	J	3.13	5.19	PQL	mg/Kg	
FDG-SL-511-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.814	1.06	PQL	mg/Kg	
	BORON	J	3.72	10.6	PQL	mg/Kg	
	CADMIUM	J	0.403	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.399	2.12	PQL	mg/Kg	J (all detects)
	SODIUM	J	95.9	106	PQL	mg/Kg	
	TIN	J	3.04	10.6	PQL	mg/Kg	
	Zirconium	J	3.76	5.29	PQL	mg/Kg	
FDG-SL-511-SA5C-SB-2.0-3.0	BERYLLIUM	J	0.400	1.02	PQL	mg/Kg	
	BORON	J	1.16	10.2	PQL	mg/Kg	
	CADMIUM	J	0.247	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.209	2.04	PQL	mg/Kg	J (all detects)
	SODIUM	J	64.9	102	PQL	mg/Kg	
	TIN	J	2.38	10.2	PQL	mg/Kg	
	Zirconium	J	2.15	5.10	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-749-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.572	1.01	PQL	mg/Kg	J (all detects)
	BORON	J	1.77	10.1	PQL	mg/Kg	
	MOLYBDENUM	J	0.442	2.02	PQL	mg/Kg	
	SODIUM	J	88.5	101	PQL	mg/Kg	
	TIN	J	2.99	10.1	PQL	mg/Kg	
	Zirconium	J	3.11	5.06	PQL	mg/Kg	

Method: 6020A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-1049-SA5C-SB-0.0-0.5	SELENIUM	J	0.160	0.415	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0444	0.207	PQL	mg/Kg	
FDG-SL-511-SA5C-SB-0.0-0.5	SELENIUM	J	0.270	0.423	PQL	mg/Kg	J (all detects)
	SILVER	J	0.137	0.212	PQL	mg/Kg	
FDG-SL-511-SA5C-SB-2.0-3.0	SELENIUM	J	0.127	0.408	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0375	0.204	PQL	mg/Kg	
	THALLIUM	J	0.126	0.204	PQL	mg/Kg	
FDG-SL-749-SA5C-SB-0.0-0.5	SELENIUM	J	0.152	0.405	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0300	0.202	PQL	mg/Kg	

Method: 7471B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-749-SA5C-SB-0.0-0.5	MERCURY	J	0.0139	0.0168	PQL	mg/Kg	J (all detects)

Method: 8082A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-511-SA5C-SB-0.0-0.5	AROCLOR 1254	J	11	18	PQL	ug/Kg	J (all detects)
	AROCLOR 1260	J	11	18	PQL	ug/Kg	
	Aroclor 5460	J	19	36	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-1049-SA5C-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	ANTHRACENE	J	1.1	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.95	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.8	19	PQL	ug/Kg	
	Butylbenzylphthalate	J	7.1	19	PQL	ug/Kg	
	CHRYSENE	J	0.46	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.80	1.7	PQL	ug/Kg	
	PYRENE	J	1.2	1.7	PQL	ug/Kg	
FDG-SL-511-SA5C-SB-0.0-0.5	BENZO(E)PYRENE	J	13	18	PQL	ug/Kg	J (all detects)
	Butylbenzylphthalate	J	11	19	PQL	ug/Kg	
FDG-SL-511-SA5C-SB-2.0-3.0	ANTHRACENE	J	1.4	1.7	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	6.7	18	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	19	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.0	1.7	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.88	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	0.69	1.7	PQL	ug/Kg	
FDG-SL-749-SA5C-SB-0.0-0.5	BENZO(A)ANTHRACENE	J	1.2	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	0.89	1.7	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.0	1.7	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	19	PQL	ug/Kg	
	Butylbenzylphthalate	J	6.8	19	PQL	ug/Kg	
	CHRYSENE	J	1.3	1.7	PQL	ug/Kg	
	Di-n-octylphthalate	J	9.3	19	PQL	ug/Kg	
	NAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	

Field Duplicate RPD Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
MOISTURE	5.0	5.5	10		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
1,2,3,4,6,7,8-HPCDD	572	24.2	184	50.00	J(all detects) UJ(all non-detects)
1,2,3,4,6,7,8-HPCDF	29.6	2.75	166	50.00	
1,2,3,4,7,8,9-HPCDF	2.47	0.483	135	50.00	
1,2,3,4,7,8-HxCDD	3.04	0.202	175	50.00	
1,2,3,4,7,8-HXCDF	0.945	0.133	151	50.00	
1,2,3,6,7,8-HXCDD	22.1	0.758	187	50.00	
1,2,3,6,7,8-HXCDF	1.11	0.272	121	50.00	
1,2,3,7,8,9-HXCDD	8.42	0.567	175	50.00	
1,2,3,7,8,9-HXCDF	0.322	0.138	80	50.00	
1,2,3,7,8-PECDD	1.87	0.131	174	50.00	
1,2,3,7,8-PECDF	0.388	0.0849	128	50.00	
2,3,4,6,7,8-HXCDF	1.84	0.363	134	50.00	
2,3,4,7,8-PECDF	0.460	0.241	62	50.00	
2,3,7,8-TCDD	0.176	1.04 U	200	50.00	
2,3,7,8-TCDF	0.150	1.04 U	200	50.00	
OCDD	3460	161	182	50.00	
OCDF	66.6	6.53	164	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5 (TOT)	FDG-SL-1049-SA5C-SB-0.0-0.5 (TOT)			
ALUMINUM	13700	13800	1	50.00	No Qualifiers Applied
ARSENIC	5.70	4.95	14	50.00	
BARIUM	74.6	70.2	6	50.00	
BERYLLIUM	0.572	0.562	2	50.00	
BORON	1.77	1.59	11	50.00	
CHROMIUM	16.7	17.1	2	50.00	
COBALT	4.98	4.87	2	50.00	
COPPER	11.8	10.6	11	50.00	
IRON	19700	18100	8	50.00	
LEAD	8.82	7.07	22	50.00	
LITHIUM	22.7	20.9	8	50.00	
MAGNESIUM	4070	3830	6	50.00	
MANGANESE	304	256	17	50.00	
NICKEL	13.4	12.4	8	50.00	
PHOSPHORUS	274	259	6	50.00	
POTASSIUM	2330	2160	8	50.00	
SODIUM	88.5	76.4	15	50.00	
TIN	2.99	2.73	9	50.00	
TITANIUM	972	925	5	50.00	
VANADIUM	36.3	35.9	1	50.00	
ZINC	75.8	49.7	42	50.00	
Zirconium	3.11	3.13	1	50.00	
CALCIUM	3330	5940	56	50.00	J(all detects) UJ(all non-detects)
MOLYBDENUM	0.442	2.07 U	200	50.00	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH173 **Laboratory: LL**

EDD Filename: PH173_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5 (TOT)	FDG-SL-1049-SA5C-SB-0.0-0.5 (TOT)			
SELENIUM	0.152	0.160	5	50.00	No Qualifiers Applied
SILVER	0.0300	0.0444	39	50.00	
STRONTIUM	28.7	27.3	5	50.00	
THALLIUM	0.276	0.248	11	50.00	

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5 (TOT)	FDG-SL-1049-SA5C-SB-0.0-0.5 (TOT)			
MERCURY	0.0139	0.0170 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
BENZO(A)ANTHRACENE	1.2	0.95	23	50.00	No Qualifiers Applied
BIS(2-ETHYLHEXYL)PHTHALATE	12	9.8	20	50.00	
Butylbenzylphthalate	6.8	7.1	4	50.00	
PHENANTHRENE	8.6	9.7	12	50.00	
1-METHYLNAPHTHALENE	4.1	1.1	115	50.00	J(all detects) UJ(all non-detects)
2-METHYLNAPHTHALENE	3.4	1.7 U	200	50.00	
ANTHRACENE	2.0	1.1	58	50.00	
BENZO(A)PYRENE	0.89	1.7 U	200	50.00	
BENZO(B)FLUORANTHENE	1.0	1.7 U	200	50.00	
CHRYSENE	1.3	0.46	95	50.00	
Di-n-octylphthalate	9.3	19 U	200	50.00	
FLUORANTHENE	1.9	0.80	81	50.00	
NAPHTHALENE	1.1	1.7 U	200	50.00	
PYRENE	2.1	1.2	55	50.00	

Method: 9045M
Matrix: SO

Analyte	Concentration (pH unit)		Sample RPD	eQAPP RPD	Flag
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
PH	8.17	8.15	0	50.00	No Qualifiers Applied

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 8, 2014

LDC Report Date: June 25, 2014

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH173

Sample Identification

EB-050814
FDG-SL-511-SA5C-SB-0.0-0.5
FDG-SL-511-SA5C-SB-2.0-3.0
FDG-SL-749-SA5C-SB-0.0-0.5
FDG-SL-1049-SA5C-SB-0.0-0.5
FDG-SL-749-SA5C-SB-0.0-0.5MS
FDG-SL-749-SA5C-SB-0.0-0.5MSD

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/20/14	Bis(2-ethylhexyl)phthalate	29	All soil samples in SDG PH173	J (all detects) UJ (all non-detects)	A
	Di-n-octylphthalate	28		J (all detects) UJ (all non-detects)	

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/2/14	Benzo(b)fluoranthene	26	All soil samples in SDG PH173	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method.

Sample EB-050814 was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-050814	5/8/14	Acenaphthene Acenaphthylene Di-n-butylphthalate Diethylphthalate	0.016 ug/L 0.021 ug/L 0.16 ug/L 0.48 ug/L	All soil samples in SDG PH173

Sample FB-051314 (from SDG PH176) was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-051314	5/13/14	Diethylphthalate Di-n-butylphthalate Bis(2-ethylhexyl)phthalate	0.47 ug/L 0.22 ug/L 0.25 ug/L	All soil samples in SDG PH173

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FDG-SL-749-SA5C-SB-0.0-0.5MS/MSD (FDG-SL-749-SA5C-SB-0.0-0.5)	Naphthalene	-	-	40 (≤30)	J (all detects)	A
	2-Methylnaphthalene	-	219 (46-147)	67 (≤30)	J (all detects)	
	1-Methylnaphthalene	-	247 (59-139)	74 (≤30)	J (all detects)	
	Phenanthrene	154 (50-137)	339 (50-137)	82 (≤30)	J (all detects)	
	Anthracene	-	127 (52-126)	-	J (all detects)	
	Fluoranthene	-	-	42 (≤30)	J (all detects)	
	Pyrene	-	144 (26-143)	40 (≤30)	J (all detects)	
	Bis(2-ethylhexyl)phthalate	-	166 (48-164)	39 (≤30)	J (all detects)	

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limit with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
134WELCS/D (All water samples in SDG PH173)	Bis(2-ethylhexyl)phthalate	58 (70-143)	-	33 (≤30)	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitation were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH173	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples FDG-SL-749-SA5C-SB-0.0-0.5 and FDG-SL-1049-SA5C-SB-0.0-0.5 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
Anthracene	2.0	1.1	58 (≤50)	J (all detects)	A
Benzo(a)anthracene	1.2	0.95	23 (≤50)	-	-
Benzo(a)pyrene	0.89	1.7U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Benzo(b)fluoranthene	1.0	1.7U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Butylbenzylphthalate	6.8	7.1	4 (≤50)	-	-
Chrysene	1.3	0.46	95 (≤50)	J (all detects)	A
Bis(2-ethylhexyl)phthalate	12	9.8	20 (≤50)	-	-
Fluoranthene	1.9	0.80	81 (≤50)	J (all detects)	A
1-Methylnaphthalene	4.1	1.1	115 (≤50)	J (all detects)	A
2-Methylnaphthalene	3.4	1.7U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Naphthalene	1.1	1.7U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Di-n-octylphthalate	9.3	19	200 (≤50)	J (all detects) UJ (all non-detects)	A

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
Phenanthrene	8.6	9.7	12 (≤50)	-	-
Pyrene	2.1	1.2	55 (≤50)	J (all detects)	A

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH173	FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	Bis(2-ethylhexyl)phthalate Di-n-octylphthalate	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH173	FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	Benzo(b)fluoranthene	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	Naphthalene Fluoranthene	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	2-Methylnaphthalene 1-Methylnaphthalene Phenanthrene Pyrene Bis(2-ethylhexyl)phthalate	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	Anthracene	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH173	EB-050814	Bis(2-ethylhexyl)phthalate	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)(RPD) (L,E)
PH173	EB-050814 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	Anthracene Chrysene Fluoranthene 1-Methylnaphthalene Pyrene	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Field duplicates (RPD) (FD)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	Benzo(a)pyrene Benzo(b)fluoranthene 2-Methylnaphthalene Naphthalene Di-n-octylphthalate	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

LDC #: 31964B2b **VALIDATION COMPLETENESS WORKSHEET** Date: 6/24/14
SDG #: PH173 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ Semivolatiles (EPA SW 846 Method 8270C/D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30 2, r²
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 25)
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD = 4+5
XVII.	Field blanks	SW	EB = 1 FB = FB-051314 CSDG # PH176

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water + Soil

1	EB-050814 W	11		21		31	SBLKWE134
2	FDG-SL-511-SA5C-SB-0.0-0.5 S	12		22		32	SBLKF133
3	FDG-SL-511-SA5C-SB-2.0-3.0	13		23		33	
4	FDG-SL-749-SA5C-SB-0.0-0.5	14		24		34	
5	FDG-SL-1049-SA5C-SB-0.0-0.5	15		25		35	
6	FDG-SL-749-SA5C-SB-0.0-0.5MS	16		26		36	
7	FDG-SL-749-SA5C-SB-0.0-0.5MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 31964B26

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: Semivolatiles (EPA SW 846 Method 8270D)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ ~~30~~ 30% and relative response factors (RRF) within the method criteria?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ ~~20~~ 25% and relative response factors (RRF) ≥ 0.05?	~~✓~~ ✓	✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

LDC #: 31964B26

VALIDATION FINDINGS CHECKLIST

Page: __ of __
Reviewer: BR
2nd Reviewer: SM

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

LDC #: 31964B2L

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: KR
2nd Reviewer: CW

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤25 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	5/2/14	ICV-fe0020	GGG	26		All soil	J/UJ/A (C)
	5/20/14	CCV-fe0511	EEE	29		All soil	J/UJ/A (C)
			FFF	28			↓

LDC #: 31964B26

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/kg

Sampling date: 05/8/14

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All Soil (ND)

Code: F

Compound	Blank ID		Sample Identification							
	1	5x/10x								
GG	0.016	0.08								
DD	0.021	0.105								
XX	0.14	1.4								
LL	0.48	4.8								

Blank units: ug/L **Associated sample units:** ug/L, ug/kg

FB = FB-051314 (SDG # PH176)

Sampling date: 5/13/14

Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil < 2-5 = ug/kg = ND+75x

Code: F

Compound	Blank ID		Sample Identification							
	FB		1	SM						
LL	0.47		0.48/1.0U							
XX	0.22		~~0.16~~/1.0U							
EEE	0.25									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 31964B2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: KM
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

(Y) N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

(Y) N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		6/7	S	( )	( )	40 (30)	4	J det / A (P)
			W	( )	219 (46-147	67 ( )		
			TTT	( )	247 (59-137	74 ( )		
			UU	154 (50-137	349 (50-137	82 ( )		
			VV	( )	127 (52-126	( )		
			YY	( )	( )	42 ( )		
			ZZ	( )	144 (26-143	40 ( )		
			EEE	( )	166 (48-164	39 ( )		✓
				( )	( )	( )		
				( )	( )	( )		
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LDC #: 31964B26

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y (N) N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		134WELCS/D	EEE	58 (70-143)	58 ( )	33 (30)	All water	J (all detects) (LCS)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC#: 31964B2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: BN
2nd Reviewer: SM

METHOD: GC MS Semivolatiles (EPA SW 846 Method 8270D-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		RPD (≤50%)	Qualifications (Parent Only)
	4	5		
VV	2.0	1.1	58	J DET/A (FD)
CCC	1.2	0.95	23	
III	0.89	1.7U	200	J/UJ/A (FD)
GGG	1.0	1.7U	200	J/UJ/A ↓
AAA	6.8	7.1	4	
DDD	1.3	0.46	95	J DET/A (FD)
EEE	12	9.8	20	
YY	1.9	0.80	81	J det/A SM
TTT	4.1	1.1	115	J DET/A (FD)
W	3.4	1.7U	200	J/UJ/A
S	1.1	1.7U	200	J/UJ/A
FFF	9.3	19U	200	J/UJ/A
UU	8.6	9.7	12	
ZZ	2.1	1.2	55	J DET/A (FD)

V:\FIELD DUPLICATES\31964B2b.wpd

LDC #: 31964B2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer BR
2nd Reviewer

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (1 std)	Recalculated RRF (1 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	HP07166	5/20/2014	N-Nitrosodimethylamine (IS1)	0.848	0.848	0.850	0.850	4	4
			Naphthalene (IS2)	1.206	1.206	1.222	1.222	3	3
			Fluorene (IS3)	1.465	1.465	1.460	1.461	3	3
			Anthracene (IS4)	1.222	1.222	1.187	1.187	6	6
			Chrysene (IS5)	1.555	1.555	1.553	1.553	2	2
			Benzo(a)pyrene (IS6)	1.737	1.737	1.619	1.619	15	15

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer BR
2nd Reviewer

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (0.1 std)	Recalculated RRF (0.1 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	HP11165	5/12/2014	N-Nitrosodimethylamine (IS1)	0.889	0.889	0.898	0.898	6	6
			Naphthalene (IS2)	1.048	1.048	1.012	1.012	4	4
			Fluorene (IS3)	1.299	1.299	1.265	1.264	3	3
			Anthracene (IS4)	1.134	1.134	1.130	1.130	2	2
			Chrysene (IS5)	1.255	1.255	1.234	1.234	6	6
			Benzo(a)pyrene (IS6)	1.125	1.125	1.092	1.092	5	5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC# 31964B2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	fe0511	05/20/14	N-Nitrosodimethylamine (IS1)	0.850	0.924	0.924	9	9
			Naphthalene (IS2)	1.222	1.246	1.246	2	2
			Fluorene (IS3)	1.460	1.502	1.502	3	3
			Anthracene (IS4)	1.187	1.309	1.309	10	10
			Chrysene (IS5)	1.553	1.490	1.490	4	4
			Benzo(a)pyrene (IS6)	1.619	1.762	1.762	9	9

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC# 31964B2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	ge0601	05/20/14	N-Nitrosodimethylamine (IS1)	0.898	0.920	0.920	2	2
			Naphthalene (IS2)	1.012	0.986	0.986	3	3
			Fluorene (IS3)	1.265	1.252	1.252	1	1
			Anthracene (IS4)	1.130	1.149	1.149	2	2
			Chrysene (IS5)	1.234	1.210	1.210	2	2
			Benzo(a)pyrene (IS6)	1.092	1.173	1.173	7	7

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B6

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Fluoranthene-d10	1.02	0.97959	96	96	0
Benzo(a)pyrene-d12	↓	0.97551	96	96	0
1-Methylnaphthalene-d10		0.95918	94	94	0

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Fluoranthene-d10	33.226	30.93	93	93	0
Benzo(a)pyrene-d12	↓	35.45	107	107	0
1-Methylnaphthalene-d10		28.41	86	86	0

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

LDC #: 31964B26

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 617

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene	33.11	33.11	0	35.37	39.44	107	107	119	119	11	11
Pentachlorophenol											
Pyrene	33.11	33.11	2.03	33.15	49.94	94	94	144	145	40	40

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 134WELCS/D

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	1.00	1.00	1.15	1.15 (4)	115	115	114	114	1	0.9
Pentachlorophenol										
Pyrene	1.00	1.00	1.08	1.08 (7)	108	108	107	107	1	0.9

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B2b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

S = 17 ug/kg

Sample I.D. 1, S:

Conc. = $\frac{(129756\ 1.00)(1000)(\quad)(\quad)}{(223912\ 1.22\ 30.1\ 0.93)}$

= 16.940625 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 8, 2014

LDC Report Date: June 25, 2014

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH173

Sample Identification

EB-050814
FDG-SL-511-SA5C-SB-0.0-0.5
FDG-SL-511-SA5C-SB-2.0-3.0
FDG-SL-749-SA5C-SB-0.0-0.5
FDG-SL-1049-SA5C-SB-0.0-0.5
FDG-SL-749-SA5C-SB-0.0-0.5MS
FDG-SL-749-SA5C-SB-0.0-0.5MSD

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample EB-050814 was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

Sample FB-051314 (from SDG PH176) was identified as a field blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Affected Compound	Flag	A or P
LCS/D 38134 (All water samples in SDG PH173)	Aroclor-1260	59 (67-128)	-	33 (≤30)	Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation

All compound quantitations were within validation criteria.

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
FDG-SL-511-SA5C-SB-0.0-0.5	Aroclor-1254	64.69	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH173	All compounds reported below the RL.	J (all detects)	A

XIV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples FDG-SL-749-SA5C-SB-0.0-0.5 and FDG-SL-1049-SA5C-SB-0.0-0.5 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH173	EB-050814	Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)(RPD) (L,E)
PH173	FDG-SL-511-SA5C-SB-0.0-0.5	Aroclor-1254	J (all detects)	A	Compound quantitation (RPD between columns) (*XIII)
PH173	EB-050814 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-749-SA5C-SB-0.0-0.5MS FDG-SL-749-SA5C-SB-0.0-0.5MSD	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

LDC #: 31964B3b **VALIDATION COMPLETENESS WORKSHEET** Date: 6/24/14
SDG #: PH173 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II.	GC Instrument Performance Check	A	
III.	Initial calibration	A	RSD≤20%
IV.	Continuing calibration/ICV	A	(CW/CCV≤20%)
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	SW A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	ND	FD = 4+5
XVI.	Field blanks	ND	EB = 1 FB = FB-051314 (SDG# PH176)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water + Soil

1	EB-050814 W	11		21		31	PBLK 38134
2	FDG-SL-511-SA5C-SB-0.0-0.5 S	12		22		32	PBLK 06133
3	FDG-SL-511-SA5C-SB-2.0-3.0	13		23		33	
4	FDG-SL-749-SA5C-SB-0.0-0.5	14		24		34	
5	FDG-SL-1049-SA5C-SB-0.0-0.5	15		25		35	
6	FDG-SL-749-SA5C-SB-0.0-0.5MS	16		26		36	
7	FDG-SL-749-SA5C-SB-0.0-0.5MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 31964B36

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: SM

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?			✓	
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
Were the required standard concentrations analyzed in the initial calibration?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or ___%R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis?			✓	
Were endrin and 4,4'-DDT breakdowns ≤ 15%.0 for individual breakdown in the Evaluation mix standards?			✓	
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recovieries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Were extract cleanup blanks analyzed with every batch requiring clean-up?			✓	
Was there contamination in the method blanks or clean-up blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	

Validation Area	Yes	No	NA	Findings/Comments
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 31956B36

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples

Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was a LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCSD 38134	PCB-1260	59 (67-128	( )	33 (30)	All Water	J/UJ/PCL, E)
				( )	( )	( )		Qual:
				( )	( )	( )		PCB-1242
				( )	( )	( )		PCB-1248
				( )	( )	( )		PCB-1254
				( )	( )	( )		PCB-1260
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 31964B6

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: KR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081,8082)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding (%RPD between two columns ≤ 40%)	Associated Samples	* XIII Qualifications
	PCB-1254	64.69	2	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31964536

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	ZB-MultiR2	0.30691	0.29896	97	97	J
Decachlorobiphenyl	1 R1	0.30894	0.281474	91	91	J
Decachlorobiphenyl						

Sample ID: 2

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	ZB-MultiR2	10.1	8.938427	89	89	0
Decachlorobiphenyl	↓	10.2	9.406252	93	92.2	0.8
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes: _____

LDC #: 31964B36

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I MS - MSD I * 2/(MS + MSD)

MS = Matrix spike percent recovery

MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 6/7

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
gamma-BHC											
4,4'-DDT											
Aroclor 1260	167	167	0	162.93	162.21	98	98	97	97	0	0.4

Comments: Refer ot Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B3b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS 06133

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC										
4,4'-DDT										
Aroclor 1260	167	~~167~~	166.03	—	99	99	—	—	—	—

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B2b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

(ZB MultiR2)

PCB 1260-4 = $\frac{(39432.97)(10)}{(1485)(30)}$

= 8.851406 73

PCB 1260-5 = 12.786814

PCB 1260-6 = 9.203472

Average = 10.280562 2

Example: 11 ug/kg

Sample I.D. 2 PCB-1260

Conc. = $\frac{10.2805622}{0.927}$

= 11.090142 64 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 8, 2014

LDC Report Date: June 23, 2014

Matrix: Soil/Water

Parameters: Metals

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH173

Sample Identification

EB-050814
FDG-SL-511-SA5C-SB-0.0-0.5
FDG-SL-511-SA5C-SB-2.0-3.0
FDG-SL-749-SA5C-SB-0.0-0.5
FDG-SL-1049-SA5C-SB-0.0-0.5
FDG-SL-749-SA5C-SB-0.0-0.5MS
FDG-SL-749-SA5C-SB-0.0-0.5MSD
FDG-SL-749-SA5C-SB-0.0-0.5DUP

Introduction

This data review covers 7 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C, 6020A, 7470A, and 7471B for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Manganese Zinc	0.0016 mg/L 0.0038 mg/L	All water samples in SDG PH173
ICB/CCB	Antimony Arsenic Chromium	4.1 ug/L 3.3 ug/L 0.74 ug/L	All water samples in SDG PH173
PB (prep blank)	Boron Calcium Strontium Tin Zinc	1.15 mg/Kg 13.6 mg/Kg 0.0750 mg/Kg 1.35 mg/Kg 0.568 mg/Kg	All soil samples in SDG PH173
ICB/CCB	Arsenic	3.4 ug/L	FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-749-SA5C-SB-0.0-0.5
ICB/CCB	Aluminum Arsenic	35.1 ug/L 5.3 ug/L	FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-1049-SA5C-SB-0.0-0.5

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
EB-050814	Manganese Zinc	0.0013 mg/L 0.0031 mg/L	0.0013U mg/L 0.0031U mg/L
FDG-SL-511-SA5C-SB-0.0-0.5	Boron Zinc	3.72 mg/Kg 3.04 mg/Kg	3.72U mg/Kg 3.04U mg/Kg
FDG-SL-511-SA5C-SB-2.0-3.0	Boron Zinc	1.16 mg/Kg 2.38 mg/Kg	1.16U mg/Kg 2.38U mg/Kg
FDG-SL-749-SA5C-SB-0.0-0.5	Boron Zinc	1.77 mg/Kg 2.99 mg/Kg	1.77U mg/Kg 2.99U mg/Kg
FDG-SL-1049-SA5C-SB-0.0-0.5	Boron Zinc	1.59 mg/Kg 2.73 mg/Kg	1.59U mg/Kg 2.73U mg/Kg

Sample EB-050814 was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-050814	5/8/14	Boron Manganese Zinc	0.0084 mg/L 0.0013 mg/L 0.0031 mg/L	All soil samples in SDG PH173

Sample FB-051314 (from SDG PH176) was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-051314	5/13/14	Manganese Zinc	0.0012 ug/L 0.0030 ug/L	All soil samples in SDG PH173

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
FDG-SL-511-SA5C-SB-0.0-0.5	Boron	3.72 mg/Kg	3.72U mg/Kg
FDG-SL-511-SA5C-SB-2.0-3.0	Boron	1.16 mg/Kg	1.16U mg/Kg
FDG-SL-749-SA5C-SB-0.0-0.5	Boron	1.77 mg/Kg	1.77U mg/Kg
FDG-SL-1049-SA5C-SB-0.0-0.5	Boron	1.59 ug/Kg	1.59U ug/Kg

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FDG-SL-749-SA5C-SB-0.0-0.5MS/MSD (All soil samples in SDG PH173)	Antimony Zinc	47 (75-125) -	45 (75-125) -	- 22 (≤20)	J (all detects) UJ (all non-detects)	A
FDG-SL-749-SA5C-SB-0.0-0.5MS/MSD (All soil samples in SDG PH173)	Chromium Copper Phosphorus Potassium Strontium Zinc	127 (75-125) - - 155 (75-125) 221 (75-125) 161 (75-125)	128 (75-125) 136 (75-125) 154 (75-125) 150 (75-125) 184 (75-125) 237 (75-125)	- - - - - -	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. For FDG-SL-749-SA5C-SB-0.0-0.5MS/MSD, no data were qualified for Aluminum, Calcium, Iron, Magnesium, Manganese, and Titanium percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
FDG-SL-749-SA5C-SB-0.0-0.5DUP (All soil samples in SDG PH173)	Manganese	24 (≤20)	-	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Analyte	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/LCSD (All water samples in SDG PH173)	Selenium	-	133 (80-120)	-	J (all detects)	P

IX. Internal Standards

All internal standard percent recoveries (%R) were within QC limits.

X. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
FDG-SL-749-SA5C-SB-0.0-0.5	Strontium	11 (≤10)	All soil samples in SDG PH173	J (all detects) UJ (all non-detects)	A

XI. Sample Result Verification

All sample result verifications were acceptable.

All metals reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG PH173	All analytes reported below the RL and above the MDL.	J (all detects)	A

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples FDG-SL-749-SA5C-SB-0.0-0.5 and FDG-SL-1049-SA5C-SB-0.0-0.5 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
Aluminum	13700	13800	1 (≤50)	-	-
Arsenic	5.70	4.95	14 (≤50)	-	-
Barium	74.6	70.2	6 (≤50)	-	-
Beryllium	0.572	0.562	2 (≤50)	-	-
Boron	1.77	1.59	11 (≤50)	-	-
Calcium	3330	5940	56 (≤50)	J (all detects)	A
Chromium	16.7	17.1	2 (≤50)	-	-
Cobalt	4.98	4.87	2 (≤50)	-	-
Copper	11.8	10.6	11 (≤50)	-	-
Iron	19700	18100	8 (≤50)	-	-
Lead	8.82	7.07	22 (≤50)	-	-
Lithium	22.7	20.9	8 (≤50)	-	-
Magnesium	4070	3830	6 (≤50)	-	-
Manganese	304	256	17 (≤50)	-	-
Mercury	0.0139	0.0170U	200 (≤50)	J (all detects) UJ (all non-detects)	A

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
Molybdenum	0.442	2.07U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Nickel	13.4	12.4	8 (≤50)	-	-
Phosphorus	274	259	6 (≤50)	-	-
Potassium	2330	2160	8 (≤50)	-	-
Selenium	0.152	0.160	5 (≤50)	-	-
Silver	0.0300	0.0444	39 (≤50)	-	-
Sodium	88.5	76.4	15 (≤50)	-	-
Strontium	28.7	27.3	5 (≤50)	-	-
Tin	2.99	2.73	9 (≤50)	-	-
Titanium	972	925	5 (≤50)	-	-
Thallium	0.276	0.248	11 (≤50)	-	-
Vanadium	36.3	35.9	1 (≤50)	-	-
Zinc	75.8	49.7	42 (≤50)	-	-
Zirconium	3.11	3.13	1 (≤50)	-	-

Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG PH173

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5	Antimony	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5	Zinc	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q, E)
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5	Chromium Copper Phosphorus Potassium Strontium	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5	Manganese	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD) (E)
PH173	EB-050814	Selenium	J (all detects)	P	Laboratory control samples (%R) (L)
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5	Strontium	J (all detects) UJ (all non-detects)	A	ICP serial dilution (%D) (A)
PH173	EB-050814 FDG-SL-1049-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-0.0-0.5	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	Calcium	J (all detects)	A	Field duplicates (RPD) (FD)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	Mercury Molybdenum	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG PH173

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH173	EB-050814	Manganese Zinc	0.0013U mg/L 0.0031U mg/L	A	B

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH173	FDG-SL-511-SA5C-SB-0.0-0.5	Boron Zinc	3.72U mg/Kg 3.04U mg/Kg	A	B
PH173	FDG-SL-511-SA5C-SB-2.0-3.0	Boron Zinc	1.16U mg/Kg 2.38U mg/Kg	A	B
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	Boron Zinc	1.77U mg/Kg 2.99U mg/Kg	A	B
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5	Boron Zinc	1.59U mg/Kg 2.73U mg/Kg	A	B

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PH173

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH173	FDG-SL-511-SA5C-SB-0.0-0.5	Boron	3.72U mg/Kg	A	F
PH173	FDG-SL-511-SA5C-SB-2.0-3.0	Boron	1.16U mg/Kg	A	F
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	Boron	1.77U mg/Kg	A	F
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5	Boron	1.59U ug/Kg	A	F

LDC #: 31964B4

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 6/17/14

SDG #: PH173

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

7471B

Reviewer: AR

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	SW	
VII.	Duplicate Sample Analysis	SW	
VIII.	Laboratory Control Samples (LCS)	SW	LCS/D
IX.	Internal Standard (ICP-MS)	A	
X.	ICP Serial Dilution	SW	
XI.	Sample Result Verification	A	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	(4,5)
XIV.	Field Blanks	SW	EB= 1 FB= FB-051314 (PH176)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil/water

1	EB-050814 W	11		21		31	
2	FDG-SL-511-SA5C-SB-0.0-0.5	12		22		32	
3	FDG-SL-511-SA5C-SB-2.0-3.0	13		23		33	
4	FDG-SL-749-SA5C-SB-0.0-0.5	14		24		34	
5	FDG-SL-1049-SA5C-SB-0.0-0.5	15		25		35	
6	FDG-SL-749-SA5C-SB-0.0-0.5MS	16		26		36	
7	FDG-SL-749-SA5C-SB-0.0-0.5MSD	17		27		37	
8	FDG-SL-749-SA5C-SB-0.0-0.5DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 31964B4

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: SM

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.		✓		
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?		✓		

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			✓	
Do all applicable analysies have duplicate injections? (Level IV only)			✓	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			✓	
Were analytical spike recoveries within the 85-115% QC limits?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?		✓		
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC6-8		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: OL
2nd Reviewer: SM

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x Reason: B
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Water

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] mg/Kg (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification: 1									
Sb			4.1	20.5										
As			3.3	16.5										
Cr			0.74	3.7										
Mn		0.0016 1.600		8	1.3									
Zn		0.0038 3.800		19	3.1									

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All Soil

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification: 2	3	4	5						
B	1.148			5.74	3.72	1.16	1.77	1.59						
Ca	13.6622			68.31										
Sr	0.075			0.375										
Sn	1.347			6.735	3.04	2.38	2.99	2.73						
Zn	0.568			2.84										

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2, 4

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification: No qualifiers									
As			3.4	1.7										

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 3, 5

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	Sample Identification: No Qualifiers									
Al			35.1	17.55										
As			5.3	2.65										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U". Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CL
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW846 6010C)

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 5/8/14 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	1	Action Limit	2	3	4	5							
B	0.0084	0.0042	3.72	1.16	1.77	1.59							
Mn	0.0013	0.0007											
Zn	0.0031	0.00155											

Blank units: mg/L **Associated sample units:** mg/Kg Reason: F
Sampling date: 5/13/14 Soil factor applied 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All Soil

Analyte	Blank ID	Sample Identification											
	FB-051314	Action Limit	No Qualifiers										
Mn	0.0012	0.0006											
Zn	0.0030	0.0015											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: CR
2nd Reviewer: SM

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	6/7	S	Sb	47	45		All Soil	J/UJ/A (Q)
			Cr	127	128			Jdet/A (Q)
			Cu		136			Jdet/A (Q)
			P		154			Jdet/A (Q)
			K	155	150			Jdet/A (Q)
			Sr	221	184			Jdet/A (Q)
			Zn	161	237			Jdet/A (Q)
			Zn			22		J/UJ/A (E)

Comments: Al, Ca, Fe, Mg, Mn, Ti>4x

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: OR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y (N) N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% samples? If no, see qualifications below. A control limit of ±R.L. (±2X R.L. for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values was <5X R.L.. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Difference (Limits)	Associated Samples	Qualifications
		8	S	Mn	24		All Soil	J/UJ/A (E)

Comments: Mo ok by difference

LDC #: 31964B4
SDG #: ——

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: CR
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010B/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a laboratory control sample (LCS) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	LCS/LCSD ID	Matrix	Analyte	LCS %R (limits)	LCSD %R (limits)	RPD (limits)	Associated Samples	Qualifications
		LCS/LCSD	W	Se		133(80-120)		All Water	J det/P(L)

Comments: _____

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Reviewer: CL
2nd Reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A If analyte concentrations were > 50X the MDL (ICP) ,or >100X the MDL (ICP/MS), was a serial dilution analyzed?
Y (N) N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y (N) N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Diluted Sample ID	Matrix	Analyte	%D (Limits)	Associated Samples	Qualifications
	4	S	Sr	11	All Soil	J/UJ/A (A)

Comments:

LDC#: 31964B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd Reviewer: SM

METHOD: Metals (EPA Method 6010C/6020A/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers (Parents Only)
	4	5		
Aluminum	13700	13800	1	
Arsenic	5.70	4.95	14	
Barium	74.6	70.2	6	
Beryllium	0.572	0.562	2	
Boron	1.77	1.59	11	
Calcium	3330	5940	56	Jdet/A (FD)
Chromium	16.7	17.1	2	
Cobalt	4.98	4.87	2	
Copper	11.8	10.6	11	
Iron	19700	18100	8	
Lead	8.82	7.07	22	
Lithium	22.7	20.9	8	
Magnesium	4070	3830	6	
Manganese	304	256	17	
Mercury	0.0139	0.0170U	200	J/UJ/A (FD)
Molybdenum	0.442	2.07U	200	J/UJ/A (FD)
Nickel	13.4	12.4	8	
Phosphorus	274	259	6	
Potassium	2330	2160	8	
Selenium	0.152	0.160	5	

LDC#: 31964B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CL
2nd Reviewer: SM

METHOD: Metals (EPA Method 6010C/6020A/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers (Parents Only)
	4	5		
Silver	0.0300	0.0444	39	
Sodium	88.5	76.4	15	
Strontium	28.7	27.3	5	
Tin	2.99	2.73	9	
Titanium	972	925	5	
Thallium	0.276	0.248	11	
Vanadium	36.3	35.9	1	
Zinc	75.8	49.7	42	
Zirconium	3.11	3.13	1	

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LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: QR
2nd Reviewer: CLA

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
ICV (19:54)	ICP (Initial calibration)	Sb	624.05	600	104.0	104.0	Y
ICV (04:36)	ICP/MS (Initial calibration)	Ag	51.13	50	102.3	102.3	
ICV (08:40)	CVAA (Initial calibration)	Hg	2.54	2.5	101.6	101.6	
CCV (21:01)	ICP (Continuing calibration)	Ni	500.69	500	100.1	100.1	
CCV (05:17)	ICP/MS (Continuing calibration)	Sr	24.48	25	97.9	97.9	
CCV (09:11)	CVAA (Continuing calibration)	Hg	1.00	1.0	100.0	100.0	
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units) mg/kg	True / D / SDR (units) mg/kg	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB (20:13)	ICP interference check	Pb	430 ug/L	50 ug/L	86.0	86.0	Y
LCS	Laboratory control sample	Se	1094 ug/L	1000 ug/L	109	109	
6	Matrix spike	Cd	(SSR-SR) 4.6647	4.9020	95	95	
8	Duplicate	Mn	2188.3788	2295.5641	24	24	
4	ICP serial dilution	Sr	141.6250	126.5250	11	11	

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31464B4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: QR
2nd reviewer: SM

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Cr were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{100mL\ (0.20536\ mg/L)}{0.927\ (1.02g)} = 21.72\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	B (ug/L)	8.4	8.4	Y
	2	Cr	21.7	21.7	
	3	Se	0.13	0.13	
	4	Hg	0.014	0.014	
	5	K	2160	2160	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 8, 2014
LDC Report Date:	June 25, 2014
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH173

Sample Identification

EB-050814

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample EB-050814 was identified as an equipment blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample FB-051314 (from SDG PH176) was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH173	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH173	EB-050814	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

LDC #: 31964B7 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/24/14
SDG #: PH173 Level IV Page: (of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II	Initial calibration	A	RSD≤20%
III.	Calibration verification/ICV	A	ICV/CCV≤20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec.
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1 FB = FB-051314 (SDG# PH176)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	EB-050814	11		21		31	BLKWD
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 3196457

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 31413A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (550 std)	Recalculated CF (550 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 16394F Restek VRX	10/8/2013	GRO	28604	28604	28046	28046	6	6

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC_____HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	WGCCXWF	5/13/2014	GRO	550.10	515.41	515.41	6	6
2								
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B7

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer:

METHOD: X GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Trifluorotoluene	DB-VRX	30	25.4870	85	85	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 3196487

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SM

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS|D 9E, W1

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	1100	1100	1174.16	1080.93	107	107	98	98	8	8
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 319648Z

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 1 Compound Name ND

LCS 9E QRO = 1174.15 ng/L

Concentration = $\frac{34313950 - 1383475}{28045}$

= 1174.159595 ng/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 8, 2014
LDC Report Date:	June 25, 2014
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Level IV
Laboratory:	Eurofins Lancaster Laboratories
Sample Delivery Group (SDG):	PH173

Sample Identification

EB-050814
EB-050814 SGCU

Samples appended with SGCU underwent Silica Gel Clean up

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractables contaminants were found in the method blanks.

Samples EB-050814 and EB-050814 SGCU were identified as equipment blanks. No total petroleum hydrocarbons as extractables contaminants were found.

Sample FB-051314 (from SDG PH176) was identified as a field blank. No total petroleum hydrocarbons as extractables contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH173	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH173	EB-050814 EB-050814 SGCU	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

LDC #: 31964B8 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/29/14
SDG #: PH173 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II	Initial calibration	A	RSD ≤ 20?
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20?
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec.
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 1, 2 FB = FB-051314 (SDG # PH176)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	EB-050814	11		21		31	PBLK17133
2	#1 SGCu	12		22		32	PBLK35133
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: SGCu - Silica Gel Cleanup

LDC #: 3196488

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 3196488

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 31964B8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (144 std)	Recalculated CF (144 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CP23-19879B	5/5/2014	C8-C40	24233	24233	24315	24315	11%	11%

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC_____HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	TPH_3PI	5/14/2014 17:25	C8-C40	288.01	319.44	319.44	11	11
2	TPH_3QF	5/19/2014 21:05	C8-C40	288.01	275.55	275.55	4	4
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: _____
2nd reviewer: SM

METHOD: X **GC** __ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Chlorobenzene	ZB-5	0.011742	0.00794	68	68	0
Ortho-terphenyl	↓	↓	0.010089	86	86	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 39648B

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SM

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS|D 17133

Compound	Spike Added (mg/L)		Spike Sample Concentration (mg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
EFH (C8-C11)	0.151	0.151	0.1109	0.1607	73	73	47	67	10	9.6

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3196488

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. AU Compound Name ND

LCS17133 : EFH C12-C14 = 0.13 mg/L

Concentration = $\frac{(3167941)}{(24315)(1000)}$

$= 0.13028751\,8$ mg/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 8, 2014

LDC Report Date: June 26, 2014

Matrix: Soil/Water

Parameters: Dioxins/Dibenzofurans

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH173

Sample Identification

EB-050814
FDG-SL-511-SA5C-SB-0.0-0.5
FDG-SL-511-SA5C-SB-2.0-3.0
FDG-SL-749-SA5C-SB-0.0-0.5
FDG-SL-1049-SA5C-SB-0.0-0.5
FDG-SL-749-SA5C-SB-0.0-0.5MS
FDG-SL-749-SA5C-SB-0.0-0.5MSD

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1613B for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

PFK and static resolving power were within validation criteria.

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 35.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio was greater than or equal to 10 for each unlabeled compound and labeled compound.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within QC limits.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
BLK133003	5/13/14	1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.535 pg/L 1.07 pg/L 0.438 pg/L 0.173 pg/L 0.329 pg/L 0.278 pg/L 0.306 pg/L 0.256 pg/L 0.404 pg/L 1.22 pg/L	All water samples in SDG PH173
BLK134003	5/14/14	2,3,7,8-TCDD 1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0966 ng/Kg 0.0398 ng/Kg 0.0254 ng/Kg 0.0340 ng/Kg 0.0539 ng/Kg 0.208 ng/Kg 0.0374 ng/Kg 0.0307 ng/Kg 0.0835 ng/Kg 0.0286 ng/Kg 0.0418 ng/Kg 0.129 ng/Kg	All soil samples in SDG PH173

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB-050814	1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.216 pg/L 1.06 pg/L 0.312 pg/L 0.131 pg/L 0.146 pg/L 0.224 pg/L 0.205 pg/L 0.824 pg/L	0.216U pg/L 1.06U pg/L 0.312U pg/L 0.131U pg/L 0.146U pg/L 0.224U pg/L 0.205U pg/L 0.824U pg/L
FDG-SL-511-SA5C-SB-2.0-3.0	2,3,7,8-TCDD	0.353 ng/Kg	0.353U ng/Kg
FDG-SL-749-SA5C-SB-0.0-0.5	2,3,7,8-TCDD 1,2,3,7,8,9-HxCDF	0.176 ng/Kg 0.322 ng/Kg	0.176U ng/Kg 0.322U ng/Kg
FDG-SL-1049-SA5C-SB-0.0-0.5	1,2,3,7,8-PeCDD 1,2,3,7,8-PeCDF 1,2,3,7,8,9-HxCDF	0.131 ng/Kg 0.0849 ng/Kg 0.138 ng/Kg	0.131U ng/Kg 0.0849U ng/Kg 0.138U ng/Kg

Sample EB-050814 was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-050814	5/8/14	1,2,3,4,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.146 pg/L 0.216 pg/L 1.06 pg/L 0.312 pg/L 0.131 pg/L 0.146 pg/L 0.114 pg/L 0.224 pg/L 0.205 pg/L 0.824 pg/L	All soil samples in SDG PH173

Sample FB-051314 (from SDG PH176) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-051314	5/13/14	1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDD OCDF	0.272 pg/L 0.195 pg/L 0.163 pg/L 0.0816 pg/L 0.611 pg/L 0.265 pg/L 0.160 pg/L 4.37 pg/L 0.794 pg/L	All soil samples in SDG PH173

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FDG-SL-749-SA5C-SB-0.0-0.5MS/MSD (FDG-SL-749-SA5C-SB-0.0-0.5)	1,2,3,4,6,7,8-HpCDF OCDF	- -	142 (40-135) 153 (40-135)	30 (≤20) 31 (≤20)	J (all detects) J (all detects)	A

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal and recovery standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Compound	Flag	A or P
FDG-SL-511-SA5C-SB-0.0-0.5	1,2,3,4,6,7,8-HpCDD OCDD	Results were flagged "E" by the laboratory to indicate that the results exceeded the calibration range.	J (all detects) J (all detects)	P
FDG-SL-511-SA5C-SB-2.0-3.0	OCDD	Results were flagged "E" by the laboratory to indicate that the results exceeded the calibration range.	J (all detects)	P

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples FDG-SL-749-SA5C-SB-0.0-0.5 and FDG-SL-1049-SA5C-SB-0.0-0.5 were identified as field duplicates. No polychlorinated dioxins/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
2,3,7,8-TCDD	0.176	1.04U	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,7,8-PeCDD	1.87	0.131	174 (≤50)	J (all detects)	A

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	FDG-SL-749-SA5C-SB-0.0-0.5	FDG-SL-1049-SA5C-SB-0.0-0.5			
1,2,3,4,7,8-HxCDD	3.04	0.202	175 (≤50)	J (all detects)	A
1,2,3,6,7,8-HxCDD	22.1	0.758	187 (≤50)	J (all detects)	A
1,2,3,7,8,9-HxCDD	8.42	0.567	175 (≤50)	J (all detects)	A
1,2,3,4,6,7,8-HpCDD	572	24.2	184 (≤50)	J (all detects)	A
OCDD	3460	161	182 (≤50)	J (all detects)	A
2,3,7,8-TCDF	0.150	1.04U	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,7,8-PeCDF	0.388	0.0849	128 (≤50)	J (all detects)	A
2,3,4,7,8-PeCDF	0.460	0.241	62 (≤50)	J (all detects)	A
1,2,3,4,7,8-HxCDF	0.945	0.133	151 (≤50)	J (all detects)	A
1,2,3,6,7,8-HxCDF	1.11	0.272	121 (≤50)	J (all detects)	A
2,3,4,6,7,8-HxCDF	1.84	0.363	134 (≤50)	J (all detects)	A
1,2,3,7,8,9-HxCDF	0.322	0.138	80 (≤50)	J (all detects)	A
1,2,3,4,6,7,8-HpCDF	29.6	2.75	166 (≤50)	J (all detects)	A
1,2,3,4,7,8,9-HpCDF	2.47	0.483	135 (≤50)	J (all detects)	A
OCDF	66.6	6.53	164 (≤50)	J (all detects)	A

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	1,2,3,4,6,7,8-HpCDF OCDF	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
PH173	FDG-SL-511-SA5C-SB-0.0-0.5	1,2,3,4,6,7,8-HpCDD OCDD	J (all detects) J (all detects)	P	Compound quantitation (exceeded range) (*XI)
PH173	FDG-SL-511-SA5C-SB-2.0-3.0	OCDD	J (all detects)	P	Compound quantitation (exceeded range) (*XI)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	2,3,7,8-TCDD 2,3,7,8-TCDF	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)		Field duplicates (RPD) (FD)
PH173	FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)		Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH173	EB-050814	1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.216U pg/L 1.06U pg/L 0.312U pg/L 0.131U pg/L 0.146U pg/L 0.224U pg/L 0.205U pg/L 0.824U pg/L	A	B
PH173	FDG-SL-511-SA5C-SB-2.0-3.0	2,3,7,8-TCDD	0.353U ng/Kg	A	B
PH173	FDG-SL-749-SA5C-SB-0.0-0.5	2,3,7,8-TCDD 1,2,3,7,8,9-HxCDF	0.176U ng/Kg 0.322U ng/Kg	A	B

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
PH173	FDG-SL-1049-SA5C-SB-0.0-0.5	1,2,3,7,8-PeCDD 1,2,3,7,8-PeCDF 1,2,3,7,8,9-HxCDF	0.131U ng/Kg 0.0849U ng/Kg 0.138U ng/Kg	A	B

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

LDC #: 31964B21 **VALIDATION COMPLETENESS WORKSHEET** Date: 6-18-14
SDG #: PH173 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: 9m
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	≤ 20/35
IV.	Continuing Calibration	A	QC limits
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation/RL/~~LOQ/LODs~~	SW	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 4+5
XV.	Field blanks	SW	EB=1, FB= FB-051314 (PH176)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water | soil

1	EB-050814 W	11		21		31	
2	FDG-SL-511-SA5C-SB-0.0-0.5 S	12		22		32	
3	FDG-SL-511-SA5C-SB-2.0-3.0 S	13		23		33	
4	FDG-SL-749-SA5C-SB-0.0-0.5 S	14		24		34	
5	FDG-SL-1049-SA5C-SB-0.0-0.5 S	15		25		35	
6	FDG-SL-749-SA5C-SB-0.0-0.5MS S	16		26		36	
7	FDG-SL-749-SA5C-SB-0.0-0.5MSD S	17		27		37	
8		18		28		38	
9		19	BLK 133003	29		39	
10		20	BLK 134003	30		40	

Notes: _____

LDC #: 31964B21

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	✓			
Were the retention time windows established for all homologues?	✓			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers ≤ 25% ?	✓			
Is the static resolving power at least 10,000 (10% valley definition)?	✓			
Was the mass resolution adequately check with PFK?	✓			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	✓			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled compounds and ≤ 35% for labeled compounds ?	✓			
Did all calibration standards meet the Ion Abundance Ratio criteria?	✓			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard ≥ 10?	✓			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	✓			
Were all the concentrations for the unlabeled compounds and labeled compounds within the QC limits (Method 1613B, Table 6)?	✓			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank performed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
IX. Internal standards				
Were internal standard recoveries within the 25-150% criteria?	✓			
Was the minimum S/N ratio of all internal standard peaks ≥ 10?	✓			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	✓			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	✓			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	✓			
Did compound spectra contain all characteristic ions listed in the table attached?	✓			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?		✓		
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5?	✓			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	✓			
For PCDF identification, was any signal (S/N ≥ 2.5, at ± seconds RT) detected in the corresponding PCDPE channel?		✓		
Was an acceptable lock mass recorded and monitored?	✓			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:_____

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: MC
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all samples associated with a method blank?
(Y) N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
(Y) N N/A Was the method blank contaminated?

Blank extraction date: 05/13/14 **Blank analysis date:** 05/15/14 **Associated samples:** All waters Qual U (B)

Conc. units: pg/L

Compound	Blank ID	Sample Identification								
	BLK133003	5x	1							
F	0.535*	2.68	0.216*							
G	1.07	5.35	1.06*							
I	0.438*	2.19	0.312*							
J	0.173*	0.865								
K	0.329*	1.65	0.131*							
L	0.278*	1.39	0.146*							
N	0.306*	1.53								
O	0.256*	1.28	0.224							
P	0.404*	2.02	0.205							
Q	1.22	6.10	0.824							

*EMPC

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a method blank?

Y N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?

Y N N/A Was the method blank contaminated?

Blank extraction date: 05/14/14 **Blank analysis date:** 05/15/14 **Associated samples:** All soils Qual U (B)

Conc. units: ng/kg

Compound	Blank ID	Sample Identification								
	BLK134003	5x	3	4	5					
A	0.0966*	0.483	0.353*	0.176						
B	0.0398	0.199			0.131					
D	0.0254*	0.127								
E	0.0340*	0.170								
F	0.0539*	0.270								
G	0.208	1.04								
I	0.0374*	0.187			0.0849*					
J	0.0307	0.154								
N	0.0835*	0.418		0.322*	0.138*					
O	0.0286	0.143								
P	0.0418	0.209								
Q	0.129*	0.645								

*EMPC

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

METHOD: HRGC/HRMS Dioxins/Furans (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 05/08/14
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All soils >5x

Compound	Blank ID	Sample Identification								
	1	5X								
C	0.146*	0.00073								
F	0.216*	0.00108								
G	1.06*	0.00530								
I	0.312*	0.00156								
K	0.131*	0.00066								
L	0.146*	0.00073								
M	0.114*	0.00057								
O	0.224	0.00112								
P	0.205	0.00103								
Q	0.824	0.00412								

*EMPC

EB-050814 (PH173)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

V:\Field Blanks\31964B21_EB-050814.wpd

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

METHOD: HRGC/HRMS Dioxins/Furans (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 05/13/14
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All soils >5x

Compound	Blank ID	Sample Identification								
	FB-051314	5X								
I	0.272	0.00136								
K	0.195	0.00098								
L	0.163	0.00082								
M	0.0816	0.00041								
F	0.611	0.00306								
O	0.265	0.00133								
P	0.160	0.00080								
G	4.37	0.02185								
Q	0.794	0.00397								

*EMPC

FB-051314 (PH17)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

V:\Field Blanks\31964B21_FB-051314.wpd

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: ON
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N (N/A) Was a MS/MSD analyzed every 20 samples of each matrix?

Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		6|7	O	( )	142 (40-135)	30 (20)	4	Jdets/A (Q)
		↓	Q	( )	153 ( )	31 ( )	↓	↓
			F	429 (40-135)	656 ( )	21 ( )		NOqual-54x
		↓	G	255 (↓)	1840 (↓)	58 (↓)	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: 9m
2nd Reviewer: Sm

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?
Y N N/A Compound quantitation and CRQLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compound	Finding	Associated Samples	Qualifications
		F, G	Results flagged "E" exceed upper calibration limit	2	Jdets/P (*XI)
		G	Results flagged "E" exceed upper calibration limit	3	Jdets/P (*XI)

Comments: See sample calculation verification worksheet for recalculations

LDC#: 31964B21

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

Dioxins/Furans (EPA Method 1613B)

	Concentration (ng/kg)		RPD (≤ 50%)	Qualifiers (Parents Only)
	4	5		
A	0.176	1.04U	200	J/UJ/A (FD)
B	1.87	0.131	174	Jdets/A (FD)
C	3.04	0.202	175	Jdets/A (FD)
D	22.1	0.758	187	Jdets/A (FD)
E	8.42	0.567	175	Jdets/A (FD)
F	572	24.2	184	Jdets/A (FD)
G	3460	161	182	Jdets/A (FD)
H	0.150	1.04U	200	J/UJ/A (FD)
I	0.388	0.0849	128	Jdets/A (FD)
J	0.460	0.241	62	Jdets/A (FD)
K	0.945	0.133	151	Jdets/A (FD)
L	1.11	0.272	121	Jdets/A (FD)
M	1.84	0.363	134	Jdets/A (FD)
N	0.322	0.138	80	Jdets/A (FD)
O	29.6	2.75	166	Jdets/A (FD)
P	2.47	0.483	135	Jdets/A (FD)
Q	66.6	6.53	164	Jdets/A (FD)

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9m
2nd Reviewer: Sm

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported RRF (CS3 std)	Recalculated RRF (CS3 std)	Reported %RSD	Recalculated %RSD
1	DF17280	5-6-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	1.125	1.125	1.090	1.090	9.97	9.97
	ICAL		2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	1.212	1.212	1.200	1.200	6.84	6.85
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	1.056	1.0565	1.028	1.028	9.26	9.24
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	1.122	1.122	1.101	1.101	6.60	6.58
			OCDF (^{13}C-OCDF)	0.984	0.9835	0.954	0.954	7.35	7.36
2	DF18471	2-20-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	1.065	1.065	1.019	1.019	7.84	7.85
	ICAL		2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	1.228	1.2275	1.118	1.118	15.69	15.68
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	1.031	1.031	1.005	1.004	8.99	8.98
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	1.136	1.136	1.086	1.086	8.81	8.78
			OCDF (^{13}C-OCDF)	0.986	0.986	0.960	0.960	5.85	5.86
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported Conc (ng/mL)	Recalculated Conc (ng/mL)	Reported %R	Recalculated %R
1	CS3CC03 (14MAY14-14)	5-15-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.655	9.654	97	97
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	10.229	10.229	102	102
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	48.747	48.764	97	97.5
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	49.463	49.457	99	99
			OCDF (^{13}C-OCDF)	100	97.701	97.653	98	98
2	CS3CC02 (14MAY15-08)	5-15-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.441	9.439	94	94
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.120	9.116	91	91
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	45.543	45.556	91	91
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	46.357	46.341	93	93
			OCDF (^{13}C-OCDF)	100	94.709	94.733	95	95
3	CS3CC03 (14MAY15-22)	5-16-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.741	9.739	97	97
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.040	9.037	90	90
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	47.482	47.496	95	95
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	46.756	46.740	94	93.5
			OCDF (^{13}C-OCDF)	100	94.863	94.887	95	95

Comments: Refer to Routine Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSR - SR)/SA Where: SSR = Spiked sample result, SR = Sample result
SA = Spike added

RPD = | MSR - MSDR | * 2/(MSR + MSDR) MSR = Matrix spike percent recovery MSDR = Matrix spike duplicate percent recovery

MS/MSD samples: 6/7

Compound	Spike Added (ng/kg)		Sample Concentration (ng/kg)	Spiked Sample Concentration (ng/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		Reported RPD	Recalculated RPD
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	----	----
2,3,7,8-TCDD	20.6	20.8	0.176	18.6	18.4	89	89	88	88	1	1
1,2,3,7,8-PeCDD	103	104	1.87	95.4	99.7	91	91	94	94	4	4
1,2,3,4,7,8-HxCDD	103	104	3.04	102	105	96	96	98	98	3	3
1,2,3,4,7,8,9-HpCDF	103	104	2.47	98.3	99.5	93	93	93	93	1	1
OCDF	206	208	66.6	280	384	104	104	153	153	31	31

Comments: Refer to Matrix Spike/Matrix Spike Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: 9m
2nd Reviewer: SM

METHOD: GC/MS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: OPR133003

Compound	Spike Added (pg/L)		Spiked Sample Concentration (pg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
2,3,7,8-TCDD	200	NA	208	NA	104	104				
1,2,3,7,8-PeCDD	1000		990		99	99				
1,2,3,4,7,8-HxCDD	1000		974		97	97				
1,2,3,4,7,8,9-HpCDF	1000		975		98	98				
OCDF	2000		1990		99	99				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B21

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?
(Y) N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

RRF = Relative Response Factor (average) from the initial calibration

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

Example:

Sample I.D. 2 , A :

Conc. = $\frac{(2717+2335)(2000)(1)}{(322075+252709)(1.228)(10.17)(0.937)}$

= 1.51841195 ng/kg ≈ 1.52 ng/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 8, 2014

LDC Report Date: June 25, 2014

Matrix: Soil/Water

Parameters: Perchlorate

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH173

Sample Identification

EB-050814
FDG-SL-511-SA5C-SB-0.0-0.5
FDG-SL-511-SA5C-SB-2.0-3.0
FDG-SL-749-SA5C-SB-0.0-0.5
FDG-SL-1049-SA5C-SB-0.0-0.5
FDG-SL-749-SA5C-SB-0.0-0.5MS
FDG-SL-749-SA5C-SB-0.0-0.5MSD
EB-050814MS
EB-050814MSD

Introduction

This data review covers 9 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6850 for Perchlorate.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. LC/MS Instrument Performance Check

Instrument performance was checked as applicable. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 15.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The percent differences (%D) of the limit of detection verification (LODV) calibration standard were less than or equal to 50.0% for perchlorate.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

Sample EB-050814 was identified as an equipment blank. No perchlorate was found in the equipment blank.

Sample FB-051314 (from SDG PH176) was identified as a field blank. No perchlorate was found in the field blank.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH173	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Perchlorate - Data Qualification Summary - SDG PH173

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH173	EB-050814 FDG-SL-511-SA5C-SB-0.0-0.5 FDG-SL-511-SA5C-SB-2.0-3.0 FDG-SL-749-SA5C-SB-0.0-0.5 FDG-SL-1049-SA5C-SB-0.0-0.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Perchlorate - Laboratory Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Perchlorate - Field Blank Data Qualification Summary - SDG PH173

No Sample Data Qualified in this SDG

LDC #: 31964B87 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/24/14
SDG #: PH173~~8~~ Level IV Page: 1 of 1
Laboratory: Eurofins Reviewer: BK
2nd Reviewer: SM

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/8/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	~~RSD ≤ 20%~~ r^2
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 15/50? LODV ≤ 50%
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/~~D~~Lm
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	NP	FD= 4+5
XVII.	Field blanks	NP	EB= 1 FB= FB-051314 (SDG# PH176)

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water + soil

1	EB-050814 W	11		21		31	PBLK20132
2	FDG-SL-511-SA5C-SB-0.0-0.5 S	12		22		32	~~PBLK~~ PBLK01136
3	FDG-SL-511-SA5C-SB-2.0-3.0	13		23		33	
4	FDG-SL-749-SA5C-SB-0.0-0.5	14		24		34	
5	FDG-SL-1049-SA5C-SB-0.0-0.5	15		25		35	
6	FDG-SL-749-SA5C-SB-0.0-0.5MS	16		26		36	
7	FDG-SL-749-SA5C-SB-0.0-0.5MSD	17		27		37	
8	#1 MS	18		28		38	
9	#1 MSD	19		29		39	
10		20		30		40	

LDC #: 31964B7

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: LC/MS

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?			✓	
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ ~~30%~~ 50%? 15?/50?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
XIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
IX. Internal standards				

Validation Area	Yes	No	NA	Findings/Comments
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
X. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC#:31964B87

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6850)

Calibration Date	Instrument	Compound	Standard	(Y) Response Ratio	(X) Concentration Ratio	CF
5/14/2014	Instrument1 MS1	Perchlorate	1	0.00159954	0.400	0.0040
			2	0.003624854	1.000	0.0036
			3	0.007064935	2.000	0.0035
			4	0.014414133	4.000	0.0036
			5	0.038865303	10.000	0.0039
			6	0.092121083	25.000	0.0037
					Ave	0.0037

Regression Output		*Calculated*	*Reported*
Constant	c =	*1.157267E-04*	*0.0000045683*
Std Err of Y Est			
R Squared	r2 =	*0.99938108*	*0.9990012*
Degrees of Freedom			
X Coefficient(s)	m =	*0.00370*	*0.00370*
Std Err of Coef.			
Correlation Coefficient		*1.000*	
Coefficient of Determination (r^2)		*0.999*	*0.999*

LDC#:31964B87

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: LCMS__X___HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported Conc	Recalculated Conc	Reported % D	Recalculated %D
1	lcperc51424a	5/16/2014 14:30	Perchlorate	4	4.043	4.033	1	1
2	lcperc21424b	5/16/2014 16:50	Perchlorate	4	4.050	4.040	1	1

Comments: Refer to Continuing Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964887

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6850/6860)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MS - MSD I * 2/(MS + MSD) MS = Matrix spike percent recovery MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 8|9

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Perchlorate	5.00	5.00	0	5.18	4.96	104	104	99	99	4	4.3

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B7

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6850/6860)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboratory control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS# 1136

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
Perchlorate	100	—	105	—	105	105	—	—	—	—

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31964B87

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: SM

METHOD: LCMS Perchlorate (EPA SW 846 Method 6850/6860)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. All, ND:

LCS01136

Conc. = $\frac{\left(\left[\frac{1152144}{2949925}\right] - (0.000118727)(10)\right)}{0.0037}$

= 105.2455654

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 8, 2014

SUBJECT: Santa Susana Field Laboratory, SVL, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on June 11, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #31965:

SDG #	Fraction
PH174, PH178, PH182	Volatiles

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

790 pages-CD

Attachment 1

90/10 ADR/IV

LDC #31965 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, SVL)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH174	06/11/14	07/09/14	1	1																																
B	PH178	06/11/14	07/09/14	2	3																																
C	PH182	06/11/14	07/09/14	1	2																																
Total	T/SM			4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH174

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 8, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 12, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH174	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminants were found in the trip blank.

One equipment blank (from SDG PH178) was collected and analyzed for VOCs. No contaminants were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminants were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-May-2014	TB-051214	7461252	TB	5030B	8260B	III
12-May-2014	SVL-501-SA5B-SB-0.75-1.25	7461253	N	5035	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH174 **Laboratory: LL**

EDD Filename: PH174_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **TB-051214** ***Collected:*** **5/12/2014 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH174 **Laboratory: LL**

EDD Filename: PH174_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

Quality Control
Outlier Reports

PH174

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH174 **Laboratory: LL**

EDD Filename: PH174_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY99Q212135A **LCSY99Y212156A** (TB-051214)	Chlorotrifluoroethylene	42	42	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH178

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 8, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on May 15, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Automated Data Review outliers are presented in Enclosure I. Method specific Level IV DVRs are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, surrogates, internal standards, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks, and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of the calibrations and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met with the exception of several VOCs. The associated sample results were qualified as non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure II.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosures I and II.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified

requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH178	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminants were found in the trip blank.

One equipment blank was collected and analyzed for VOCs. No contaminants were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminants were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-May-2014	TB-051514	7466271	TB	5030B	8260B	IV
15-May-2014	SVL-534-SA5B-SB-3.0-3.5	7466272	N	5035A	8260B	IV
15-May-2014	SVL-538-SA5B-SB-1.5-2.0	7466273	N	5035A	8260B	IV
15-May-2014	EB2-051514	7466275	EB	5030B	8260B	IV
15-May-2014	SVL-566-SA5B-SB-2.0-2.5	7466274	N	5035A	8260B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH178 **Laboratory: LL**

EDD Filename: PH178_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: **EB2-051514** *Collected:* **5/15/2014 9:05:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

Sample ID: **TB-051514** *Collected:* **5/15/2014 8:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

Method Category: VOA

Method: 8260B **Matrix: SO**

Sample ID: **SVL-534-SA5B-SB-3.0-3.5** *Collected:* **5/15/2014 8:10:00** *Analysis Type:* **RES** *Dilution:* **0.89**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2-TRICHLORO-1,2;2-TRIFLUOROETHANE	5	U	2	MDL	5	PQL	ug/Kg	UJ	C
DICHLORODIFLUOROMETHANE	5	U	2	MDL	5	PQL	ug/Kg	UJ	C

Sample ID: **SVL-538-SA5B-SB-1.5-2.0** *Collected:* **5/15/2014 8:45:00** *Analysis Type:* **RES** *Dilution:* **0.82**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4	U	2	MDL	4	PQL	ug/Kg	UJ	C
DICHLORODIFLUOROMETHANE	4	U	2	MDL	4	PQL	ug/Kg	UJ	C

Sample ID: **SVL-566-SA5B-SB-2.0-2.5** *Collected:* **5/15/2014 2:58:00** *Analysis Type:* **RES** *Dilution:* **0.93**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	U	2	MDL	5	PQL	ug/Kg	UJ	C
DICHLORODIFLUOROMETHANE	5	U	2	MDL	5	PQL	ug/Kg	UJ	C

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH178 **Laboratory: LL**

EDD Filename: PH178_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
C	Continuing Calibration Verification Percent Difference Lower Estimation
C	Initial Calibration Verification Percent Difference Lower Estimation
L	Laboratory Control Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

Quality Control Outlier Reports

PH178

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH178 **Laboratory: LL**

EDD Filename: PH178_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY99Q212135A **LCSY99Y212156A** (EB2-051514 TB-051514)	Chlorotrifluoroethylene	42	42	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH182

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 8, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 14, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, equipment blanks, field blanks and trip blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH182	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminants were found in the trip blank.

One equipment blank (from SDG PH178) was collected and analyzed for VOCs. No contaminants were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminants were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-May-2014	TB2-051414	7468636	TB	5030B	8260B	III
14-May-2014	SVL-521-SA5B-SB-3.0-3.5	7468635	N	5035A	8260B	III
14-May-2014	SVL-543-SA5B-SB-2.0-2.5	7468637	N	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH182 **Laboratory: LL**

EDD Filename: PH182_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **TB2-051414** ***Collected:*** **5/14/2014 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH182 **Laboratory: LL**

EDD Filename: PH182_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

Quality Control Outlier Reports

PH182

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH182 **Laboratory: LL**

EDD Filename: PH182_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY18Q211044A (TB2-051414)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Santa Susana Field Laboratory
Collection Date:	May 15, 2014
LDC Report Date:	June 26, 2014
Matrix:	Soil/Water
Parameters:	Volatiles
Validation Level:	Level IV
Laboratory:	Eurofins
Sample Delivery Group (SDG):	PH178

Sample Identification

TB-051514
SVL-534-SA5B-SB-3.0-3.5
SVL-538-SA5B-SB-1.5-2.0
SVL-566-SA5B-SB-2.0-2.5
EB2-051514

Introduction

This data review covers 3 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a Laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/29/14	Freon 113a	28	All soil samples in SDG PH178	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/5/14	Dichlorodifluoromethane	28	All soil samples in SDG PH178	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB-051514 was identified as a trip blank. No volatile contaminants were found.

Sample EB2-051514 was identified as an equipment blank. No volatile contaminants were found.

Sample FB-051314 (from SDG PH175) was identified as a field blank. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D Y99 (All water samples in SDG PH178)	Chlorotrifluoroethene	42 (47-120)	42 (47-120)	-	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH178	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Volatiles - Data Qualification Summary - SDG PH178

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH178	SVL-534-SA5B-SB-3.0-3.5 SVL-538-SA5B-SB-1.5-2.0 SVL-566-SA5B-SB-2.0-2.5	Freon 113a	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH178	SVL-534-SA5B-SB-3.0-3.5 SVL-538-SA5B-SB-1.5-2.0 SVL-566-SA5B-SB-2.0-2.5	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
PH178	TB-051514 EB2-051514	Chlorotrifluoroethene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
PH178	TB-051514 SVL-534-SA5B-SB-3.0-3.5 SVL-538-SA5B-SB-1.5-2.0 SVL-566-SA5B-SB-2.0-2.5 EB2-051514	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Volatiles - Laboratory Blank Data Qualification Summary - SDG PH178

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Volatiles - Field Blank Data Qualification Summary - SDG PH178

No Sample Data Qualified in this SDG

LDC #: 31965B1a **VALIDATION COMPLETENESS WORKSHEET** Date: 6/20/14
SDG #: PH178 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: KR
2nd Reviewer: SAA

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/15/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤30% r²
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	~~A SW~~ R	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1 EB = 5 FB = FB-051314 (SDG # PH175)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water + Soil

1	TB-051514 W	11		21		31	VBLKB62
2	SVL-534-SA5B-SB-3.0-3.5	12		22		32	~~VBLKY~~ R2
3	SVL-538-SA5B-SB-1.5-2.0	13		23		33	VBLKY98
4	SVL-566-SA5B-SB-2.0-2.5	14		24		34	
5	EB2-051514 W	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 31965B1a

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: BR
2nd Reviewer: SW

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 31965Bk

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	X	✓ SM		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. Chlorotrifluoroethene
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ. Freon 113a
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31965B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y (N) N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	3/5/14	ICV - bm0305V01	JJ	28		All soil	J/UJ/A
		29602					
	5/29/14	CCV - by0	QQQQ	28		All soil	J/UJ/A

LDC #: 31965B1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a LCS required?
Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCS/D Y99	PPPP	42 (47-120)	42 (47-120)	( )	All water	J/UJ/P
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		

LDC # 31965B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ A_x = Area of Compound A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards C_x = Concentration of compound, C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) S= Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	3/25/2013	tert-Butyl alcohol (IS1)	1.2249	1.2249	1.1733	1.1733	11	11
			Trichloroethene (IS2)	0.2855	0.2855	0.2871	0.2871	7	7
			Tetrachloroethene (IS3)	0.4567	0.4567	0.4412	0.4413	6	6
			1,1,2,2-Tetrachloroethane (IS4)	0.6931	0.6931	0.6742	0.6742	13	13

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 31965B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (300 std)	Recalculated RRF (300 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	2/5/2014	Vinyl acetate (IS1)	0.4770	0.4770	0.4703	0.4703	4	4

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 31965B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (100 std)	Recalculated RRF (100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09935	5/19/2014	tert-Butyl alcohol (IS1)	1.4155	1.4155	1.4269	1.4269	4	4
			Trichloroethene (IS2)	0.3206	0.3206	0.3112	0.3112	8	8
			Tetrachloroethene (IS3)	0.4916	0.4916	0.4899	0.4900	9	9
			1,1,2,2-Tetrachloroethane (IS4)	1.3664	1.3664	1.3609	1.3609	6	6

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 31965B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	3/27/2014	Vinyl acetate (IS1)	0.7194	0.7194	0.6990	0.6990	5	5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31965B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	by29c01	5/29/2014	tert-Butyl alcohol (IS1)	1.1733	1.1694	1.1694	0	0
			Trichloroethene (IS2)	0.2871	0.2910	0.2910	1	1
			Tetrachloroethene (IS3)	0.4412	0.5319	0.5319	21	21
			1,1,2,2-Tetrachloroethane (IS4)	0.6742	0.6001	0.6001	11	11
2	by29c02	5/29/2014	Vinyl acetate (IS1)	0.4703	0.5074	0.5074	8	8

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31965B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	yy19131	5/19/2014	tert-Butyl alcohol (IS1)	1.4269	1.4058	1.4058	1	1
			Trichloroethene (IS2)	0.3112	0.3201	0.3201	3	3
			Tetrachloroethene (IS3)	0.4899	0.4830	0.4830	1	1
			1,1,2,2-Tetrachloroethane (IS4)	1.3609	1.3419	1.3419	1	1
2	yy19c05	5/19/2014	Vinyl acetate (IS1)	0.6990	0.7411	0.7411	6	6

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31965B1a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.0	49.24	98	98	0
1,2-Dichloroethane-d4	↓	49.292	99	99	0
Toluene-d8		49.571	99	~~99~~ 99	0
Bromofluorobenzene		47.576	95	95	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 31965B2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS/D B62

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene	20	20	20.56	19.98	103	103	100	100	3	3
Trichloroethene	↓	↓	20.42	20.22	102	102	101	101	1	1
Benzene			19.12	18.57	96	96	93	93	3	3
Toluene			18.8	17.81	94	94	89	89	5	5
Chlorobenzene			19.93	19	100	100	95	95	5	5

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31965B1c

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: GM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

S = 20.42 g/kg

Sample I.D. A11, NB:

LCSB62

Conc. = $\frac{(128048)(50)(5)}{(1092094)(0.2871)(5)(\ )}$

= 20.41971096 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 23, 2014

SUBJECT: Santa Susana Field Laboratory, FDG Block 2, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on June 24, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32029:

SDG #	Fraction
PH188, PH191	Volatiles, 1,4-Dioxane, Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Herbicides, Explosives, Glycols, Terphenyls, Formaldehyde, Perchlorate, Total Petroleum Hydrocarbons as Gasolines, Total Petroleum Hydrocarbons as Extractables, Dioxins and Dibenzofurans, Wet Chemistry

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, January 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

110 pages-CD

Attachment 1

90/10 ADR/IV

LDC #32029 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, FDG Block 2)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B)		SVOA (8270D)		SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		Herbs. (8151A)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		Expl. (8330A)		Glycols (8015C)		CLO_4 (6850)		Terp-henyls (8015B)		Formal dehyde (8315A)					
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH188	06/24/14	07/23/14	-	-	-	-	-	-	0	4	-	-	0	4	0	4	-	-	1	3	0	8	0	4	-	-	-	-	-	-	-	-	-	-				
B	PH191	06/24/14	07/23/14	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	1	0	1	0				
Total	T/SM			1	0	1	0	1	0	1	4	1	0	1	4	1	4	1	0	2	3	2	8	1	4	1	0	1	0	1	0	1	0	1	0	0	0	0	45

90/10 ADR/IV

LDC #32029 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, FDG Block 2)

LDC	SDG#	DATE REC'D	(4) DATE DUE	Br,Cl,F, SO_4 O-PO4		NO_3-N NO_2-N (300.0)		Cr(VI) (7199)																													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
B	PH191	06/24/14	07/23/14	1	0	1	0	1	0																														
Total	T/SM			1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 2

SDG: PH188

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 20, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Please note that sample names have been truncated due to database limitations. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, field blanks, and field duplicate samples. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for TPH as extractables and metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
FDG2-SL-874-SA5A-SB-4.0-5.0	Cobalt	11 (≤10)	All soil samples in SDG PH188	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH188	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, metals, PCBs, TPH as extractables, TPH as gasoline, and dioxins and diobenzofurans. All RPDs were within QC limits with the exception of SVOCs, metals, and dioxins and diobenzofurans. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminate concentrations were detected in the trip blank.

One equipment blank (from SDG PH196) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated

sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-May-2014	TB1-052014	7471503	TB	5030B	8015M	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	3050B	6010C	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	3050B	6020A	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	3546	8015M	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	3546	8082A	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	3546	8270D SIM	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	METHOD	1613B	III
20-May-2014	SL-874-SA5A-SB-0.0-0.5	7471504	N	METHOD	7471B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	3050B	6010C	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	3050B	6020A	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	3546	8015M	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	3546	8082A	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	3546	8270D SIM	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	5035A	8015M	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	METHOD	1613B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0	7471505	N	METHOD	7471B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	3050B	6010C	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	3050B	6020A	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	3546	8015M	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	3546	8082A	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	3546	8270D SIM	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	5035A	8015M	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	METHOD	1613B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MS	7471506	MS	METHOD	7471B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	3050B	6010C	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	3546	8015M	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	3546	8082A	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	3546	8270D SIM	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	5035A	8015M	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	METHOD	1613B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0MSD	7471507	MSD	METHOD	7471B	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0DUP	7471508	DUP	3050B	6010C	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0DUP	7471508	DUP	3050B	6020A	III
20-May-2014	SL-874-SA5A-SB-4.0-5.0DUP	7471508	DUP	METHOD	7471B	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	3050B	6010C	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	3050B	6020A	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	3546	8015M	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	3546	8082A	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	3546	8270D SIM	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	5035A	8015M	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	METHOD	1613B	III
20-May-2014	SL-1174-SA5A-SB-4.0-5.0	7471509	FD	METHOD	7471B	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	3050B	6010C	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	3050B	6020A	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	3546	8015M	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	3546	8082A	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	3546	8270D SIM	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	5035A	8015M	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	METHOD	1613B	III
20-May-2014	SL-874-SA5A-SB-12.0-13.0	7471510	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG2-SL-1174-SA5A-SB-4.0-5.0 **Collected: 5/20/2014 9:25:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.18	U	0.773	MDL	4.18	PQL	mg/Kg	UJ	Q
ARSENIC	3.84	J	0.731	MDL	4.18	PQL	mg/Kg	J	Z
BARIUM	106		0.0345	MDL	1.04	PQL	mg/Kg	J	Q, E, FD
BERYLLIUM	0.529	J	0.0699	MDL	1.04	PQL	mg/Kg	J	Z
BORON	4.55	J	0.877	MDL	10.4	PQL	mg/Kg	J	Z
CADMIUM	0.565	J	0.0793	MDL	1.04	PQL	mg/Kg	J	Z
COBALT	5.58		0.103	MDL	1.04	PQL	mg/Kg	J	A
MOLYBDENUM	0.277	J	0.177	MDL	2.09	PQL	mg/Kg	J	Z, FD
PHOSPHORUS	412		3.02	MDL	10.4	PQL	mg/Kg	J	Q
TIN	2.49	J	0.230	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	3.87	J	0.877	MDL	5.22	PQL	mg/Kg	U	F, F
CHROMIUM	18.4		0.167	MDL	3.13	PQL	mg/Kg	J	E

Sample ID: FDG2-SL-874-SA5A-SB-0.0-0.5 **Collected: 5/20/2014 8:20:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.15	U	0.769	MDL	4.15	PQL	mg/Kg	UJ	Q
ARSENIC	3.62	J	0.727	MDL	4.15	PQL	mg/Kg	J	Z
BARIUM	81.4		0.0343	MDL	1.04	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.430	J	0.0696	MDL	1.04	PQL	mg/Kg	J	Z
BORON	4.30	J	0.872	MDL	10.4	PQL	mg/Kg	J	Z
CADMIUM	0.435	J	0.0789	MDL	1.04	PQL	mg/Kg	J	Z
CHROMIUM	17.6		0.166	MDL	3.12	PQL	mg/Kg	J	E
COBALT	4.62		0.103	MDL	1.04	PQL	mg/Kg	J	A
PHOSPHORUS	362		3.00	MDL	10.4	PQL	mg/Kg	J	Q
TIN	2.49	J	0.228	MDL	10.4	PQL	mg/Kg	U	B
Zirconium	2.83	J	0.872	MDL	5.19	PQL	mg/Kg	U	F, F

Sample ID: FDG2-SL-874-SA5A-SB-12.0-13.0 **Collected: 5/20/2014 10:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.10	U	0.758	MDL	4.10	PQL	mg/Kg	UJ	Q
BARIUM	73.9		0.0338	MDL	1.02	PQL	mg/Kg	J	Q, E
BERYLLIUM	0.540	J	0.0686	MDL	1.02	PQL	mg/Kg	J	Z
BORON	3.61	J	0.860	MDL	10.2	PQL	mg/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG2-SL-874-SA5A-SB-12.0-13.0 **Collected: 5/20/2014 10:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.541	J	0.0778	MDL	1.02	PQL	mg/Kg	J	Z
CHROMIUM	21.8		0.164	MDL	3.07	PQL	mg/Kg	J	E
COBALT	3.96		0.101	MDL	1.02	PQL	mg/Kg	J	A
MOLYBDENUM	0.206	J	0.174	MDL	2.05	PQL	mg/Kg	J	Z
PHOSPHORUS	412		2.96	MDL	10.2	PQL	mg/Kg	J	Q
TIN	2.68	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	2.86	J	0.860	MDL	5.12	PQL	mg/Kg	U	F, F

Sample ID: FDG2-SL-874-SA5A-SB-4.0-5.0 **Collected: 5/20/2014 9:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.30	U	0.796	MDL	4.30	PQL	mg/Kg	UJ	Q
BARIUM	247		0.0355	MDL	1.08	PQL	mg/Kg	J	Q, E, FD
BERYLLIUM	0.604	J	0.0720	MDL	1.08	PQL	mg/Kg	J	Z
BORON	7.29	J	0.903	MDL	10.8	PQL	mg/Kg	J	Z
CADMIUM	0.590	J	0.0817	MDL	1.08	PQL	mg/Kg	J	Z
CHROMIUM	22.0		0.172	MDL	3.23	PQL	mg/Kg	J	E
COBALT	5.61		0.106	MDL	1.08	PQL	mg/Kg	J	A
MOLYBDENUM	0.474	J	0.183	MDL	2.15	PQL	mg/Kg	J	Z, FD
PHOSPHORUS	400		3.11	MDL	10.8	PQL	mg/Kg	J	Q
TIN	2.57	J	0.237	MDL	10.8	PQL	mg/Kg	U	B
Zirconium	4.29	J	0.903	MDL	5.38	PQL	mg/Kg	U	F, F

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG2-SL-1174-SA5A-SB-4.0-5.0 **Collected: 5/20/2014 9:25:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.161	J	0.104	MDL	0.418	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-1174-SA5A-SB-4.0-5.0 **Collected: 5/20/2014 9:25:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.209	U	0.0271	MDL	0.209	PQL	mg/Kg	UJ	FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **FDG2-SL-874-SA5A-SB-12.0-13.0** *Collected:* **5/20/2014 10:15:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.150	J	0.102	MDL	0.410	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-874-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.148	J	0.108	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-874-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0297	J	0.0280	MDL	0.215	PQL	mg/Kg	J	Z, FD

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **FDG2-SL-1174-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:25:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0124	J	0.0102	MDL	0.0171	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-874-SA5A-SB-12.0-13.0** *Collected:* **5/20/2014 10:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0114	J	0.0106	MDL	0.0176	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-874-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0118	J	0.0104	MDL	0.0174	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **FDG2-SL-1174-SA5A-SB-4.0-5.0** ***Collected:*** **5/20/2014 9:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.842	JB	0.0545	MDL	5.38	PQL	ng/Kg	J	Z, FD
1,2,3,4,6,7,8-HPCDF	0.192	JB	0.0159	MDL	5.38	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.0562	JBQ	0.0268	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	5.38	U	0.0451	MDL	5.38	PQL	ng/Kg	UJ	FD
1,2,3,4,7,8-HXCDF	0.0937	JBQ	0.0399	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.297	JBQ	0.0445	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.106	JBQ	0.0367	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.392	JB	0.0425	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.370	JB	0.0440	MDL	5.38	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.172	JBQ	0.0644	MDL	5.38	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.239	JBQ	0.0344	MDL	5.38	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.107	JBQ	0.0391	MDL	5.38	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.187	JBQ	0.0333	MDL	5.38	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.122	JQ	0.0719	MDL	1.08	PQL	ng/Kg	J	Z, FD
OCDD	6.72	JB	0.0407	MDL	10.8	PQL	ng/Kg	J	Z, FD
OCDF	0.500	JB	0.0752	MDL	10.8	PQL	ng/Kg	J	Z, FD

Sample ID: **FDG2-SL-874-SA5A-SB-0.0-0.5** ***Collected:*** **5/20/2014 8:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.270	JBQ	0.0491	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0734	JBQ	0.0180	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0533	JBQ	0.0389	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0631	JB	0.0335	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0794	JB	0.0433	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0940	JBQ	0.0673	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0519	JBQ	0.0407	MDL	5.21	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.149	JQ	0.106	MDL	1.04	PQL	ng/Kg	J	Z
OCDD	3.21	JB	0.0359	MDL	10.4	PQL	ng/Kg	U	B
OCDF	0.209	JB	0.0777	MDL	10.4	PQL	ng/Kg	U	B

Sample ID: **FDG2-SL-874-SA5A-SB-12.0-13.0** ***Collected:*** **5/20/2014 10:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.118	JBQ	0.0422	MDL	5.13	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG2-SL-874-SA5A-SB-12.0-13.0 **Collected: 5/20/2014 10:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.0606	JBQ	0.0130	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0309	JB	0.0202	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0742	JBQ	0.0309	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0470	JBQ	0.0286	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0874	JBQ	0.0584	MDL	5.13	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0598	JB	0.0321	MDL	5.13	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0341	JBQ	0.0315	MDL	5.13	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0511	JBQ	0.0313	MDL	5.13	PQL	ng/Kg	U	B
OCDD	0.739	JB	0.0364	MDL	10.3	PQL	ng/Kg	U	B
OCDF	0.151	JBQ	0.0755	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: FDG2-SL-874-SA5A-SB-4.0-5.0 **Collected: 5/20/2014 9:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.76	JB	0.0651	MDL	5.27	PQL	ng/Kg	J	Z, FD
1,2,3,4,6,7,8-HPCDF	0.386	JBQ	0.0173	MDL	5.27	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8,9-HPCDF	0.0420	JB	0.0292	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0535	JQ	0.0356	MDL	5.27	PQL	ng/Kg	J	Z, FD
1,2,3,4,7,8-HXCDF	0.134	JBQ	0.0340	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.394	JBQ	0.0367	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.129	JBQ	0.0310	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.447	JB	0.0346	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.422	JBQ	0.0331	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.192	JBQ	0.0391	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.266	JB	0.0295	MDL	5.27	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.112	JB	0.0332	MDL	5.27	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.252	JB	0.0305	MDL	5.27	PQL	ng/Kg	U	B
2,3,7,8-TCDF	1.05	U	0.0521	MDL	1.05	PQL	ng/Kg	UJ	FD
OCDD	14.0	QB	0.0392	MDL	10.5	PQL	ng/Kg	J	FD
OCDF	0.953	JB	0.0526	MDL	10.5	PQL	ng/Kg	J	Z, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **FDG2-SL-874-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	16		2.2	MDL	5.4	PQL	mg/Kg	J	Q, Q
EFH (C30-C40)	31		4.3	MDL	11	PQL	mg/Kg	J	Q, Q, Q

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **FDG2-SL-1174-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:25:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.8	U	0.72	MDL	1.8	PQL	ug/Kg	UJ	FD
BENZO(B)FLUORANTHENE	0.93	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.2	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	1.7	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.7	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z, FD
PYRENE	0.89	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **FDG2-SL-874-SA5A-SB-4.0-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.0	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z, FD
BENZO(B)FLUORANTHENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
CHRYSENE	1.4	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	2.9		0.71	MDL	1.8	PQL	ug/Kg	J	FD
PYRENE	0.91	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH188

Method Blank Outlier Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1480B370327	5/30/2014 3:27:00 AM	1,2,3,4,6,7,8-HPCDD	0.104 ng/Kg	FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0
		1,2,3,4,6,7,8-HPCDF	0.0707 ng/Kg	
		1,2,3,4,7,8,9-HPCDF	0.0368 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0887 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0322 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0451 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0351 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0531 ng/Kg	
		1,2,3,7,8-PECDD	0.0674 ng/Kg	
		1,2,3,7,8-PECDF	0.0961 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0468 ng/Kg	
		2,3,4,7,8-PECDF	0.0685 ng/Kg	
		OCDD	0.662 ng/Kg	
		OCDF	0.0875 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.192 ng/Kg	0.192U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0562 ng/Kg	0.0562U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0937 ng/Kg	0.0937U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.106 ng/Kg	0.106U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.172 ng/Kg	0.172U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.239 ng/Kg	0.239U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.107 ng/Kg	0.107U ng/Kg
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.187 ng/Kg	0.187U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDD	0.270 ng/Kg	0.270U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0734 ng/Kg	0.0734U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0533 ng/Kg	0.0533U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0631 ng/Kg	0.0631U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0794 ng/Kg	0.0794U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,7,8-PECDD	0.0940 ng/Kg	0.0940U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.0519 ng/Kg	0.0519U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	OCDD	3.21 ng/Kg	3.21U ng/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	OCDF	0.209 ng/Kg	0.209U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,4,6,7,8-HPCDD	0.118 ng/Kg	0.118U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0606 ng/Kg	0.0606U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0309 ng/Kg	0.0309U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,4,7,8-HXCDF	0.0742 ng/Kg	0.0742U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,6,7,8-HXCDF	0.0470 ng/Kg	0.0470U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,7,8-PECDD	0.0874 ng/Kg	0.0874U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	1,2,3,7,8-PECDF	0.0598 ng/Kg	0.0598U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	2,3,4,6,7,8-HXCDF	0.0341 ng/Kg	0.0341U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	2,3,4,7,8-PECDF	0.0511 ng/Kg	0.0511U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	OCDD	0.739 ng/Kg	0.739U ng/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	OCDF	0.151 ng/Kg	0.151U ng/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0420 ng/Kg	0.0420U ng/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	1,2,3,4,7,8-HXCDF	0.134 ng/Kg	0.134U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Method Blank Outlier Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	1,2,3,6,7,8-HXCDF	0.129 ng/Kg	0.129U ng/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	1,2,3,7,8-PECDD	0.192 ng/Kg	0.192U ng/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.266 ng/Kg	0.266U ng/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	2,3,4,6,7,8-HXCDF	0.112 ng/Kg	0.112U ng/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	2,3,4,7,8-PECDF	0.252 ng/Kg	0.252U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14737BB222033	5/28/2014 8:33:00 PM	ALUMINUM BORON CALCIUM TIN ZINC	9.28 mg/Kg 0.858 mg/Kg 12.8 mg/Kg 1.36 mg/Kg 0.956 mg/Kg	FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	TIN	2.49 mg/Kg	2.49U mg/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	TIN	2.49 mg/Kg	2.49U mg/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	BORON	3.61 mg/Kg	3.61U mg/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	TIN	2.68 mg/Kg	2.68U mg/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	TIN	2.57 mg/Kg	2.57U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	Zirconium	3.87 mg/Kg	3.87U mg/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	Zirconium	2.83 mg/Kg	2.83U mg/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	Zirconium	2.86 mg/Kg	2.86U mg/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	Zirconium	4.29 mg/Kg	4.29U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB2-052214(RES)	5/22/2014 3:30:00 PM	Zirconium	0.0108 mg/L	FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-1174-SA5A-SB-4.0-5.0(RES)	Zirconium	3.87 mg/Kg	3.87U mg/Kg
FDG2-SL-874-SA5A-SB-0.0-0.5(RES)	Zirconium	2.83 mg/Kg	2.83U mg/Kg
FDG2-SL-874-SA5A-SB-12.0-13.0(RES)	Zirconium	2.86 mg/Kg	2.86U mg/Kg
FDG2-SL-874-SA5A-SB-4.0-5.0(RES)	Zirconium	4.29 mg/Kg	4.29U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FDG2-SL-874-SA5A-SB-4.0-5.0MS **FDG2-SL-874-SA5A-SB-4.0-5.0MSD** (FDG2-SL-874-SA5A-SB-4.0-5.0)	EFH (C21-C30) EFH (C30-C40)	- 130	42 28	49.00-123.00 49.00-123.00	26 (20.00) 38 (20.00)	EFH (C21-C30) EFH (C30-C40)	J (all detects) UJ (all non-detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FDG2-SL-874-SA5A-SB-4.0-5.0MS (TOT) **FDG2-SL-874-SA5A-SB-4.0-5.0MSD (TOT)** (FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0)	ALUMINUM CALCIUM MANGANESE TITANIUM	372 149 156 150	821 - - 258	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - -	ALUMINUM CALCIUM MANGANESE TITANIUM	No Qual, >4x
FDG2-SL-874-SA5A-SB-4.0-5.0MS (TOT) **FDG2-SL-874-SA5A-SB-4.0-5.0MSD (TOT)** (FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0)	IRON MAGNESIUM	-2173 -196	-1295 -75	75.00-125.00 75.00-125.00	- -	IRON MAGNESIUM	No Qual, >4x
FDG2-SL-874-SA5A-SB-4.0-5.0MS (TOT) **FDG2-SL-874-SA5A-SB-4.0-5.0MSD (TOT)** (FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0)	ANTIMONY BARIUM PHOSPHORUS	52 35 -	51 37 38	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ANTIMONY BARIUM PHOSPHORUS	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
FDG2-SL-874-SA5A-SB-4.0-5.0DUP (TOT) (FDG2-SL-1174-SA5A-SB-4.0-5.0 FDG2-SL-874-SA5A-SB-0.0-0.5 FDG2-SL-874-SA5A-SB-12.0-13.0 FDG2-SL-874-SA5A-SB-4.0-5.0)	ARSENIC	28	20.00	
	BARIUM	84	20.00	J (all detects)
	BORON	32	20.00	UJ (all non-detects)
	CHROMIUM	22	20.00	
	LEAD	23	20.00	As, B, Pb, Mo, No Qual,
	MOLYBDENUM	29	20.00	OK by Difference

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0	FDG2-SL-1174-SA5A-SB-4.0-5.0			
MOISTURE	7.0	7.9	12		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0	FDG2-SL-1174-SA5A-SB-4.0-5.0			
1,2,3,4,7,8,9-HPCDF	0.0420	0.0562	29	50.00	
1,2,3,4,7,8-HXCDF	0.134	0.0937	35	50.00	
1,2,3,6,7,8-HXCDD	0.394	0.297	28	50.00	
1,2,3,6,7,8-HXCDF	0.129	0.106	20	50.00	
1,2,3,7,8,9-HXCDD	0.447	0.392	13	50.00	
1,2,3,7,8,9-HXCDF	0.422	0.370	13	50.00	No Qualifiers Applied
1,2,3,7,8-PECDD	0.192	0.172	11	50.00	
1,2,3,7,8-PECDF	0.266	0.239	11	50.00	
2,3,4,6,7,8-HXCDF	0.112	0.107	5	50.00	
2,3,4,7,8-PECDF	0.252	0.187	30	50.00	
TEQ WHO 2005 - EDLx0.0	0.158	0.0887	56		
1,2,3,4,6,7,8-HPCDD	1.76	0.842	71	50.00	
1,2,3,4,6,7,8-HPCDF	0.386	0.192	67	50.00	
1,2,3,4,7,8-HxCDD	0.0535	5.38 U	200	50.00	J(all detects)
2,3,7,8-TCDF	1.05 U	0.122	200	50.00	UJ(all non-detects)
OCDD	14.0	6.72	70	50.00	
OCDF	0.953	0.500	62	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0 (TOT)	FDG2-SL-1174-SA5A-SB-4.0-5.0 (TOT)			
ALUMINUM	16200	14900	8	50.00	
ARSENIC	4.42	3.84	14	50.00	
BERYLLIUM	0.604	0.529	13	50.00	
BORON	7.29	4.55	46	50.00	
CADMIUM	0.590	0.565	4	50.00	
CALCIUM	3140	3440	9	50.00	
CHROMIUM	22.0	18.4	18	50.00	
COBALT	5.61	5.58	1	50.00	
COPPER	11.0	10.0	10	50.00	
IRON	20000	20100	0	50.00	
LEAD	7.41	5.67	27	50.00	
LITHIUM	23.3	23.1	1	50.00	No Qualifiers Applied
MAGNESIUM	4540	4420	3	50.00	
MANGANESE	313	367	16	50.00	
NICKEL	11.9	11.0	8	50.00	
PHOSPHORUS	400	412	3	50.00	
POTASSIUM	3470	3450	1	50.00	
SODIUM	119	104	13	50.00	
TIN	2.57	2.49	3	50.00	
TITANIUM	1160	1100	5	50.00	
VANADIUM	37.5	34.8	7	50.00	
ZINC	60.5	57.4	5	50.00	
Zirconium	4.29	3.87	10	50.00	
BARIUM	247	106	80	50.00	J(all detects)
MOLYBDENUM	0.474	0.277	52	50.00	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0 (TOT)	FDG2-SL-1174-SA5A-SB-4.0-5.0 (TOT)			
SELENIUM	0.148	0.161	8	50.00	No Qualifiers Applied
STRONTIUM	24.5	21.4	14	50.00	
THALLIUM	0.275	0.289	5	50.00	
SILVER	0.0297	0.209 U	200	50.00	J(all detects) UJ(all non-detects)

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0 (TOT)	FDG2-SL-1174-SA5A-SB-4.0-5.0 (TOT)			
MERCURY	0.0118	0.0124	5	50.00	No Qualifiers Applied

Method: 8015M
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0	FDG2-SL-1174-SA5A-SB-4.0-5.0			
EFH (C21-C30)	16	11	37	50.00	No Qualifiers Applied
EFH (C30-C40)	31	21	38	50.00	

Method: 8270D SIM
Matrix: SO

Analyte	Concentration (ug/Kg)		Sample RPD	eQAPP RPD	Flag
	FDG2-SL-874-SA5A-SB-4.0-5.0	FDG2-SL-1174-SA5A-SB-4.0-5.0			
BENZO(B)FLUORANTHENE	1.2	0.93	25	50.00	No Qualifiers Applied
CHRYSENE	1.4	1.2	15	50.00	
FLUORANTHENE	1.8	1.7	6	50.00	
PYRENE	0.91	0.89	2	50.00	
2-METHYLNAPHTHALENE	1.0	1.8 U	200	50.00	J(all detects)
PHENANTHRENE	2.9	1.7	52	50.00	UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-1174-SA5A-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.842	5.38	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.192	5.38	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0562	5.38	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0937	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.297	5.38	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.106	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.392	5.38	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.370	5.38	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.172	5.38	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.239	5.38	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.107	5.38	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.187	5.38	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.122	1.08	PQL	ng/Kg	
	OCDD	JB	6.72	10.8	PQL	ng/Kg	
	OCDF	JB	0.500	10.8	PQL	ng/Kg	
FDG2-SL-874-SA5A-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.270	5.21	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0734	5.21	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0533	5.21	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0631	5.21	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0794	5.21	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.0940	5.21	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0519	5.21	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.149	1.04	PQL	ng/Kg	
	OCDD	JB	3.21	10.4	PQL	ng/Kg	
	OCDF	JB	0.209	10.4	PQL	ng/Kg	
FDG2-SL-874-SA5A-SB-12.0-13.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.118	5.13	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0606	5.13	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0309	5.13	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0742	5.13	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0470	5.13	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0874	5.13	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JB	0.0598	5.13	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0341	5.13	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0511	5.13	PQL	ng/Kg	
	OCDD	JB	0.739	10.3	PQL	ng/Kg	
	OCDF	JBQ	0.151	10.3	PQL	ng/Kg	
FDG2-SL-874-SA5A-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	1.76	5.27	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.386	5.27	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0420	5.27	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0535	5.27	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.134	5.27	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.394	5.27	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.129	5.27	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.447	5.27	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.422	5.27	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.192	5.27	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.266	5.27	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.112	5.27	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.252	5.27	PQL	ng/Kg	
	OCDF	JB	0.953	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-1174-SA5A-SB-4.0-5.0	ARSENIC	J	3.84	4.18	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.529	1.04	PQL	mg/Kg	
	BORON	J	4.55	10.4	PQL	mg/Kg	
	CADMIUM	J	0.565	1.04	PQL	mg/Kg	
	MOLYBDENUM	J	0.277	2.09	PQL	mg/Kg	
	TIN	J	2.49	10.4	PQL	mg/Kg	
	Zirconium	J	3.87	5.22	PQL	mg/Kg	
FDG2-SL-874-SA5A-SB-0.0-0.5	ARSENIC	J	3.62	4.15	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.430	1.04	PQL	mg/Kg	
	BORON	J	4.30	10.4	PQL	mg/Kg	
	CADMIUM	J	0.435	1.04	PQL	mg/Kg	
	TIN	J	2.49	10.4	PQL	mg/Kg	
	Zirconium	J	2.83	5.19	PQL	mg/Kg	
FDG2-SL-874-SA5A-SB-12.0-13.0	BERYLLIUM	J	0.540	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	3.61	10.2	PQL	mg/Kg	
	CADMIUM	J	0.541	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.206	2.05	PQL	mg/Kg	
	TIN	J	2.68	10.2	PQL	mg/Kg	
	Zirconium	J	2.86	5.12	PQL	mg/Kg	
FDG2-SL-874-SA5A-SB-4.0-5.0	BERYLLIUM	J	0.604	1.08	PQL	mg/Kg	J (all detects)
	BORON	J	7.29	10.8	PQL	mg/Kg	
	CADMIUM	J	0.590	1.08	PQL	mg/Kg	
	MOLYBDENUM	J	0.474	2.15	PQL	mg/Kg	
	TIN	J	2.57	10.8	PQL	mg/Kg	
	Zirconium	J	4.29	5.38	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-1174-SA5A-SB-4.0-5.0	SELENIUM	J	0.161	0.418	PQL	mg/Kg	J (all detects)
FDG2-SL-874-SA5A-SB-12.0-13.0	SELENIUM	J	0.150	0.410	PQL	mg/Kg	J (all detects)
FDG2-SL-874-SA5A-SB-4.0-5.0	SELENIUM	J	0.148	0.430	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0297	0.215	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-1174-SA5A-SB-4.0-5.0	MERCURY	J	0.0124	0.0171	PQL	mg/Kg	J (all detects)
FDG2-SL-874-SA5A-SB-12.0-13.0	MERCURY	J	0.0114	0.0176	PQL	mg/Kg	J (all detects)
FDG2-SL-874-SA5A-SB-4.0-5.0	MERCURY	J	0.0118	0.0174	PQL	mg/Kg	J (all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH188 **Laboratory: LL**

EDD Filename: PH188_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-1174-SA5A-SB-4.0-5.0	BENZO(B)FLUORANTHENE	J	0.93	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.2	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	1.7	1.8	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	1.7	1.8	PQL	ug/Kg	
	PYRENE	J	0.89	1.8	PQL	ug/Kg	
FDG2-SL-874-SA5A-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	
	BENZO(B)FLUORANTHENE	J	1.2	1.8	PQL	ug/Kg	
	CHRYSENE	J	1.4	1.8	PQL	ug/Kg	J (all detects)
	PYRENE	J	0.91	1.8	PQL	ug/Kg	

LDC #: 32029A4
SDG #: PH188
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/20/14
Page: 1 of 1
Reviewer: KK
2nd Reviewer: AL

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	–	Sampling dates:
II.	ICP/MS Tune	N	
III.	Calibration	–	
IV.	Blanks	A	No qualifying hits for ICB/CCB
V.	ICP Interference Check Sample (ICS) Analysis	–	
VI.	Matrix Spike Analysis	SW N	MS/MSD
VII.	Duplicate Sample Analysis	SW N	DUP
VIII.	Laboratory Control Samples (LCS)	N	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	–	FD = 2, 3
XV	Field Blanks	SW	FB = FB-052114 SDG# PH191 EB = EB2-052214 (PH196)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	FDG2-SL-874-SA5A-SB-0.0-0.5	11		21		31	
2	FDG2-SL-874-SA5A-SB-4.0-5.0	12		22		32	
3	FDG2-SL-1174-SA5A-SB-4.0-5.0	13		23		33	
4	FDG2-SL-874-SA5A-SB-12.0-13.0	14		24		34	
5	FDG2-SL-874-SA5A-SB-4.0-5.0MS	15		25		35	
6	FDG2-SL-874-SA5A-SB-4.0-5.0MSD	16		26		36	
7	FDG2-SL-874-SA5A-SB-4.0-5.0DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32029A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KK
2nd reviewer: _____

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4	Soil	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC5-7	Soil	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

LDC #: 32029A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: KK
2nd Reviewer: OM

METHOD: Trace Metals (EPA SW846 6010C/6020C/7471B)

Blank units: mg/l **Associated sample units:** mg/kg
Sampling date: 5/21/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All

Analyte	Blank ID	Sample Identification											
	1 (mg/L)	(mg/kg) Action Limit	1	2	3	4							
Zr	0.0110	5.50	2.83	4.29	3.87	2.86							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 32029A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: SM
2nd Reviewer:

METHOD: Trace Metals (EPA SW846 6010C/6020C/7471B)

Blank units: mg/l **Associated sample units:** mg/kg
Sampling date: 5/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: All

Analyte	Blank ID	Sample Identification										
	EB2-052214 (PH196)	Action Limit	1	2	3	4						
Zr	0.0108	5.40	2.83	4.29	3.87	2.86						

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

>4x

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH188
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7471505BKG Matrix Spike Lab Sample ID: 7471506MS Matrix Spike Duplicate Lab Sample ID: 7471507MSD
Batch Id(s): P14737B, P14138B

		BKG Sample		MS Sample		MSD Sample		MS Spike	MSD Spike		MS		MSD				Control Limit		
Analyte	Mass	Result	C	Result	C	Result	C	Added	Added	Units	%R	Q	%R	Q	RPD	Q	%R	RPD	M
Aluminum		15077.2240		15799.8087		16719.2600		194.1748	200.0000	MG/KG	372		821		6			20	P
Antimony		0.7400	U	25.1388		25.7470		48.5437	50.0000	MG/KG	52	N	51	N	2		75 - 125	20	P
Arsenic		4.1100		18.1495		18.5110		14.5631	15.0000	MG/KG	96		96		2		75 - 125	20	P
Barium		229.5740		297.2029		303.1120		194.1748	200.0000	MG/KG	35	N	37	N	2		75 - 125	20	P
Beryllium		0.5620	B	5.4524		5.6390		4.8544	5.0000	MG/KG	101		102		3		75 - 125	20	P
Boron		6.7790	B	197.7252		203.6840		194.1748	200.0000	MG/KG	98		98		3		75 - 125	20	P
Cadmium		0.5490	B	5.2553		5.4090		4.8544	5.0000	MG/KG	97		97		3		75 - 125	20	P
Calcium		2922.0890		3499.1408		3333.7350		388.3495	400.0000	MG/KG	149		103		5			20	P
Chromium		20.4370		36.1767		38.1970		19.4175	20.0000	MG/KG	81		89		5		75 - 125	20	P
Cobalt		5.2200		51.6757		53.5250		48.5437	50.0000	MG/KG	96		97		4		75 - 125	20	P
Copper		10.2590		34.9660		36.5290		24.2718	25.0000	MG/KG	102		105		4		75 - 125	20	P
Iron		18611.9190		16501.9854		17317.2320		97.0874	100.0000	MG/KG	-2173		-1295		5			20	P
Lead		6.8920		21.2291		20.8850		14.5631	15.0000	MG/KG	98		93		2		75 - 125	20	P
Lithium		21.6980		117.9398		122.4810		97.0874	100.0000	MG/KG	99		101		4		75 - 125	20	P
Magnesium		4221.3380		3841.4194		4071.8270		194.1748	200.0000	MG/KG	-196		-75		6			20	P
Manganese		291.0670		366.9010		350.5210		48.5437	50.0000	MG/KG	156		119		5			20	P
Mercury		0.0109	B	0.1872		0.1680		0.1651	0.1644	MG/KG	107		96		11		65 - 135	20	CV
Molybdenum		0.4410	B	185.6796		191.5500		194.1748	200.0000	MG/KG	95		96		3		75 - 125	20	P
Nickel		11.0400		57.5845		59.7340		48.5437	50.0000	MG/KG	96		97		4		75 - 125	20	P
Phosphorus		371.5600		474.9204		409.8270		97.0874	100.0000	MG/KG	106		38	N	15		75 - 125	20	P
Potassium		3224.7770		4274.3272		4315.1720		970.8738	1000.0000	MG/KG	108		109		1		75 - 125	20	P
Selenium	78	0.1373	B	2.0524		2.1120		1.9417	2.0000	MG/KG	99		99		3		75 - 125	20	MS
Silver	107	0.0276	B	10.2039		10.2440		9.7087	10.0000	MG/KG	105		102		0		75 - 125	20	MS
Sodium		111.0220		1034.4136		1073.5840		970.8738	1000.0000	MG/KG	95		96		4		75 - 125	20	P
Strontium	88	22.8200		31.0291		30.1800		7.7670	8.0000	MG/KG	106		92		3		75 - 125	20	MS
Thallium	203	0.2560		0.7212		0.7038		0.3883	0.4000	MG/KG	120		112		2		75 - 125	20	MS
Tin		2.3870	B	352.1097		362.6580		388.3495	400.0000	MG/KG	90		90		3		75 - 125	20	P
Titanium		1074.1990		1220.2078		1331.7550		97.0874	100.0000	MG/KG	150		258		9			20	P
Vanadium		34.8650		81.7874		85.7960		48.5437	50.0000	MG/KG	97		102		5		75 - 125	20	P
Zinc		56.2590		101.3602		100.6030		48.5437	50.0000	MG/KG	93		89		1		75 - 125	20	P
Zirconium		3.9890	B	98.7417		102.2970		97.0874	100.0000	MG/KG	98		98		4		75 - 125	20	P

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: PH188
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7471505BKG Duplicate Lab Sample ID: 7471508DUP
Batch ID(s): P14737B, P14138B
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			15077.2240		13172.7860		13		P
Antimony			0.7400	U	0.7400	U			P
Arsenic		4.0	4.1100		3.0940	B	28		P
Barium			229.5740		94.1420		84	*	P
Beryllium			0.5620	B	0.4860	B	15		P
Boron			6.7790	B	4.9280	B	32		P
Cadmium			0.5490	B	0.4910	B	11		P
Calcium			2922.0890		2520.8370		15		P
Chromium			20.4370		16.3790		22	*	P
Cobalt			5.2200		5.0370		4		P
Copper		2.0	10.2590		8.9330		14		P
Iron			18611.9190		17426.7630		7		P
Lead		3.0	6.8920		5.4820		23		P
Lithium			21.6980		20.2870		7		P
Magnesium			4221.3380		3839.8420		9		P
Manganese			291.0670		293.9320		1		P
Mercury			0.0109	B	0.0097	B	12		CV
Molybdenum			0.4410	B	0.3290	B	29		P
Nickel			11.0400		10.7650		3		P
Phosphorus			371.5600		354.0090		5		P
Potassium			3224.7770		3074.5320		5		P
Selenium	78		0.1373	B	0.1183	B	15		MS
Silver	107		0.0276	B	0.0297	B	7		MS
Sodium		100.0	111.0220		102.0390		8		P
Strontium	88		22.8200		19.6980		15		MS
Thallium	203	0.2	0.2560		0.2524		1		MS
Tin			2.3870	B	2.2340	B	7		P
Titanium			1074.1990		993.9750		8		P
Vanadium			34.8650		30.5970		13		P
Zinc			56.2590		52.0170		8		P
Zirconium			3.9890	B	4.0810	B	2		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

ok by diff

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH188
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7471505BKG Serial Dilution Lab Sample ID: 7471505L
Batch ID(s): P14737B
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		150772.2400		160976.4000		7		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		41.1000		35.0000	U	100		P
Barium		2295.7400		2368.3500		3		P
Beryllium		5.6200	B	3.9000	B	31		P
Boron		67.7900	B	83.3000	B	23		P
Cadmium		5.4900	B	5.1500	B	6		P
Calcium		29220.8900		31391.4500		7		P
Chromium		204.3700		214.0500		5		P
Cobalt		52.2000		57.8500		11	E	P
Copper		102.5900		109.4500		7		P
Iron		186119.1900		195022.9000		5		P
Lead		68.9200		72.2500	B	5		P
Lithium		216.9800		230.8500		6		P
Magnesium		42213.3800		44577.7000		6		P
Manganese		2910.6700		3073.0000		6		P
Molybdenum		4.4100	B	10.4000	B	136		P
Nickel		110.4000		120.7500		9		P
Phosphorus		3715.6000		3852.6000		4		P
Potassium		32247.7700		34272.2500		6		P
Selenium	78	0.6864	B	2.5000	U	100		MS
Silver	107	0.1379	B	0.6500	U	100		MS
Sodium		1110.2200		1249.8500	B	13		P
Strontium	88	114.1000		116.0500		2		MS
Thallium	203	1.2800		1.2985	B	1		MS
Tin		23.8700	B	25.7000	B	8		P
Titanium		10741.9900		11366.6000		6		P
Vanadium		348.6500		363.1000		4		P
Zinc		562.5900		594.0500		6		P
Zirconium		39.8900	B	47.9500	B	20		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

J/UJ/A

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
	FLAGS:
	E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 2

SDG: PH191

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 21, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
1,4-Dioxane by EPA SW 846 Method 8260B utilizing Selective Ion Monitoring (SIM)
Semivolatiles (SVOCs) by EPA SW 846 Method 8270D
SVOCs by EPA SW 846 Method 8270D utilizing SIM
Pesticides by EPA SW 846 Method 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Herbicides by EPA SW 846 Method 8151A
Explosives by EPA SW 846 Method 8330A
Glycols by EPA SW 846 Method 8015C
Terphenyls by EPA SW 846 Method 8015B
Formaldehyde by EPA Method 8315A
Perchlorate by EPA SW 846 Method 6850
Metals by EPA SW 846 Method 6010C, 6020A, and 7470A.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

Wet Chemistry:
Bromide, Chloride, Sulfate, Othrophosphate, Nitrate as Nitrogen, and Nitrite as Nitrogen by EPA Method 300.0
Hexavalent Chromium by EPA Method 7199

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met with the exception of one sample for orthophosphate. The associated sample result was qualified as rejected (R) due to holding time grossly outside of QC limits (>2x 48 hours). The details regarding the qualification of data are provided in Enclosure I.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of three blanks for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for glycols. The associated sample results were qualified as detected estimated (J) as applicable.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two LCS/LCSD pairs for VOCs and SVOCs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH191	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

No trip blank was collected for this SDG.

No equipment blank was associated to the samples in this SDG.

One field blank was collected and analyzed for VOCs, 1,4-Dioxane, SVOCs, pesticides, PCBs, herbicides, explosives, glycols, perchlorate, terphenyls, formaldehyde, metals, TPH as gasoline, TPH as extractables, bromide, chloride, fluoride, sulfate, orthophosphate, nitrate as nitrogen, nitrate as nitrogen, hexavalent chromium, and dioxins and dibenzofurans. The field blank had detections for VOCs, SVOCs, metals, and dioxins and dibenzofurans. The field blank did not associate to any samples in this SDG, therefore no samples were qualified due to field blank contamination.

XV. Overall Assessment of Data

One orthophosphate result was rejected due to holding times grossly outside of QC limits. This result is not useable for all purposes.

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-May-2014	FB-052114	7472961	FB	3005A	6010C	III
21-May-2014	FB-052114	7472961	FB	3510C	8015B	III
21-May-2014	FB-052114	7472961	FB	3510C	8015M	III
21-May-2014	FB-052114	7472961	FB	3510C	8081B	III
21-May-2014	FB-052114	7472961	FB	3510C	8082A	III
21-May-2014	FB-052114	7472961	FB	3510C	8270D	III
21-May-2014	FB-052114	7472961	FB	3510C	8270D SIM	III
21-May-2014	FB-052114	7472961	FB	5030B	8015M	III
21-May-2014	FB-052114	7472961	FB	5030B	8260B	III
21-May-2014	FB-052114	7472961	FB	5030B	8260B SIM	III
21-May-2014	FB-052114	7472961	FB	8330	8330A	III
21-May-2014	FB-052114	7472961	FB	Gen Prep	300.0	III
21-May-2014	FB-052114	7472961	FB	Gen Prep	6850	III
21-May-2014	FB-052114	7472961	FB	Gen Prep	7199	III
21-May-2014	FB-052114	7472961	FB	Gen Prep	8015C	III
21-May-2014	FB-052114	7472961	FB	M3010A	6020A	III
21-May-2014	FB-052114	7472961	FB	METHOD	1613B	III
21-May-2014	FB-052114	7472961	FB	METHOD	7470A	III
21-May-2014	FB-052114	7472961	FB	METHOD	8151A	III
21-May-2014	FB-052114	7472961	FB	METHOD	8315A	III
21-May-2014	FB-052114MSD	P472961M241907A	MSD	Gen Prep	6850	III
21-May-2014	FB-052114MSD	P472961M322027A	MSD	Gen Prep	8015C	III
21-May-2014	FB-052114MS	P472961R241854A	MS	Gen Prep	6850	III
21-May-2014	FB-052114MS	P472961R322012A	MS	Gen Prep	8015C	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: FB-052114 *Collected:* 5/21/2014 2:00:00 *Analysis Type:* RE *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Orthophosphate	0.50	U	0.20	MDL	0.50	PQL	mg/L	R	H

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: FB-052114 *Collected:* 5/21/2014 2:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	0.0110	J	0.0084	MDL	0.100	PQL	mg/L	U	B, B

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: FB-052114 *Collected:* 5/21/2014 2:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.23	JBQ	0.142	MDL	9.90	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.176	JBQ	0.0588	MDL	9.90	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.328	JBQ	0.0704	MDL	9.90	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.108	JBQ	0.100	MDL	9.90	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.182	JQ	0.101	MDL	9.90	PQL	pg/L	J	Z
1,2,3,7,8-PECDF	0.333	JBQ	0.110	MDL	9.90	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.188	JBQ	0.0902	MDL	9.90	PQL	pg/L	U	B
OCDD	6.37	JBQ	0.209	MDL	19.8	PQL	pg/L	U	B
OCDF	0.531	JBQ	0.166	MDL	19.8	PQL	pg/L	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D **Matrix: AQ**

Sample ID: FB-052114 *Collected:* 5/21/2014 2:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NAPHTHALENE	0.2	J	0.1	MDL	0.5	PQL	ug/L	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: FB-052114 *Collected:* 5/21/2014 2:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.022	J	0.011	MDL	0.053	PQL	ug/L	J	Z, L
2-METHYLNAPHTHALENE	0.032	J	0.011	MDL	0.053	PQL	ug/L	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	0.058	J	0.053	MDL	1.1	PQL	ug/L	UJ	L, E, B
Di-n-butylphthalate	0.089	J	0.053	MDL	1.1	PQL	ug/L	J	Z

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FB-052114 *Collected:* 5/21/2014 2:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.7	J	0.5	MDL	5	PQL	ug/L	J	Z
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Control Precision
E	Matrix Spike Precision
H	Sampling to Analysis Rejection
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Matrix Spike Precision
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH191

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 300.0 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
FB-052114 (RE)	Sampling To Analysis	216.00	48.00	HOURS	J (all detects) R (all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1480B370404	5/31/2014 4:04:00 AM	1,2,3,4,6,7,8-HPCDD	0.923 pg/L	FB-052114
		1,2,3,4,6,7,8-HPCDF	0.283 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.365 pg/L	
		1,2,3,4,7,8-HxCDD	0.213 pg/L	
		1,2,3,4,7,8-HXCDF	0.316 pg/L	
		1,2,3,6,7,8-HXCDD	0.251 pg/L	
		1,2,3,7,8,9-HXCDD	0.159 pg/L	
		1,2,3,7,8-PECDF	0.603 pg/L	
		2,3,4,6,7,8-HXCDF	0.178 pg/L	
		OCDD	7.17 pg/L	
		OCDF	0.452 pg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB-052114(RES)	1,2,3,4,6,7,8-HPCDD	1.23 pg/L	1.23U pg/L
FB-052114(RES)	1,2,3,4,6,7,8-HPCDF	0.176 pg/L	0.176U pg/L
FB-052114(RES)	1,2,3,4,7,8,9-HPCDF	0.328 pg/L	0.328U pg/L
FB-052114(RES)	1,2,3,4,7,8-HXCDF	0.108 pg/L	0.108U pg/L
FB-052114(RES)	1,2,3,7,8-PECDF	0.333 pg/L	0.333U pg/L
FB-052114(RES)	2,3,4,6,7,8-HXCDF	0.188 pg/L	0.188U pg/L
FB-052114(RES)	OCDD	6.37 pg/L	6.37U pg/L
FB-052114(RES)	OCDF	0.531 pg/L	0.531U pg/L

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14835BB221845	5/29/2014 6:45:00 PM	Zirconium	0.0110 mg/L	FB-052114

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB-052114(RES)	Zirconium	0.0110 mg/L	0.0110U mg/L

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWN14B260205	6/3/2014 2:05:00 AM	BIS(2-ETHYLHEXYL)PHTHALATE	0.056 ug/L	FB-052114

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB-052114(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.058 ug/L	1.1U ug/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015C**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FB-052114MSD	ETHYLENE GLYCOL	-	-	50.00-155.00	26 (20.00)	ETHYLENE GLYCOL	J (all detects)
(FB-052114)	Propylene glycol	-	-	54.00-145.00	29 (20.00)	Propylene glycol	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P4WNLCSQ260235 **P4WNLCSY260304** (FB-052114)	1-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALAT	84 160	- -	86.00-130.00 70.00-143.00	- 77 (30.00)	1-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALA	J (all detects) UJ (all non-detects)

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY18Q211044A (FB-052114)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH191 **Laboratory: LL**

EDD Filename: PH191_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-052114	1,2,3,4,6,7,8-HPCDD	JBQ	1.23	9.90	PQL	pg/L	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.176	9.90	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.328	9.90	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.108	9.90	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JQ	0.182	9.90	PQL	pg/L	J (all detects)
	1,2,3,7,8-PECDF	JBQ	0.333	9.90	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.188	9.90	PQL	pg/L	
	OCDD	JBQ	6.37	19.8	PQL	pg/L	
	OCDF	JBQ	0.531	19.8	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-052114	Zirconium	J	0.0110	0.100	PQL	mg/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-052114	CHLOROFORM	J	0.7	5	PQL	ug/L	J (all detects)

Method: 8270D

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-052114	NAPHTHALENE	J	0.2	0.5	PQL	ug/L	J (all detects)

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-052114	1-METHYLNAPHTHALENE	J	0.022	0.053	PQL	ug/L	
	2-METHYLNAPHTHALENE	J	0.032	0.053	PQL	ug/L	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.058	1.1	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.089	1.1	PQL	ug/L	

LDC #: 32029B4

VALIDATION COMPLETENESS WORKSHEET

Date: 6/20/14

SDG #: PH191

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: KK

2nd Reviewer: CL

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7470 A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates:
II.	ICP/MS Tune	A	
III.	Calibration	—	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	~~N~~ —	
VI.	Matrix Spike Analysis	N	
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	—	FB=1 ~~EB=EB2-052214~~

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	FB-052114	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32029B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: VR
2nd reviewer: CV

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	Water	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32029B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010C/6020A/7470A) Soil preparation factor applied: ~~100~~ 1

Sample Concentration units, unless otherwise noted: mg/l Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level (mg/l)	1										
~~Zr~~			~~10.4~~	~~0.0520~~	~~0.0110~~	OR									
Zr		11.5	~~11.5~~	0.0575	0.0110										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 23, 2014

SUBJECT: Santa Susana Field Laboratory, Trench, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on June 24, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32030:

SDG #	Fraction
PH185, PH189, PH195	Volatiles, Semivolatiles, Polychlorinated Biphenyls, Metals, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins and Dibenzofurans

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, January 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

2,571 pages-CD

Attachment 1

90/10 ADR/IV

LDC #32030 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Trench)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)		SVOA (8270D -SIM)		PCBs (8082A)		Metals & Hg (SW846)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)																							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH185	06/24/14	07/23/14	-	-	0	6	0	6	0	6	1	3	0	12	0	6																				
B	PH189	06/24/14	07/23/14	-	-	0	8	0	8	0	8	1	5	0	16	0	8																				
C	PH195	06/24/14	07/23/14	1	0	1	5	1	5	1	5	2	3	2	10	1	5																				
Total	T/SM			1	0	1	19	1	19	1	19	4	11	2	38	1	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	136

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup Trench

SDG: PH185

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on May 19, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. Level III Automated Data Review outliers are presented in Enclosure I. Level IV DVRs are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, field blanks, field duplicate samples, and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the initial and continuing calibrations, ICB/CCBs, interference check samples, internal standards (except dioxins), and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met with the exception of benzo(b)fluoranthene. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure II.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the exception of several metals. The associated sample results were qualified as non-detected (U) due to calibration blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure II.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of several samples for TPH as extractables with silica gel cleanup. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs, TPH as extractables, and metals. The

associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for several metals. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosures I and II.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for TPH as extractables with and without silica gel cleanup. The associated sample results were qualified as detected estimated (J) or non-detected estimates (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

X. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the exception of nickel. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure II.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag
All samples in SDG PH185	All compounds reported as detected below the RL.	J (all detects)

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, TPH as extractables, and dioxins and dibenzofurans. All RPDs were within QC limits with the exception of TPH as extractables, metals, and dioxins and dibenzofurans. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The field duplicate result comparisons are provided in Enclosures I and II.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were found in the trip blank.

One equipment blank was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosures I and II.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blanks were not qualified. The field blank outlier reports are presented in Enclosures I and II.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-May-2014	TB2-051914	7470321	TB	5030B	8015M	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	3050B	6010C	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	3050B	6020A	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	3546	8015M	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	3546	8082A	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	3546	8270D SIM	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	METHOD	1613B	IV
19-May-2014	SL-534-SA8-TR-0.5	7470312	N	METHOD	7471B	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	3050B	6010C	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	3050B	6020A	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	3546	8015M	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	3546	8082A	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	3546	8270D SIM	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	5035A	8015M	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	METHOD	1613B	IV
19-May-2014	SL-534-SA8-TR-5.0	7470313	N	METHOD	7471B	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	3050B	6010C	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	3050B	6020A	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	3546	8015M	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	3546	8082A	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	3546	8270D SIM	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	5035A	8015M	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	METHOD	1613B	IV
19-May-2014	SL-548-SA8-TR-10.0	7470320	N	METHOD	7471B	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	3050B	6010C	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	3050B	6020A	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	3546	8015M	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	3546	8082A	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	3546	8270D SIM	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	5035A	8015M	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	METHOD	1613B	IV
19-May-2014	SL-548-SA8-TR-5.0	7470316	N	METHOD	7471B	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	3050B	6010C	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	3050B	6020A	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	3546	8015M	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	3546	8082A	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	3546	8270D SIM	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	5035A	8015M	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	METHOD	1613B	IV
19-May-2014	SL-548-SA8-TR-5.0 MS	7470317	MS	METHOD	7471B	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	3050B	6010C	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	3050B	6020A	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	3546	8015M	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	3546	8082A	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	3546	8270D SIM	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	5035A	8015M	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	METHOD	1613B	IV
19-May-2014	SL-548-SA8-TR-5.0 MSD	7470318	MSD	METHOD	7471B	IV
19-May-2014	SL-548-SA8-TR-5.0 DUP	7470319	DUP	3050B	6010C	IV
19-May-2014	SL-548-SA8-TR-5.0 DUP	7470319	DUP	3050B	6020A	IV
19-May-2014	SL-548-SA8-TR-5.0 DUP	7470319	DUP	METHOD	7471B	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	3050B	6010C	IV

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	3050B	6020A	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	3546	8015M	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	3546	8082A	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	3546	8270D SIM	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	5035A	8015M	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	METHOD	1613B	IV
19-May-2014	SL-848-SA8-TR-5.0	7470315	FD	METHOD	7471B	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	3050B	6010C	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	3050B	6020A	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	3546	8015M	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	3546	8082A	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	3546	8270D SIM	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	METHOD	1613B	IV
19-May-2014	SL-548-SA8-TR-0.5	7470314	N	METHOD	7471B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-534-SA8-TR-0.5 **Collected: 5/19/2014 9:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.13	U	0.765	MDL	4.13	PQL	mg/Kg	UJ	Q
ARSENIC	3.16	J	0.723	MDL	4.13	PQL	mg/Kg	J	Z
BERYLLIUM	0.589	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
BORON	8.29	J	0.868	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	1.03	U	0.0785	MDL	1.03	PQL	mg/Kg	UJ	Q
CALCIUM	35700		3.45	MDL	20.7	PQL	mg/Kg	J	E, E
COBALT	5.69		0.102	MDL	1.03	PQL	mg/Kg	J	E
MANGANESE	305		0.0858	MDL	1.03	PQL	mg/Kg	J	E
NICKEL	12.2		0.134	MDL	2.07	PQL	mg/Kg	J	A
POTASSIUM	2050		8.62	MDL	103	PQL	mg/Kg	J	Q
TIN	3.09	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	4.00	J	0.868	MDL	5.17	PQL	mg/Kg	U	F, F
LEAD	8.90		0.517	MDL	3.10	PQL	mg/Kg	J	Q

Sample ID: SL-534-SA8-TR-5.0 **Collected: 5/19/2014 9:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.24	U	0.784	MDL	4.24	PQL	mg/Kg	UJ	Q
ARSENIC	1.33	J	0.741	MDL	4.24	PQL	mg/Kg	U	B
BERYLLIUM	0.505	J	0.0709	MDL	1.06	PQL	mg/Kg	J	Z
BORON	6.99	J	0.890	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	1.06	U	0.0805	MDL	1.06	PQL	mg/Kg	UJ	Q
CALCIUM	5600		3.54	MDL	21.2	PQL	mg/Kg	J	E, E
COBALT	5.58		0.105	MDL	1.06	PQL	mg/Kg	J	E
LEAD	7.98		0.529	MDL	3.18	PQL	mg/Kg	J	Q
MANGANESE	313		0.0879	MDL	1.06	PQL	mg/Kg	J	E
NICKEL	11.2		0.138	MDL	2.12	PQL	mg/Kg	J	A
POTASSIUM	1610		8.83	MDL	106	PQL	mg/Kg	J	Q
TIN	3.08	J	0.233	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.99	J	0.890	MDL	5.29	PQL	mg/Kg	U	F, F

Sample ID: SL-548-SA8-TR-0.5 **Collected: 5/19/2014 1:37:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.40	U	0.813	MDL	4.40	PQL	mg/Kg	UJ	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-548-SA8-TR-0.5** ***Collected:*** **5/19/2014 1:37:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.58	J	0.769	MDL	4.40	PQL	mg/Kg	J	Z
BERYLLIUM	1.02	J	0.0736	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	1.10	U	0.0835	MDL	1.10	PQL	mg/Kg	UJ	Q
CALCIUM	15400		3.67	MDL	22.0	PQL	mg/Kg	J	E, E
COBALT	10.7		0.109	MDL	1.10	PQL	mg/Kg	J	E
LEAD	14.9		0.549	MDL	3.30	PQL	mg/Kg	J	Q
MANGANESE	504		0.0912	MDL	1.10	PQL	mg/Kg	J	E
NICKEL	20.8		0.143	MDL	2.20	PQL	mg/Kg	J	A
POTASSIUM	5930		9.16	MDL	110	PQL	mg/Kg	J	Q
SODIUM	108	J	18.4	MDL	110	PQL	mg/Kg	J	Z
TIN	3.13	J	0.242	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: **SL-548-SA8-TR-10.0** ***Collected:*** **5/19/2014 1:09:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.45	U	0.823	MDL	4.45	PQL	mg/Kg	UJ	Q
ARSENIC	3.82	J	0.778	MDL	4.45	PQL	mg/Kg	J	Z
BERYLLIUM	0.822	J	0.0745	MDL	1.11	PQL	mg/Kg	J	Z
BORON	10.9	J	0.934	MDL	11.1	PQL	mg/Kg	J	Z
CADMIUM	1.11	U	0.0845	MDL	1.11	PQL	mg/Kg	UJ	Q
CALCIUM	27900		3.71	MDL	22.2	PQL	mg/Kg	J	E, E
COBALT	6.40		0.110	MDL	1.11	PQL	mg/Kg	J	E
LEAD	10.0		0.556	MDL	3.34	PQL	mg/Kg	J	Q
MANGANESE	308		0.0923	MDL	1.11	PQL	mg/Kg	J	E
NICKEL	16.1		0.145	MDL	2.22	PQL	mg/Kg	J	A
POTASSIUM	2360		9.28	MDL	111	PQL	mg/Kg	J	Q
TIN	3.24	J	0.245	MDL	11.1	PQL	mg/Kg	U	B
Zirconium	5.45	J	0.934	MDL	5.56	PQL	mg/Kg	U	F

Sample ID: **SL-548-SA8-TR-5.0** ***Collected:*** **5/19/2014 1:17:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.53	U	0.839	MDL	4.53	PQL	mg/Kg	UJ	Q
ARSENIC	2.92	J	0.793	MDL	4.53	PQL	mg/Kg	J	Z
BERYLLIUM	1.00	J	0.0759	MDL	1.13	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-548-SA8-TR-5.0 **Collected: 5/19/2014 1:17:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	1.13	U	0.0861	MDL	1.13	PQL	mg/Kg	UJ	Q
CALCIUM	18000		3.79	MDL	22.7	PQL	mg/Kg	J	E, E, FD
COBALT	7.01		0.112	MDL	1.13	PQL	mg/Kg	J	E
LEAD	13.1		0.567	MDL	3.40	PQL	mg/Kg	J	Q
MANGANESE	261		0.0941	MDL	1.13	PQL	mg/Kg	J	E
NICKEL	17.1		0.147	MDL	2.27	PQL	mg/Kg	J	A
POTASSIUM	2740		9.45	MDL	113	PQL	mg/Kg	J	Q
TIN	3.34	J	0.249	MDL	11.3	PQL	mg/Kg	U	B

Sample ID: SL-848-SA8-TR-5.0 **Collected: 5/19/2014 1:22:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.38	U	0.809	MDL	4.38	PQL	mg/Kg	UJ	Q
ARSENIC	2.99	J	0.766	MDL	4.38	PQL	mg/Kg	J	Z
BERYLLIUM	0.873	J	0.0733	MDL	1.09	PQL	mg/Kg	J	Z
CADMIUM	1.09	U	0.0831	MDL	1.09	PQL	mg/Kg	UJ	Q
CALCIUM	46300		3.65	MDL	21.9	PQL	mg/Kg	J	E, E, FD
COBALT	7.31		0.108	MDL	1.09	PQL	mg/Kg	J	E
LEAD	11.3		0.547	MDL	3.28	PQL	mg/Kg	J	Q
MANGANESE	260		0.0908	MDL	1.09	PQL	mg/Kg	J	E
NICKEL	15.5		0.142	MDL	2.19	PQL	mg/Kg	J	A
POTASSIUM	2600		9.12	MDL	109	PQL	mg/Kg	J	Q
TIN	3.31	J	0.241	MDL	10.9	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-534-SA8-TR-0.5 **Collected: 5/19/2014 9:10:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.117	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-534-SA8-TR-0.5 **Collected: 5/19/2014 9:10:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0442	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-534-SA8-TR-5.0 **Collected: 5/19/2014 9:40:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0298	J	0.0275	MDL	0.212	PQL	mg/Kg	J	Z

Sample ID: SL-548-SA8-TR-0.5 **Collected: 5/19/2014 1:37:00** **Analysis Type: REA** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.178	J	0.110	MDL	0.440	PQL	mg/Kg	J	Z

Sample ID: SL-548-SA8-TR-0.5 **Collected: 5/19/2014 1:37:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0623	J	0.0286	MDL	0.220	PQL	mg/Kg	J	Z

Sample ID: SL-548-SA8-TR-10.0 **Collected: 5/19/2014 1:09:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0543	J	0.0289	MDL	0.222	PQL	mg/Kg	J	Z

Sample ID: SL-548-SA8-TR-5.0 **Collected: 5/19/2014 1:17:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0496	J	0.0295	MDL	0.227	PQL	mg/Kg	J	Z

Sample ID: SL-848-SA8-TR-5.0 **Collected: 5/19/2014 1:22:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0509	J	0.0284	MDL	0.219	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-548-SA8-TR-0.5 *Collected:* 5/19/2014 1:37:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0139	J	0.0108	MDL	0.0180	PQL	mg/Kg	J	Z

Sample ID: SL-548-SA8-TR-10.0 *Collected:* 5/19/2014 1:09:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0163	J	0.0114	MDL	0.0190	PQL	mg/Kg	J	Z

Sample ID: SL-548-SA8-TR-5.0 *Collected:* 5/19/2014 1:17:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0127	J	0.0113	MDL	0.0188	PQL	mg/Kg	J	Z

Sample ID: SL-848-SA8-TR-5.0 *Collected:* 5/19/2014 1:22:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0125	J	0.0112	MDL	0.0187	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-534-SA8-TR-0.5 *Collected:* 5/19/2014 9:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.13	JB	0.0255	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.244	JB	0.0101	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0432	JBQ	0.0229	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0451	JQ	0.0227	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0484	JB	0.0267	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.140	JBQ	0.0241	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0986	JBQ	0.0220	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.100	JBQ	0.0237	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0364	JB	0.0321	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0374	JQ	0.0238	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.223	JBQ	0.0186	MDL	5.18	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0899	JB	0.0243	MDL	5.18	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-534-SA8-TR-0.5 **Collected: 5/19/2014 9:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,7,8-TCDF	0.0798	J	0.0407	MDL	1.04	PQL	ng/Kg	J	Z
OCDD	8.27	JB	0.0189	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.424	JBQ	0.0262	MDL	10.4	PQL	ng/Kg	U	B

Sample ID: SL-534-SA8-TR-5.0 **Collected: 5/19/2014 9:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.393	JB	0.0219	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.217	JB	0.00813	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0561	JB	0.0207	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0213	JQ	0.0152	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0412	JBQ	0.0159	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0225	JB	0.0150	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0238	JBQ	0.0129	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0190	JBQ	0.0150	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0200	JBQ	0.0160	MDL	5.18	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0283	JQ	0.0195	MDL	5.18	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0383	JB	0.0101	MDL	5.18	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0478	JBQ	0.0145	MDL	5.18	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0197	JBQ	0.0113	MDL	5.18	PQL	ng/Kg	U	B
OCDD	4.14	JB	0.0189	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.781	JBQ	0.0285	MDL	10.4	PQL	ng/Kg	J	Z

Sample ID: SL-548-SA8-TR-0.5 **Collected: 5/19/2014 1:37:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.59	JB	0.0184	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.352	JB	0.00878	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0502	JBQ	0.0206	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0438	JQ	0.0270	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0505	JBQ	0.0196	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.230	JBQ	0.0279	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0533	JBQ	0.0157	MDL	5.37	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.317	JB	0.0264	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.272	JB	0.0183	MDL	5.37	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-548-SA8-TR-0.5 **Collected: 5/19/2014 1:37:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8-PECDD	0.0253	JQ	0.0233	MDL	5.37	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.148	JB	0.0121	MDL	5.37	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0448	JBQ	0.0167	MDL	5.37	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0525	JBQ	0.0129	MDL	5.37	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0392	J	0.0245	MDL	1.07	PQL	ng/Kg	J	Z
OCDF	0.941	JB	0.0242	MDL	10.7	PQL	ng/Kg	J	Z

Sample ID: SL-548-SA8-TR-10.0 **Collected: 5/19/2014 1:09:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.107	JBQ	0.0160	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0422	JB	0.00498	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0297	JBQ	0.0112	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0303	JBQ	0.0159	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0283	JBQ	0.0186	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0498	JBQ	0.0124	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0296	JBQ	0.0186	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0188	JBQ	0.0187	MDL	5.69	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0744	JQ	0.0255	MDL	5.69	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0948	JBQ	0.0118	MDL	5.69	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0348	JB	0.0136	MDL	5.69	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0429	JBQ	0.0129	MDL	5.69	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0380	JB	0.0281	MDL	1.14	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0245	JQ	0.0217	MDL	1.14	PQL	ng/Kg	J	Z
OCDD	0.401	JBQ	0.0262	MDL	11.4	PQL	ng/Kg	U	B
OCDF	0.154	JBQ	0.0284	MDL	11.4	PQL	ng/Kg	U	B

Sample ID: SL-548-SA8-TR-5.0 **Collected: 5/19/2014 1:17:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.111	JB	0.0201	MDL	5.77	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.209	JBQ	0.00857	MDL	5.77	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.0636	JBQ	0.0176	MDL	5.77	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0310	JQ	0.0184	MDL	5.77	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.111	JB	0.0138	MDL	5.77	PQL	ng/Kg	UJ	B, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-548-SA8-TR-5.0** ***Collected:*** **5/19/2014 1:17:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDD	0.0290	JBQ	0.0191	MDL	5.77	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDF	0.0637	JBQ	0.0116	MDL	5.77	PQL	ng/Kg	UJ	B, FD
1,2,3,7,8,9-HXCDF	0.0470	JB	0.0160	MDL	5.77	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0232	JQ	0.0204	MDL	5.77	PQL	ng/Kg	J	Z, FD
1,2,3,7,8-PECDF	0.0686	JB	0.0116	MDL	5.77	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0428	JBQ	0.0132	MDL	5.77	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0262	JBQ	0.0120	MDL	5.77	PQL	ng/Kg	U	B
OCDD	0.434	JB	0.0219	MDL	11.5	PQL	ng/Kg	U	B
OCDF	0.559	JBQ	0.0336	MDL	11.5	PQL	ng/Kg	UJ	B, FD

Sample ID: **SL-848-SA8-TR-5.0** ***Collected:*** **5/19/2014 1:22:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.0786	JBQ	0.0185	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0246	JBQ	0.00655	MDL	5.59	PQL	ng/Kg	UJ	B, FD
1,2,3,4,7,8,9-HPCDF	0.0695	JBQ	0.0178	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0245	JQ	0.0194	MDL	5.59	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0172	JB	0.0119	MDL	5.59	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	5.59	U	0.0198	MDL	5.59	PQL	ng/Kg	UJ	FD
1,2,3,6,7,8-HXCDF	5.59	U	0.00909	MDL	5.59	PQL	ng/Kg	UJ	FD
1,2,3,7,8,9-HXCDF	0.0438	JBQ	0.0139	MDL	5.59	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	5.59	U	0.0263	MDL	5.59	PQL	ng/Kg	UJ	FD
1,2,3,7,8-PECDF	0.0148	JB	0.0130	MDL	5.59	PQL	ng/Kg	UJ	B, FD
2,3,4,6,7,8-HXCDF	0.0235	JB	0.0104	MDL	5.59	PQL	ng/Kg	UJ	B, FD
2,3,4,7,8-PECDF	0.0260	JBQ	0.0144	MDL	5.59	PQL	ng/Kg	U	B
OCDD	0.359	JB	0.0229	MDL	11.2	PQL	ng/Kg	U	B
OCDF	0.197	JBQ	0.0381	MDL	11.2	PQL	ng/Kg	UJ	B, FD

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-534-SA8-TR-0.5 **Collected: 5/19/2014 9:10:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L

Sample ID: SL-534-SA8-TR-0.5 **Collected: 5/19/2014 9:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.6	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-534-SA8-TR-5.0 **Collected: 5/19/2014 9:40:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C30-C40)	5.0	J	4.3	MDL	11	PQL	mg/Kg	J	Z

Sample ID: SL-534-SA8-TR-5.0 **Collected: 5/19/2014 9:40:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L

Sample ID: SL-548-SA8-TR-0.5 **Collected: 5/19/2014 1:37:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	11	U	4.4	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L, S

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-548-SA8-TR-10.0 **Collected: 5/19/2014 1:09:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	11	U	4.6	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S

Sample ID: SL-548-SA8-TR-5.0 **Collected: 5/19/2014 1:17:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.8	U	2.3	MDL	5.8	PQL	mg/Kg	UJ	FD
EFH (C30-C40)	12	U	4.6	MDL	12	PQL	mg/Kg	UJ	FD

Sample ID: SL-548-SA8-TR-5.0 **Collected: 5/19/2014 1:17:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.8	U	2.3	MDL	5.8	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.8	U	2.3	MDL	5.8	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.8	U	2.3	MDL	5.8	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	12	U	4.6	MDL	12	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.8	U	2.3	MDL	5.8	PQL	mg/Kg	UJ	L, S

Sample ID: SL-848-SA8-TR-5.0 **Collected: 5/19/2014 1:22:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	2.9	J	2.3	MDL	5.7	PQL	mg/Kg	J	Z, FD
EFH (C30-C40)	15		4.6	MDL	11	PQL	mg/Kg	J	FD

Sample ID: SL-848-SA8-TR-5.0 **Collected: 5/19/2014 1:22:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	11	U	4.6	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.7	U	2.3	MDL	5.7	PQL	mg/Kg	UJ	L, S

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-534-SA8-TR-0.5** ***Collected:*** **5/19/2014 9:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.71	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.7	U	0.69	MDL	1.7	PQL	ug/Kg	UJ	C
CHRYSENE	0.99	J	0.35	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.73	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-534-SA8-TR-5.0** ***Collected:*** **5/19/2014 9:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.8	U	0.71	MDL	1.8	PQL	ug/Kg	UJ	C

Sample ID: **SL-548-SA8-TR-0.5** ***Collected:*** **5/19/2014 1:37:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.83	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.61	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	0.85	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(B)FLUORANTHENE	1.3	J	0.73	MDL	1.8	PQL	ug/Kg	J	Z, C
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	6.6	MDL	20	PQL	ug/Kg	J	Z

Sample ID: **SL-548-SA8-TR-10.0** ***Collected:*** **5/19/2014 1:09:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.9	U	0.76	MDL	1.9	PQL	ug/Kg	UJ	C

Sample ID: **SL-548-SA8-TR-5.0** ***Collected:*** **5/19/2014 1:17:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.9	U	0.77	MDL	1.9	PQL	ug/Kg	UJ	C

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **SVOA**

Method: **8270D SIM** ***Matrix:*** **SO**

Sample ID: **SL-848-SA8-TR-5.0** ***Collected:*** **5/19/2014 1:22:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(B)FLUORANTHENE	1.9	U	0.76	MDL	1.9	PQL	ug/Kg	UJ	C

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	ICP Serial Dilution
B	Method Blank Contamination
C	Continuing Calibration Verification Percent Difference Lower Estimation
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH185

Method Blank Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1470B371326	5/29/2014 1:26:00 PM	1,2,3,4,6,7,8-HPCDD	0.0514 ng/Kg	SL-534-SA8-TR-0.5
		1,2,3,4,6,7,8-HPCDF	0.0453 ng/Kg	SL-534-SA8-TR-5.0
		1,2,3,4,7,8,9-HPCDF	0.0269 ng/Kg	SL-548-SA8-TR-0.5
		1,2,3,4,7,8-HXCDF	0.0282 ng/Kg	SL-548-SA8-TR-10.0
		1,2,3,6,7,8-HXCDD	0.0211 ng/Kg	SL-548-SA8-TR-5.0
		1,2,3,6,7,8-HXCDF	0.0254 ng/Kg	SL-848-SA8-TR-5.0
		1,2,3,7,8,9-HXCDD	0.0209 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0446 ng/Kg	
		1,2,3,7,8-PECDF	0.0315 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0380 ng/Kg	
		2,3,4,7,8-PECDF	0.0159 ng/Kg	
		2,3,7,8-TCDD	0.0397 ng/Kg	
		OCDD	0.217 ng/Kg	
		OCDF	0.125 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-534-SA8-TR-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0432 ng/Kg	0.0432U ng/Kg
SL-534-SA8-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0484 ng/Kg	0.0484U ng/Kg
SL-534-SA8-TR-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0986 ng/Kg	0.0986U ng/Kg
SL-534-SA8-TR-0.5(RES)	1,2,3,7,8,9-HXCDD	0.100 ng/Kg	0.100U ng/Kg
SL-534-SA8-TR-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0364 ng/Kg	0.0364U ng/Kg
SL-534-SA8-TR-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0899 ng/Kg	0.0899U ng/Kg
SL-534-SA8-TR-0.5(RES)	OCDF	0.424 ng/Kg	0.424U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.217 ng/Kg	0.217U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0561 ng/Kg	0.0561U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0412 ng/Kg	0.0412U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0225 ng/Kg	0.0225U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0238 ng/Kg	0.0238U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0190 ng/Kg	0.0190U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0200 ng/Kg	0.0200U ng/Kg
SL-534-SA8-TR-5.0(RES)	1,2,3,7,8-PECDF	0.0383 ng/Kg	0.0383U ng/Kg
SL-534-SA8-TR-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0478 ng/Kg	0.0478U ng/Kg
SL-534-SA8-TR-5.0(RES)	2,3,4,7,8-PECDF	0.0197 ng/Kg	0.0197U ng/Kg
SL-548-SA8-TR-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0502 ng/Kg	0.0502U ng/Kg
SL-548-SA8-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0505 ng/Kg	0.0505U ng/Kg
SL-548-SA8-TR-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0533 ng/Kg	0.0533U ng/Kg
SL-548-SA8-TR-0.5(RES)	1,2,3,7,8-PECDF	0.148 ng/Kg	0.148U ng/Kg
SL-548-SA8-TR-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0448 ng/Kg	0.0448U ng/Kg
SL-548-SA8-TR-0.5(RES)	2,3,4,7,8-PECDF	0.0525 ng/Kg	0.0525U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,4,6,7,8-HPCDD	0.107 ng/Kg	0.107U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0422 ng/Kg	0.0422U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0297 ng/Kg	0.0297U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,4,7,8-HXCDF	0.0303 ng/Kg	0.0303U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,6,7,8-HXCDD	0.0283 ng/Kg	0.0283U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,6,7,8-HXCDF	0.0498 ng/Kg	0.0498U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,7,8,9-HXCDD	0.0296 ng/Kg	0.0296U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Method Blank Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-548-SA8-TR-10.0(RES)	1,2,3,7,8,9-HXCDF	0.0188 ng/Kg	0.0188U ng/Kg
SL-548-SA8-TR-10.0(RES)	1,2,3,7,8-PECDF	0.0948 ng/Kg	0.0948U ng/Kg
SL-548-SA8-TR-10.0(RES)	2,3,4,6,7,8-HXCDF	0.0348 ng/Kg	0.0348U ng/Kg
SL-548-SA8-TR-10.0(RES)	2,3,4,7,8-PECDF	0.0429 ng/Kg	0.0429U ng/Kg
SL-548-SA8-TR-10.0(RES)	2,3,7,8-TCDD	0.0380 ng/Kg	0.0380U ng/Kg
SL-548-SA8-TR-10.0(RES)	OCDD	0.401 ng/Kg	0.401U ng/Kg
SL-548-SA8-TR-10.0(RES)	OCDF	0.154 ng/Kg	0.154U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.111 ng/Kg	0.111U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.209 ng/Kg	0.209U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0636 ng/Kg	0.0636U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,4,7,8-HXCDF	0.111 ng/Kg	0.111U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,6,7,8-HXCDD	0.0290 ng/Kg	0.0290U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0637 ng/Kg	0.0637U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0470 ng/Kg	0.0470U ng/Kg
SL-548-SA8-TR-5.0(RES)	1,2,3,7,8-PECDF	0.0686 ng/Kg	0.0686U ng/Kg
SL-548-SA8-TR-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0428 ng/Kg	0.0428U ng/Kg
SL-548-SA8-TR-5.0(RES)	2,3,4,7,8-PECDF	0.0262 ng/Kg	0.0262U ng/Kg
SL-548-SA8-TR-5.0(RES)	OCDD	0.434 ng/Kg	0.434U ng/Kg
SL-548-SA8-TR-5.0(RES)	OCDF	0.559 ng/Kg	0.559U ng/Kg
SL-848-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.0786 ng/Kg	0.0786U ng/Kg
SL-848-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0246 ng/Kg	0.0246U ng/Kg
SL-848-SA8-TR-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0695 ng/Kg	0.0695U ng/Kg
SL-848-SA8-TR-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0172 ng/Kg	0.0172U ng/Kg
SL-848-SA8-TR-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0438 ng/Kg	0.0438U ng/Kg
SL-848-SA8-TR-5.0(RES)	1,2,3,7,8-PECDF	0.0148 ng/Kg	0.0148U ng/Kg
SL-848-SA8-TR-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0235 ng/Kg	0.0235U ng/Kg
SL-848-SA8-TR-5.0(RES)	2,3,4,7,8-PECDF	0.0260 ng/Kg	0.0260U ng/Kg
SL-848-SA8-TR-5.0(RES)	OCDD	0.359 ng/Kg	0.359U ng/Kg
SL-848-SA8-TR-5.0(RES)	OCDF	0.197 ng/Kg	0.197U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14337AB220659	5/29/2014 6:59:00 AM	CALCIUM TIN ZINC	7.84 mg/Kg 1.46 mg/Kg 0.461 mg/Kg	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0

Method Blank Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-534-SA8-TR-0.5(RES)	TIN	3.09 mg/Kg	3.09U mg/Kg
SL-534-SA8-TR-5.0(RES)	TIN	3.08 mg/Kg	3.08U mg/Kg
SL-548-SA8-TR-0.5(RES)	TIN	3.13 mg/Kg	3.13U mg/Kg
SL-548-SA8-TR-10.0(RES)	TIN	3.24 mg/Kg	3.24U mg/Kg
SL-548-SA8-TR-5.0(RES)	TIN	3.34 mg/Kg	3.34U mg/Kg
SL-848-SA8-TR-5.0(RES)	TIN	3.31 mg/Kg	3.31U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-534-SA8-TR-0.5(RES)	Zirconium	4.00 mg/Kg	4.00U mg/Kg
SL-534-SA8-TR-5.0(RES)	Zirconium	3.99 mg/Kg	3.99U mg/Kg
SL-548-SA8-TR-10.0(RES)	Zirconium	5.45 mg/Kg	5.45U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB3-052214(RES)	5/22/2014 3:45:00 PM	CALCIUM MANGANESE Zirconium	0.15 mg/L 0.0009 mg/L 0.0108 mg/L	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-534-SA8-TR-0.5(RES)	Zirconium	4.00 mg/Kg	4.00U mg/Kg
SL-534-SA8-TR-5.0(RES)	Zirconium	3.99 mg/Kg	3.99U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-548-SA8-TR-0.5 (REA)	O-TERPHENYL	61	66.00-123.00	All Target Analytes	J (all detects) UJ (all non-detects)
SL-548-SA8-TR-10.0 (REA2)	O-TERPHENYL	51	66.00-123.00	All Target Analytes	J(all detects) UJ(all non-detects)
SL-548-SA8-TR-5.0 (REA2)	O-TERPHENYL	64	66.00-123.00	All Target Analytes	J(all detects) UJ(all non-detects)
SL-848-SA8-TR-5.0 (REA2)	O-TERPHENYL	52	66.00-123.00	All Target Analytes	J(all detects) UJ(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-548-SA8-TR-5.0 MSD (SL-548-SA8-TR-5.0)	EFH (C30-C40)	-	-	49.00-123.00	42 (20.00)	EFH (C30-C40)	J (all detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-548-SA8-TR-5.0 MSD (SL-548-SA8-TR-5.0)	BENZO(G,H,I)PERYLENE	-	-	33.00-141.00	65 (30.00)	BENZO(G,H,I)PERYLENE	J(all detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-548-SA8-TR-5.0 MS (TOT) SL-548-SA8-TR-5.0 MSD (TOT) (SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0)	ALUMINUM POTASSIUM TITANIUM	2456 126 445	3885 164 622	75.00-125.00 75.00-125.00 75.00-125.00	- - -	ALUMINUM POTASSIUM TITANIUM	J(all detects) Al, Ti No Qual, >4x
SL-548-SA8-TR-5.0 MS (TOT) SL-548-SA8-TR-5.0 MSD (TOT) (SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0)	IRON MAGNESIUM	-1341 13	1088 323	75.00-125.00 75.00-125.00	- -	IRON MAGNESIUM	No Qual, >4x
SL-548-SA8-TR-5.0 MS (TOT) SL-548-SA8-TR-5.0 MSD (TOT) (SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0)	ANTIMONY CADMIUM CALCIUM LEAD	41 - 11145 72	34 74 2442 -	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - 81 (20.00) -	ANTIMONY CADMIUM CALCIUM LEAD	J(all detects) UJ(all non-detects) Ca, No Qual %R, >4x

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6020A**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SL-548-SA8-TR-5.0 MSD (TOT) (SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-548-SA8-TR-10.0 SL-548-SA8-TR-5.0 SL-848-SA8-TR-5.0)	STRONTIUM	-	153	75.00-125.00	-	STRONTIUM	No Qual, >4x

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-548-SA8-TR-5.0 DUP (TOT)	CALCIUM	77	20.00	
(SL-534-SA8-TR-0.5	COBALT	24	20.00	
SL -534-SA8-TR-5.0	MANGANESE	30	20.00	
SL -548-SA8-TR-0.5				J (all detects)
SL -548-SA8-TR-10.0				UJ (all non-detects)
SL -548-SA8-TR-5.0				
SL -848-SA8-TR-5.0)				

Method: 6020A
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-548-SA8-TR-5.0 DUP (TOT)	SILVER	27	20.00	
(SL-534-SA8-TR-0.5				
SL -534-SA8-TR-5.0				No Qual,
SL -548-SA8-TR-0.5				OK by Difference
SL -548-SA8-TR-10.0				
SL -548-SA8-TR-5.0				
SL -848-SA8-TR-5.0)				

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P41416AQ321722A (SL-534-SA8-TR-0.5 SL -534-SA8-TR-5.0 SL -548-SA8-TR-0.5 SL -548-SA8-TR-10.0 SL -548-SA8-TR-5.0 SL -848-SA8-TR-5.0)	EFH (C12-C14)	117	-	76.00-115.00	-	EFH (C12-C14)	J (all detects)
P41417AQ321743A (SL-534-SA8-TR-0.5 SL -534-SA8-TR-5.0 SL -548-SA8-TR-0.5 SL -548-SA8-TR-10.0 SL -548-SA8-TR-5.0 SL -848-SA8-TR-5.0)	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	71 74 73 57	- - - -	76.00-115.00 78.00-127.00 77.00-127.00 60.00-115.00	- - - -	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	J(all detects) UJ(all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-548-SA8-TR-5.0	SL-848-SA8-TR-5.0			
MOISTURE	13.5	12.1	11		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-548-SA8-TR-5.0	SL-848-SA8-TR-5.0			
1,2,3,4,6,7,8-HPCDD	0.111	0.0786	34	50.00	
1,2,3,4,7,8,9-HPCDF	0.0636	0.0695	9	50.00	
1,2,3,4,7,8-HxCDD	0.0310	0.0245	23	50.00	
1,2,3,7,8,9-HXCDF	0.0470	0.0438	7	50.00	No Qualifiers Applied
2,3,4,7,8-PECDF	0.0262	0.0260	1	50.00	
OCDD	0.434	0.359	19	50.00	
1,2,3,4,6,7,8-HPCDF	0.209	0.0246	158	50.00	
1,2,3,4,7,8-HXCDF	0.111	0.0172	146	50.00	
1,2,3,6,7,8-HXCDD	0.0290	5.59 U	200	50.00	
1,2,3,6,7,8-HXCDF	0.0637	5.59 U	200	50.00	J(all detects)
1,2,3,7,8-PECDD	0.0232	5.59 U	200	50.00	UJ(all non-detects)
1,2,3,7,8-PECDF	0.0686	0.0148	129	50.00	
2,3,4,6,7,8-HXCDF	0.0428	0.0235	58	50.00	
OCDF	0.559	0.197	96	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-548-SA8-TR-5.0 (TOT)	SL-848-SA8-TR-5.0 (TOT)			
ALUMINUM	29100	27300	6	50.00	
ARSENIC	2.92	2.99	2	50.00	
BARIUM	123	112	9	50.00	
BERYLLIUM	1.00	0.873	14	50.00	
BORON	12.6	12.9	2	50.00	
CHROMIUM	35.4	33.0	7	50.00	
COBALT	7.01	7.31	4	50.00	
COPPER	19.1	17.6	8	50.00	
IRON	31900	29300	8	50.00	
LEAD	13.1	11.3	15	50.00	
LITHIUM	26.2	24.5	7	50.00	
MAGNESIUM	7090	6420	10	50.00	No Qualifiers Applied
MANGANESE	261	260	0	50.00	
NICKEL	17.1	15.5	10	50.00	
PHOSPHORUS	240	239	0	50.00	
POTASSIUM	2740	2600	5	50.00	
SODIUM	163	154	6	50.00	
TIN	3.34	3.31	1	50.00	
TITANIUM	1020	1020	0	50.00	
VANADIUM	61.7	57.9	6	50.00	
ZINC	64.4	58.8	9	50.00	
Zirconium	6.04	5.60	8	50.00	
CALCIUM	18000	46300	88	50.00	J(all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A
Matrix: SO

Analyte	*Concentration (mg/Kg)* SL-548-SA8-TR-5.0 (TOT)	SL-848-SA8-TR-5.0 (TOT)	*Sample RPD*	*eQAPP RPD*	*Flag*
SILVER	0.0496	0.0509	3	50.00	
STRONTIUM	47.7	53.9	12	50.00	No Qualifiers Applied
THALLIUM	0.316	0.322	2	50.00	

Method: 7471B
Matrix: SO

Analyte	*Concentration (mg/Kg)* SL-548-SA8-TR-5.0 (TOT)	SL-848-SA8-TR-5.0 (TOT)	*Sample RPD*	*eQAPP RPD*	*Flag*
MERCURY	0.0127	0.0125	2	50.00	No Qualifiers Applied

Method: 8015M
Matrix: SO

Analyte	*Concentration (mg/Kg)* SL-548-SA8-TR-5.0	SL-848-SA8-TR-5.0	*Sample RPD*	*eQAPP RPD*	*Flag*
EFH (C21-C30)	5.8 U	2.9	200	50.00	J(all detects)
EFH (C30-C40)	12 U	15	200	50.00	UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-534-SA8-TR-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.13	5.18	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.244	5.18	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0432	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0451	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0484	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.140	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0986	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.100	5.18	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.0364	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0374	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.223	5.18	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0899	5.18	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0798	1.04	PQL	ng/Kg	
	OCDD	JB	8.27	10.4	PQL	ng/Kg	
	OCDF	JBQ	0.424	10.4	PQL	ng/Kg	
SL-534-SA8-TR-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.393	5.18	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.217	5.18	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0561	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0213	5.18	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0412	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.0225	5.18	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0238	5.18	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0190	5.18	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0200	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0283	5.18	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0383	5.18	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0478	5.18	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0197	5.18	PQL	ng/Kg	
	OCDD	JB	4.14	10.4	PQL	ng/Kg	
	OCDF	JBQ	0.781	10.4	PQL	ng/Kg	
SL-548-SA8-TR-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.59	5.37	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.352	5.37	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0502	5.37	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0438	5.37	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0505	5.37	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.230	5.37	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0533	5.37	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.317	5.37	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.272	5.37	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0253	5.37	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.148	5.37	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0448	5.37	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0525	5.37	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0392	1.07	PQL	ng/Kg	
	OCDF	JB	0.941	10.7	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-548-SA8-TR-10.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.107	5.69	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0422	5.69	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0297	5.69	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0303	5.69	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0283	5.69	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0498	5.69	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0296	5.69	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0188	5.69	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0744	5.69	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JBQ	0.0948	5.69	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0348	5.69	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0429	5.69	PQL	ng/Kg	
	2,3,7,8-TCDD	JB	0.0380	1.14	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0245	1.14	PQL	ng/Kg	
	OCDD	JBQ	0.401	11.4	PQL	ng/Kg	
	OCDF	JBQ	0.154	11.4	PQL	ng/Kg	
SL-548-SA8-TR-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.111	5.77	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.209	5.77	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0636	5.77	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0310	5.77	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.111	5.77	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0290	5.77	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0637	5.77	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0470	5.77	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.0232	5.77	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0686	5.77	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0428	5.77	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0262	5.77	PQL	ng/Kg	
	OCDD	JB	0.434	11.5	PQL	ng/Kg	
	OCDF	JBQ	0.559	11.5	PQL	ng/Kg	
SL-848-SA8-TR-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.0786	5.59	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0246	5.59	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0695	5.59	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0245	5.59	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0172	5.59	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0438	5.59	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JB	0.0148	5.59	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0235	5.59	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0260	5.59	PQL	ng/Kg	
	OCDD	JB	0.359	11.2	PQL	ng/Kg	
	OCDF	JBQ	0.197	11.2	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-534-SA8-TR-0.5	ARSENIC	J	3.16	4.13	PQL	mg/Kg	
	BERYLLIUM	J	0.589	1.03	PQL	mg/Kg	
	BORON	J	8.29	10.3	PQL	mg/Kg	J (all detects)
	TIN	J	3.09	10.3	PQL	mg/Kg	
	Zirconium	J	4.00	5.17	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-534-SA8-TR-5.0	ARSENIC	J	1.33	4.24	PQL	mg/Kg	
	BERYLLIUM	J	0.505	1.06	PQL	mg/Kg	
	BORON	J	6.99	10.6	PQL	mg/Kg	J (all detects)
	TIN	J	3.08	10.6	PQL	mg/Kg	
	Zirconium	J	3.99	5.29	PQL	mg/Kg	
SL-548-SA8-TR-0.5	ARSENIC	J	3.58	4.40	PQL	mg/Kg	
	BERYLLIUM	J	1.02	1.10	PQL	mg/Kg	J (all detects)
	SODIUM	J	108	110	PQL	mg/Kg	
	TIN	J	3.13	11.0	PQL	mg/Kg	
SL-548-SA8-TR-10.0	ARSENIC	J	3.82	4.45	PQL	mg/Kg	
	BERYLLIUM	J	0.822	1.11	PQL	mg/Kg	
	BORON	J	10.9	11.1	PQL	mg/Kg	J (all detects)
	TIN	J	3.24	11.1	PQL	mg/Kg	
	Zirconium	J	5.45	5.56	PQL	mg/Kg	
SL-548-SA8-TR-5.0	ARSENIC	J	2.92	4.53	PQL	mg/Kg	
	BERYLLIUM	J	1.00	1.13	PQL	mg/Kg	J (all detects)
	TIN	J	3.34	11.3	PQL	mg/Kg	
SL-848-SA8-TR-5.0	ARSENIC	J	2.99	4.38	PQL	mg/Kg	
	BERYLLIUM	J	0.873	1.09	PQL	mg/Kg	J (all detects)
	TIN	J	3.31	10.9	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-534-SA8-TR-0.5	SELENIUM	J	0.117	0.413	PQL	mg/Kg	
	SILVER	J	0.0442	0.207	PQL	mg/Kg	J (all detects)
SL-534-SA8-TR-5.0	SILVER	J	0.0298	0.212	PQL	mg/Kg	J (all detects)
SL-548-SA8-TR-0.5	SELENIUM	J	0.178	0.440	PQL	mg/Kg	
	SILVER	J	0.0623	0.220	PQL	mg/Kg	J (all detects)
SL-548-SA8-TR-10.0	SILVER	J	0.0543	0.222	PQL	mg/Kg	J (all detects)
SL-548-SA8-TR-5.0	SILVER	J	0.0496	0.227	PQL	mg/Kg	J (all detects)
SL-848-SA8-TR-5.0	SILVER	J	0.0509	0.219	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-548-SA8-TR-0.5	MERCURY	J	0.0139	0.0180	PQL	mg/Kg	J (all detects)
SL-548-SA8-TR-10.0	MERCURY	J	0.0163	0.0190	PQL	mg/Kg	J (all detects)
SL-548-SA8-TR-5.0	MERCURY	J	0.0127	0.0188	PQL	mg/Kg	J (all detects)
SL-848-SA8-TR-5.0	MERCURY	J	0.0125	0.0187	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH185 **Laboratory: LL**

EDD Filename: PH185_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-534-SA8-TR-0.5	EFH (C21-C30)	J	4.6	5.2	PQL	mg/Kg	J (all detects)
SL-534-SA8-TR-5.0	EFH (C30-C40)	J	5.0	11	PQL	mg/Kg	J (all detects)
SL-848-SA8-TR-5.0	EFH (C21-C30)	J	2.9	5.7	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-534-SA8-TR-0.5	2-METHYLNAPHTHALENE	J	0.71	1.7	PQL	ug/Kg	
	CHRYSENE	J	0.99	1.7	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	0.73	1.7	PQL	ug/Kg	
SL-548-SA8-TR-0.5	1-METHYLNAPHTHALENE	J	0.83	1.8	PQL	ug/Kg	
	ANTHRACENE	J	0.61	1.8	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	0.85	1.8	PQL	ug/Kg	J (all detects)
	BENZO(B)FLUORANTHENE	J	1.3	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	20	PQL	ug/Kg	

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 19, 2014

LDC Report Date: July 10, 2014

Matrix: Soil

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH185

Sample Identification

SL-534-SA8-TR-0.5
SL-534-SA8-TR-5.0
SL-548-SA8-TR-0.5
SL-848-SA8-TR-5.0
SL-548-SA8-TR-5.0
SL-548-SA8-TR-10.0
SL-548-SA8-TR-5.0MS
SL-548-SA8-TR-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/2/14	Benzo(b)fluoranthene	26	All samples in SDG PH185	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method.

Sample EB3-052214 (from SDG PH195) was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB3-052214	5/22/14	Di-n-butylphthalate Diethylphthalate Bis(2-ethylhexyl)phthalate	0.10 ug/L 0.097 ug/L 0.097 ug/L	All samples in SDG PH185

Sample FB-052114 (from SDG PH191) was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-052114	5/21/14	Di-n-butylphthalate Bis(2-ethylhexyl)phthalate 1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	0.089 ug/L 0.058 ug/L 0.022 ug/L 0.032 ug/L 0.11 ug/L	All samples in SDG PH185

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-548-SA8-TR-5.0MS/MSD (SL-548-SA8-TR-5.0)	Benzo(g,h,i)perylene	-	-	65 (≤30)	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitation were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH185	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SL-848-SA8-TR-5.0 and SL-548-SA8-TR-5.0 were identified as field duplicates. No semivolatiles were detected in any of the samples.

Santa Susana Field Laboratory
Semivolatiles - Data Qualification Summary - SDG PH185

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Benzo(b)fluoranthene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
PH185	SL-548-SA8-TR-5.0	Benzo(g,h,i)perylene	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Semivolatiles - Field Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

LDC #: 32030A2b **VALIDATION COMPLETENESS WORKSHEET** Date: 7/1/14

SDG #: PH185 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: BR

2nd Reviewer: SM

METHOD: GC/MS ~~Polynuclear Aromatic Hydrocarbons~~ SVOCs (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/19/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD≤30?, r^2
IV.	Continuing calibration/ICV	SW	ICV/CCV≤25?
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	FD = 4+5 9
XVII.	Field blanks	SW	EB = EB3-052214 (SDG# PH185) FB = FB-052114 (SDG# PH191)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-534-SA8-TR-0.5	11		21		31	SBLKLD142
2	SL-534-SA8-TR-5.0	12		22		32	
3	SL-548-SA8-TR-0.5	13		23		33	
4	SL-848-SA8-TR-5.0	14		24		34	
5	SL-548-SA8-TR-5.0	15		25		35	
6	SL-548-SA8-TR-10.0	16		26		36	
7	SL-548-SA8-TR-5.0MS	17		27		37	
8	SL-548-SA8-TR-5.0MSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 32030A26

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: SM

Method: Semivolatiles (EPA SW 846 Method 8270C) D
RSR

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 32030A26

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	OOOO.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

LDC #: 32030A2b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: KR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y (N) N/A Were percent differences (%D) ≤~~20~~ 25% and relative response factors (RRF) within the method criteria?

Cod: C

#	Date	Standard ID	Compound	Finding %D (Limit: ~~<20.0%~~ 25?)	Finding RRF (Limit)	Associated Samples	Qualifications
	5/2/14	CCV - fe0020	GGG	26		All	J/UJ/A

LDC #: 32030A2b

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

EB = EB3-052214 (SDG # PH195)

Code: F

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 5/22/14
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All (ND + 75x)

Compound	Blank ID	Sample Identification								
	EB									
XX	0.10									
LL	0.097									
EEE	0.097									

FB = FB-052114 (SDG # PH191)

Code: F

Blank units: ug/L **Associated sample units:** ug/kg
Sampling date: 5/21/14
Field blank type: (circle one) ~~Field Blank~~ / Rinsate / Other: Associated Samples: All (ND + 75x)

Compound	Blank ID	Sample Identification								
	FB		+							
XX	0.089									
EEE	0.058									
TTT	0.022									
W	0.032									
S ~~AAAAA~~ 6*	0.11									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 32030A26

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: SR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

(Y) N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		7/8	LLL	( )	( )	65 (30)	5	J det/A (Q)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 32030A2b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer BR
2nd Reviewer

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (1 std)	Recalculated RRF (1 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	HP07166	5/2/2014	N-Nitrosodimethylamine (IS1)	0.848	0.848	0.850	0.850	4	4
			Naphthalene (IS2)	1.206	1.206	1.222	1.222	3	3
			Fluorene (IS3)	1.465	1.465	1.460	1.461	3	3
			Anthracene (IS4)	1.222	1.222	1.187	1.187	6	6
			Chrysene (IS5)	1.555	1.555	1.553	1.553	2	2
			Benzo(a)pyrene (IS6)	1.737	1.737	1.619	1.619	15	15

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC# 32030A2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	fe0721	05/26/14	N-Nitrosodimethylamine (IS1)	0.850	0.926	0.926	9	9
			Naphthalene (IS2)	1.222	1.223	1.223	0	0
			Fluorene (IS3)	1.460	1.414	1.414	3	3
			Anthracene (IS4)	1.187	1.298	1.298	9	9
			Chrysene (IS5)	1.553	1.471	1.471	5	5
			Benzo(a)pyrene (IS6)	1.619	1.719	1.719	6	6

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC# 32030A2b

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS SVOA (EPA SW 846 Method 8270DSIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	fe0761	05/27/14	N-Nitrosodimethylamine (IS1)	0.850	0.934	0.934	10	10
			Naphthalene (IS2)	1.222	1.198	1.198	2	2
			Fluorene (IS3)	1.460	1.466	1.466	0	0
			Anthracene (IS4)	1.187	1.312	1.312	11	11
			Chrysene (IS5)	1.553	1.487	1.487	4	4
			Benzo(a)pyrene (IS6)	1.619	1.674	1.674	3	3

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A2b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd Reviewer SM

METHOD: GC/MS Semivolatiles (EPA Method 8270D)

The percent recoveries (%R) of surrogate compounds were recalculated for the compounds identified below using the following calculation:

%Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: (

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Fluoranthene-d10	33.22	32.69	98	98	0
Benzo(a)pyrene-d12	↓	35.32	106	106	0
1-Methylnaphthalene-d10		28.74	87	87	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Fluoranthene-d10					
Benzo(a)pyrene-d12					
1-Methylnaphthalene-d10					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Fluoranthene-d10					
Benzo(a)pyrene-d12					
1-Methylnaphthalene-d10					

LDC #: 32030A25

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 7/8

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene	33.22	33.22	0	35.02	33.33	105	105	100	100	5	5
Pentachlorophenol											
Pyrene	33.22	33.22	0	31.1	30.27	94	94	91	91	3	3

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A26

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270~~C~~) D

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA

Where: SSC = Spike concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 142LDLCS

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene	33.33	-	35.04	-	105	105	-	-	-	-
Pentachlorophenol										
Pyrene	33.33	-	32.97	-	99	99	-	-	-	-

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A26

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS BNA (EPA SW 846 Method 8270C) D

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 5 (1), S:

S = 0.73

Conc. = $\frac{(5049)(1.00)(1000)(\quad)(\quad)}{(196943)(1.222)(30.1)(0.96)(\quad)}$

= 0.725847929 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 19, 2014

LDC Report Date: July 10, 2014

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH185

Sample Identification

SL-534-SA8-TR-0.5
SL-534-SA8-TR-5.0
SL-548-SA8-TR-0.5
SL-848-SA8-TR-5.0
SL-548-SA8-TR-5.0
SL-548-SA8-TR-10.0
SL-548-SA8-TR-5.0MS
SL-548-SA8-TR-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample EB3-052214 (from SDG PH195) was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

Sample FB-052114 (from SDG PH191) was identified as a field blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

All target compound identifications were within validation criteria.

XIII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH185	All compounds reported below the RL.	J (all detects)	A

XIV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples SL-848-SA8-TR-5.0 and SL-548-SA8-TR-5.0 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Data Qualification Summary - SDG PH185

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

LDC #: 32030A3b **VALIDATION COMPLETENESS WORKSHEET** Date: 7/2/14
SDG #: PH185 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/19/14
II.	GC Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20%
IV.	Continuing calibration/ICV	A	ICV ≤ 20%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	A	
XIII.	Compound quantitation/RL/LOQ/LODs	A	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	ND	FD = ~~3~~ 4 + 5
XVI.	Field blanks	ND	EB = EB3-052214 (SDG # PH185) FB = FB-052114 (SDG # PH191)

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Soil

1	SL-534-SA8-TR-0.5	11		21		31	PBLK07142
2	SL-534-SA8-TR-5.0	12		22		32	
3	SL-548-SA8-TR-0.5	13		23		33	
4	SL-848-SA8-TR-5.0	14		24		34	
5	SL-548-SA8-TR-5.0	15		25		35	
6	SL-548-SA8-TR-10.0	16		26		36	
7	SL-548-SA8-TR-5.0MS	17		27		37	
8	SL-548-SA8-TR-5.0MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 32030A36

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: SM

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/ECD Instrument performance check				
Was the instrument performance found to be acceptable?			✓	
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
Were the required standard concentrations analyzed in the initial calibration?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or ___ %R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis?			✓	
Were endrin and 4,4'-DDT breakdowns ≤ 15%.0 for individual breakdown in the Evaluation mix standards?			✓	
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recovieries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Were extract cleanup blanks analyzed with every batch requiring clean-up?			✓	
Was there contamination in the method blanks or clean-up blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	

Validation Area	Yes	No	NA	Findings/Comments
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC#: 32030A3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC PCBs (EPA SW 846 Method 8082A)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (500 std)	Recalculated CF (500 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 19843A	5/20/2014	PCB1260-1 (ZB-MultiR1)	2229	2229	2342	2342	8	8
			PCB1260-1 (ZB-MultiR2I)	2627	2627	2871	2871	11	11

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 32030A3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC PCBs (EPA SW 846 Method 8082)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Conc	Reported Conc (CCV)	Recalculated Conc (CCV)	Reported % D	Recalculated %D
1	AR163TW	5/25/2014 23:03	PCB1260 (ZB-MultiR1)	200	186.86	186.87	7	7
			PCB1260 (ZB-MultiR2)	200	189.43	189.42	5	5

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 32030A3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC PCBs (EPA SW 846 Method 8082)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Conc	Reported Conc (CCV)	Recalculated Conc (CCV)	Reported % D	Recalculated %D
1	AR163TX	5/26/2014 3:21	PCB1260 (ZB-MultiR1)	200	189.52	189.53	5	5
			PCB1260 (ZB-MultiR2)	200	191.84	191.84	4	4

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A3b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: SR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	MultiR2	10.1	9.493668	94	94	0
Decachlorobiphenyl	MultiR1	10.2	10.39493	102	102	0
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID: _____

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes: _____

LDC #: 32030A36

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Concentration

RPD = I MS - MSD I * 2/(MS + MSD)

MS = Matrix spike percent recovery; MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 7|8

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
gamma-BHC											
4,4'-DDT											
Aroclor 1260	167	167	0	169.33	169.83	101	101	102	102	0	0

Comments: Refer ot Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030 &36

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS07K12

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC										
4,4'-DDT										
Aroclor 1260	167	-	170.3	-	102	102	-	-	-	-

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A2b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

LCS07142
2B Multi_R2

Aroclor 1260-1 = $\frac{(1416560)(10)}{(2871)(30)}$ ~~191.84~~

= 164.4676652

1260-2 = 167.935444

1260-3 = 164.279954

1260-4 = 171.571332

1260-5 = 181.996657

1260-6 = 169.543034

Average = 170.2990144

Example:

Sample I.D. #11 WD:

Conc. = _____

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Note: _____

RECALC.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 19, 2014

LDC Report Date: July 18, 2014

Matrix: Soil

Parameters: Metals

Validation Level: Level IV

Laboratory: Euorfins Lancaster Laboratories

Sample Delivery Group (SDG): PH185

Sample Identification

SL-534-SA8-TR-0.5
SL-534-SA8-TR-5.0
SL-548-SA8-TR-0.5
SL-848-SA8-TR-5.0
SL-548-SA8-TR-5.0
SL-548-SA8-TR-10.0
SL-548-SA8-TR-5.0MS
SL-548-SA8-TR-5.0MSD
SL-548-SA8-TR-5.0DUP

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C, 6020A, and 7471B for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Molybdenum, Manganese, Mercury, Nickel, Phosphorus, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, and Zirconium.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium Zinc Tin	7.84 mg/Kg 0.461 mg/Kg 1.46 mg/Kg	All samples in SDG PH185
ICB/CCB	Aluminum Arsenic Barium Calcium Magnesium Manganese Titanium	923 ug/L 5.2 ug/L 0.76 ug/L 1110 ug/L 638 ug/L 1.6 ug/L 4.2 ug/L	All samples in SDG PH185
ICB/CCB	Iron	750 ug/L	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-10.0

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-534-SA8-TR-0.5	Tin	3.09 mg/Kg	3.09U mg/Kg
SL-534-SA8-TR-5.0	Arsenic Tin	1.33 mg/Kg 3.09 mg/Kg	1.33U mg/Kg 3.09U mg/Kg
SL-548-SA8-TR-0.5	Tin	3.13 mg/Kg	3.13U mg/Kg
SL-848-SA8-TR-5.0	Tin	3.31 mg/Kg	3.31 mg/Kg
SL-548-SA8-TR-5.0	Tin	3.34 mg/Kg	3.34U mg/Kg
SL-548-SA8-TR-10.0	Tin	3.24 mg/Kg	3.24U mg/Kg

Sample EB3-052214 (from SDG PH195) was identified as an equipment blank . No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB3-052214	5/22/14	Calcium Manganese Zirconium Strontium	0.150 mg/L 0.00090 mg/L 0.0108 mg/L 0.00046 mg/L	All samples in SDG PH185

Sample FB-052114 (from SDG PH191) was identified as a field blank . No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-052114	5/21/14	Zirconium	0.0110 mg/L	All samples in SDG PH185

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
SL-534-SA8-TR-0.5	Zirconium	4.00 mg/Kg	4.00U mg/Kg
SL-534-SA8-TR-5.0	Zirconium	3.99 mg/Kg	3.99U mg/Kg
SL-548-SA8-TR-10.0	Zirconium	5.45 mg/Kg	5.45U mg/Kg

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-548-SA8-TR-5.0MS/MSD (All samples in SDG PH185)	Antimony Cadmium Lead Calcium	41 (75-125) - 72 (75-125) -	34 (75-125) 74 (75-125) - -	- - - 81 (≤20)	J (all detects) UJ (all non-detects)	A
SL-548-SA8-TR-5.0MS/MSD (All samples in SDG PH185)	Potassium	126 (75-125)	164 (75-125)	-	J (all detects)	A

For SL-548-SA8-TR-5.0MS/MSD, no data were qualified for Aluminum, Calcium, Iron, Magnesium, Strontium, and Titanium percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
SL-548-SA8-TR-5.0DUP (All samples in SDG PH185)	Calcium Cobalt Manganese	77 (≤20) 24 (≤20) 30 (≤20)	- - -	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

X. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-548-SA8-TR-5.0	Nickel	13 (≤10)	All samples in SDG PH185	J (all detects) UJ (all non-detects)	A

XI. Sample Result Verification

All sample result verifications were acceptable.

All metals reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG PH185	All analytes reported below the RL and above the MDL.	J (all detects)	A

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples SL-848-SA8-TR-5.0 and SL-548-SA8-TR-5.0 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-848-SA8-TR-5.0	SL-548-SA8-TR-5.0			
Aluminum	27300	29100	6 (≤50)	-	-
Arsenic	2.99	2.92	2 (≤50)	-	-
Barium	112	123	9 (≤50)	-	-
Beryllium	0.873	1.00	14 (≤50)	-	-
Boron	12.9	12.6	2 (≤50)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-848-SA8-TR-5.0	SL-548-SA8-TR-5.0			
Calcium	46300	18000	88 (≤50)	J (all detects)	A
Chromium	33.0	35.4	7 (≤50)	-	-
Cobalt	7.31	7.01	4 (≤50)	-	-
Copper	17.6	19.1	8 (≤50)	-	-
Iron	29300	31900	8 (≤50)	-	-
Lead	11.3	13.1	15 (≤50)	-	-
Lithium	24.5	26.2	7 (≤50)	-	-
Magnesium	6420	7090	10 (≤50)	-	-
Manganese	260	261	0 (≤50)	-	-
Mercury	0.0125	0.0127	2 (≤50)	-	-
Nickel	15.5	17.1	10 (≤50)	-	-
Phosphorus	239	240	0 (≤50)	-	-
Potassium	2600	2740	5 (≤50)	-	-
Tin	3.31	3.34	1 (≤50)	-	-
Titanium	1020	1020	0 (≤50)	-	-
Strontium	53.9	47.7	12 (≤50)	-	-
Silver	0.0509	0.0496	3 (≤50)	-	-
Sodium	154	163	6 (≤50)	-	-
Thallium	0.322	0.316	2 (≤50)	-	-
Vanadium	57.9	61.7	6 (≤50)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	SL-848-SA8-TR-5.0	SL-548-SA8-TR-5.0			
Zinc	58.8	64.4	9 (≤50)	-	-
Zirconium	5.60	6.04	8 (≤50)	-	-

Santa Susana Field Laboratory
Metals - Data Qualification Summary - SDG PH185

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Antimony Cadmium Lead	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(Q)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Calcium	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)(E)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Potassium	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(Q)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Calcium Cobalt Manganese	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)(E)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Nickel	J (all detects) UJ (all non-detects)	A	ICP serial dilution (%D) (A)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (Z)
PH185	SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0	Calcium	J (all detects)	A	Field duplicates (FD)

Santa Susana Field Laboratory
Metals - Laboratory Blank Data Qualification Summary - SDG PH185

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH185	SL-534-SA8-TR-0.5	Tin	3.09U mg/Kg	A	B
PH185	SL-534-SA8-TR-5.0	Arsenic Tin	1.33U mg/Kg 3.09U mg/Kg	A	B
PH185	SL-548-SA8-TR-0.5	Tin	3.13U mg/Kg	A	B
PH185	SL-848-SA8-TR-5.0	Tin	3.31 mg/Kg	A	B
PH185	SL-548-SA8-TR-5.0	Tin	3.34U mg/Kg	A	B
PH185	SL-548-SA8-TR-10.0	Tin	3.24U mg/Kg	A	B

Santa Susana Field Laboratory
Metals - Field Blank Data Qualification Summary - SDG PH185

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH185	SL-534-SA8-TR-0.5	Zirconium	4.00U mg/Kg	A	F
PH185	SL-534-SA8-TR-5.0	Zirconium	3.99U mg/Kg	A	F
PH185	SL-548-SA8-TR-10.0	Zirconium	5.45U mg/Kg	A	F

LDC #: 32030A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 06/26/14

SDG #: PH185 Level IV Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: JO

2nd Reviewer: CR

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 05/19/14
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	SW	MS/D (7.8)
VII.	Duplicate Sample Analysis	SW	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	A	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	
XII.	Sample Result Verification	A	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	~~A~~ SW	FD = 4,5
XV	Field Blanks	SW	EB = EB3-052214 (SDG: PH195), FB = FB-052114 (SDG: PH191)

Note: A = Acceptable; ND = No compounds detected; D = Duplicate
N = Not provided/applicable; R = Rinsate; TB = Trip blank
SW = See worksheet; FB = Field blank; EB = Equipment blank

Validated Samples: Soils

1	SL-534-SA8-TR-0.5	11		21		31	
2	SL-534-SA8-TR-5.0	12		22		32	
3	SL-548-SA8-TR-0.5	13		23		33	
4	SL-848-SA8-TR-5.0	14		24		34	
5	SL-548-SA8-TR-5.0	15		25		35	
6	SL-548-SA8-TR-10.0	16		26		36	
7	SL-548-SA8-TR-5.0MS	17		27		37	
8	SL-548-SA8-TR-5.0MSD	18		28		38	
9	SL-548-SA8-TR-5.0DUP	19		29		39	
10		20		30		40	

Notes: _____

DC #: 320304

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: CN

Method: Metals (EPA SW 846 Method 6010/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients > 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.		✓		
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

DC #: 32030A4

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: CL

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?		/		
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		/		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	/		/ SM	
Target analytes were detected in the field duplicates.	/		/ SM	
XIII. Field blanks				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: [signature]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC:7-9	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JO
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010C/6020A/7471B) Soil preparation factor applied: 100x

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: All (Reason: B)

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level (mg/kg)	Sample Identification 1	2	3	4	5	6					
Al			923	461.5											
As			5.2	2.6		1.33									
Ba			0.76	0.38											
Ca	7.837		1110	555											
Mg			638	319											
Mn			1.6	0.8											
Ti			4.2	2.1											
Zn	0.461			2.305											
Sn	1.455			7.275	3.09	3.08	3.13	3.31	3.34	3.24					

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1, 2, 6 (Reason: B)

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level (mg/kg)	Sample Identification 1	2	3	4	5	6					
					~~1~~ NO Quals	~~2~~	3	4	5	~~6~~ a					
Fe			750	375											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JD
2nd Reviewer: DR

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 05/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All (Reason: F)

Analyte	Blank ID	Sample Identification											
	EB3-052214	Action Limit (mg/kg)	1	2									
Ca	0.150	75											
Mn	0.00090	0.45											
Zr	0.0108	5.4	4.00	3.99									
Sr	0.00046	0.23											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JO
2nd Reviewer: 2

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 05/21/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All (Reason F)

Analyte	Blank ID	Sample Identification										
	FB-052114	Action Limit (mg/kg)	1	2	6							
Zr	0.0110	5.5	4.00	3.99	5.45							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JO
2nd Reviewer: 02

METHOD: Trace metals (EPA SW 846 Method 6010C/6020A/7471B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	7/8	S	Sb	41	34		All	J/UJ/A (Reason: Q)
			Cd		74		All	J/UJ/A (Reason: Q)
			Pb	72			All	J/UJ/A (Reason: Q)
			K	126	164		All	Jdet/A (Reason: Q)
			Ca			81	All	J/UJ/A (Reason: Q) E

Comments: Al, Ca, Fe, Mg, Sr, Ti > 4X

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Reviewer: SD
2nd Reviewer: a

METHOD: Trace Metals (EPA SW 846 Method 601C0/6020A/7471B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤ 20% for soil samples? If no, see qualifications below. A control limit of ±R.L. (±2X R.L. for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values was <5X R.L.. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (≤ 20%)	Difference (Limits)	Associated Samples	Qualifications
		9	S	Ca	77		All	J/UJ/A (Reason:E)
				Co	24		All	J/UJ/A (Reason:E)
				Mn	30		All	J/UJ/A (Reason:E)

Comments: Cd, Ag ok by difference

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Reviewer: SD
2nd Reviewer: [signature]

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A If analyte concentrations were > 50X the MDL (ICP) ,or >100X the MDL (ICP/MS), was a serial dilution analyzed?
Y (N) N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y (N) N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Diluted Sample ID	Matrix	Analyte	%D (Limits)	Associated Samples	Qualifications
	5	S	Ni	13	All	J/UJ/A (Reason: A)

Comments:

LDC#: 32030A4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: SD
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010C/6020A/7471B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg) 4	Concentration (mg/Kg) 5	RPD (≤50)	Parent Only
Aluminum	27300	29100	6	
Arsenic	2.99	2.92	2	
Barium	112	123	9	
Beryllium	0.873	1.00~~U~~	~~200~~ 14	~~[illegible]~~ sm
Boron	12.9	12.6	2	
Calcium	46300	18000	88	Jdet/A ~~J/UJ~~/A
Chromium	33.0	35.4	7	
Cobalt	7.31	7.01	4	
Copper	17.6	19.1	8	
Iron	29300	31900	8	
Lead	11.3	13.1	15	
Lithium	24.5	26.2	7	
Magnesium	6420	7090	10	
Manganese	260	261	0	
Mercury	0.0125	0.0127	2	
Nickel	15.5	17.1	10	
Phosphorus	239	240	0	
Potassium	2600	2740	5	
Tin	3.31	3.34	1	

LDC#: 32030A4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SD
2nd Reviewer: CV

METHOD: Metals (EPA Method 6010C/6020A/7471B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Parent Only
	4	5		
Titanium	1020	1020	0	
Strontium	53.9	47.7	12	
Silver	0.0509	0.0496	3	
Sodium	154	163	6	
Thallium	0.322	~~0.277~~ 0.316	~~15~~ 2 SW	
Vanadium	57.9	61.7	6	
Zinc	58.8	64.4	9	
Zirconium	5.60	6.04	8	

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: JD
2nd Reviewer: DR

METHOD: Trace Metals (EPA SW 846 Method ~~6010/6020/7000~~ 6010C/6020A/7471B)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS (8:33)	ICP interference check	Co	449.36ug/L	500ug/L	89.9%R	89.9%R	Y
LCS (8:48)	Laboratory control sample	Ba	208,600ug/L	200,000ug/L	104%R	104%R	Y
MS (9:03)	Matrix spike	Cu	(SSR-SR) 25.4019mg/kg	24.5098mg/kg	104%R	104%R	Y
Dup (8:59)	Duplicate	Cr	29.8416mg/kg	30.6275mg/kg	3%RPD	3%RPD	Y
Ser (9:11)	ICP serial dilution	Al	264,847.99mg/kg	251,382.33mg/kg	5%D	5%D	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: JD
2nd Reviewer: DR

METHOD: Trace Metals (EPA SW 846 Method ~~6010/6020/7000~~ 6020A 6010C/~~6020A~~/7471B)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
ICV 8:14	ICP (Initial calibration)	Pb	587.08	600.0	97.8%	97.8%	Y
ICV 6:02	ICP/MS (Initial calibration)	Se	52.71	50.0	105.4%	105.4%	Y
ICV 08:22	CVAA (Initial calibration)	Hg	2.439	2.5	97.6%	97.6%	Y
CCV 9:22	ICP (Continuing calibration)	Mn	510.57	500.0	102.1%	102.1%	Y
CCV 6:42	ICP/MS (Continuing calibration)	Ag	26.02	25	104.1%	104.1%	Y
CCV 8:53	CVAA (Continuing calibration)	Hg	1.0617	1.0	106%	106%	Y
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JD
2nd reviewer: CN

6010C/6020A/7471B

METHOD: Trace Metals (EPA SW 846 Method ~~6010/6020/7000~~)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for V (1) were recalculated and verified using the following equation:

Concentration = $\left(\frac{(RD)(FV)(Dil)}{(In.\ Vol.)} \Big/ \%Solid\right)$ %solid = 95.8

RD = Raw data concentration RD = 0.40046 ppm
FV = Final volume (ml) FV = 100 ml
In. Vol. = Initial volume (ml) or weight (G) In W. = 1.0 g
Dil = Dilution factor D:1=1

Recalculation:

$$\frac{(0.40046\ mg/L)(100\ ml)}{(1.01\ g)} = 39.6495\ mg/kg$$

$$\frac{39.6495\ mg/kg}{95.8\%} = 41.4\ mg/l$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	V	41.4	41.4	Y
	2	Zn	51.2	51.2	Y
	3	K	5930	5930	Y
	4	Na	154	154	Y
	5	Tl	0.32	0.32	Y
	6	Cu	14.7	14.7	Y

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 19, 2014

LDC Report Date: July 10, 2014

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH185

Sample Identification

SL-534-SA8-TR-5.0
SL-548-SA8-TR-5.0
SL-548-SA8-TR-10.0
TB2-051914
SL-548-SA8-TR-5.0MS
SL-548-SA8-TR-5.0MSD
SL-848-SA8-TR-5.0

Introduction

This data review covers 6 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample TB2-051914 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample EB3-052214 (from SDG PH195) was identified as an equipment blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample FB-052114 (from SDG PH191) was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH185	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-548-SA8-TR-5.0 and SL-848-SA8-TR-5.0 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG PH185

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH185	SL-534-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0 TB2-051914 SL-848-SA8-TR-5.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

LDC #: 32030A7 **VALIDATION COMPLETENESS WORKSHEET** Date: 7/2/14
SDG #: PH185 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: KK
2nd Reviewer: SM

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/19/14
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	1 w 1 CCV ≤ 20?
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	FD = 2 + 7
XIII.	Field blanks	ND	TB = 4 EB = EB3-052214 (SDG # PH185) FB = FB-052114 (SDG # PH191)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil + Water

1	SL-534-SA8-TR-5.0	11		21		31	BLKVB
2	SL-548-SA8-TR-5.0	12		22		32	BLKVF
3	SL-548-SA8-TR-10.0	13		23		33	
4	TB2-051914	14		24		34	
5	SL-548-SA8-TR-5.0MS	15		25		35	
6	SL-548-SA8-TR-5.0MSD	16		26		36	
7	SL-548-SA8-TR-5.0	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 32030A7

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: x GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (550 std)	Recalculated CF (550 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 11379F J&W DB-MTB	9/27/2013	GRO	53902	53902	55635	55635	4	4

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (550 std)	Recalculated CF (550 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 16394F Restek VRX	10/8/2013	GRO	28604	28604	28046	28046	6	6

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC_____HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	SGCKXWQ	5/21/2014 16:23	GRO	220.04	218.86	218.86	1	1
2	WGCCXXU	5/27/2014 10:10	GRO	1100.20	1060.10	1060.10	4	4
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: X **GC** __ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Trifluorotoluene-F	DB-MTB	721.2	610.7/25	85	85	0

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: SR
2nd Reviewer: SM

METHOD: X **GC** __**HPLC**

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 516

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	9.03	9.70	0	7.26	8.46	80	80	87	87	15	15
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SM

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCSA7

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	11	-	8.85	-	80	80	-	-	-	-
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. All Compound Name NJD

#5MS = 8.4

Concentration = $\frac{(22521050 - 2851029)(5)(25)}{(55635)(6.09)(100)(8.865)}$

= 8.389447181 mg/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 19, 2014

LDC Report Date: July 18, 2014

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH185

Sample Identification

SL-534-SA8-TR-0.5
SL-534-SA8-TR-5.0
SL-548-SA8-TR-0.5
SL-848-SA8-TR-5.0
SL-548-SA8-TR-5.0
SL-548-SA8-TR-10.0
SL-534-SA8-TR-0.5(SGCU)
SL-534-SA8-TR-5.0(SGCU)
SL-548-SA8-TR-0.5(SGCU)
SL-848-SA8-TR-5.0(SGCU)
SL-548-SA8-TR-5.0(SGCU)
SL-548-SA8-TR-10.0(SGCU)
SL-548-SA8-TR-5.0MS
SL-548-SA8-TR-5.0MSD
SL-548-SA8-TR-5.0 MS(SGCU)
SL-548-SA8-TR-5.0 MSD(SGCU)

Samples appended with SGCU underwent Silica Gel cleanup

Introduction

This data review covers 16 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

Sample EB3-052214 (from SDG PH195) was identified as an equipment blank. No total petroleum hydrocarbons as extractable contaminants were found.

Sample FB-052114 (from SDG PH191) was identified as a field blank. No total petroleum hydrocarbons as extractable contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
SL-548-SA8-TR-0.5(SGCU)	ZB-5	Ortho-Terphenyl	61 (66-123)	All TCL compounds	J (all detects) UJ (all non-detects)	A
SL-848-SA8-TR-5.0(SGCU)	ZB-5	Ortho-Terphenyl	52 (66-123)	All TCL compounds	J (all detects) UJ (all non-detects)	A

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
SL-548-SA8-TR-5.0(SGCU)	ZB-5	Ortho-Terphenyl	64 (66-123)	All TCL compounds	J (all detects) UJ (all non-detects)	A
SL-548-SA8-TR-10.0(SGCU)	ZB-5	Ortho-Terphenyl	51 (66-123)	All TCL compounds	J (all detects) UJ (all non-detects)	A

VI. Matrix Spike/Matrix Spike Duplicates/Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
SL-548-SA8-TR-5.0MS/MSD (SL-548-SA8-TR-5.0)	Extractable fuel hydrocarbons (C30-C40)	-	-	42 (≤20)	J (all detects)	A

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
LCS 16141	Extractable fuel hydrocarbons (C12-C14)	117 (76-115)	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	J (all detects)	P
LCS 17141	Extractable fuel hydrocarbons (C8-C11) Extractable fuel hydrocarbons (C12-C14) Extractable fuel hydrocarbons (C15-C20) Extractable fuel hydrocarbons (C21-C30)	57 (60-115) 71 (76-115) 74 (78-127) 73 (77-127)	SL-534-SA8-TR-0.5(SGCU) SL-534-SA8-TR-5.0(SGCU) SL-548-SA8-TR-0.5(SGCU) SL-848-SA8-TR-5.0(SGCU) SL-548-SA8-TR-5.0(SGCU) SL-548-SA8-TR-10.0(SGCU)	J (all detects) UJ (all non-detects)	P

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH185	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples SL-848-SA8-TR-5.0 and SL-548-SA8-TR-5.0 and samples SL-848-SA8-TR-5.0(SGCU) and SL-548-SA8-TR-5.0(SGCU) were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	SL-848-SA8-TR-5.0	SL-548-SA8-TR-5.0			
Extractable fuel hydrocarbons (C21-C30)	2.9	5.8U	200 (≤50)	J (all detects) UJ (all non-detects)	A
Extractable fuel hydrocarbons (C30-C40)	15	12U	200 (≤50)	J (all detects) UJ (all non-detects)	A

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG PH185

SDG	Sample	Compound	Flag	A or P	Reason (Codes)
PH185	SL-548-SA8-TR-0.5(SGCU) SL-848-SA8-TR-5.0(SGCU) SL-548-SA8-TR-5.0(SGCU) SL-548-SA8-TR-10.0(SGCU)	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate recovery (%R) (S)
PH185	SL-548-SA8-TR-5.0	Extractable fuel hydrocarbons (C30-C40)	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	Extractable fuel hydrocarbons (C12-C14)	J (all detects)	P	Laboratory control samples (%R) (L)
PH185	SL-534-SA8-TR-0.5(SGCU) SL-534-SA8-TR-5.0(SGCU) SL-548-SA8-TR-0.5(SGCU) SL-848-SA8-TR-5.0(SGCU) SL-548-SA8-TR-5.0(SGCU) SL-548-SA8-TR-10.0(SGCU)	Extractable fuel hydrocarbons (C8-C11) Extractable fuel hydrocarbons (C12-C14) Extractable fuel hydrocarbons (C15-C20) Extractable fuel hydrocarbons (C21-C30)	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0 SL-534-SA8-TR-0.5(SGCU) SL-534-SA8-TR-5.0(SGCU) SL-548-SA8-TR-0.5(SGCU) SL-848-SA8-TR-5.0(SGCU) SL-548-SA8-TR-5.0(SGCU) SL-548-SA8-TR-10.0(SGCU)	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH185	SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0	Extractable fuel hydrocarbons (C21-C30) Extractable fuel hydrocarbons (C30-C40)	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

LDC #: 32030A8 **VALIDATION COMPLETENESS WORKSHEET** Date: 7/2/14
SDG #: PH185 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: KR
2nd Reviewer: SM

METHOD: GC TPH as Extractables (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/19/14
II	Initial calibration	A	RSD ≤20?
III.	Calibration verification/ICV	A	ICV/CCV ≤20?
IV.	Blanks	A	
V	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	SW	LCS
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	FD = 4+5, 10+11 9
XIII.	Field blanks	ND	EB = EB3-052214 (SDG # PH185) FB = FB-052114 (SDG # PH191)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:** Indicates sample underwent Level IV validation

1	SL-534-SA8-TR-0.5 S (Soil)	11	SL-548-SA8-TR-5.0(SGCU)	21		31	PBLK16141
2	SL-534-SA8-TR-5.0	12	SL-548-SA8-TR-10.0(SGCU)	22		32	PBLK17141
3	SL-548-SA8-TR-0.5	13	SL-548-SA8-TR-5.0MS	23		33	
4	SL-848-SA8-TR-5.0	14	SL-548-SA8-TR-5.0MSD	24		34	
5	SL-548-SA8-TR-5.0	15	SL-548-SA8-TR-5.0(SGCU) MS	25		35	
6	SL-548-SA8-TR-10.0	16	SL-548-SA8-TR-5.0(SGCU) MSD	26		36	
7	SL-534-SA8-TR-0.5(SGCU)	17		27		37	
8	SL-534-SA8-TR-5.0(SGCU)	18		28		38	
9	SL-548-SA8-TR-0.5(SGCU)	19		29		39	
10	SL-848-SA8-TR-5.0(SGCU)	20		30		40	

Notes: Samples appended with SGCU underwent Silica Gel Cleanup

LDC #: 32030A8

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: X GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?		✓		
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	✓			
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 32030A8

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SW

METHOD: X **GC** ___ **HPLC**

Are surrogates required by the method? Yes X or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications (Vol. 5)
	~~10~~ 9	~~ZB-5~~	H	61 (66-123)	J | UJ | A
				( )	
				( )	
	10	ZB-5	H	52 ( )	
				( )	
				( )	
	11	ZB-5	H	64 ( )	
				( )	
				( )	
	12	ZB-5	H	51 ( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C`	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	1-Chlorooctadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-DCAA
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 32030A8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	13 | 14	EFH (C30-C40)	( )	( )	42 (20)	5	J det | A (Q)
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 32030A8

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

(Y) N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Code: L Qualifications
	LCS16141	EPH(C12-C24)	117 (76-115)	( )	( )	1-6	J det / P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
	LCS17141	EPH(C8-C11)*	57 (60-115)	( )	( )	7-12	J / UJ / P
		EPH(C12-C14)*	71 (76-115)	( )	( )		↓
		EPH(C15-C20)*	74 (78-127)	( )	( )		
		EPH(C21-C30)*	73 (77-127)	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
		* with Silica Gel	( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 3203048

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BR
2nd reviewer: SM

METHOD: X GC ___ HPLC
Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (µg/kg)		%RPD Limit 50?	Qualification
	4	5		Parent only / All Samples
EFH (C21-C30)	2.9	5.8 U	200	J/UJ/A } Lab (FD)
EFH (C30-C40)	15	12 U	200	J/UJ/A } Lab (FD)

Compound	Concentration ( )		%RPD Limit_____	Qualification
				Parent only / All Samples

Compound	Concentration ( )		%RPD Limit_____	Qualification
				Parent only / All Samples

Compound	Concentration ( )		%RPD Limit_____	Qualification
				Parent only / All Samples

LDC #: 32030A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (144 std)	Recalculated CF (144 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CP23-19879A ZB-5	5/5/2014	C8-C40	22555	22555	23612	23612	7%	7%

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (144 std)	Recalculated CF (144 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL CP23-19879B	5/5/2014	C8-C40	24233	24233	24315	24315	11%	11%

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC_____HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	TPH_3RW	5/23/2014 16:39	C8-C40	288.01	272.59	272.59	5	5
2	TPH_3SA	5/23/2014 16:39	C8-C40	288.01	278.01	278.01	3	3
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32038A8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: SM

METHOD: X GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Chlorobenzene	ZB-5	2.00	1.811911	91	91	0
Orthoterphenyl	↓	↓	2.049446	102	102	0

Sample ID: 7

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Chlorobenzene	ZB-5	2.00	1.341505	67	67	0
Orthoterphenyl	↓	↓	1.502149	75	75	0

Sample ID: ___

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 32030A8

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: B14

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
~~EH~~ (C8-C11)	5.02	5.02	0	4.52	4.44	90	90	88	88	2	1.8

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32038A8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: SM

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS71141

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
EFH C8-C11 (GW/Si. gel)	5.02	—	2-86	—	57	57	—	—	—	—

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: X GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 1 Compound Name EFH C30-C40

Concentration = $\frac{(7301450)(1000)}{(23612)(30)(0.958)(1000)}$

$= 10.759743775$

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 19, 2014

LDC Report Date: July 18, 2014

Matrix: Soil

Parameters: Dioxins/Dibenzofurans

Validation Level: Level IV

Laboratory: Eurofins Lancaster Laboratories

Sample Delivery Group (SDG): PH185

Sample Identification

SL-534-SA8-TR-0.5
SL-534-SA8-TR-5.0
SL-548-SA8-TR-0.5
SL-848-SA8-TR-5.0
SL-548-SA8-TR-5.0
SL-548-SA8-TR-10.0
SL-548-SA8-TR-5.0MS
SL-548-SA8-TR-5.0MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1613B for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 35.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio was greater than or equal to 2.5 for target compounds and 10 for recovery and internal standard compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration results were within the QC limits for unlabeled compounds and labeled compounds.

The second source calibration standard results were within the QC limits for unlabeled compounds and labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
BLK147001	5/27/14	2,3,7,8-TCDD	0.0397 ng/Kg	All samples in SDG PH185
		1,2,3,6,7,8-HxCDD	0.0211 ng/Kg	
		1,2,3,7,8,9-HxCDD	0.0209 ng/Kg	
		1,2,3,4,6,7,8-HpCDD	0.0514 ng/Kg	
		OCDD	0.217 ng/Kg	
		1,2,3,7,8-PeCDF	0.0315 ng/Kg	
		2,3,4,7,8-PeCDF	0.0159 ng/Kg	
		1,2,3,4,7,8-HxCDF	0.0282 ng/Kg	
		1,2,3,6,7,8-HxCDF	0.0254 ng/Kg	
		2,3,4,6,7,8-HxCDF	0.0380 ng/Kg	
		1,2,3,7,8,9-HxCDF	0.0446 ng/Kg	
		1,2,3,4,6,7,8-HpCDF	0.0453 ng/Kg	
		1,2,3,4,7,8,9-HpCDF	0.0269 ng/Kg	
		OCDF	0.125 ng/Kg	

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-534-SA8-TR-0.5	1,2,3,7,8,9-HxCDD	0.100 ng/Kg	0.100U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0484 ng/Kg	0.0484U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0986 ng/Kg	0.0986U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0899 ng/Kg	0.0899U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0364 ng/Kg	0.0364U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0432 ng/Kg	0.0432U ng/Kg
	OCDF	0.424 ng/Kg	0.424U ng/Kg
SL-534-SA8-TR-5.0	1,2,3,6,7,8-HxCDD	0.0225 ng/Kg	0.0225U ng/Kg
	1,2,3,7,8,9-HxCDD	0.0190 ng/Kg	0.0190U ng/Kg
	1,2,3,7,8-PeCDF	0.0383 ng/Kg	0.0383U ng/Kg
	2,3,4,7,8-PeCDF	0.0197 ng/Kg	0.0197U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0412 ng/Kg	0.0412U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0238 ng/Kg	0.0238U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0478 ng/Kg	0.0478U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0200 ng/Kg	0.0200U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.217 ng/Kg	0.217U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0561 ng/Kg	0.0561U ng/Kg
SL-548-SA8-TR-0.5	1,2,3,7,8-PeCDF	0.148 ng/Kg	0.148U ng/Kg
	2,3,4,7,8-PeCDF	0.0525 ng/Kg	0.0525U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0505 ng/Kg	0.0505U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0533 ng/Kg	0.0533U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0448 ng/Kg	0.0448U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0502 ng/Kg	0.0502U ng/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
SL-848-SA8-TR-5.0	1,2,3,4,6,7,8-HpCDD	0.0786 ng/Kg	0.0786U ng/Kg
	OCDD	0.359 ng/Kg	0.359U ng/Kg
	1,2,3,7,8-PeCDF	0.0148 ng/Kg	0.0148U ng/Kg
	2,3,4,7,8-PeCDF	0.0260 ng/Kg	0.0260U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0172 ng/Kg	0.0172U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0235 ng/Kg	0.0235U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0438 ng/Kg	0.0438U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0246 ng/Kg	0.0246U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0695 ng/Kg	0.0695U ng/Kg
	OCDF	0.197 ng/Kg	0.197U ng/Kg
SL-548-SA8-TR-5.0	1,2,3,6,7,8-HxCDD	0.0290 ng/Kg	0.0290U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.111 ng/Kg	0.111U ng/Kg
	OCDD	0.434 ng/Kg	0.434U ng/Kg
	1,2,3,7,8-PeCDF	0.0686 ng/Kg	0.0686U ng/Kg
	2,3,478-PeCDF	0.0262 ng/Kg	0.0262U ng/Kg
	1,2,3,4,7,8-HxCDF	0.111 ng/Kg	0.111U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0637 ng/Kg	0.0637U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0428 ng/Kg	0.0428U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0470 ng/Kg	0.0470U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.209 ng/Kg	0.209U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0636 ng/Kg	0.0636U ng/Kg
	OCDF	0.559 ng/Kg	0.559U ng/Kg
SL-548-SA8-TR-10.0	2,3,7,8-TCDD	0.0380 ng/Kg	0.0380U ng/Kg
	1,2,3,6,7,8-HxCDD	0.0283 ng/Kg	0.0283U ng/Kg
	1,2,3,7,8,9-HxCDD	0.0296 ng/Kg	0.0296U ng/Kg
	1,2,3,7,8-PeCDF	0.107 ng/Kg	0.107U ng/Kg
	1,2,3,4,6,7,8-HpCDD	0.401 ng/Kg	0.401U ng/Kg
	OCDD	0.0948 ng/Kg	0.0948U ng/Kg
	2,3,4,7,8-PeCDF	0.0429 ng/Kg	0.0429U ng/Kg
	1,2,3,4,7,8-HxCDF	0.0303 ng/Kg	0.0303U ng/Kg
	1,2,3,6,7,8-HxCDF	0.0498 ng/Kg	0.0498U ng/Kg
	2,3,4,6,7,8-HxCDF	0.0348 ng/Kg	0.0348U ng/Kg
	1,2,3,7,8,9-HxCDF	0.0188 ng/Kg	0.0188U ng/Kg
	1,2,3,4,6,7,8-HpCDF	0.0422 ng/Kg	0.0422U ng/Kg
	1,2,3,4,7,8,9-HpCDF	0.0297 ng/Kg	0.0297U ng/Kg
	OCDF	0.154 ng/Kg	0.154U ng/Kg

Sample EB3-052214 (from SDG PH195) was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB3-052214	5/22/14	1,2,3,4,6,7,8-HpCDD	0.865 pg/L	All samples in SDG PH185
		OCDD	9.68 pg/L	
		2,3,7,8-TCDF	0.203 pg/L	
		1,2,3,7,8-PeCDF	0.289 pg/L	
		2,3,4,6,7,8-HxCDF	0.192 pg/L	
		1,2,3,4,6,7,8-HpCDF	0.177 pg/L	
		1,2,3,4,7,8,9-HpCDF	0.106 pg/L	
		OCDF	1.11 pg/L	

Sample FB-052114 (FROM SDG PH191) was identified as a rinsate. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB-052114	5/21/14	1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF 1,2,3,4,7,8,9-HpCDF OCDF	1.23 pg/L 6.37 pg/L 0.333 pg/L 0.108 pg/L 0.188 pg/L 0.182 pg/L 0.176 pg/L 0.328 pg/L 0.531 pg/L	All samples in SDG PH185

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within the QC limits.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries (%R) were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH185	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SL-848-SA8-TR-5.0 and SL-548-SA8-TR-5.0 were identified as field duplicates. No polychlorinated dioxins/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (ng/Kg)		RPD (Limits)	Flag	A or P
	SL-848-SA8-TR-5.0	SL-548-SA8-TR-5.0			
1,2,3,7,8-PeCDD	5.59U	0.0232	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,4,7,8-HxCDD	0.0245	0.0310	23 (≤50)	-	-
1,2,3,6,7,8-HxCDD	5.59U	0.0290	200 (≤50)	J (all detects) UJ (all non-detects)	A
1,2,3,4,6,7,8-HpCDD	0.0786	0.111	34 (≤50)	-	-
OCDD	0.359	0.434	19 (≤50)	-	-
1,2,3,7,8-PeCDF	0.0148	0.0686	129 (≤50)	J (all detects)	A
2,3,4,7,8-PeCDF	0.0260	0.0262	1 (≤50)	-	-
1,2,3,4,7,8-HxCDF	0.0172	0.111	146 (≤50)	J (all detects)	A
1,2,3,6,7,8-HxCDF	5.59U	0.0637	200 (≤50)	J (all detects) UJ (all non-detects)	A
2,3,4,6,7,8-HxCDF	0.0235	0.0428	58 (≤50)	J (all detects)	A
1,2,3,7,8,9-HxCDF	0.0438	0.0470	7 (≤50)	-	-
1,2,3,4,6,7,8-HpCDF	0.0246	0.209	158 (≤50)	J (all detects)	A
1,2,3,4,7,8,9-HpCDF	0.0695	0.0636	9 (≤50)	-	-
OCDF	0.197	0.559	96 (≤50)	J (all detects)	A

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Data Qualification Summary - SDG PH185

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
PH185	SL-534-SA8-TR-0.5 SL-534-SA8-TR-5.0 SL-548-SA8-TR-0.5 SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0 SL-548-SA8-TR-10.0	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)
PH185	SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0	1,2,3,7,8-PeCDD 1,2,3,6,7,8-HxCDD 1,2,3,6,7,8-HxCDF	J (all detects) UJ (all non-detects)	A	Field duplicates (RPD) (FD)
PH185	SL-848-SA8-TR-5.0 SL-548-SA8-TR-5.0	1,2,3,7,8-PeCDF 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF OCDF	J (all detects)	A	Field duplicates (RPD) (FD)

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG PH185

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH185	SL-534-SA8-TR-0.5	1,2,3,7,8,9-HxCDD 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.100U ng/Kg 0.0484U ng/Kg 0.0986U ng/Kg 0.0899U ng/Kg 0.0364U ng/Kg 0.0432U ng/Kg 0.424U ng/Kg	A	B
PH185	SL-534-SA8-TR-5.0	1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF	0.0225U ng/Kg 0.0190U ng/Kg 0.0383U ng/Kg 0.0197U ng/Kg 0.0412U ng/Kg 0.0238U ng/Kg 0.0478U ng/Kg 0.0200U ng/Kg 0.217U ng/Kg 0.0561U ng/Kg	A	B
PH185	SL-548-SA8-TR-0.5	1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,7,8,9-HpCDF	0.148U ng/Kg 0.0525U ng/Kg 0.0505U ng/Kg 0.0533U ng/Kg 0.0448U ng/Kg 0.0502U ng/Kg	A	B

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
PH185	SL-848-SA8-TR-5.0	1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0786U ng/Kg 0.359U ng/Kg 0.0148U ng/Kg 0.0260U ng/Kg 0.0172U ng/Kg 0.0235U ng/Kg 0.0438U ng/Kg 0.0246U ng/Kg 0.0695U ng/Kg 0.197U ng/Kg	A	B
PH185	SL-548-SA8-TR-5.0	1,2,3,6,7,8-HxCDD 1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,7,8-PeCDF 2,3,478-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0290U ng/Kg 0.111U ng/Kg 0.434U ng/Kg 0.0686U ng/Kg 0.0262U ng/Kg 0.111U ng/Kg 0.0637U ng/Kg 0.0428U ng/Kg 0.0470U ng/Kg 0.209U ng/Kg 0.0636U ng/Kg 0.559U ng/Kg	A	B
PH185	SL-548-SA8-TR-10.0	2,3,7,8-TCDD 1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDD OCDD 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF	0.0380U ng/Kg 0.0283U ng/Kg 0.0296U ng/Kg 0.107U ng/Kg 0.401U ng/Kg 0.0948U ng/Kg 0.0429U ng/Kg 0.0303U ng/Kg 0.0498U ng/Kg 0.0348U ng/Kg 0.0188U ng/Kg 0.0422U ng/Kg 0.0297U ng/Kg 0.154U ng/Kg	A	B

Santa Susana Field Laboratory
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG PH185

No Sample Data Qualified in this SDG

LDC #: 32030A21 **VALIDATION COMPLETENESS WORKSHEET** Date: 6-26-14
SDG #: PH185 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: SM
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/19/14
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	≤20/35
IV.	Continuing Calibration	A	QC limits
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation/RL/~~LOQ/LODs~~	A	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D=4+5
XV.	Field blanks	SW	EB=EB3-052214(PH195), FB=FB-052114 (PH191)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-534-SA8-TR-0.5	11		21		31	
2	SL-534-SA8-TR-5.0	12		22		32	
3	SL-548-SA8-TR-0.5	13		23		33	
4	SL-848-SA8-TR-5.0	14		24		34	
5	SL-548-SA8-TR-5.0	15		25		35	
6	SL-548-SA8-TR-10.0	16		26		36	
7	SL-548-SA8-TR-5.0MS	17		27		37	
8	SL-548-SA8-TR-5.0MSD	18		28		38	
9		19		29		39	
10		20	BLK147001	30		40	

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:_____

LDC #: 32030A21

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: JM
2nd Reviewer: SM

Method: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	✓			
Were the retention time windows established for all homologues?	✓			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers ≤ 25% ?	✓			
Is the static resolving power at least 10,000 (10% valley definition)?	✓			
Was the mass resolution adequately check with PFK?	✓			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	✓			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled compounds and ≤ 35% for labeled compounds ?	✓			
Did all calibration standards meet the Ion Abundance Ratio criteria?	✓			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard ≥ 10?	✓			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	✓			
Were all the concentrations for the unlabeled compounds and labeled compounds within the QC limits (Method 1613B, Table 6)?	✓			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank performed for each matrix and concentration?			✓	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?			✓	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 32030A21

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer: 9m

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
IX. Internal standards				
Were internal standard recoveries within the 25-150% criteria?	✓			
Was the minimum S/N ratio of all internal standard peaks ≥ 10?	✓			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	✓			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	✓			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	✓			
Did compound spectra contain all characteristic ions listed in the table attached?	✓			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?		✓		
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5?	✓			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	✓			
For PCDF identification, was any signal (S/N ≥ 2.5, at ± seconds RT) detected in the corresponding PCDPE channel?		✓		
Was an acceptable lock mass recorded and monitored?	✓			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Dioxins/Furans (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 05/21/14
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All >5x

Compound	Blank ID	Sample Identification								
	FB-052114	5X								
F	1.23*	0.00615								
G	6.37*	0.03185								
I	0.333*	0.00167								
K	0.108*	0.00054								
M	0.188*	0.00094								
N	0.182*	0.00091								
O	0.176*	0.00088								
P	0.328*	0.00164								
Q	0.531*	0.00266								

*EMPC

FB-052114 (PH191)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

V:\Field Blanks\32030A21_FB3-052114.wpd

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer:
2nd Reviewer:

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all samples associated with a method blank?
Y N (N/A) Was a method blank performed for each matrix and whenever a sample extraction was performed?
(Y) N N/A Was the method blank contaminated?

Blank extraction date: 05/27/14 **Blank analysis date:** 05/29/14 **Associated samples:** All Qual U (B)
Conc. units: ng/kg

Compound	Blank ID	Sample Identification								
	BLK147001	5x	1	2	3	4	5	6		
A	0.0397*	0.199						0.0380		
D	0.0211*	0.106		0.0225			0.0290*	0.0283*		
E	0.0209*	0.105	0.100*	0.0190*				0.0296*		
F	0.0514*	0.257				0.0786*	0.111	0.107*		
G	0.217*	1.085				0.359	0.434	0.401*		
I	0.0315*	0.158		0.0383	0.148	0.0148	0.0686	0.0948*		
J	0.0159*	0.080		0.0197*	0.0525*	0.0260*	0.0262*	0.0429*		
K	0.0282	0.141	0.0484	0.0412*	0.0505*	0.0172	0.111	0.0303*		
L	0.0254*	0.127	0.0986*	0.0238*	0.0533*		0.0637*	0.0498*		
M	0.0380*	0.190	0.0899	0.0478*	0.0448*	0.0235	0.0428*	0.0348		
N	0.0446	0.223	0.0364	0.0200*		0.0438*	0.0470	0.0188*		
O	0.0453*	0.227		0.217		0.0246*	0.209*	0.0422		
P	0.0269*	0.135	0.0432*	0.0561	0.0502*	0.0695*	0.0636*	0.0297*		
Q	0.125*	0.625	0.424*			0.197*	0.559*	0.154*		

*EMPC

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: PH
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Furans (EPA Method 1613B)

Blank units: pg/L **Associated sample units:** ng/kg
Sampling date: 05/22/14
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All >5x

Compound	Blank ID	Sample Identification								
	EB3-052214	5X								
F	0.865*	0.00433								
G	9.68*	0.04840								
H	0.203*	0.00102								
I	0.289*	0.00145								
M	0.192*	0.00096								
O	0.177*	0.00089								
P	0.106*	0.00053								
Q	1.11*	0.00555								

*EMPC

EB3-052214 (PH195)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the blank concentration were qualified as not detected, "U".

V:\Field Blanks\32030A21_EB3-052214.wpd

LDC#: 32030A21

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: 1st
2nd Reviewer: SM

Dioxins/Furans (EPA Method 1613B)

Analyte	Concentration (ng/kg)		RPD (≤ 50%)	Qualifiers (Parents Only)
	4	5		
B	5.59U	0.0232	200	J/UJ/A (FD)
C	0.0245	0.0310	23	--
D	5.59U	0.0290	200	J/UJ/A (FD)
F	0.0786	0.111	34	--
G	0.359	0.434	19	--
I	0.0148	0.0686	129	Jdets/A (FD)
J	0.0260	0.0262	1	--
K	0.0172	0.111	146	Jdets/A (FD)
L	5.59U	0.0637	200	J/UJ/A (FD)
M	0.0235	0.0428	58	Jdets/A (FD)
N	0.0438	0.0470	7	--
O	0.0246	0.209	158	Jdets/A (FD)
P	0.0695	0.0636	9	--
Q	0.197	0.559	96	Jdets/A (FD)

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9m
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported RRF (CS3 std)	Recalculated RRF (CS3 std)	Reported %RSD	Recalculated %RSD
1	DF17280	5-6-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	1.125	1.125	1.090	1.090	9.97	9.97
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	1.212	1.212	1.200	1.200	6.84	6.85
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	1.056	1.0565	1.028	1.028	9.26	9.24
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	1.122	1.122	1.101	1.101	6.60	6.58
			OCDF (^{13}C-OCDF)	0.984	0.9835	0.954	0.954	7.35	7.36
2			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)						
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)						
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)						
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)						
			OCDF (^{13}C-OCDF)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: 9m
2nd Reviewer: Sm

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported Conc (ng/mL)	Recalculated Conc (ng/mL)	Reported %R	Recalculated %R
1	14MAY29-03	5-29-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.147	9.146	91	91
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.415	9.414	94	94
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	47.478	47.495	95	95
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	47.136	47.130	94	94
			OCDF (^{13}C-OCDF)	100	93.783	93.737	94	94
2	14MAY29-17	5-29-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.382	9.382	94	94
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.729	9.729	97	97
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	46.631	46.648	93	93
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	47.800	47.794	96	96
			OCDF (^{13}C-OCDF)	100	95.114	95.067	95	95
3	14MAY30-03	5-30-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.704	9.703	97	97
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.767	9.7610	98	98
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	48.004	48.021	96	96
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	48.701	48.695	97	97
			OCDF (^{13}C-OCDF)	100	95.316	95.270	95	95

Comments: Refer to Routine Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A2|

VALIDATION FINDINGS WORKSHEET
Routine Calibration Results Verification

Reviewer: 9m
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Spiked Conc (ng/mL)	Reported Conc (ng/mL)	Recalculated Conc (ng/mL)	Reported %R	Recalculated %R
1	14MA130-17	5-31-14	2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10	9.430	9.430	94	94
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10	9.852	9.851	99	99
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50	47.145	47.161	94	94
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50	48.640	48.634	97	97
			OCDF (^{13}C-OCDF)	100	95.187	95.140	95	95
2			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10				
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10				
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50				
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50				
			OCDF (^{13}C-OCDF)	100				
3			2,3,7,8-TCDF (^{13}C-2,3,7,8-TCDF)	10				
			2,3,7,8-TCDD (^{13}C-2,3,7,8-TCDD)	10				
			1,2,3,6,7,8-HxCDD (^{13}C-1,2,3,6,7,8-HxCDD)	50				
			1,2,3,4,6,7,8-HpCDD (^{13}C-1,2,4,6,7,8,-HpCDD)	50				
			OCDF (^{13}C-OCDF)	100				

Comments: Refer to Routine Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: QM
2nd Reviewer: SM

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSR - SR)/SA Where: SSR = Spiked sample result, SR = Sample result
SA = Spike added

RPD = I MSR - MSDR I * 2/(MSR + MSDR) MSR = Matrix spike percent recovery MSDR = Matrix spike duplicate percent recovery

MS/MSD samples: 7/8

Compound	Spike Added (ng/Kg)		Sample Concentration (ng/Kg)	Spiked Sample Concentration (ng/Kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		Reported RPD	Recalculated RPD
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	----	----
2,3,7,8-TCDD	22.3	22.7	ND	21.7	22.7	97	97	100	100	4	4.5
1,2,3,7,8-PeCDD	112	113	0.0232	108	109	96	96	97	97	2	1
1,2,3,4,7,8-HxCDD	112	113	0.0310	110	110	98	98	97	97	0	0
1,2,3,4,7,8,9-HpCDF	112	113	0.01636	110	109	99	99	96	96.5	1	1
OCDF	223	227	0.559	217	220	97	97	97	97	1	1

Comments: Refer to Matrix Spike/Matrix Spike Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: 9m
2nd Reviewer: SM

METHOD: GC/MS Dioxins/Dibenzofurans (EPA Method 1613B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: OPR147001

Compound	Spike Added (ng/kg)		Spiked Sample Concentration (ng/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
2,3,7,8-TCDD	20.0	NA	19.8	NA	99	99				
1,2,3,7,8-PeCDD	100		96.7		97	97				
1,2,3,4,7,8-HxCDD	100		94.1		94	94				
1,2,3,4,7,8,9-HpCDF	100		96.5		97	97				
OCDF	200		189		95	94.5				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32030A21

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: _____
2nd reviewer: _____

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?
(Y) N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

RRF = Relative Response Factor (average) from the initial calibration

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

Example:

Sample I.D. 1, G:

Conc. = $\frac{(14984+13955)(4000)(1)}{(657498+592891)(1.160)(10.07)(0.958)}$

= 8.27 ng/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup Trench

SDG: PH189

Prepared for

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Prepared by

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July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 20, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits with the exception of one sample for TPH as extractables with silica gel cleanup. The associated sample results were qualified as non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals from SDG PH185. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I of the DVR for PH185.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for metals from SDG PH185. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I of the DVR for PH185.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
SL-548-SA8-TR-5.0	Nickel	13 (≤10)	All soil samples in SDG PH189	J (all detects) UJ (all non-detects)	A

The associated sample results were qualified as detected estimated (J).

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH189	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH195) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

reports are presented in Enclosure I.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-May-2014	TB3-052014	7471531	TB	5030B	8015M	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	3050B	6010C	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	3050B	6020A	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	3546	8015M	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	3546	8082A	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	3546	8270D SIM	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	METHOD	1613B	III
20-May-2014	SL-611-SA8-TR-0.5	7471532	N	METHOD	7471B	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	3050B	6010C	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	3050B	6020A	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	3546	8015M	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	3546	8082A	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	3546	8270D SIM	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	5035A	8015M	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	METHOD	1613B	III
20-May-2014	SL-611-SA8-TR-5.0	7471533	N	METHOD	7471B	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	3050B	6010C	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	3050B	6020A	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	3546	8015M	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	3546	8082A	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	3546	8270D SIM	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	5035A	8015M	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	METHOD	1613B	III
20-May-2014	SL-611-SA8-TR-10.5	7471534	N	METHOD	7471B	III
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	3050B	6010C	III
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	3546	8015M	III
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	3546	8082A	III
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	3546	8270D SIM	III
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	METHOD	1613B	III
20-May-2014	SL-569-SA6-TR-0.5	7471539	N	METHOD	7471B	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	3050B	6010C	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	3050B	6020A	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	3546	8015M	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	3546	8082A	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	3546	8270D SIM	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	5035A	8015M	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	METHOD	1613B	III
20-May-2014	SL-569-SA6-TR-2.5	7471538	N	METHOD	7471B	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	3050B	6010C	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	3050B	6020A	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	3546	8015M	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	3546	8082A	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	3546	8270D SIM	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	METHOD	1613B	III
20-May-2014	SL-570-SA6-TR-0.5	7471537	N	METHOD	7471B	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	3050B	6010C	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	3050B	6020A	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	3546	8015M	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	3546	8082A	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	3546	8270D SIM	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	5035A	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	METHOD	1613B	III
20-May-2014	SL-570-SA6-TR-2.0	7471536	N	METHOD	7471B	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	3050B	6010C	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	3050B	6020A	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	3546	8015M	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	3546	8082A	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	3546	8270D SIM	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	5035A	8015M	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	METHOD	1613B	III
20-May-2014	SL-570-SA6-TR-6.0	7471535	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-569-SA6-TR-0.5** ***Collected:*** **5/20/2014 10:58:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.10	U	0.758	MDL	4.10	PQL	mg/Kg	UJ	Q
ARSENIC	2.20	J	0.717	MDL	4.10	PQL	mg/Kg	J	Z
BERYLLIUM	0.474	J	0.0686	MDL	1.02	PQL	mg/Kg	J	Z
BORON	7.06	J	0.861	MDL	10.2	PQL	mg/Kg	J	Z
CADMIUM	1.02	U	0.0779	MDL	1.02	PQL	mg/Kg	UJ	Q
CALCIUM	4170		3.42	MDL	20.5	PQL	mg/Kg	J	E, E
COBALT	5.08		0.101	MDL	1.02	PQL	mg/Kg	J	E
MANGANESE	295		0.0850	MDL	1.02	PQL	mg/Kg	J	E
NICKEL	9.63		0.133	MDL	2.05	PQL	mg/Kg	J	A
POTASSIUM	3130		8.55	MDL	102	PQL	mg/Kg	J	Q
SODIUM	89.4	J	17.1	MDL	102	PQL	mg/Kg	J	Z
TIN	3.22	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	1.89	J	0.861	MDL	5.12	PQL	mg/Kg	U	F, F
LEAD	7.36		0.512	MDL	3.07	PQL	mg/Kg	J	Q

Sample ID: **SL-569-SA6-TR-2.5** ***Collected:*** **5/20/2014 11:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.11	U	0.759	MDL	4.11	PQL	mg/Kg	UJ	Q
ARSENIC	2.83	J	0.718	MDL	4.11	PQL	mg/Kg	J	Z
BERYLLIUM	0.817	J	0.0688	MDL	1.03	PQL	mg/Kg	J	Z
BORON	7.65	J	0.862	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	1.03	U	0.0780	MDL	1.03	PQL	mg/Kg	UJ	Q
CALCIUM	2120		3.43	MDL	20.5	PQL	mg/Kg	J	E, E
COBALT	5.67		0.102	MDL	1.03	PQL	mg/Kg	J	E
LEAD	8.23		0.513	MDL	3.08	PQL	mg/Kg	J	Q
MANGANESE	268		0.0852	MDL	1.03	PQL	mg/Kg	J	E
MOLYBDENUM	0.467	J	0.174	MDL	2.05	PQL	mg/Kg	J	Z
NICKEL	11.2		0.133	MDL	2.05	PQL	mg/Kg	J	A
POTASSIUM	2200		8.56	MDL	103	PQL	mg/Kg	J	Q
SODIUM	90.7	J	17.1	MDL	103	PQL	mg/Kg	J	Z
TIN	3.36	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	2.75	J	0.862	MDL	5.13	PQL	mg/Kg	U	F, F

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-570-SA6-TR-0.5 **Collected: 5/20/2014 12:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.13	U	0.764	MDL	4.13	PQL	mg/Kg	UJ	Q
ARSENIC	2.22	J	0.722	MDL	4.13	PQL	mg/Kg	J	Z
BERYLLIUM	0.571	J	0.0691	MDL	1.03	PQL	mg/Kg	J	Z
BORON	8.14	J	0.867	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	1.03	U	0.0784	MDL	1.03	PQL	mg/Kg	UJ	Q
CALCIUM	2760		3.45	MDL	20.6	PQL	mg/Kg	J	E, E
COBALT	5.79		0.102	MDL	1.03	PQL	mg/Kg	J	E
LEAD	8.41		0.516	MDL	3.10	PQL	mg/Kg	J	Q
MANGANESE	324		0.0857	MDL	1.03	PQL	mg/Kg	J	E
MOLYBDENUM	0.243	J	0.175	MDL	2.06	PQL	mg/Kg	J	Z
NICKEL	12.1		0.134	MDL	2.06	PQL	mg/Kg	J	A
POTASSIUM	3610		8.61	MDL	103	PQL	mg/Kg	J	Q
SODIUM	78.9	J	17.2	MDL	103	PQL	mg/Kg	J	Z
TIN	3.01	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	2.53	J	0.867	MDL	5.16	PQL	mg/Kg	U	F, F

Sample ID: SL-570-SA6-TR-2.0 **Collected: 5/20/2014 1:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.05	U	0.750	MDL	4.05	PQL	mg/Kg	UJ	Q
ARSENIC	2.24	J	0.709	MDL	4.05	PQL	mg/Kg	J	Z
BERYLLIUM	0.628	J	0.0679	MDL	1.01	PQL	mg/Kg	J	Z
BORON	8.13	J	0.851	MDL	10.1	PQL	mg/Kg	J	Z
CADMIUM	1.01	U	0.0770	MDL	1.01	PQL	mg/Kg	UJ	Q
CALCIUM	2110		3.38	MDL	20.3	PQL	mg/Kg	J	E, E
COBALT	5.76		0.100	MDL	1.01	PQL	mg/Kg	J	E
LEAD	7.33		0.507	MDL	3.04	PQL	mg/Kg	J	Q
MANGANESE	440		0.0841	MDL	1.01	PQL	mg/Kg	J	E
MOLYBDENUM	0.447	J	0.172	MDL	2.03	PQL	mg/Kg	J	Z
NICKEL	12.4		0.132	MDL	2.03	PQL	mg/Kg	J	A
POTASSIUM	3700		8.45	MDL	101	PQL	mg/Kg	J	Q
SODIUM	79.9	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	3.07	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	3.15	J	0.851	MDL	5.07	PQL	mg/Kg	U	F, F

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **SO**

Sample ID: **SL-570-SA6-TR-6.0** ***Collected:*** **5/20/2014 1:43:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.23	U	0.782	MDL	4.23	PQL	mg/Kg	UJ	Q
ARSENIC	3.03	J	0.740	MDL	4.23	PQL	mg/Kg	J	Z
BERYLLIUM	0.887	J	0.0708	MDL	1.06	PQL	mg/Kg	J	Z
BORON	8.53	J	0.887	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	1.06	U	0.0803	MDL	1.06	PQL	mg/Kg	UJ	Q
CALCIUM	2550		3.53	MDL	21.1	PQL	mg/Kg	J	E, E
COBALT	6.11		0.105	MDL	1.06	PQL	mg/Kg	J	E
LEAD	9.18		0.528	MDL	3.17	PQL	mg/Kg	J	Q
MANGANESE	249		0.0877	MDL	1.06	PQL	mg/Kg	J	E
MOLYBDENUM	0.322	J	0.180	MDL	2.11	PQL	mg/Kg	J	Z
NICKEL	13.1		0.137	MDL	2.11	PQL	mg/Kg	J	A
POTASSIUM	1680		8.81	MDL	106	PQL	mg/Kg	J	Q
TIN	3.64	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	3.41	J	0.887	MDL	5.28	PQL	mg/Kg	U	F, F

Sample ID: **SL-611-SA8-TR-0.5** ***Collected:*** **5/20/2014 9:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.21	U	0.778	MDL	4.21	PQL	mg/Kg	UJ	Q
ARSENIC	3.28	J	0.736	MDL	4.21	PQL	mg/Kg	J	Z
BERYLLIUM	0.714	J	0.0705	MDL	1.05	PQL	mg/Kg	J	Z
CADMIUM	1.05	U	0.0799	MDL	1.05	PQL	mg/Kg	UJ	Q
CALCIUM	53400		3.51	MDL	21.0	PQL	mg/Kg	J	E, E
COBALT	8.21		0.104	MDL	1.05	PQL	mg/Kg	J	E
LEAD	17.2		0.526	MDL	3.16	PQL	mg/Kg	J	Q
MANGANESE	403		0.0873	MDL	1.05	PQL	mg/Kg	J	E
NICKEL	17.7		0.137	MDL	2.10	PQL	mg/Kg	J	A
POTASSIUM	6150		8.77	MDL	105	PQL	mg/Kg	J	Q
TIN	3.09	J	0.231	MDL	10.5	PQL	mg/Kg	U	B

Sample ID: **SL-611-SA8-TR-10.5** ***Collected:*** **5/20/2014 9:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.39	U	0.812	MDL	4.39	PQL	mg/Kg	UJ	Q
ARSENIC	2.45	J	0.769	MDL	4.39	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-611-SA8-TR-10.5** *Collected:* **5/20/2014 9:20:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.878	J	0.0736	MDL	1.10	PQL	mg/Kg	J	Z
CADMIUM	1.10	U	0.0834	MDL	1.10	PQL	mg/Kg	UJ	Q
CALCIUM	23500		3.67	MDL	22.0	PQL	mg/Kg	J	E, E
COBALT	9.55		0.109	MDL	1.10	PQL	mg/Kg	J	E
LEAD	13.3		0.549	MDL	3.29	PQL	mg/Kg	J	Q
MANGANESE	392		0.0911	MDL	1.10	PQL	mg/Kg	J	E
NICKEL	19.2		0.143	MDL	2.20	PQL	mg/Kg	J	A
POTASSIUM	4280		9.16	MDL	110	PQL	mg/Kg	J	Q
TIN	3.33	J	0.242	MDL	11.0	PQL	mg/Kg	U	B

Sample ID: **SL-611-SA8-TR-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.22	U	0.781	MDL	4.22	PQL	mg/Kg	UJ	Q
ARSENIC	1.96	J	0.739	MDL	4.22	PQL	mg/Kg	U	B
BERYLLIUM	0.837	J	0.0707	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	1.06	U	0.0802	MDL	1.06	PQL	mg/Kg	UJ	Q
CALCIUM	30500		3.53	MDL	21.1	PQL	mg/Kg	J	E, E
COBALT	9.63		0.105	MDL	1.06	PQL	mg/Kg	J	E
LEAD	12.8		0.528	MDL	3.17	PQL	mg/Kg	J	Q
MANGANESE	411		0.0876	MDL	1.06	PQL	mg/Kg	J	E
NICKEL	18.9		0.137	MDL	2.11	PQL	mg/Kg	J	A
POTASSIUM	5590		8.81	MDL	106	PQL	mg/Kg	J	Q
SODIUM	93.4	J	17.6	MDL	106	PQL	mg/Kg	J	Z
TIN	2.88	J	0.232	MDL	10.6	PQL	mg/Kg	U	B

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-569-SA6-TR-0.5** *Collected:* **5/20/2014 10:58:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
THALLIUM	0.196	J	0.0307	MDL	0.205	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-569-SA6-TR-2.5 **Collected: 5/20/2014 11:15:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.155	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: SL-569-SA6-TR-2.5 **Collected: 5/20/2014 11:15:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0509	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA6-TR-0.5 **Collected: 5/20/2014 12:10:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.154	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA6-TR-0.5 **Collected: 5/20/2014 12:10:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0617	J	0.0268	MDL	0.206	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA6-TR-2.0 **Collected: 5/20/2014 1:00:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.126	J	0.101	MDL	0.405	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA6-TR-2.0 **Collected: 5/20/2014 1:00:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0513	J	0.0263	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA6-TR-6.0 **Collected: 5/20/2014 1:43:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0847	J	0.0275	MDL	0.211	PQL	mg/Kg	J	Z

Sample ID: SL-611-SA8-TR-0.5 **Collected: 5/20/2014 9:10:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.287	J	0.105	MDL	0.421	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-611-SA8-TR-0.5 **Collected: 5/20/2014 9:10:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0335	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z

Sample ID: SL-611-SA8-TR-10.5 **Collected: 5/20/2014 9:20:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.194	J	0.110	MDL	0.439	PQL	mg/Kg	J	Z

Sample ID: SL-611-SA8-TR-10.5 **Collected: 5/20/2014 9:20:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0414	J	0.0285	MDL	0.220	PQL	mg/Kg	J	Z

Sample ID: SL-611-SA8-TR-5.0 **Collected: 5/20/2014 9:15:00** **Analysis Type: REA2** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.255	J	0.106	MDL	0.422	PQL	mg/Kg	J	Z

Sample ID: SL-611-SA8-TR-5.0 **Collected: 5/20/2014 9:15:00** **Analysis Type: RES** **Dilution: 2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0429	J	0.0275	MDL	0.211	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-569-SA6-TR-2.5 **Collected: 5/20/2014 11:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0159	J	0.0102	MDL	0.0170	PQL	mg/Kg	J	Z

Sample ID: SL-570-SA6-TR-0.5 **Collected: 5/20/2014 12:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0155	J	0.010	MDL	0.0166	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-611-SA8-TR-10.5** *Collected:* **5/20/2014 9:20:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0124	J	0.0109	MDL	0.0182	PQL	mg/Kg	J	Z

Sample ID: **SL-611-SA8-TR-5.0** *Collected:* **5/20/2014 9:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0120	J	0.0106	MDL	0.0177	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-569-SA6-TR-0.5** *Collected:* **5/20/2014 10:58:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.77	JB	0.0639	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.144	JB	0.0122	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0631	JQ	0.0386	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.102	JBQ	0.0318	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0884	JBQ	0.0391	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0557	JBQ	0.0265	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.212	JBQ	0.0384	MDL	5.06	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0756	JBQ	0.0354	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0527	JBQ	0.0458	MDL	5.06	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.107	JBQ	0.0304	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0336	JBQ	0.0304	MDL	5.06	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0528	JBQ	0.0323	MDL	5.06	PQL	ng/Kg	U	B
OCDF	0.510	JBQ	0.0837	MDL	10.1	PQL	ng/Kg	J	Z

Sample ID: **SL-569-SA6-TR-2.5** *Collected:* **5/20/2014 11:15:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.143	JB	0.0330	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0497	JBQ	0.0120	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0285	JBQ	0.0206	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0574	JBQ	0.0264	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0478	JBQ	0.0299	MDL	5.12	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-569-SA6-TR-2.5** ***Collected:*** **5/20/2014 11:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDF	0.0568	JB	0.0233	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0506	JB	0.0286	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0814	JBQ	0.0258	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0831	JBQ	0.0292	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0263	JBQ	0.0246	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0484	JBQ	0.0285	MDL	5.12	PQL	ng/Kg	U	B
OCDD	1.19	JB	0.0357	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.193	JBQ	0.0724	MDL	10.2	PQL	ng/Kg	U	B

Sample ID: **SL-570-SA6-TR-0.5** ***Collected:*** **5/20/2014 12:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.511	JB	0.0196	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.188	J	0.0502	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0778	JBQ	0.0342	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.313	JBQ	0.0494	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.101	JB	0.0311	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.507	JBQ	0.0485	MDL	5.10	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.141	JB	0.0352	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.177	JB	0.0508	MDL	5.10	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.135	JB	0.0285	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0900	JBQ	0.0322	MDL	5.10	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0683	JBQ	0.0288	MDL	5.10	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0700	JQ	0.0594	MDL	1.02	PQL	ng/Kg	J	Z
OCDF	1.71	JB	0.0796	MDL	10.2	PQL	ng/Kg	J	Z

Sample ID: **SL-570-SA6-TR-2.0** ***Collected:*** **5/20/2014 1:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.343	JBQ	0.0468	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0639	JBQ	0.0134	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0366	JBQ	0.0239	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0398	JB	0.0311	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.131	JB	0.0360	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.183	JBQ	0.0341	MDL	5.14	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-570-SA6-TR-2.0 **Collected: 5/20/2014 1:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDF	0.238	JBQ	0.0318	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0597	JBQ	0.0320	MDL	5.14	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0393	JBQ	0.0299	MDL	5.14	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0321	JBQ	0.0315	MDL	5.14	PQL	ng/Kg	U	B
OCDD	4.52	JB	0.0443	MDL	10.3	PQL	ng/Kg	J	Z
OCDF	0.280	JBQ	0.0791	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: SL-570-SA6-TR-6.0 **Collected: 5/20/2014 1:43:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.161	JB	0.0424	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0279	JB	0.0132	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0246	JBQ	0.0238	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0647	JBQ	0.0262	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0383	JBQ	0.0231	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0334	JBQ	0.0302	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.117	JBQ	0.0494	MDL	5.30	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.139	JB	0.0287	MDL	5.30	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.107	JBQ	0.0296	MDL	5.30	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0531	JQ	0.0489	MDL	1.06	PQL	ng/Kg	J	Z
OCDD	1.93	JB	0.0363	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.132	JBQ	0.0711	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: SL-611-SA8-TR-0.5 **Collected: 5/20/2014 9:10:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.98	JB	0.109	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.792	JBQ	0.0329	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.122	JBQ	0.0593	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0787	JQ	0.0564	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.416	JB	0.0812	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.214	JBQ	0.0583	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	1.16	JB	0.0715	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.182	JBQ	0.0547	MDL	5.34	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.415	JB	0.0775	MDL	5.34	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-611-SA8-TR-0.5** ***Collected:*** **5/20/2014 9:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,7,8-PECDF	0.958	JBQ	0.0865	MDL	5.34	PQL	ng/Kg	J	Z
OCDF	1.51	JBQ	0.112	MDL	10.7	PQL	ng/Kg	J	Z

Sample ID: **SL-611-SA8-TR-10.5** ***Collected:*** **5/20/2014 9:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.377	JBQ	0.0491	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.157	JB	0.0137	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0432	JBQ	0.0245	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.100	J	0.0321	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.151	JBQ	0.0348	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0832	JBQ	0.0325	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.227	JBQ	0.0296	MDL	5.39	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0692	JBQ	0.0342	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0685	JBQ	0.0366	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.249	JBQ	0.0667	MDL	5.39	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	1.95	JB	0.0409	MDL	5.39	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0789	JB	0.0319	MDL	5.39	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.237	JB	0.0421	MDL	5.39	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0778	JQ	0.0715	MDL	1.08	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.232	J	0.0643	MDL	1.08	PQL	ng/Kg	J	Z
OCDD	4.16	JB	0.0450	MDL	10.8	PQL	ng/Kg	J	Z
OCDF	0.440	JB	0.0828	MDL	10.8	PQL	ng/Kg	J	Z

Sample ID: **SL-611-SA8-TR-5.0** ***Collected:*** **5/20/2014 9:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.188	JBQ	0.0397	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0443	JB	0.0118	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0718	JBQ	0.0252	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0432	JB	0.0356	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0558	JBQ	0.0310	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0680	JBQ	0.0514	MDL	5.33	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.241	JBQ	0.0335	MDL	5.33	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0521	JBQ	0.0266	MDL	5.33	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-611-SA8-TR-5.0 *Collected:* 5/20/2014 9:15:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,3,4,7,8-PECDF	0.0352	JB	0.0346	MDL	5.33	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0883	JQ	0.0814	MDL	1.07	PQL	ng/Kg	J	Z
OCDD	0.976	JB	0.0399	MDL	10.7	PQL	ng/Kg	U	B
OCDF	0.215	JB	0.0817	MDL	10.7	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-611-SA8-TR-10.5 *Collected:* 5/20/2014 9:20:00 *Analysis Type:* REA2 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S
EFH (C15-C20) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S
EFH (C21-C30) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S
EFH (C30-C40) SG	11	U	4.5	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-611-SA8-TR-10.5 *Collected:* 5/20/2014 9:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	11	J	4.8	MDL	19	PQL	ug/Kg	J	Z
AROCLOR 1260	9.7	J	4.3	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: SL-611-SA8-TR-0.5 *Collected:* 5/20/2014 9:10:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.85	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.72	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **SVOA**

Method: **8270D SIM** ***Matrix:*** **SO**

Sample ID: **SL-611-SA8-TR-0.5** ***Collected:*** **5/20/2014 9:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
BENZO(G,H,I)PERYLENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	11	J	6.4	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	1.5	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.90	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	1.3	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
*#	Professional Judgment
A	Professional Judgment
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Estimation
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH189

Method Blank Outlier Report

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1480B370327	5/30/2014 3:27:00 AM	1,2,3,4,6,7,8-HPCDD	0.104 ng/Kg	SL-569-SA6-TR-0.5
		1,2,3,4,6,7,8-HPCDF	0.0707 ng/Kg	SL-569-SA6-TR-2.5
		1,2,3,4,7,8,9-HPCDF	0.0368 ng/Kg	SL-570-SA6-TR-0.5
		1,2,3,4,7,8-HXCDF	0.0887 ng/Kg	SL-570-SA6-TR-2.0
		1,2,3,6,7,8-HXCDD	0.0322 ng/Kg	SL-570-SA6-TR-6.0
		1,2,3,6,7,8-HXCDF	0.0451 ng/Kg	SL-611-SA8-TR-0.5
		1,2,3,7,8,9-HXCDD	0.0351 ng/Kg	SL-611-SA8-TR-10.5
		1,2,3,7,8,9-HXCDF	0.0531 ng/Kg	SL-611-SA8-TR-5.0
		1,2,3,7,8-PECDD	0.0674 ng/Kg	
		1,2,3,7,8-PECDF	0.0961 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0468 ng/Kg	
		2,3,4,7,8-PECDF	0.0685 ng/Kg	
		OCDD	0.662 ng/Kg	
		OCDF	0.0875 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-569-SA6-TR-0.5(RES)	1,2,3,4,6,7,8-HPCDF	0.144 ng/Kg	0.144U ng/Kg
SL-569-SA6-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.102 ng/Kg	0.102U ng/Kg
SL-569-SA6-TR-0.5(RES)	1,2,3,6,7,8-HXCDD	0.0884 ng/Kg	0.0884U ng/Kg
SL-569-SA6-TR-0.5(RES)	1,2,3,6,7,8-HXCDF	0.0557 ng/Kg	0.0557U ng/Kg
SL-569-SA6-TR-0.5(RES)	1,2,3,7,8,9-HXCDF	0.0756 ng/Kg	0.0756U ng/Kg
SL-569-SA6-TR-0.5(RES)	1,2,3,7,8-PECDD	0.0527 ng/Kg	0.0527U ng/Kg
SL-569-SA6-TR-0.5(RES)	1,2,3,7,8-PECDF	0.107 ng/Kg	0.107U ng/Kg
SL-569-SA6-TR-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0336 ng/Kg	0.0336U ng/Kg
SL-569-SA6-TR-0.5(RES)	2,3,4,7,8-PECDF	0.0528 ng/Kg	0.0528U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,4,6,7,8-HPCDD	0.143 ng/Kg	0.143U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0497 ng/Kg	0.0497U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0285 ng/Kg	0.0285U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,4,7,8-HXCDF	0.0574 ng/Kg	0.0574U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,6,7,8-HXCDD	0.0478 ng/Kg	0.0478U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,6,7,8-HXCDF	0.0568 ng/Kg	0.0568U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,7,8,9-HXCDD	0.0506 ng/Kg	0.0506U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,7,8,9-HXCDF	0.0814 ng/Kg	0.0814U ng/Kg
SL-569-SA6-TR-2.5(RES)	1,2,3,7,8-PECDF	0.0831 ng/Kg	0.0831U ng/Kg
SL-569-SA6-TR-2.5(RES)	2,3,4,6,7,8-HXCDF	0.0263 ng/Kg	0.0263U ng/Kg
SL-569-SA6-TR-2.5(RES)	2,3,4,7,8-PECDF	0.0484 ng/Kg	0.0484U ng/Kg
SL-569-SA6-TR-2.5(RES)	OCDD	1.19 ng/Kg	1.19U ng/Kg
SL-569-SA6-TR-2.5(RES)	OCDF	0.193 ng/Kg	0.193U ng/Kg
SL-570-SA6-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.0778 ng/Kg	0.0778U ng/Kg
SL-570-SA6-TR-0.5(RES)	1,2,3,6,7,8-HXCDF	0.101 ng/Kg	0.101U ng/Kg
SL-570-SA6-TR-0.5(RES)	1,2,3,7,8,9-HXCDF	0.141 ng/Kg	0.141U ng/Kg
SL-570-SA6-TR-0.5(RES)	1,2,3,7,8-PECDD	0.177 ng/Kg	0.177U ng/Kg
SL-570-SA6-TR-0.5(RES)	1,2,3,7,8-PECDF	0.135 ng/Kg	0.135U ng/Kg
SL-570-SA6-TR-0.5(RES)	2,3,4,6,7,8-HXCDF	0.0900 ng/Kg	0.0900U ng/Kg
SL-570-SA6-TR-0.5(RES)	2,3,4,7,8-PECDF	0.0683 ng/Kg	0.0683U ng/Kg
SL-570-SA6-TR-2.0(RES)	1,2,3,4,6,7,8-HPCDD	0.343 ng/Kg	0.343U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Method Blank Outlier Report

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-570-SA6-TR-2.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0639 ng/Kg	0.0639U ng/Kg
SL-570-SA6-TR-2.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0366 ng/Kg	0.0366U ng/Kg
SL-570-SA6-TR-2.0(RES)	1,2,3,4,7,8-HXCDF	0.0398 ng/Kg	0.0398U ng/Kg
SL-570-SA6-TR-2.0(RES)	1,2,3,6,7,8-HXCDD	0.131 ng/Kg	0.131U ng/Kg
SL-570-SA6-TR-2.0(RES)	1,2,3,7,8,9-HXCDF	0.238 ng/Kg	0.238U ng/Kg
SL-570-SA6-TR-2.0(RES)	1,2,3,7,8-PECDF	0.0597 ng/Kg	0.0597U ng/Kg
SL-570-SA6-TR-2.0(RES)	2,3,4,6,7,8-HXCDF	0.0393 ng/Kg	0.0393U ng/Kg
SL-570-SA6-TR-2.0(RES)	2,3,4,7,8-PECDF	0.0321 ng/Kg	0.0321U ng/Kg
SL-570-SA6-TR-2.0(RES)	OCDF	0.280 ng/Kg	0.280U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,4,6,7,8-HPCDD	0.161 ng/Kg	0.161U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0279 ng/Kg	0.0279U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0246 ng/Kg	0.0246U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,4,7,8-HXCDF	0.0647 ng/Kg	0.0647U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,6,7,8-HXCDF	0.0383 ng/Kg	0.0383U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,7,8,9-HXCDD	0.0334 ng/Kg	0.0334U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,7,8-PECDD	0.117 ng/Kg	0.117U ng/Kg
SL-570-SA6-TR-6.0(RES)	1,2,3,7,8-PECDF	0.139 ng/Kg	0.139U ng/Kg
SL-570-SA6-TR-6.0(RES)	2,3,4,7,8-PECDF	0.107 ng/Kg	0.107U ng/Kg
SL-570-SA6-TR-6.0(RES)	OCDD	1.93 ng/Kg	1.93U ng/Kg
SL-570-SA6-TR-6.0(RES)	OCDF	0.132 ng/Kg	0.132U ng/Kg
SL-611-SA8-TR-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.122 ng/Kg	0.122U ng/Kg
SL-611-SA8-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.416 ng/Kg	0.416U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,4,6,7,8-HPCDD	0.377 ng/Kg	0.377U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,4,6,7,8-HPCDF	0.157 ng/Kg	0.157U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0432 ng/Kg	0.0432U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,4,7,8-HXCDF	0.151 ng/Kg	0.151U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,6,7,8-HXCDD	0.0832 ng/Kg	0.0832U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,7,8,9-HXCDD	0.0692 ng/Kg	0.0692U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,7,8,9-HXCDF	0.0685 ng/Kg	0.0685U ng/Kg
SL-611-SA8-TR-10.5(RES)	1,2,3,7,8-PECDD	0.249 ng/Kg	0.249U ng/Kg
SL-611-SA8-TR-10.5(RES)	2,3,4,6,7,8-HXCDF	0.0789 ng/Kg	0.0789U ng/Kg
SL-611-SA8-TR-10.5(RES)	2,3,4,7,8-PECDF	0.237 ng/Kg	0.237U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.188 ng/Kg	0.188U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0443 ng/Kg	0.0443U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0718 ng/Kg	0.0718U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,7,8,9-HXCDD	0.0432 ng/Kg	0.0432U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0558 ng/Kg	0.0558U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,7,8-PECDD	0.0680 ng/Kg	0.0680U ng/Kg
SL-611-SA8-TR-5.0(RES)	1,2,3,7,8-PECDF	0.241 ng/Kg	0.241U ng/Kg
SL-611-SA8-TR-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0521 ng/Kg	0.0521U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-611-SA8-TR-5.0(RES)	2,3,4,7,8-PECDF	0.0352 ng/Kg	0.0352U ng/Kg
SL-611-SA8-TR-5.0(RES)	OCDD	0.976 ng/Kg	0.976U ng/Kg
SL-611-SA8-TR-5.0(RES)	OCDF	0.215 ng/Kg	0.215U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14337AB220659	5/29/2014 6:59:00 AM	CALCIUM TIN ZINC	7.84 mg/Kg 1.46 mg/Kg 0.461 mg/Kg	SL-569-SA6-TR-0.5 SL-569-SA6-TR-2.5 SL-570-SA6-TR-0.5 SL-570-SA6-TR-2.0 SL-570-SA6-TR-6.0 SL-611-SA8-TR-0.5 SL-611-SA8-TR-10.5 SL-611-SA8-TR-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-569-SA6-TR-0.5(RES)	TIN	3.22 mg/Kg	3.22U mg/Kg
SL-569-SA6-TR-2.5(RES)	TIN	3.36 mg/Kg	3.36U mg/Kg
SL-570-SA6-TR-0.5(RES)	TIN	3.01 mg/Kg	3.01U mg/Kg
SL-570-SA6-TR-2.0(RES)	TIN	3.07 mg/Kg	3.07U mg/Kg
SL-570-SA6-TR-6.0(RES)	TIN	3.64 mg/Kg	3.64U mg/Kg
SL-611-SA8-TR-0.5(RES)	TIN	3.09 mg/Kg	3.09U mg/Kg
SL-611-SA8-TR-10.5(RES)	TIN	3.33 mg/Kg	3.33U mg/Kg
SL-611-SA8-TR-5.0(RES)	TIN	2.88 mg/Kg	2.88U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	SL-569-SA6-TR-0.5 SL-569-SA6-TR-2.5 SL-570-SA6-TR-0.5 SL-570-SA6-TR-2.0 SL-570-SA6-TR-6.0 SL-611-SA8-TR-0.5 SL-611-SA8-TR-10.5 SL-611-SA8-TR-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-569-SA6-TR-0.5(RES)	Zirconium	1.89 mg/Kg	1.89U mg/Kg
SL-569-SA6-TR-2.5(RES)	Zirconium	2.75 mg/Kg	2.75U mg/Kg
SL-570-SA6-TR-0.5(RES)	Zirconium	2.53 mg/Kg	2.53U mg/Kg
SL-570-SA6-TR-2.0(RES)	Zirconium	3.15 mg/Kg	3.15U mg/Kg
SL-570-SA6-TR-6.0(RES)	Zirconium	3.41 mg/Kg	3.41U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB3-052214(RES)	5/22/2014 3:45:00 PM	CALCIUM MANGANESE Zirconium	0.15 mg/L 0.0009 mg/L 0.0108 mg/L	SL-569-SA6-TR-0.5 SL-569-SA6-TR-2.5 SL-570-SA6-TR-0.5 SL-570-SA6-TR-2.0 SL-570-SA6-TR-6.0 SL-611-SA8-TR-0.5 SL-611-SA8-TR-10.5 SL-611-SA8-TR-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-569-SA6-TR-0.5(RES)	Zirconium	1.89 mg/Kg	1.89U mg/Kg
SL-569-SA6-TR-2.5(RES)	Zirconium	2.75 mg/Kg	2.75U mg/Kg
SL-570-SA6-TR-0.5(RES)	Zirconium	2.53 mg/Kg	2.53U mg/Kg
SL-570-SA6-TR-2.0(RES)	Zirconium	3.15 mg/Kg	3.15U mg/Kg
SL-570-SA6-TR-6.0(RES)	Zirconium	3.41 mg/Kg	3.41U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-611-SA8-TR-10.5 (REA2)	O-TERPHENYL	64	66.00-123.00	All Target Analytes	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-569-SA6-TR-0.5	1,2,3,4,6,7,8-HPCDD	JB	1.77	5.06	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.144	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0631	5.06	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.102	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0884	5.06	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0557	5.06	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.212	5.06	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0756	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0527	5.06	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.107	5.06	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0336	5.06	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0528	5.06	PQL	ng/Kg	
	OCDF	JBQ	0.510	10.1	PQL	ng/Kg	
SL-569-SA6-TR-2.5	1,2,3,4,6,7,8-HPCDD	JB	0.143	5.12	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0497	5.12	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0285	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0574	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0478	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0568	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0506	5.12	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0814	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0831	5.12	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0263	5.12	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0484	5.12	PQL	ng/Kg	
	OCDD	JB	1.19	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.193	10.2	PQL	ng/Kg	
SL-570-SA6-TR-0.5	1,2,3,4,6,7,8-HPCDF	JB	0.511	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.188	5.10	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0778	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.313	5.10	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.101	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.507	5.10	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.141	5.10	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.177	5.10	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.135	5.10	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0900	5.10	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0683	5.10	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0700	1.02	PQL	ng/Kg	
	OCDF	JB	1.71	10.2	PQL	ng/Kg	
SL-570-SA6-TR-2.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.343	5.14	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0639	5.14	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0366	5.14	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0398	5.14	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.131	5.14	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.183	5.14	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.238	5.14	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0597	5.14	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0393	5.14	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0321	5.14	PQL	ng/Kg	
	OCDD	JB	4.52	10.3	PQL	ng/Kg	
	OCDF	JBQ	0.280	10.3	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-570-SA6-TR-6.0	1,2,3,4,6,7,8-HPCDD	JB	0.161	5.30	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0279	5.30	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0246	5.30	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0647	5.30	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0383	5.30	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0334	5.30	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.117	5.30	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.139	5.30	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.107	5.30	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0531	1.06	PQL	ng/Kg	
	OCDD	JB	1.93	10.6	PQL	ng/Kg	
	OCDF	JBQ	0.132	10.6	PQL	ng/Kg	
SL-611-SA8-TR-0.5	1,2,3,4,6,7,8-HPCDD	JB	2.98	5.34	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.792	5.34	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.122	5.34	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0787	5.34	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.416	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.214	5.34	PQL	ng/Kg	J (all detects)
	1,2,3,6,7,8-HXCDF	JB	1.16	5.34	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.182	5.34	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.415	5.34	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.958	5.34	PQL	ng/Kg	
	OCDF	JBQ	1.51	10.7	PQL	ng/Kg	
SL-611-SA8-TR-10.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.377	5.39	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.157	5.39	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0432	5.39	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.100	5.39	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.151	5.39	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0832	5.39	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.227	5.39	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0692	5.39	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0685	5.39	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.249	5.39	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	1.95	5.39	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.0789	5.39	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.237	5.39	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0778	1.08	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.232	1.08	PQL	ng/Kg	
	OCDD	JB	4.16	10.8	PQL	ng/Kg	
	OCDF	JB	0.440	10.8	PQL	ng/Kg	
SL-611-SA8-TR-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.188	5.33	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0443	5.33	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0718	5.33	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.0432	5.33	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0558	5.33	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0680	5.33	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JBQ	0.241	5.33	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0521	5.33	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0352	5.33	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.0883	1.07	PQL	ng/Kg	
	OCDD	JB	0.976	10.7	PQL	ng/Kg	
	OCDF	JB	0.215	10.7	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-569-SA6-TR-0.5	ARSENIC	J	2.20	4.10	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.474	1.02	PQL	mg/Kg	
	BORON	J	7.06	10.2	PQL	mg/Kg	
	SODIUM	J	89.4	102	PQL	mg/Kg	
	TIN	J	3.22	10.2	PQL	mg/Kg	
	Zirconium	J	1.89	5.12	PQL	mg/Kg	
SL-569-SA6-TR-2.5	ARSENIC	J	2.83	4.11	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.817	1.03	PQL	mg/Kg	
	BORON	J	7.65	10.3	PQL	mg/Kg	
	MOLYBDENUM	J	0.467	2.05	PQL	mg/Kg	
	SODIUM	J	90.7	103	PQL	mg/Kg	
	TIN	J	3.36	10.3	PQL	mg/Kg	
	Zirconium	J	2.75	5.13	PQL	mg/Kg	
SL-570-SA6-TR-0.5	ARSENIC	J	2.22	4.13	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.571	1.03	PQL	mg/Kg	
	BORON	J	8.14	10.3	PQL	mg/Kg	
	MOLYBDENUM	J	0.243	2.06	PQL	mg/Kg	
	SODIUM	J	78.9	103	PQL	mg/Kg	
	TIN	J	3.01	10.3	PQL	mg/Kg	
	Zirconium	J	2.53	5.16	PQL	mg/Kg	
SL-570-SA6-TR-2.0	ARSENIC	J	2.24	4.05	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.628	1.01	PQL	mg/Kg	
	BORON	J	8.13	10.1	PQL	mg/Kg	
	MOLYBDENUM	J	0.447	2.03	PQL	mg/Kg	
	SODIUM	J	79.9	101	PQL	mg/Kg	
	TIN	J	3.07	10.1	PQL	mg/Kg	
	Zirconium	J	3.15	5.07	PQL	mg/Kg	
SL-570-SA6-TR-6.0	ARSENIC	J	3.03	4.23	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.887	1.06	PQL	mg/Kg	
	BORON	J	8.53	10.6	PQL	mg/Kg	
	MOLYBDENUM	J	0.322	2.11	PQL	mg/Kg	
	TIN	J	3.64	10.6	PQL	mg/Kg	
	Zirconium	J	3.41	5.28	PQL	mg/Kg	
SL-611-SA8-TR-0.5	ARSENIC	J	3.28	4.21	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.714	1.05	PQL	mg/Kg	
	TIN	J	3.09	10.5	PQL	mg/Kg	
SL-611-SA8-TR-10.5	ARSENIC	J	2.45	4.39	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.878	1.10	PQL	mg/Kg	
	TIN	J	3.33	11.0	PQL	mg/Kg	
SL-611-SA8-TR-5.0	ARSENIC	J	1.96	4.22	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.837	1.06	PQL	mg/Kg	
	SODIUM	J	93.4	106	PQL	mg/Kg	
	TIN	J	2.88	10.6	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-569-SA6-TR-0.5	THALLIUM	J	0.196	0.205	PQL	mg/Kg	J (all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-569-SA6-TR-2.5	SELENIUM SILVER	J J	0.155 0.0509	0.411 0.205	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-570-SA6-TR-0.5	SELENIUM SILVER	J J	0.154 0.0617	0.413 0.206	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-570-SA6-TR-2.0	SELENIUM SILVER	J J	0.126 0.0513	0.405 0.203	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-570-SA6-TR-6.0	SILVER	J	0.0847	0.211	PQL	mg/Kg	J (all detects)
SL-611-SA8-TR-0.5	SELENIUM SILVER	J J	0.287 0.0335	0.421 0.210	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-611-SA8-TR-10.5	SELENIUM SILVER	J J	0.194 0.0414	0.439 0.220	PQL PQL	mg/Kg mg/Kg	J (all detects)
SL-611-SA8-TR-5.0	SELENIUM SILVER	J J	0.255 0.0429	0.422 0.211	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-569-SA6-TR-2.5	MERCURY	J	0.0159	0.0170	PQL	mg/Kg	J (all detects)
SL-570-SA6-TR-0.5	MERCURY	J	0.0155	0.0166	PQL	mg/Kg	J (all detects)
SL-611-SA8-TR-10.5	MERCURY	J	0.0124	0.0182	PQL	mg/Kg	J (all detects)
SL-611-SA8-TR-5.0	MERCURY	J	0.0120	0.0177	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-611-SA8-TR-10.5	AROCLOR 1254 AROCLOR 1260	J J	11 9.7	19 19	PQL PQL	ug/Kg ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH189 **Laboratory: LL**

EDD Filename: PH189_v3. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-611-SA8-TR-0.5	BENZO(A)ANTHRACENE	J	0.85	1.8	PQL	ug/Kg	
	BENZO(A)PYRENE	J	0.72	1.8	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.3	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	11	19	PQL	ug/Kg	
	FLUORANTHENE	J	1.5	1.8	PQL	ug/Kg	J (all detects)
	INDENO(1,2,3-CD)PYRENE	J	0.90	1.8	PQL	ug/Kg	
	NAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.3	1.8	PQL	ug/Kg	
	PYRENE	J	1.3	1.8	PQL	ug/Kg	

LDC #: 32030B4

VALIDATION COMPLETENESS WORKSHEET

Date: 06/20/14

SDG #: PH189

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

7471B

Reviewer: SD

2nd Reviewer: G

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 05/20/14
II.	ICP/MS Tune	—	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	N	SDG: PH185 (T,S) MS/D
VII.	Duplicate Sample Analysis	N	SDG: PH185 (A)a
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	SW	(PH185)
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB= EB3-052214 (SDG: PH195), FB=FB-052114 (SDG: PH191)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-611-SA8-TR-0.5	11		21		31	
2	SL-611-SA8-TR-5.0	12		22		32	
3	SL-611-SA8-TR-10.0	13		23		33	
4	SL-570-SA6-TR-6.0	14		24		34	
5	SL-570-SA6-TR-2.0	15		25		35	
6	SL-570-SA6-TR-0.5	16		26		36	
7	SL-569-SA6-TR-2.5	17		27		37	
8	SL-569-SA6-TR-0.5	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32030B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: _____

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32030B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: SD
2nd Reviewer: 9

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100
Sample Concentration units, unless otherwise noted: _____ Associated Samples: 1-7

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level (mg /kg)	2										
As		~~4.4~~	4.4	2.2	1.96										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 32030B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JP
2nd Reviewer: Or

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 05/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All (Reason: F)

Analyte	Blank ID	Sample Identification										
	EB3-052214	Action Limit (mg/kg)	4	5	6	7	8					
Ca	0.150	75										
Mn	0.00090	0.45										
Zr	0.0108	5.4	3.41	3.15	2.53	2.75	1.89					
Sr	0.00046	0.23										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 32030B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: SD
2nd Reviewer: CL

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 05/21/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All (Reason F)

Analyte	Blank ID	Sample Identification										
	FB-052114	Action Limit (mg/kg)	4	5	6	7	8					
Zr	0.0110	5.5	3.41	3.15	2.53	2.75	1.89					

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: PH189
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: *70316BKG Serial Dilution Lab Sample ID: *70316L
Batch ID(s): P14337A
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Aluminum		256409.9800		270144.9500		5		P
Antimony		7.4000	U	37.0000	U			P
Arsenic		25.7200	B	42.9000	B	67		P
Barium		1080.8400		1146.4000		6		P
Beryllium		8.8200	B	8.7000	B	1		P
Boron		111.6000		149.0500	B	34		P
Cadmium		0.7600	U	3.8000	U			P
Calcium		159173.4700		166020.4500		4		P
Chromium		312.4000		327.9500		5		P
Cobalt		61.8500		67.1000		8		P
Copper		168.7200		166.9000		1		P
Iron		140641.5800		147083.6000		5		P
Lead		115.7800		122.2000	B	6		P
Lithium		230.7900		234.9500		2		P
Magnesium		62536.3100		64817.3500		4		P
Manganese		2306.5000		2416.7500		5		P
Molybdenum		1.7000	U	9.0000	B	100		P
Nickel		150.5100		169.8000		13	E	P
Phosphorus		2117.2200		2147.1500		1		P
Potassium		24132.0800		24560.4500		2		P
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.2189	B	0.6500	U	100		MS
Sodium		1435.5200		1496.2500	B	4		P
Strontium	88	210.6000		211.6000		0		MS
Thallium	203	1.3950		1.1860	B	15		MS
Tin		29.5000	B	33.0000	B	12		P
Titanium		9025.5500		9004.5500		0		P
Vanadium		544.0400		561.7500		3		P
Zinc		567.8800		580.9000		2		P
Zirconium		53.2700		54.5000	B	2		P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

5/05/A

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup Trench

SDG: PH195

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July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 22, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Semivolatiles (SVOCs) by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7470A and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), ICP serial dilutions, method blanks, trip blanks, equipment blanks, field blanks, and field duplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs and ICP serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for metals and dioxins and dibenzofurans. The the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the exception of one DUP for cobalt. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for VOCs and SVOCs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH195	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

One field duplicate pair was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. All RPDs were within QC limits with the exception of metals and dioxins and dibenzofurans. In these duplicate pairs, the associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were found in the trip blank.

One equipment blank was collected and analyzed for VOCs, SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, PCBs, metals, TPH

as gasoline, TPH as extractables, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	TB3-052214	7475533	TB	5030B	8015M	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	3050B	6010C	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	3050B	6020A	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	3546	8015M	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	3546	8082A	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	3546	8270D SIM	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	METHOD	1613B	III
22-May-2014	SL-730-SA5A-TR-0.5	7475534	N	METHOD	7471B	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	3050B	6010C	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	3050B	6020A	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	3546	8015M	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	3546	8082A	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	3546	8270D SIM	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	5035A	8015M	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	METHOD	1613B	III
22-May-2014	SL-730-SA5A-TR-6.0	7475535	N	METHOD	7471B	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	3050B	6010C	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	3050B	6020A	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	3546	8015M	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	3546	8082A	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	3546	8270D SIM	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	METHOD	1613B	III
22-May-2014	SL-587-SA5A-TR-0.5	7475536	N	METHOD	7471B	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	3050B	6010C	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	3050B	6020A	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	3546	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	3546	8082A	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	3546	8270D SIM	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	5035A	8015M	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	METHOD	1613B	III
22-May-2014	SL-587-SA5A-TR-5.5	7475537	N	METHOD	7471B	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	3050B	6010C	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	3050B	6020A	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	3546	8015M	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	3546	8082A	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	3546	8270D SIM	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	5035A	8015M	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	METHOD	1613B	III
22-May-2014	SL-587-SA5A-TR-5.5MS	7475538	MS	METHOD	7471B	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	3050B	6010C	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	3050B	6020A	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	3546	8015M	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	3546	8082A	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	3546	8270D SIM	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	5035A	8015M	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	METHOD	1613B	III
22-May-2014	SL-587-SA5A-TR-5.5MSD	7475539	MSD	METHOD	7471B	III
22-May-2014	SL-587-SA5A-TR-5.5DUP	7475540	DUP	3050B	6010C	III
22-May-2014	SL-587-SA5A-TR-5.5DUP	7475540	DUP	3050B	6020A	III
22-May-2014	SL-587-SA5A-TR-5.5DUP	7475540	DUP	METHOD	7471B	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	3050B	6010C	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	3546	8015M	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	3546	8082A	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	3546	8270D SIM	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	5035A	8015M	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	METHOD	1613B	III
22-May-2014	SL-887-SA5A-TR-5.5	7475541	FD	METHOD	7471B	III
22-May-2014	EB3-052214	7475542	EB	3005A	6010C	III
22-May-2014	EB3-052214	7475542	EB	3510C	8015M	III
22-May-2014	EB3-052214	7475542	EB	3510C	8082A	III
22-May-2014	EB3-052214	7475542	EB	3510C	8270D SIM	III
22-May-2014	EB3-052214	7475542	EB	5030B	8015M	III
22-May-2014	EB3-052214	7475542	EB	5030B	8260B	III
22-May-2014	EB3-052214	7475542	EB	M3010A	6020A	III
22-May-2014	EB3-052214	7475542	EB	METHOD	1613B	III
22-May-2014	EB3-052214	7475542	EB	METHOD	7470A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB3-052214 **Collected:** 5/22/2014 3:45:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	0.150	J	0.0334	MDL	0.400	PQL	mg/L	J	Z
Zirconium	0.0108	J	0.0084	MDL	0.100	PQL	mg/L	U	B
MANGANESE	0.00090	J	0.00083	MDL	0.0100	PQL	mg/L	J	Z

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-587-SA5A-TR-0.5 **Collected:** 5/22/2014 12:14:00 **Analysis Type:** REA **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	16700		7.23	MDL	40.1	PQL	mg/Kg	J	Q
ARSENIC	3.34	J	0.702	MDL	4.01	PQL	mg/Kg	J	Z
BERYLLIUM	0.725	J	0.0672	MDL	1.00	PQL	mg/Kg	J	Z
BORON	6.50	J	0.842	MDL	10.0	PQL	mg/Kg	U	B
CADMIUM	0.264	J	0.0762	MDL	1.00	PQL	mg/Kg	J	Z
CALCIUM	2540		3.35	MDL	20.1	PQL	mg/Kg	J	Q
COBALT	4.96		0.0993	MDL	1.00	PQL	mg/Kg	J	E
IRON	22200		3.63	MDL	40.1	PQL	mg/Kg	J	Q
MAGNESIUM	4120		1.67	MDL	10.0	PQL	mg/Kg	J	Q
MANGANESE	298		0.0832	MDL	1.00	PQL	mg/Kg	J	Q
MOLYBDENUM	0.347	J	0.171	MDL	2.01	PQL	mg/Kg	J	Z
TIN	2.85	J	0.221	MDL	10.0	PQL	mg/Kg	U	B
ZINC	210		0.201	MDL	4.01	PQL	mg/Kg	J	E
Zirconium	3.89	J	0.842	MDL	5.01	PQL	mg/Kg	U	F, F

Sample ID: SL-587-SA5A-TR-0.5 **Collected:** 5/22/2014 12:14:00 **Analysis Type:** REA2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	1190		0.171	MDL	1.00	PQL	mg/Kg	J	Q

Sample ID: SL-587-SA5A-TR-5.5 **Collected:** 5/22/2014 1:03:00 **Analysis Type:** REA **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	19600		7.79	MDL	43.2	PQL	mg/Kg	J	Q
BERYLLIUM	0.836	J	0.0724	MDL	1.08	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-587-SA5A-TR-5.5** ***Collected:*** **5/22/2014 1:03:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	6.66	J	0.907	MDL	10.8	PQL	mg/Kg	U	B
CADMIUM	0.193	J	0.0821	MDL	1.08	PQL	mg/Kg	J	Z
CALCIUM	2560		3.61	MDL	21.6	PQL	mg/Kg	J	Q
COBALT	4.69		0.107	MDL	1.08	PQL	mg/Kg	J	E
IRON	22900		3.91	MDL	43.2	PQL	mg/Kg	J	Q
MAGNESIUM	4210		1.80	MDL	10.8	PQL	mg/Kg	J	Q
MANGANESE	261		0.0896	MDL	1.08	PQL	mg/Kg	J	Q
MOLYBDENUM	0.599	J	0.184	MDL	2.16	PQL	mg/Kg	J	Z
TIN	3.03	J	0.238	MDL	10.8	PQL	mg/Kg	U	B
ZINC	45.8		0.216	MDL	4.32	PQL	mg/Kg	J	E
Zirconium	4.42	J	0.907	MDL	5.40	PQL	mg/Kg	U	F, F

Sample ID: **SL-587-SA5A-TR-5.5** ***Collected:*** **5/22/2014 1:03:00** ***Analysis Type:*** **REA2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	1140		0.184	MDL	1.08	PQL	mg/Kg	J	Q

Sample ID: **SL-730-SA5A-TR-0.5** ***Collected:*** **5/22/2014 9:56:00** ***Analysis Type:*** **REA** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	13700		7.24	MDL	40.2	PQL	mg/Kg	J	Q
ARSENIC	3.09	J	0.703	MDL	4.02	PQL	mg/Kg	J	Z
BERYLLIUM	0.628	J	0.0673	MDL	1.00	PQL	mg/Kg	J	Z
BORON	5.72	J	0.844	MDL	10.0	PQL	mg/Kg	U	B
CADMIUM	0.697	J	0.0763	MDL	1.00	PQL	mg/Kg	J	Z
CALCIUM	2600		3.36	MDL	20.1	PQL	mg/Kg	J	Q
COBALT	4.73		0.0994	MDL	1.00	PQL	mg/Kg	J	E
IRON	18700		3.64	MDL	40.2	PQL	mg/Kg	J	Q
MAGNESIUM	4100		1.68	MDL	10.0	PQL	mg/Kg	J	Q
MANGANESE	295		0.0834	MDL	1.00	PQL	mg/Kg	J	Q
MOLYBDENUM	0.455	J	0.171	MDL	2.01	PQL	mg/Kg	J	Z
SODIUM	83.0	J	16.8	MDL	100	PQL	mg/Kg	J	Z
TIN	2.89	J	0.221	MDL	10.0	PQL	mg/Kg	U	B
ZINC	123		0.201	MDL	4.02	PQL	mg/Kg	J	E
Zirconium	3.39	J	0.844	MDL	5.02	PQL	mg/Kg	U	F, F

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-730-SA5A-TR-0.5 **Collected: 5/22/2014 9:56:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	1130		0.171	MDL	1.00	PQL	mg/Kg	J	Q

Sample ID: SL-730-SA5A-TR-6.0 **Collected: 5/22/2014 10:09:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	21500		7.73	MDL	42.9	PQL	mg/Kg	J	Q
BERYLLIUM	1.03	J	0.0719	MDL	1.07	PQL	mg/Kg	J	Z
BORON	5.74	J	0.901	MDL	10.7	PQL	mg/Kg	U	B
CALCIUM	2390		3.58	MDL	21.5	PQL	mg/Kg	J	Q
COBALT	5.57		0.106	MDL	1.07	PQL	mg/Kg	J	E
IRON	25000		3.88	MDL	42.9	PQL	mg/Kg	J	Q
MAGNESIUM	4940		1.79	MDL	10.7	PQL	mg/Kg	J	Q
MANGANESE	195		0.0890	MDL	1.07	PQL	mg/Kg	J	Q
MOLYBDENUM	0.516	J	0.182	MDL	2.15	PQL	mg/Kg	J	Z
TIN	3.29	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
ZINC	42.3		0.215	MDL	4.29	PQL	mg/Kg	J	E
Zirconium	4.65	J	0.901	MDL	5.36	PQL	mg/Kg	U	F, F

Sample ID: SL-730-SA5A-TR-6.0 **Collected: 5/22/2014 10:09:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	1410		0.182	MDL	1.07	PQL	mg/Kg	J	Q

Sample ID: SL-887-SA5A-TR-5.5 **Collected: 5/22/2014 1:08:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	22000		7.87	MDL	43.6	PQL	mg/Kg	J	Q
BERYLLIUM	0.948	J	0.0731	MDL	1.09	PQL	mg/Kg	J	Z
BORON	6.87	J	0.916	MDL	10.9	PQL	mg/Kg	U	B
CADMIUM	0.262	J	0.0829	MDL	1.09	PQL	mg/Kg	J	Z
CALCIUM	2810		3.64	MDL	21.8	PQL	mg/Kg	J	Q
COBALT	4.60		0.108	MDL	1.09	PQL	mg/Kg	J	E
IRON	23500		3.95	MDL	43.6	PQL	mg/Kg	J	Q
MAGNESIUM	4300		1.82	MDL	10.9	PQL	mg/Kg	J	Q
MANGANESE	228		0.0905	MDL	1.09	PQL	mg/Kg	J	Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **SL-887-SA5A-TR-5.5** *Collected:* **5/22/2014 1:08:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.472	J	0.185	MDL	2.18	PQL	mg/Kg	J	Z
TIN	3.08	J	0.240	MDL	10.9	PQL	mg/Kg	U	B
ZINC	46.4		0.218	MDL	4.36	PQL	mg/Kg	J	E
Zirconium	4.28	J	0.916	MDL	5.45	PQL	mg/Kg	U	F, F

Sample ID: **SL-887-SA5A-TR-5.5** *Collected:* **5/22/2014 1:08:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	1180		0.185	MDL	1.09	PQL	mg/Kg	J	Q

Method Category: METALS

Method: 6020A **Matrix: AQ**

Sample ID: **EB3-052214** *Collected:* **5/22/2014 3:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STRONTIUM	0.00046	J	0.00034	MDL	0.0020	PQL	mg/L	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-587-SA5A-TR-0.5** *Collected:* **5/22/2014 12:14:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0415	J	0.0261	MDL	0.201	PQL	mg/Kg	J	Z

Sample ID: **SL-587-SA5A-TR-0.5** *Collected:* **5/22/2014 12:14:00** *Analysis Type:* **REA3** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.219	J	0.100	MDL	0.401	PQL	mg/Kg	J	Z

Sample ID: **SL-587-SA5A-TR-5.5** *Collected:* **5/22/2014 1:03:00** *Analysis Type:* **REA2** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0419	J	0.0281	MDL	0.216	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-587-SA5A-TR-5.5 **Collected:** 5/22/2014 1:03:00 **Analysis Type:** REA3 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.209	J	0.108	MDL	0.432	PQL	mg/Kg	J	Z

Sample ID: SL-730-SA5A-TR-0.5 **Collected:** 5/22/2014 9:56:00 **Analysis Type:** REA3 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.237	J	0.100	MDL	0.402	PQL	mg/Kg	J	Z

Sample ID: SL-730-SA5A-TR-6.0 **Collected:** 5/22/2014 10:09:00 **Analysis Type:** REA2 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0418	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: SL-730-SA5A-TR-6.0 **Collected:** 5/22/2014 10:09:00 **Analysis Type:** REA3 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.313	J	0.107	MDL	0.429	PQL	mg/Kg	J	Z

Sample ID: SL-887-SA5A-TR-5.5 **Collected:** 5/22/2014 1:08:00 **Analysis Type:** REA2 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0434	J	0.0284	MDL	0.218	PQL	mg/Kg	J	Z

Sample ID: SL-887-SA5A-TR-5.5 **Collected:** 5/22/2014 1:08:00 **Analysis Type:** REA3 **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.238	J	0.109	MDL	0.436	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-587-SA5A-TR-0.5 **Collected:** 5/22/2014 12:14:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0161	J	0.0101	MDL	0.0169	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **SL-587-SA5A-TR-5.5** *Collected:* **5/22/2014 1:03:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0123	J	0.0109	MDL	0.0182	PQL	mg/Kg	J	Z, FD

Sample ID: **SL-887-SA5A-TR-5.5** *Collected:* **5/22/2014 1:08:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0230		0.0108	MDL	0.0180	PQL	mg/Kg	J	FD

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB3-052214** *Collected:* **5/22/2014 3:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.865	JBQ	0.199	MDL	9.56	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.177	JBQ	0.0723	MDL	9.56	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.106	JBQ	0.0909	MDL	9.56	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.289	JBQ	0.127	MDL	9.56	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.192	JBQ	0.101	MDL	9.56	PQL	pg/L	U	B
2,3,7,8-TCDF	0.203	JQ	0.178	MDL	1.91	PQL	pg/L	J	Z
OCDD	9.68	JBQ	0.445	MDL	19.1	PQL	pg/L	U	B
OCDF	1.11	JBQ	0.269	MDL	19.1	PQL	pg/L	U	B

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-587-SA5A-TR-0.5** *Collected:* **5/22/2014 12:14:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	1.03	JB	0.0276	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.230	JB	0.0338	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.105	JBQ	0.0432	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.147	JB	0.0350	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.431	JB	0.0445	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.198	JB	0.0332	MDL	5.02	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-587-SA5A-TR-0.5 **Collected: 5/22/2014 12:14:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDD	0.488	JBQ	0.0423	MDL	5.02	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.311	JBQ	0.0356	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.229	JB	0.0449	MDL	5.02	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.350	JB	0.0284	MDL	5.02	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.198	JB	0.0343	MDL	5.02	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.330	JB	0.0257	MDL	5.02	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0660	JBQ	0.0590	MDL	1.00	PQL	ng/Kg	U	B
2,3,7,8-TCDF	0.0843	JBQ	0.0591	MDL	1.00	PQL	ng/Kg	U	B
OCDF	2.24	JB	0.0572	MDL	10.0	PQL	ng/Kg	J	Z

Sample ID: SL-587-SA5A-TR-5.5 **Collected: 5/22/2014 1:03:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	17.4	B	0.0659	MDL	5.40	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	3.75	JB	0.0184	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.592	JB	0.0376	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0783	JBQ	0.0369	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.397	JBQ	0.0462	MDL	5.40	PQL	ng/Kg	J	Z, FD
1,2,3,6,7,8-HXCDD	0.420	JBQ	0.0388	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.255	JB	0.0374	MDL	5.40	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.203	JBQ	0.0360	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.298	JB	0.0499	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0362	JB	0.0296	MDL	5.40	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.179	JBQ	0.0189	MDL	5.40	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.331	JB	0.0427	MDL	5.40	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0773	JBQ	0.0200	MDL	5.40	PQL	ng/Kg	U	B
OCDD	301	B	0.0490	MDL	10.8	PQL	ng/Kg	J	Q, FD
OCDF	8.04	JB	0.0492	MDL	10.8	PQL	ng/Kg	J	Z

Sample ID: SL-730-SA5A-TR-0.5 **Collected: 5/22/2014 9:56:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	2.29	JB	0.0430	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.21	JB	0.0422	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	1.34	JB	0.0521	MDL	5.08	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-730-SA5A-TR-0.5 **Collected: 5/22/2014 9:56:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,6,7,8-HXCDD	3.68	JB	0.0435	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	1.55	JB	0.0467	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	2.33	JB	0.0397	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.692	JB	0.0551	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.885	JB	0.0472	MDL	5.08	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	1.95	JBQ	0.0412	MDL	5.08	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	1.63	JB	0.0499	MDL	5.08	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.37	JB	0.0408	MDL	5.08	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.863	JB	0.100	MDL	1.02	PQL	ng/Kg	J	Z

Sample ID: SL-730-SA5A-TR-6.0 **Collected: 5/22/2014 10:09:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.538	JB	0.0268	MDL	5.35	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.178	JBQ	0.0110	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0847	JBQ	0.0213	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0855	JBQ	0.0236	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0382	JBQ	0.0238	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0705	JBQ	0.0236	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0850	JBQ	0.0194	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0816	JBQ	0.0223	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0950	JBQ	0.0280	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0399	JBQ	0.0317	MDL	5.35	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.108	JBQ	0.0167	MDL	5.35	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0681	JBQ	0.0216	MDL	5.35	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0459	JBQ	0.0172	MDL	5.35	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0781	JBQ	0.0515	MDL	1.07	PQL	ng/Kg	U	B
OCDD	4.80	JB	0.0201	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.573	JB	0.0324	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: SL-887-SA5A-TR-5.5 **Collected: 5/22/2014 1:08:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	10.3	B	0.0704	MDL	5.53	PQL	ng/Kg	J	FD
1,2,3,4,6,7,8-HPCDF	2.45	JB	0.0235	MDL	5.53	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-887-SA5A-TR-5.5** *Collected:* **5/22/2014 1:08:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.400	JB	0.0479	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0729	JBQ	0.0493	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.197	JBQ	0.0466	MDL	5.53	PQL	ng/Kg	UJ	B, FD
1,2,3,6,7,8-HXCDD	0.341	JBQ	0.0522	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.249	JBQ	0.0405	MDL	5.53	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.245	JBQ	0.0493	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.286	JB	0.0555	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0544	JBQ	0.0476	MDL	5.53	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.198	JB	0.0272	MDL	5.53	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.251	JB	0.0433	MDL	5.53	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.104	JB	0.0287	MDL	5.53	PQL	ng/Kg	U	B
OCDD	175	B	0.0807	MDL	11.1	PQL	ng/Kg	J	FD
OCDF	5.35	JB	0.107	MDL	11.1	PQL	ng/Kg	J	Z

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **SL-730-SA5A-TR-0.5** *Collected:* **5/22/2014 9:56:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30) SG	2.1	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: **SL-587-SA5A-TR-0.5** *Collected:* **5/22/2014 12:14:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1260	7.3	J	4.0	MDL	17	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: **EB3-052214** *Collected:* **5/22/2014 3:45:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	L
BIS(2-ETHYLHEXYL)PHTHALATE	0.097	J	0.051	MDL	1.0	PQL	ug/L	UJ	L, E, B
Diethylphthalate	0.097	J	0.051	MDL	1.0	PQL	ug/L	J	Z
Di-n-butylphthalate	0.10	J	0.051	MDL	1.0	PQL	ug/L	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-587-SA5A-TR-0.5** *Collected:* **5/22/2014 12:14:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.85	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	0.77	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	18	U	3.4	MDL	18	PQL	ug/Kg	UJ	L
DIBENZO(A,H)ANTHRACENE	0.75	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.70	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.77	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.99	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-587-SA5A-TR-5.5** *Collected:* **5/22/2014 1:03:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	19	U	3.7	MDL	19	PQL	ug/Kg	UJ	L

Sample ID: **SL-730-SA5A-TR-0.5** *Collected:* **5/22/2014 9:56:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.55	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)PYRENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	17	U	3.4	MDL	17	PQL	ug/Kg	UJ	L
BENZO(G,H,I)PERYLENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(K)FLUORANTHENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	16	J	6.1	MDL	18	PQL	ug/Kg	J	Z
Di-n-butylphthalate	6.2	J	6.1	MDL	18	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-730-SA5A-TR-6.0** *Collected:* **5/22/2014 10:09:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.6	MDL	18	PQL	ug/Kg	UJ	L

Sample ID: **SL-887-SA5A-TR-5.5** *Collected:* **5/22/2014 1:08:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	19	U	3.7	MDL	19	PQL	ug/Kg	UJ	L

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: **EB3-052214** *Collected:* **5/22/2014 3:45:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Laboratory Control Precision
E	Laboratory Duplicate Precision
E	Matrix Spike Precision
F	Equipment Blank Contamination
F	Field Blank Contamination
FD	Field Duplicate Precision
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
Q	Laboratory Duplicate Precision
Q	Matrix Spike Lower Rejection
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH195

Method Blank Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1480B370404	5/31/2014 4:04:00 AM	1,2,3,4,6,7,8-HPCDD	0.923 pg/L	EB3-052214
		1,2,3,4,6,7,8-HPCDF	0.283 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.365 pg/L	
		1,2,3,4,7,8-HxCDD	0.213 pg/L	
		1,2,3,4,7,8-HXCDF	0.316 pg/L	
		1,2,3,6,7,8-HXCDD	0.251 pg/L	
		1,2,3,7,8,9-HXCDD	0.159 pg/L	
		1,2,3,7,8-PECDF	0.603 pg/L	
		2,3,4,6,7,8-HXCDF	0.178 pg/L	
		OCDD	7.17 pg/L	
		OCDF	0.452 pg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB3-052214(RES)	1,2,3,4,6,7,8-HPCDD	0.865 pg/L	0.865U pg/L
EB3-052214(RES)	1,2,3,4,6,7,8-HPCDF	0.177 pg/L	0.177U pg/L
EB3-052214(RES)	1,2,3,4,7,8,9-HPCDF	0.106 pg/L	0.106U pg/L
EB3-052214(RES)	1,2,3,7,8-PECDF	0.289 pg/L	0.289U pg/L
EB3-052214(RES)	2,3,4,6,7,8-HXCDF	0.192 pg/L	0.192U pg/L
EB3-052214(RES)	OCDD	9.68 pg/L	9.68U pg/L
EB3-052214(RES)	OCDF	1.11 pg/L	1.11U pg/L

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1530B370625	6/5/2014 6:25:00 AM	1,2,3,4,6,7,8-HPCDD	0.0893 ng/Kg	SL-587-SA5A-TR-0.5
		1,2,3,4,6,7,8-HPCDF	0.0727 ng/Kg	SL-587-SA5A-TR-5.5
		1,2,3,4,7,8,9-HPCDF	0.0705 ng/Kg	SL-730-SA5A-TR-0.5
		1,2,3,4,7,8-HxCDD	0.0830 ng/Kg	SL-730-SA5A-TR-6.0
		1,2,3,4,7,8-HXCDF	0.0629 ng/Kg	SL-887-SA5A-TR-5.5
		1,2,3,6,7,8-HXCDD	0.0643 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0439 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0684 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0800 ng/Kg	
		1,2,3,7,8-PECDD	0.0540 ng/Kg	
		1,2,3,7,8-PECDF	0.103 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0522 ng/Kg	
		2,3,4,7,8-PECDF	0.105 ng/Kg	
		2,3,7,8-TCDD	0.0448 ng/Kg	
		2,3,7,8-TCDF	0.0491 ng/Kg	
		OCDD	0.452 ng/Kg	
		OCDF	0.182 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-587-SA5A-TR-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.230 ng/Kg	0.230U ng/Kg
SL-587-SA5A-TR-0.5(RES)	1,2,3,4,7,8-HxCDD	0.105 ng/Kg	0.105U ng/Kg
SL-587-SA5A-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.147 ng/Kg	0.147U ng/Kg
SL-587-SA5A-TR-0.5(RES)	1,2,3,6,7,8-HXCDF	0.198 ng/Kg	0.198U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-587-SA5A-TR-0.5(RES)	1,2,3,7,8,9-HXCDF	0.311 ng/Kg	0.311U ng/Kg
SL-587-SA5A-TR-0.5(RES)	1,2,3,7,8-PECDD	0.229 ng/Kg	0.229U ng/Kg
SL-587-SA5A-TR-0.5(RES)	1,2,3,7,8-PECDF	0.350 ng/Kg	0.350U ng/Kg
SL-587-SA5A-TR-0.5(RES)	2,3,4,6,7,8-HXCDF	0.198 ng/Kg	0.198U ng/Kg
SL-587-SA5A-TR-0.5(RES)	2,3,4,7,8-PECDF	0.330 ng/Kg	0.330U ng/Kg
SL-587-SA5A-TR-0.5(RES)	2,3,7,8-TCDD	0.0660 ng/Kg	0.0660U ng/Kg
SL-587-SA5A-TR-0.5(RES)	2,3,7,8-TCDF	0.0843 ng/Kg	0.0843U ng/Kg
SL-587-SA5A-TR-5.5(RES)	1,2,3,4,7,8-HxCDD	0.0783 ng/Kg	0.0783U ng/Kg
SL-587-SA5A-TR-5.5(RES)	1,2,3,7,8,9-HXCDD	0.203 ng/Kg	0.203U ng/Kg
SL-587-SA5A-TR-5.5(RES)	1,2,3,7,8,9-HXCDF	0.298 ng/Kg	0.298U ng/Kg
SL-587-SA5A-TR-5.5(RES)	1,2,3,7,8-PECDD	0.0362 ng/Kg	0.0362U ng/Kg
SL-587-SA5A-TR-5.5(RES)	1,2,3,7,8-PECDF	0.179 ng/Kg	0.179U ng/Kg
SL-587-SA5A-TR-5.5(RES)	2,3,4,7,8-PECDF	0.0773 ng/Kg	0.0773U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,4,6,7,8-HPCDF	0.178 ng/Kg	0.178U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0847 ng/Kg	0.0847U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,4,7,8-HxCDD	0.0855 ng/Kg	0.0855U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,4,7,8-HXCDF	0.0382 ng/Kg	0.0382U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,6,7,8-HXCDD	0.0705 ng/Kg	0.0705U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,6,7,8-HXCDF	0.0850 ng/Kg	0.0850U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,7,8,9-HXCDD	0.0816 ng/Kg	0.0816U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,7,8,9-HXCDF	0.0950 ng/Kg	0.0950U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,7,8-PECDD	0.0399 ng/Kg	0.0399U ng/Kg
SL-730-SA5A-TR-6.0(RES)	1,2,3,7,8-PECDF	0.108 ng/Kg	0.108U ng/Kg
SL-730-SA5A-TR-6.0(RES)	2,3,4,6,7,8-HXCDF	0.0681 ng/Kg	0.0681U ng/Kg
SL-730-SA5A-TR-6.0(RES)	2,3,4,7,8-PECDF	0.0459 ng/Kg	0.0459U ng/Kg
SL-730-SA5A-TR-6.0(RES)	2,3,7,8-TCDD	0.0781 ng/Kg	0.0781U ng/Kg
SL-730-SA5A-TR-6.0(RES)	OCDF	0.573 ng/Kg	0.573U ng/Kg
SL-887-SA5A-TR-5.5(RES)	1,2,3,4,7,8-HxCDD	0.0729 ng/Kg	0.0729U ng/Kg
SL-887-SA5A-TR-5.5(RES)	1,2,3,4,7,8-HXCDF	0.197 ng/Kg	0.197U ng/Kg
SL-887-SA5A-TR-5.5(RES)	1,2,3,7,8,9-HXCDD	0.245 ng/Kg	0.245U ng/Kg
SL-887-SA5A-TR-5.5(RES)	1,2,3,7,8,9-HXCDF	0.286 ng/Kg	0.286U ng/Kg
SL-887-SA5A-TR-5.5(RES)	1,2,3,7,8-PECDD	0.0544 ng/Kg	0.0544U ng/Kg
SL-887-SA5A-TR-5.5(RES)	1,2,3,7,8-PECDF	0.198 ng/Kg	0.198U ng/Kg
SL-887-SA5A-TR-5.5(RES)	2,3,4,6,7,8-HXCDF	0.251 ng/Kg	0.251U ng/Kg
SL-887-SA5A-TR-5.5(RES)	2,3,4,7,8-PECDF	0.104 ng/Kg	0.104U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14835BB221845	5/29/2014 6:45:00 PM	Zirconium	0.0110 mg/L	EB3-052214

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB3-052214(RES)	Zirconium	0.0108 mg/L	0.0108U mg/L

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14937AB220850	6/2/2014 8:50:00 AM	ALUMINUM	7.59 mg/Kg	SL-587-SA5A-TR-0.5
		BERYLLIUM	0.0890 mg/Kg	SL-587-SA5A-TR-5.5
		BORON	1.60 mg/Kg	SL-730-SA5A-TR-0.5
		CALCIUM	21.3 mg/Kg	SL-730-SA5A-TR-6.0
		TIN	1.59 mg/Kg	SL-887-SA5A-TR-5.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-587-SA5A-TR-0.5(REA)	BORON	6.50 mg/Kg	6.50U mg/Kg
SL-587-SA5A-TR-0.5(REA)	TIN	2.85 mg/Kg	2.85U mg/Kg
SL-587-SA5A-TR-5.5(REA)	BORON	6.66 mg/Kg	6.66U mg/Kg
SL-587-SA5A-TR-5.5(REA)	TIN	3.03 mg/Kg	3.03U mg/Kg
SL-730-SA5A-TR-0.5(REA)	BORON	5.72 mg/Kg	5.72U mg/Kg
SL-730-SA5A-TR-0.5(REA)	TIN	2.89 mg/Kg	2.89U mg/Kg
SL-730-SA5A-TR-6.0(REA)	BORON	5.74 mg/Kg	5.74U mg/Kg
SL-730-SA5A-TR-6.0(REA)	TIN	3.29 mg/Kg	3.29U mg/Kg
SL-887-SA5A-TR-5.5(REA)	BORON	6.87 mg/Kg	6.87U mg/Kg
SL-887-SA5A-TR-5.5(REA)	TIN	3.08 mg/Kg	3.08U mg/Kg

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14937AB221403A	6/2/2014 2:03:00 PM	STRONTIUM	0.103 mg/Kg	SL-587-SA5A-TR-0.5 SL-587-SA5A-TR-5.5 SL-730-SA5A-TR-0.5 SL-730-SA5A-TR-6.0 SL-887-SA5A-TR-5.5

Method Blank Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWN14B260205	6/3/2014 2:05:00 AM	BIS(2-ETHYLHEXYL)PHTHALATE	0.056 ug/L	EB3-052214

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB3-052214(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.097 ug/L	1.0U ug/L

Field Blank Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	SL-587-SA5A-TR-0.5 SL-587-SA5A-TR-5.5 SL-730-SA5A-TR-0.5 SL-730-SA5A-TR-6.0 SL-887-SA5A-TR-5.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-587-SA5A-TR-0.5(REA)	Zirconium	3.89 mg/Kg	3.89U mg/Kg
SL-587-SA5A-TR-5.5(REA)	Zirconium	4.42 mg/Kg	4.42U mg/Kg
SL-730-SA5A-TR-0.5(REA)	Zirconium	3.39 mg/Kg	3.39U mg/Kg
SL-730-SA5A-TR-6.0(REA)	Zirconium	4.65 mg/Kg	4.65U mg/Kg
SL-887-SA5A-TR-5.5(REA)	Zirconium	4.28 mg/Kg	4.28U mg/Kg

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB3-052214(RES)	5/22/2014 3:45:00 PM	CALCIUM MANGANESE Zirconium	0.15 mg/L 0.0009 mg/L 0.0108 mg/L	SL-587-SA5A-TR-0.5 SL-587-SA5A-TR-5.5 SL-730-SA5A-TR-0.5 SL-730-SA5A-TR-6.0 SL-887-SA5A-TR-5.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-587-SA5A-TR-0.5(REA)	Zirconium	3.89 mg/Kg	3.89U mg/Kg
SL-587-SA5A-TR-5.5(REA)	Zirconium	4.42 mg/Kg	4.42U mg/Kg
SL-730-SA5A-TR-0.5(REA)	Zirconium	3.39 mg/Kg	3.39U mg/Kg
SL-730-SA5A-TR-6.0(REA)	Zirconium	4.65 mg/Kg	4.65U mg/Kg
SL-887-SA5A-TR-5.5(REA)	Zirconium	4.28 mg/Kg	4.28U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-587-SA5A-TR-5.5MS SL-587-SA5A-TR-5.5MSD (SL-587-SA5A-TR-5.5)	OCDD	-15	-4	40.00-135.00	-	OCDD	J (all detects) R (all non-detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-587-SA5A-TR-5.5MS (TOT) SL-587-SA5A-TR-5.5MSD (TOT) (SL-587-SA5A-TR-0.5 SL -587-SA5A-TR-5.5 SL -730-SA5A-TR-0.5 SL -730-SA5A-TR-6.0 SL -887-SA5A-TR-5.5)	ALUMINUM CALCIUM COPPER IRON MAGNESIUM MANGANESE PHOSPHORUS POTASSIUM TITANIUM	2418 163 - 672 299 129 - 139 297	2734 192 137 1158 377 134 159 128 399	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - - - - - -	ALUMINUM CALCIUM COPPER IRON MAGNESIUM MANGANESE PHOSPHORUS POTASSIUM TITANIUM	J(all detects) Cu, P, K, No Qual, >4x
SL-587-SA5A-TR-5.5MSD (TOT) (SL-587-SA5A-TR-0.5 SL -587-SA5A-TR-5.5 SL -730-SA5A-TR-0.5 SL -730-SA5A-TR-6.0 SL -887-SA5A-TR-5.5)	ZINC	-	142	75.00-125.00	21 (20.00)	ZINC	J(all detects) UJ(all non-detects) No Qual %R, >4x

Method: 6020A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-587-SA5A-TR-5.5MS (TOT) (SL-587-SA5A-TR-0.5 SL -587-SA5A-TR-5.5 SL -730-SA5A-TR-0.5 SL -730-SA5A-TR-6.0 SL -887-SA5A-TR-5.5)	STRONTIUM	128	-	75.00-125.00	-	STRONTIUM	No Qual, >4x

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Lab Duplicate Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C
Matrix: SO

QC Sample ID (Associated Sample ID)	*Analyte*	*Sample RPD*	*eQAPP RPD*	*Flag*
SL-587-SA5A-TR-5.5DUP (TOT)	CADMIUM	32	20.00	
(SL-587-SA5A-TR-0.5	COBALT	69	20.00	J (all detects)
SL -587-SA5A-TR-5.5	MOLYBDENUM	33	20.00	UJ (all non-detects)
SL -730-SA5A-TR-0.5				Cd, Mo, No Qual,
SL -730-SA5A-TR-6.0				OK by Difference
SL -887-SA5A-TR-5.5)				

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P4WNLCSQ260235 **P4WNLCSY260304** (EB3-052214)	1-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALAT	84 160	- -	86.00-130.00 70.00-143.00	- 77 (30.00)	1-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALA	J (all detects) UJ (all non-detects)

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY18Q211044A (EB3-052214)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P5LALCSQ260113 (SL-587-SA5A-TR-0.5 SL-587-SA5A-TR-5.5 SL-730-SA5A-TR-0.5 SL-730-SA5A-TR-6.0 SL-887-SA5A-TR-5.5)	BENZO(E)PYRENE	80	-	81.00-110.00	-	BENZO(E)PYRENE	J(all detects) UJ(all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 160.3M
Matrix: SO

Analyte	Concentration (%)		Sample RPD	eQAPP RPD	Flag
	SL-587-SA5A-TR-5.5	SL-887-SA5A-TR-5.5			
MOISTURE	10.1	11.0	9		No Qualifiers Applied

Method: 1613B
Matrix: SO

Analyte	Concentration (ng/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-587-SA5A-TR-5.5	SL-887-SA5A-TR-5.5			
1,2,3,4,6,7,8-HPCDF	3.75	2.45	42	50.00	
1,2,3,4,7,8,9-HPCDF	0.592	0.400	39	50.00	
1,2,3,4,7,8-HxCDD	0.0783	0.0729	7	50.00	
1,2,3,6,7,8-HXCDD	0.420	0.341	21	50.00	
1,2,3,6,7,8-HXCDF	0.255	0.249	2	50.00	
1,2,3,7,8,9-HXCDD	0.203	0.245	19	50.00	
1,2,3,7,8,9-HXCDF	0.298	0.286	4	50.00	No Qualifiers Applied
1,2,3,7,8-PECDD	0.0362	0.0544	40	50.00	
1,2,3,7,8-PECDF	0.179	0.198	10	50.00	
2,3,4,6,7,8-HXCDF	0.331	0.251	27	50.00	
2,3,4,7,8-PECDF	0.0773	0.104	29	50.00	
OCDF	8.04	5.35	40	50.00	
			45		
1,2,3,4,6,7,8-HPCDD	17.4	10.3	51	50.00	J(all detects)
1,2,3,4,7,8-HXCDF	0.397	0.197	67	50.00	
OCDD	301	175	53	50.00	

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-587-SA5A-TR-5.5 (TOT)	SL-887-SA5A-TR-5.5 (TOT)			
ALUMINUM	19600	22000	12	50.00	
ARSENIC	4.32	5.26	20	50.00	
BARIUM	94.0	98.0	4	50.00	
BERYLLIUM	0.836	0.948	13	50.00	
BORON	6.66	6.87	3	50.00	
CADMIUM	0.193	0.262	30	50.00	
CALCIUM	2560	2810	9	50.00	
CHROMIUM	20.0	23.0	14	50.00	
COBALT	4.69	4.60	2	50.00	
COPPER	7.98	9.48	17	50.00	
IRON	22900	23500	3	50.00	
LEAD	5.45	6.55	18	50.00	
LITHIUM	26.3	28.1	7	50.00	No Qualifiers Applied
MAGNESIUM	4210	4300	2	50.00	
MANGANESE	261	228	13	50.00	
MOLYBDENUM	0.599	0.472	24	50.00	
NICKEL	10.7	11.7	9	50.00	
PHOSPHORUS	226	258	13	50.00	
POTASSIUM	2190	2240	2	50.00	
SODIUM	147	159	8	50.00	
TIN	3.03	3.08	2	50.00	
TITANIUM	1140	1180	3	50.00	
VANADIUM	39.9	44.1	10	50.00	
ZINC	45.8	46.4	1	50.00	
Zirconium	4.42	4.28	3	50.00	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Field Duplicate RPD Report

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-587-SA5A-TR-5.5 (TOT)	SL-887-SA5A-TR-5.5 (TOT)			
SELENIUM	0.209	0.238	13	50.00	No Qualifiers Applied
SILVER	0.0419	0.0434	4	50.00	
STRONTIUM	21.4	21.9	2	50.00	
THALLIUM	0.242	0.240	1	50.00	

Method: 7471B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	SL-587-SA5A-TR-5.5 (TOT)	SL-887-SA5A-TR-5.5 (TOT)			
MERCURY	0.0123	0.0230	61	50.00	J(all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB3-052214	1,2,3,4,6,7,8-HPCDD	JBQ	0.865	9.56	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.177	9.56	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.106	9.56	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.289	9.56	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.192	9.56	PQL	pg/L	
	2,3,7,8-TCDF	JQ	0.203	1.91	PQL	pg/L	
	OCDD	JBQ	9.68	19.1	PQL	pg/L	
	OCDF	JBQ	1.11	19.1	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB3-052214	CALCIUM	J	0.150	0.400	PQL	mg/L	J (all detects)
	MANGANESE	J	0.00090	0.0100	PQL	mg/L	
	Zirconium	J	0.0108	0.100	PQL	mg/L	

Method: 6020A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB3-052214	STRONTIUM	J	0.00046	0.0020	PQL	mg/L	J (all detects)

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB3-052214	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.097	1.0	PQL	ug/L	J (all detects)
	Diethylphthalate	J	0.097	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.10	1.0	PQL	ug/L	

Reporting Limit Outliers

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA5A-TR-0.5	1,2,3,4,6,7,8-HPCDF	JB	1.03	5.02	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.230	5.02	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.105	5.02	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.147	5.02	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	0.431	5.02	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.198	5.02	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.488	5.02	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.311	5.02	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.229	5.02	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.350	5.02	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.198	5.02	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.330	5.02	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0660	1.00	PQL	ng/Kg	
	2,3,7,8-TCDF	JBQ	0.0843	1.00	PQL	ng/Kg	
	OCDF	JB	2.24	10.0	PQL	ng/Kg	
SL-587-SA5A-TR-5.5	1,2,3,4,6,7,8-HPCDF	JB	3.75	5.40	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.592	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0783	5.40	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.397	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.420	5.40	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.255	5.40	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.203	5.40	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.298	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.0362	5.40	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.179	5.40	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.331	5.40	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0773	5.40	PQL	ng/Kg	
	OCDF	JB	8.04	10.8	PQL	ng/Kg	
SL-730-SA5A-TR-0.5	1,2,3,4,7,8,9-HPCDF	JB	2.29	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	1.21	5.08	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	1.34	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JB	3.68	5.08	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	1.55	5.08	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	2.33	5.08	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.692	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JB	0.885	5.08	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	1.95	5.08	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	1.63	5.08	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	1.37	5.08	PQL	ng/Kg	
	2,3,7,8-TCDF	JB	0.863	1.02	PQL	ng/Kg	
SL-730-SA5A-TR-6.0	1,2,3,4,6,7,8-HPCDD	JB	0.538	5.35	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.178	5.35	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0847	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0855	5.35	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0382	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0705	5.35	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0850	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0816	5.35	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0950	5.35	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JBQ	0.0399	5.35	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.108	5.35	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0681	5.35	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0459	5.35	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0781	1.07	PQL	ng/Kg	
	OCDD	JB	4.80	10.7	PQL	ng/Kg	
	OCDF	JB	0.573	10.7	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-887-SA5A-TR-5.5	1,2,3,4,6,7,8-HPCDF	JB	2.45	5.53	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.400	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0729	5.53	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.197	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.341	5.53	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.249	5.53	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.245	5.53	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JB	0.286	5.53	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.0544	5.53	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.198	5.53	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.251	5.53	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.104	5.53	PQL	ng/Kg	
	OCDF	JB	5.35	11.1	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA5A-TR-0.5	ARSENIC	J	3.34	4.01	PQL	mg/Kg	
	BERYLLIUM	J	0.725	1.00	PQL	mg/Kg	
	BORON	J	6.50	10.0	PQL	mg/Kg	
	CADMIUM	J	0.264	1.00	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.347	2.01	PQL	mg/Kg	
	TIN	J	2.85	10.0	PQL	mg/Kg	
	Zirconium	J	3.89	5.01	PQL	mg/Kg	
SL-587-SA5A-TR-5.5	BERYLLIUM	J	0.836	1.08	PQL	mg/Kg	
	BORON	J	6.66	10.8	PQL	mg/Kg	
	CADMIUM	J	0.193	1.08	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.599	2.16	PQL	mg/Kg	
	TIN	J	3.03	10.8	PQL	mg/Kg	
	Zirconium	J	4.42	5.40	PQL	mg/Kg	
SL-730-SA5A-TR-0.5	ARSENIC	J	3.09	4.02	PQL	mg/Kg	
	BERYLLIUM	J	0.628	1.00	PQL	mg/Kg	
	BORON	J	5.72	10.0	PQL	mg/Kg	
	CADMIUM	J	0.697	1.00	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.455	2.01	PQL	mg/Kg	
	SODIUM	J	83.0	100	PQL	mg/Kg	
	TIN	J	2.89	10.0	PQL	mg/Kg	
	Zirconium	J	3.39	5.02	PQL	mg/Kg	
SL-730-SA5A-TR-6.0	BERYLLIUM	J	1.03	1.07	PQL	mg/Kg	
	BORON	J	5.74	10.7	PQL	mg/Kg	
	MOLYBDENUM	J	0.516	2.15	PQL	mg/Kg	J (all detects)
	TIN	J	3.29	10.7	PQL	mg/Kg	
	Zirconium	J	4.65	5.36	PQL	mg/Kg	
SL-887-SA5A-TR-5.5	BERYLLIUM	J	0.948	1.09	PQL	mg/Kg	
	BORON	J	6.87	10.9	PQL	mg/Kg	
	CADMIUM	J	0.262	1.09	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.472	2.18	PQL	mg/Kg	
	TIN	J	3.08	10.9	PQL	mg/Kg	
	Zirconium	J	4.28	5.45	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA5A-TR-0.5	SELENIUM	J	0.219	0.401	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0415	0.201	PQL	mg/Kg	
SL-587-SA5A-TR-5.5	SELENIUM	J	0.209	0.432	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0419	0.216	PQL	mg/Kg	
SL-730-SA5A-TR-0.5	SELENIUM	J	0.237	0.402	PQL	mg/Kg	J (all detects)
SL-730-SA5A-TR-6.0	SELENIUM	J	0.313	0.429	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0418	0.215	PQL	mg/Kg	
SL-887-SA5A-TR-5.5	SELENIUM	J	0.238	0.436	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0434	0.218	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA5A-TR-0.5	MERCURY	J	0.0161	0.0169	PQL	mg/Kg	J (all detects)
SL-587-SA5A-TR-5.5	MERCURY	J	0.0123	0.0182	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-730-SA5A-TR-0.5	EFH (C21-C30) SG	J	2.1	5.1	PQL	mg/Kg	J (all detects)

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA5A-TR-0.5	AROCLOR 1260	J	7.3	17	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-587-SA5A-TR-0.5	BENZO(A)ANTHRACENE	J	0.85	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)PYRENE	J	0.77	1.7	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	0.75	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	0.70	1.7	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.77	1.7	PQL	ug/Kg	
	PYRENE	J	0.99	1.7	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH195 **Laboratory: LL**

EDD Filename: PH195_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-730-SA5A-TR-0.5	ANTHRACENE	J	0.55	1.7	PQL	ug/Kg	
	BENZO(A)PYRENE	J	1.0	1.7	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.4	1.7	PQL	ug/Kg	
	BENZO(K)FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	16	18	PQL	ug/Kg	
	Di-n-butylphthalate	J	6.2	18	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.0	1.7	PQL	ug/Kg	

LDC #: 32030C4

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 06/26/14

SDG #: PH195

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: SD

2nd Reviewer: a

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 05/22/14
II.	ICP/MS Tune	—	
III.	Calibration	—	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	N	MS/D (7,8)
VII.	Duplicate Sample Analysis	N	Dup (9)
VIII.	Laboratory Control Samples (LCS)	N	
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	A	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	~~A~~ SW	FD = 4,5
XV	Field Blanks	SW	EB=(6), FB=FB-052114 (SDG-PH191)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soils / Water

1	SL-730-SA5A-TR-0.5	11		21		31	
2	SL-730-SA5A-TR-6.0	12		22		32	
3	SL-587-SA5A-TR-0.5	13		23		33	
4	SL-587-SA5A-TR-5.5	14		24		34	
5	SL-887-SA5A-TR-5.5	15		25		35	
6	EB3-052214 Water	16		26		36	
7	SL-587-SA5A-TR-5.5MS	17		27		37	
8	SL-587-SA5A-TR-5.5MSD	18		28		38	
9	SL-587-SA5A-TR-5.5DUP	19		29		39	
10		20		30		40	

Notes:

LDC #: 32030C4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: a

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
6	W	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC-79	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32030C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010C/602A/7471B) Soil preparation factor applied: ____
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 6

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level (mg/L)	6										
Zr		11.5 SW	~~11.5~~	0.0575	0.0108										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 32030C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JD
2nd Reviewer: 9

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 05/21/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: 1-5 (Reason F)

Analyte	Blank ID	Sample Identification										
	FB-052114	Action Limit (mg/kg)	1	2	3	4	5					
Zr	0.0110	5.5	3.39	4.65	3.89	4.42	4.28					

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 32030C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: SO
2nd Reviewer: CL

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 05/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 1-5(Reason: F)

Analyte	Blank ID	Sample Identification											
	EB3-052214	Action Limit (mg/kg)	1	2	3	4	5						
Ca	0.150	75											
Mn	0.00090	0.45											
Zr	0.0108	5.4	3.39	4.65	3.89	4.42	4.28						
Sr	0.00046	0.23											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: PH195
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7475537BKG Matrix Spike Lab Sample ID: 7475538MS Matrix Spike Duplicate Lab Sample ID: 7475539MSD
Batch Id(s): P14937A, P14838B

Analyte	Mass	BKG Sample Result	C	MS Sample Result	C	MSD Sample Result	C	MS Spike Added	MSD Spike Added	Units	MS %R	Q	MSD %R	Q	RPD	Q	Control Limit %R	Control Limit RPD	M
Aluminum		17657.5068		22353.0107		22965.4408		194.1748	194.1748	MG/KG	2418		2734		3			20	P
Antimony		0.7184	U	37.5650		38.8748		48.5437	48.5437	MG/KG	77		80		3		75 - 125	20	P
Arsenic		3.8864		18.6447		18.8214		14.5631	14.5631	MG/KG	101		103		1		75 - 125	20	P
Barium		84.5010		284.3845		284.4408		194.1748	194.1748	MG/KG	103		103		0		75 - 125	20	P
Beryllium		0.7515	B	5.7243		5.6748		4.8544	4.8544	MG/KG	102		101		1		75 - 125	20	P
Boron		5.9874	B	195.5330		195.7485		194.1748	194.1748	MG/KG	98		98		0		75 - 125	20	P
Cadmium		0.1738	B	4.8359		4.9243		4.8544	4.8544	MG/KG	96		98		2		75 - 125	20	P
Calcium		2299.7408		2933.5806		3046.6553		388.3495	388.3495	MG/KG	163		192		4			20	P
Chromium		17.9485		39.7359		42.0029		19.4175	19.4175	MG/KG	112		124		6		75 - 125	20	P
Cobalt		4.2204		50.9573		50.3146		48.5437	48.5437	MG/KG	96		95		1		75 - 125	20	P
Copper		7.1748		33.1146		40.4738		24.2718	24.2718	MG/KG	107		137	N	20		75 - 125	20	P
Iron		20598.7845		21250.8612		21723.0748		97.0874	97.0874	MG/KG	672		1158		2			20	P
Lead		4.9039		18.9806		20.7544		14.5631	14.5631	MG/KG	97		109		9		75 - 125	20	P
Lithium		23.6524		126.9583		124.7583		97.0874	97.0874	MG/KG	106		104		2		75 - 125	20	P
Magnesium		3781.9816		4363.3524		4514.3223		194.1748	194.1748	MG/KG	299		377		3			20	P
Manganese		234.3767		296.9854		299.6136		48.5437	48.5437	MG/KG	129		134		1			20	P
Mercury		0.0111	B	0.1577		0.1608		0.1605	0.1630	MG/KG	91		92		2		65 - 135	20	CV
Molybdenum		0.5388	B	186.3874		185.2476		194.1748	194.1748	MG/KG	96		95		1		75 - 125	20	P
Nickel		9.6204		58.5320		57.9447		48.5437	48.5437	MG/KG	101		100		1		75 - 125	20	P
Phosphorus		203.4369		304.4214		358.2146		97.0874	97.0874	MG/KG	104		159	N	16		75 - 125	20	P
Potassium		1969.3194		3323.0282		3211.1320		970.8738	970.8738	MG/KG	139	N	128	N	3		75 - 125	20	P
Selenium	78	0.1880	B	2.1755		2.1660		1.9417	1.9417	MG/KG	102		102		0		75 - 125	20	MS
Silver	107	0.0377	B	10.0802		10.0206		9.7087	9.7087	MG/KG	103		103		1		75 - 125	20	MS
Sodium		132.2563		1152.8340		1110.9476		970.8738	970.8738	MG/KG	105		101		4		75 - 125	20	P
Strontium	88	19.2019		29.1351		28.3567		7.7670	7.7670	MG/KG	128	N	118		3		75 - 125	20	MS
Thallium	203	0.2173		0.6066		0.6202		0.3883	0.3883	MG/KG	100		104		2		75 - 125	20	MS
Tin		2.7214	B	361.5845		356.6932		388.3495	388.3495	MG/KG	92		91		1		75 - 125	20	P
Titanium		1023.2194		1311.2903		1410.7709		97.0874	97.0874	MG/KG	297		399		7			20	P
Vanadium		35.8796		88.8019		91.3126		48.5437	48.5437	MG/KG	109		114		3		75 - 125	20	P
Zinc		41.1621		89.5136		110.2806		48.5437	48.5437	MG/KG	100		142	N	21	*	75 - 125	20	P
Zirconium		3.9738	B	98.1971		98.3243		97.0874	97.0874	MG/KG	97		97		0		75 - 125	20	P

Cu, P, K, Sr= 3dat/A Zn= 3lus/A

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

Al, Ca, Fe, Mg, Mn, Ti > 4x

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: PH195
Matrix: SOIL Level (low/med): LOW

Background Lab Sample ID: 7475537BKG Duplicate Lab Sample ID: 7475540DUP
Batch ID(s): P14937A, P14838B
Concentration Units: MG/KG

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			17657.5068		17805.7883		1		P
Antimony			0.7184	U	0.7184	U			P
Arsenic		3.9	3.8864		4.1330		6		P
Barium			84.5010		86.4951		2		P
Beryllium			0.7515	B	0.7757	B	3		P
Boron			5.9874	B	6.2883	B	5		P
Cadmium			0.1738	B	0.1262	B	32		P
Calcium			2299.7408		2376.1165		3		P
Chromium			17.9485		18.1515		1		P
Cobalt		1.0	4.2204		8.6544		69	*	P
Copper		1.9	7.1748		7.4786		4		P
Iron			20598.7845		20033.2583		3		P
Lead		2.9	4.9039		5.2641		7		P
Lithium			23.6524		23.6592		0		P
Magnesium			3781.9816		3909.7942		3		P
Manganese			234.3767		272.7223		15		P
Mercury			0.0111	B	0.0105	B	6		CV
Molybdenum			0.5388	B	0.3845	B	33		P
Nickel		1.9	9.6204		9.9126		3		P
Phosphorus			203.4369		211.9553		4		P
Potassium			1969.3194		2029.5126		3		P
Selenium	78		0.1880	B	0.1839	B	2		MS
Silver	107		0.0377	B	0.0369	B	2		MS
Sodium		97.1	132.2563		138.3650		5		P
Strontium	88		19.2019		19.3592		1		MS
Thallium	203	0.2	0.2173		0.2128		2		MS
Tin			2.7214	B	2.8476	B	5		P
Titanium			1023.2194		1026.3505		0		P
Vanadium			35.8796		36.0738		1		P
Zinc			41.1621		41.7660		1		P
Zirconium			3.9738	B	4.7971	B	19		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Co= J/UJ/A

Mo, Cd, Ni = ok by difference

Note: Results shown are reported on an as-received basis.

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	FLAGS:
AF = Cold Vapor Atomic Fluorescence	* = Duplicate Out of Spec

LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 28, 2014

SUBJECT: Santa Susana Field Laboratory, FDG Block 1, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on June 24, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32031:

SDG #	Fraction
PH175, PH176 PH177	Volatiles, Semivolatiles, Polychlorinated Biphenyls, Metals, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins and Dibenzofurans, Perchlorate

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, January 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

155 pages-CD

Attachment 1

90/10 ADR/IV

LDC #32031 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, FDG Block 1)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)		SVOA (8270D -SIM)		PCBs (8082A)		Metals & Hg (SW846)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		CLO_4 (6850)																					
Matrix:	Water/Soil					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH175	06/24/14	07/23/14	-	-	0	2	0	2	0	2	-	-	-	-	0	2	0	2																			
B	PH176	06/24/14	07/23/14	1	0	1	3	1	3	1	3	2	2	2	4	1	0	1	1																			
C	PH177	06/24/14	07/23/14	-	-	2	8	2	8	2	8	2	3	4	10	2	8	2	3																			
Total	T/SM					3	13	3	13	3	13	4	5	6	14	3	10	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 1

SDG: PH175

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 25, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 12, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B
Dioxins and Dibenzofurans by EPA Method 1613B
Perchlorate by EPA Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH175	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

No trip blanks were identified in this SDG.

One equipment blank (from SDG PH177) was collected and analyzed for SVOCs, PCBs, metals, dioxins and dibenzofurans and perchlorate. The equipment blank had detections for SVOCs, metals, dioxins and dibenzofurans and perchlorate. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH176) was collected and analyzed for SVOCs, PCBs, metals, dioxins and dibenzofurans and perchlorate. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	3050B	6010C	III
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	3050B	6020A	III
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	3546	8082A	III
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	3546	8270D SIM	III
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	METHOD	1613B	III
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	METHOD	6850	III
12-May-2014	FDG-SL-748-SA5C-SB-0.0-0.	7461254	N	METHOD	7471B	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	3050B	6010C	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	3050B	6020A	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	3546	8082A	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	3546	8270D SIM	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	METHOD	1613B	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	METHOD	6850	III
12-May-2014	FDG-SL-748-SA5C-SB-4.0-5.	7461255	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-0.0-0.5 *Collected:* 5/12/2014 8:32:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.888	J	0.0717	MDL	1.07	PQL	mg/Kg	J	Z
BORON	6.28	J	0.899	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.305	J	0.0814	MDL	1.07	PQL	mg/Kg	J	Z
TIN	3.18	J	0.236	MDL	10.7	PQL	mg/Kg	U	B

Sample ID: FDG-SL-748-SA5C-SB-4.0-5.0 *Collected:* 5/12/2014 10:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.633	J	0.0717	MDL	1.07	PQL	mg/Kg	J	Z
BORON	1.40	J	0.898	MDL	10.7	PQL	mg/Kg	U	B, F
SODIUM	84.9	J	17.9	MDL	107	PQL	mg/Kg	J	Z
TIN	3.12	J	0.235	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	3.13	J	0.898	MDL	5.35	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-0.0-0.5 *Collected:* 5/12/2014 8:32:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.351	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-748-SA5C-SB-0.0-0.5 *Collected:* 5/12/2014 8:32:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.200	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-748-SA5C-SB-4.0-5.0 *Collected:* 5/12/2014 10:00:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.193	J	0.107	MDL	0.428	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-4.0-5.0 *Collected:* 5/12/2014 10:00:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.187	J	0.0278	MDL	0.214	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-4.0-5.0 *Collected:* 5/12/2014 10:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0169	J	0.0106	MDL	0.0177	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-0.0-0.5 *Collected:* 5/12/2014 8:32:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.581	JBQ	0.0614	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.03	JB	0.135	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.591	JB	0.0941	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.44	J	0.137	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.684	JB	0.0928	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	2.31	JB	0.136	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.320	JBQ	0.0976	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.708	JBQ	0.127	MDL	5.28	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.873	JB	0.0643	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.451	JBQ	0.0935	MDL	5.28	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.439	JB	0.0581	MDL	5.28	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.193	JQ	0.0946	MDL	1.06	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.801	J	0.109	MDL	1.06	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-4.0-5.0 *Collected:* 5/12/2014 10:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.715	JB	0.0633	MDL	5.15	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.0357	JBQ	0.0190	MDL	5.15	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0302	JBQ	0.0290	MDL	5.15	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0501	J	0.0374	MDL	5.15	PQL	ng/Kg	J	Z
OCDD	6.71	JB	0.0468	MDL	10.3	PQL	ng/Kg	J	Z
OCDF	0.193	JBQ	0.0842	MDL	10.3	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: FDG-SL-748-SA5C-SB-0.0-0.5 *Collected:* 5/12/2014 8:32:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.2	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: FDG-SL-748-SA5C-SB-0.0-0.5 *Collected:* 5/12/2014 8:32:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.7	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
ANTHRACENE	0.85	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	3.8	J	3.6	MDL	18	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	13	J	6.4	MDL	19	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
F	Equipment Blank Contamination
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH175

Method Blank Outlier Report

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1360B372053	5/19/2014 8:53:00 PM	1,2,3,4,6,7,8-HPCDD	0.0887 ng/Kg	FDG-SL-748-SA5C-SB-0.0-0.5
		1,2,3,4,6,7,8-HPCDF	0.0135 ng/Kg	FDG-SL-748-SA5C-SB-4.0-5.0
		1,2,3,4,7,8,9-HPCDF	0.0284 ng/Kg	
		1,2,3,4,7,8-HxCDD	0.0321 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0576 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0280 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0241 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0367 ng/Kg	
		1,2,3,7,8-PECDD	0.0427 ng/Kg	
		1,2,3,7,8-PECDF	0.0581 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0471 ng/Kg	
		2,3,4,7,8-PECDF	0.0414 ng/Kg	
		OCDD	0.355 ng/Kg	
		OCDF	0.165 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-748-SA5C-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0357 ng/Kg	0.0357U ng/Kg
FDG-SL-748-SA5C-SB-4.0-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0302 ng/Kg	0.0302U ng/Kg
FDG-SL-748-SA5C-SB-4.0-5.0(RES)	OCDF	0.193 ng/Kg	0.193U ng/Kg

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB222025	5/15/2014 8:25:00 PM	BORON	1.15 mg/Kg	FDG-SL-748-SA5C-SB-0.0-0.5
		CALCIUM	13.6 mg/Kg	FDG-SL-748-SA5C-SB-4.0-5.0
		TIN	1.35 mg/Kg	
		ZINC	0.568 mg/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-748-SA5C-SB-0.0-0.5(RES)	TIN	3.18 mg/Kg	3.18U mg/Kg
FDG-SL-748-SA5C-SB-4.0-5.0(RES)	BORON	1.40 mg/Kg	1.40U mg/Kg
FDG-SL-748-SA5C-SB-4.0-5.0(RES)	TIN	3.12 mg/Kg	3.12U mg/Kg

Method: 6020A
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB220455A	5/16/2014 4:55:00 AM	STRONTIUM	0.0750 mg/Kg	FDG-SL-748-SA5C-SB-0.0-0.5
				FDG-SL-748-SA5C-SB-4.0-5.0

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-051414(REA3)	5/14/2014 3:00:00 PM	BARIUM BORON MOLYBDENUM	0.00034 mg/L 0.0106 mg/L 0.0029 mg/L	FDG-SL-748-SA5C-SB-0.0-0.5 FDG-SL-748-SA5C-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-748-SA5C-SB-4.0-5.0(RES)	BORON	1.40 mg/Kg	1.40U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-748-SA5C-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	JBQ	0.581	5.28	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8-HxCDD	JB	1.03	5.28	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.591	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	2.44	5.28	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.684	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	2.31	5.28	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.320	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.708	5.28	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.873	5.28	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.451	5.28	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.439	5.28	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.193	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.801	1.06	PQL	ng/Kg	
FDG-SL-748-SA5C-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JB	0.715	5.15	PQL	ng/Kg	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0357	5.15	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0302	5.15	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.0501	5.15	PQL	ng/Kg	
	OCDD	JB	6.71	10.3	PQL	ng/Kg	
	OCDF	JBQ	0.193	10.3	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-748-SA5C-SB-0.0-0.5	BERYLLIUM	J	0.888	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	6.28	10.7	PQL	mg/Kg	
	CADMIUM	J	0.305	1.07	PQL	mg/Kg	
	TIN	J	3.18	10.7	PQL	mg/Kg	
FDG-SL-748-SA5C-SB-4.0-5.0	BERYLLIUM	J	0.633	1.07	PQL	mg/Kg	J (all detects)
	BORON	J	1.40	10.7	PQL	mg/Kg	
	SODIUM	J	84.9	107	PQL	mg/Kg	
	TIN	J	3.12	10.7	PQL	mg/Kg	
	Zirconium	J	3.13	5.35	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-748-SA5C-SB-0.0-0.5	SELENIUM	J	0.351	0.428	PQL	mg/Kg	J (all detects)
	SILVER	J	0.200	0.214	PQL	mg/Kg	
FDG-SL-748-SA5C-SB-4.0-5.0	SELENIUM	J	0.193	0.428	PQL	mg/Kg	J (all detects)
	SILVER	J	0.187	0.214	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH175 **Laboratory: LL**

EDD Filename: PH175_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-748-SA5C-SB-4.0-5.0	MERCURY	J	0.0169	0.0177	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-748-SA5C-SB-0.0-0.5	1-METHYLNAPHTHALENE	J	1.2	1.8	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.7	1.8	PQL	ug/Kg	
	ANTHRACENE	J	0.85	1.8	PQL	ug/Kg	
	BENZO(E)PYRENE	J	3.8	18	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	13	19	PQL	ug/Kg	

LDC #: 32031A4
SDG #: PH175
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/26/14
Page: 1 of 1
Reviewer: KK
2nd Reviewer: CC

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7600~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 5/12/14
II.	ICP/MS Tune	A	
III.	Calibration	—	
IV.	Blanks	A	no qualifying hits
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB = EB1-051414 SDG# PH177 FB = FB-051314 SDG#PH176

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	FDG-SL-748-SA5C-SB-0.0-0.5	11		21		31	
2	FDG-SL-748-SA5C-SB-4.0-5.0	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32031A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: VK
2nd reviewer: 02

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-2	Soil	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32031A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: KK
2nd Reviewer: 02

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 5/14/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	Blank ID	Blank ID	Sample Identification								
	FB-051314 SDG #PH176	EB1-051414 SDG #PH177	Action Limit	2							
Ba		0.34	0.17								
B		10.6	5.30	1.40							
Mo		2.90	1.45								
Mn	0.0012 mg/L		0.60								
Zn	0.003mg/L		1.50								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 1

SDG: PH176

Prepared for

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Prepared by

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Carlsbad, California 92010

July 25, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 13, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Semivolatiles (SVOCs) by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B
Perchlorate by EPA Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met with the exception of one sample for SVOCs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH176/ 6010C	ICB/CCB	Arsenic	5.3 ug/L	All samples in SDG PH176

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH176/ 6010C	FDB-SL-836-SA5B-SB-19.0-20.0	Arsenic	2.31 mg/kg	2.31U mg/kg

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for TPH as extractables

with silica gel clean up. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for VOCs, TPH as extractables with and without silica gel clean up, and metals. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH176	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

One equipment blank (from SDG PH177) was collected and analyzed for SVOCs, PCBs, TPH as gasoline, TPH as extractables with and without silica gel clean up, metals, dioxins and dibenzofurans and perchlorate. The equipment blank had detections for SVOCs, metals, dioxins and dibenzofurans and perchlorate. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank was collected and analyzed for SVOCs, PCBs, TPH as gasoline, TPH as extractables with and without silica gel clean up, metals, dioxins and dibenzofurans and perchlorate. The field blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-May-2014	TB1-051314	7462588	TB	5030B	8015M	III
13-May-2014	FDG-SL-756-SA5C-SB-15.0-1	7462589	N	3050B	6010C	III
13-May-2014	FDG-SL-756-SA5C-SB-15.0-1	7462589	N	3050B	6020A	III
13-May-2014	FDG-SL-756-SA5C-SB-15.0-1	7462589	N	3546	8082A	III
13-May-2014	FDG-SL-756-SA5C-SB-15.0-1	7462589	N	3546	8270D SIM	III
13-May-2014	FDG-SL-756-SA5C-SB-15.0-1	7462589	N	METHOD	6850	III
13-May-2014	FDG-SL-756-SA5C-SB-15.0-1	7462589	N	METHOD	7471B	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	3050B	6010C	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	3050B	6020A	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	3546	8015M	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	3546	8082A	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	3546	8270D SIM	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	5035A	8015M	III
13-May-2014	FDG-SL-836-SA5B-SB-15.0-1	7462590	N	METHOD	7471B	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	3050B	6010C	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	3050B	6020A	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	3546	8015M	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	3546	8082A	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	3546	8270D SIM	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	5035A	8015M	III
13-May-2014	FDG-SL-836-SA5B-SB-19.0-2	7462591	N	METHOD	7471B	III
13-May-2014	FB-051314	7462597	FB	3005A	6010C	III
13-May-2014	FB-051314	7462597	FB	3510C	8015M	III
13-May-2014	FB-051314	7462597	FB	3510C	8082A	III
13-May-2014	FB-051314	7462597	FB	3510C	8270D SIM	III
13-May-2014	FB-051314	7462597	FB	5030B	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-May-2014	FB-051314	7462597	FB	5030B	8260B	III
13-May-2014	FB-051314	7462597	FB	Gen Prep	6850	III
13-May-2014	FB-051314	7462597	FB	M3010A	6020A	III
13-May-2014	FB-051314	7462597	FB	METHOD	1613B	III
13-May-2014	FB-051314	7462597	FB	METHOD	7470A	III
13-May-2014	FB-051314MSD	P462597M241722A	MSD	Gen Prep	6850	III
13-May-2014	FB-051314MS	P462597R241709A	MS	Gen Prep	6850	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: FB-051314 **Collected: 5/13/2014 3:00:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.0030	J	0.0020	MDL	0.0400	PQL	mg/L	U	B
MANGANESE	0.0012	J	0.00083	MDL	0.0100	PQL	mg/L	U	B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG-SL-756-SA5C-SB-15.0-16.0 **Collected: 5/13/2014 9:20:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.762	J	0.0720	MDL	1.07	PQL	mg/Kg	J	Z
MOLYBDENUM	0.455	J	0.183	MDL	2.15	PQL	mg/Kg	J	Z
TIN	3.15	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	3.05	J	0.902	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-836-SA5B-SB-15.0-16.0 **Collected: 5/13/2014 11:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	1.00	J	0.0751	MDL	1.12	PQL	mg/Kg	J	Z
BORON	4.77	J	0.941	MDL	11.2	PQL	mg/Kg	U	B
TIN	3.64	J	0.246	MDL	11.2	PQL	mg/Kg	U	B

Sample ID: FDG-SL-836-SA5B-SB-19.0-20.0 **Collected: 5/13/2014 11:20:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.31	J	0.704	MDL	4.02	PQL	mg/Kg	U	B
BERYLLIUM	0.482	J	0.0674	MDL	1.01	PQL	mg/Kg	J	Z
BORON	1.35	J	0.845	MDL	10.1	PQL	mg/Kg	U	B
MOLYBDENUM	0.775	J	0.171	MDL	2.01	PQL	mg/Kg	J	Z
TIN	2.99	J	0.221	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	2.46	J	0.845	MDL	5.03	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **FDG-SL-756-SA5C-SB-15.0-16.0** *Collected:* **5/13/2014 9:20:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.221	J	0.107	MDL	0.430	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-756-SA5C-SB-15.0-16.0** *Collected:* **5/13/2014 9:20:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0374	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-836-SA5B-SB-15.0-16.0** *Collected:* **5/13/2014 11:00:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.268	J	0.112	MDL	0.448	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-836-SA5B-SB-15.0-16.0** *Collected:* **5/13/2014 11:00:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0598	J	0.0291	MDL	0.224	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-836-SA5B-SB-19.0-20.0** *Collected:* **5/13/2014 11:20:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.157	J	0.101	MDL	0.402	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: **FDG-SL-756-SA5C-SB-15.0-16.0** *Collected:* **5/13/2014 9:20:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0136	J	0.0105	MDL	0.0176	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-836-SA5B-SB-15.0-16.0** *Collected:* **5/13/2014 11:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0128	J	0.0114	MDL	0.0190	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: FDG-SL-836-SA5B-SB-19.0-20.0 *Collected:* 5/13/2014 11:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0122	J	0.0102	MDL	0.0170	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: FB-051314 *Collected:* 5/13/2014 3:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.611	JBQ	0.134	MDL	9.90	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.265	JBQ	0.0474	MDL	9.90	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.160	JBQ	0.0519	MDL	9.90	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.195	JBQ	0.0797	MDL	9.90	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.163	JBQ	0.0746	MDL	9.90	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.272	JBQ	0.0933	MDL	9.90	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.0816	JBQ	0.0717	MDL	9.90	PQL	pg/L	U	B
OCDD	4.37	JBQ	0.191	MDL	19.8	PQL	pg/L	U	B
OCDF	0.794	JBQ	0.154	MDL	19.8	PQL	pg/L	U	B

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: FB-051314 *Collected:* 5/13/2014 3:00:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	0.098	U	0.049	MDL	0.098	PQL	mg/L	UJ	L
EFH (C21-C30) SG	0.098	U	0.049	MDL	0.098	PQL	mg/L	UJ	L
EFH (C8-C11) SG	0.098	U	0.049	MDL	0.098	PQL	mg/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **FDG-SL-836-SA5B-SB-15.0-16.0** *Collected:* **5/13/2014 11:00:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	3.4	J	2.4	MDL	5.9	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-836-SA5B-SB-15.0-16.0** *Collected:* **5/13/2014 11:00:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.9	U	2.4	MDL	5.9	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.9	U	2.4	MDL	5.9	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.9	U	2.4	MDL	5.9	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	12	U	4.7	MDL	12	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.9	U	2.4	MDL	5.9	PQL	mg/Kg	UJ	L, S

Sample ID: **FDG-SL-836-SA5B-SB-19.0-20.0** *Collected:* **5/13/2014 11:20:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	11	U	4.2	MDL	11	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	15		4.2	MDL	11	PQL	mg/Kg	J	L
EFH (C21-C30) SG	94		4.2	MDL	11	PQL	mg/Kg	J	L
EFH (C8-C11) SG	11	U	4.2	MDL	11	PQL	mg/Kg	UJ	L

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: **FB-051314** *Collected:* **5/13/2014 3:00:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
2-METHYLNAPHTHALENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
ACENAPHTHENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
ACENAPHTHYLENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
ANTHRACENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
BENZO(A)ANTHRACENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
BENZO(A)PYRENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
BENZO(B)FLUORANTHENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
BENZO(E)PYRENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
BENZO(G,H,I)PERYLENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: FB-051314 **Collected: 5/13/2014 3:00:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(K)FLUORANTHENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
BIS(2-ETHYLHEXYL)PHTHALATE	0.25	J	0.048	MDL	0.97	PQL	ug/L	UJ	B, H
Butylbenzylphthalate	0.97	U	0.048	MDL	0.97	PQL	ug/L	UJ	H
CHRYSENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
DIBENZO(A,H)ANTHRACENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
Diethylphthalate	0.47	J	0.048	MDL	0.97	PQL	ug/L	J	Z, H
Dimethylphthalate	0.97	U	0.048	MDL	0.97	PQL	ug/L	UJ	H
Di-n-butylphthalate	0.22	J	0.048	MDL	0.97	PQL	ug/L	J	Z, H
Di-n-octylphthalate	0.97	U	0.048	MDL	0.97	PQL	ug/L	UJ	H
FLUORANTHENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
FLUORENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
INDENO(1,2,3-CD)PYRENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
NAPHTHALENE	0.048	U	0.029	MDL	0.048	PQL	ug/L	UJ	H
N-NITROSODIMETHYLAMINE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H
PHENANTHRENE	0.048	U	0.029	MDL	0.048	PQL	ug/L	UJ	H
PYRENE	0.048	U	0.0097	MDL	0.048	PQL	ug/L	UJ	H

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: FDG-SL-756-SA5C-SB-15.0-16.0 **Collected: 5/13/2014 9:20:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	6.4	MDL	19	PQL	ug/Kg	J	Z
FLUORANTHENE	0.88	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	1.1	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.94	J	0.72	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: FDG-SL-836-SA5B-SB-15.0-16.0 **Collected: 5/13/2014 11:00:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.8	J	0.78	MDL	2.0	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	10	J	7.1	MDL	21	PQL	ug/Kg	J	Z
PHENANTHRENE	0.94	J	0.78	MDL	2.0	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: FDG-SL-836-SA5B-SB-19.0-20.0 **Collected: 5/13/2014 11:20:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHYLENE	0.35	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	5.6	J	3.5	MDL	18	PQL	ug/Kg	J	Z
BENZO(G,H,I)PERYLENE	1.7	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.3	MDL	19	PQL	ug/Kg	J	Z
Butylbenzylphthalate	6.4	J	6.3	MDL	19	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	0.99	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	0.95	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: FB-051314 **Collected: 5/13/2014 3:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
H	Sampling to Extraction Estimation
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH176

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: PH176 **Laboratory: LL**
EDD Filename: PH176_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM **Preparation Method: 3510C**
Matrix: AQ

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
FB-051314 (RES)	Sampling To Extraction	9.00	7.00	DAYS	J (all detects) UJ (all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PH176_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1360B371810	5/20/2014 6:10:00 PM	1,2,3,4,6,7,8-HPCDD	1.08 pg/L	FB-051314
		1,2,3,4,6,7,8-HPCDF	0.515 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.574 pg/L	
		1,2,3,4,7,8-HxCDD	0.303 pg/L	
		1,2,3,4,7,8-HXCDF	0.418 pg/L	
		1,2,3,6,7,8-HXCDD	0.312 pg/L	
		1,2,3,6,7,8-HXCDF	0.243 pg/L	
		1,2,3,7,8,9-HXCDD	0.356 pg/L	
		1,2,3,7,8,9-HXCDF	0.445 pg/L	
		1,2,3,7,8-PECDD	0.307 pg/L	
		1,2,3,7,8-PECDF	0.466 pg/L	
		2,3,4,6,7,8-HXCDF	0.153 pg/L	
		2,3,4,7,8-PECDF	0.402 pg/L	
		2,3,7,8-TCDD	0.258 pg/L	
		OCDD	5.19 pg/L	
		OCDF	1.10 pg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB-051314(RES)	1,2,3,4,6,7,8-HPCDD	0.611 pg/L	0.611U pg/L
FB-051314(RES)	1,2,3,4,6,7,8-HPCDF	0.265 pg/L	0.265U pg/L
FB-051314(RES)	1,2,3,4,7,8,9-HPCDF	0.160 pg/L	0.160U pg/L
FB-051314(RES)	1,2,3,4,7,8-HXCDF	0.195 pg/L	0.195U pg/L
FB-051314(RES)	1,2,3,6,7,8-HXCDF	0.163 pg/L	0.163U pg/L
FB-051314(RES)	1,2,3,7,8-PECDF	0.272 pg/L	0.272U pg/L
FB-051314(RES)	2,3,4,6,7,8-HXCDF	0.0816 pg/L	0.0816U pg/L
FB-051314(RES)	OCDD	4.37 pg/L	4.37U pg/L
FB-051314(RES)	OCDF	0.794 pg/L	0.794U pg/L

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13535AB221726	5/16/2014 5:26:00 PM	MANGANESE	0.0016 mg/L	FB-051314
		ZINC	0.0038 mg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB-051314(REA2)	MANGANESE	0.0012 mg/L	0.0012U mg/L
FB-051314(REA2)	ZINC	0.0030 mg/L	0.0030U mg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PH176_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB222025	5/15/2014 8:25:00 PM	BORON CALCIUM TIN ZINC	1.15 mg/Kg 13.6 mg/Kg 1.35 mg/Kg 0.568 mg/Kg	FDG-SL-756-SA5C-SB-15.0-16.0 FDG-SL-836-SA5B-SB-15.0-16.0 FDG-SL-836-SA5B-SB-19.0-20.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-756-SA5C-SB-15.0-16.0(RES)	TIN	3.15 mg/Kg	3.15U mg/Kg
FDG-SL-836-SA5B-SB-15.0-16.0(RES)	BORON	4.77 mg/Kg	4.77U mg/Kg
FDG-SL-836-SA5B-SB-15.0-16.0(RES)	TIN	3.64 mg/Kg	3.64U mg/Kg
FDG-SL-836-SA5B-SB-19.0-20.0(RES)	BORON	1.35 mg/Kg	1.35U mg/Kg
FDG-SL-836-SA5B-SB-19.0-20.0(RES)	TIN	2.99 mg/Kg	2.99U mg/Kg

Method: 6020A
Matrix: SO

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13437DB220455A	5/16/2014 4:55:00 AM	STRONTIUM	0.0750 mg/Kg	FDG-SL-756-SA5C-SB-15.0-16.0 FDG-SL-836-SA5B-SB-15.0-16.0 FDG-SL-836-SA5B-SB-19.0-20.0

Method: 8270D SIM
Matrix: AQ

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWE14B260901	5/26/2014 9:01:00 AM	BIS(2-ETHYLHEXYL)PHTHALATE	0.24 ug/L	FB-051314

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB-051314(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.25 ug/L	0.97U ug/L

Surrogate Outlier Report

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PH176_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
FDG-SL-836-SA5B-SB-15.0-16.0 (REA2)	O-TERPHENYL	65	66.00-123.00	All Target Analytes	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P13539AY221932B (TOT) (FB-051314)	SELENIUM	-	133	80.00-120.00	-	SELENIUM	J (all detects)

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P41395AQ321725A P41395AY321747A (FB-051314)	EFH (C12-C14) SG EFH (C21-C30) SG EFH (C8-C11) SG	- 74 49	65 72 44	67.00-109.00 75.00-117.00 55.00-86.00	- - -	EFH (C12-C14) SG EFH (C21-C30) SG EFH (C8-C11) SG	J(all detects) UJ(all non-detects)

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY99Q212135A LCSY99Y212156A (FB-051314)	Chlorotrifluoroethylene	42	42	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P41416AQ321722A (FDG-SL-836-SA5B-SB-15.0-16.0 FDG -SL-836-SA5B-SB-19.0-20.0)	EFH (C12-C14)	117	-	76.00-115.00	-	EFH (C12-C14)	J(all detects)
P41417AQ321743A (FDG-SL-836-SA5B-SB-15.0-16.0 FDG -SL-836-SA5B-SB-19.0-20.0)	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	71 74 73 57	- - - -	76.00-115.00 78.00-127.00 77.00-127.00 60.00-115.00	- - - -	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-051314	1,2,3,4,6,7,8-HPCDD	JBQ	0.611	9.90	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.265	9.90	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.160	9.90	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.195	9.90	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.163	9.90	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.272	9.90	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.0816	9.90	PQL	pg/L	
	OCDD	JBQ	4.37	19.8	PQL	pg/L	
	OCDF	JBQ	0.794	19.8	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-051314	MANGANESE	J	0.0012	0.0100	PQL	mg/L	J (all detects)
	ZINC	J	0.0030	0.0400	PQL	mg/L	

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FB-051314	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.25	0.97	PQL	ug/L	J (all detects)
	Diethylphthalate	J	0.47	0.97	PQL	ug/L	
	Di-n-butylphthalate	J	0.22	0.97	PQL	ug/L	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-756-SA5C-SB-15.0-16.0	BERYLLIUM	J	0.762	1.07	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.455	2.15	PQL	mg/Kg	
	TIN	J	3.15	10.7	PQL	mg/Kg	
	Zirconium	J	3.05	5.37	PQL	mg/Kg	
FDG-SL-836-SA5B-SB-15.0-16.0	BERYLLIUM	J	1.00	1.12	PQL	mg/Kg	J (all detects)
	BORON	J	4.77	11.2	PQL	mg/Kg	
	TIN	J	3.64	11.2	PQL	mg/Kg	
FDG-SL-836-SA5B-SB-19.0-20.0	ARSENIC	J	2.31	4.02	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.482	1.01	PQL	mg/Kg	
	BORON	J	1.35	10.1	PQL	mg/Kg	
	MOLYBDENUM	J	0.775	2.01	PQL	mg/Kg	
	TIN	J	2.99	10.1	PQL	mg/Kg	
	Zirconium	J	2.46	5.03	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH176 **Laboratory: LL**

EDD Filename: PrepPH176 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-756-SA5C-SB-15.0-16.0	SELENIUM	J	0.221	0.430	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0374	0.215	PQL	mg/Kg	
FDG-SL-836-SA5B-SB-15.0-16.0	SELENIUM	J	0.268	0.448	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0598	0.224	PQL	mg/Kg	
FDG-SL-836-SA5B-SB-19.0-20.0	SELENIUM	J	0.157	0.402	PQL	mg/Kg	J (all detects)

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-756-SA5C-SB-15.0-16.0	MERCURY	J	0.0136	0.0176	PQL	mg/Kg	J (all detects)
FDG-SL-836-SA5B-SB-15.0-16.0	MERCURY	J	0.0128	0.0190	PQL	mg/Kg	J (all detects)
FDG-SL-836-SA5B-SB-19.0-20.0	MERCURY	J	0.0122	0.0170	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-836-SA5B-SB-15.0-16.0	EFH (C21-C30)	J	3.4	5.9	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-756-SA5C-SB-15.0-16.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	19	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.88	1.8	PQL	ug/Kg	
	PHENANTHRENE	J	1.1	1.8	PQL	ug/Kg	
	PYRENE	J	0.94	1.8	PQL	ug/Kg	
FDG-SL-836-SA5B-SB-15.0-16.0	1-METHYLNAPHTHALENE	J	1.8	2.0	PQL	ug/Kg	J (all detects)
	BIS(2-ETHYLHEXYL)PHTHALATE	J	10	21	PQL	ug/Kg	
	PHENANTHRENE	J	0.94	2.0	PQL	ug/Kg	
FDG-SL-836-SA5B-SB-19.0-20.0	ACENAPHTHYLENE	J	0.35	1.8	PQL	ug/Kg	J (all detects)
	BENZO(E)PYRENE	J	5.6	18	PQL	ug/Kg	
	BENZO(G,H,I)PERYLENE	J	1.7	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	19	PQL	ug/Kg	
	Butylbenzylphthalate	J	6.4	19	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	0.99	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	0.95	1.8	PQL	ug/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

LDC #: 32031B4
SDG #: PH176
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 6/26/14
Page: 1 of 1
Reviewer: KK
2nd Reviewer: CR

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 5/13/14
II.	ICP/MS Tune	A	
III.	Calibration	—	
IV.	Blanks	SW	N
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB = EB-051414 SDG# PH177 FB = FB-051314 SDG# PH176

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	FDG-SL-756-SA5C-SB-15.0-16.0	11		21		31	
2	FDG-SL-836-SA5B-SB-15.0-16.0	12		22		32	
3	FDG-SL-836-SA5B-SB-19.0-20.0	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 3203184

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KK
2nd reviewer: OR

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3	Soil	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32031B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010C/6020A/7471B) Soil preparation factor applied: 100
Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1-3

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level (mg/Kg)	3										
As			5.3	2.65	2.31										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 32031B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: tk
2nd Reviewer: ar

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 5/14/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: All

Analyte	Blank ID	Blank ID	Sample Identification						
	FB-051314 SDG#PH176	EB2-051414 SDG#PH177	Action Limit	No quals					
K		114	57						
Mn	0.0012mg/L		0.60						
Zn	0.003mg/L		1.50						

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 1

SDG: PH177

Prepared for

CDM Smith
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Prepared by

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Carlsbad, California 92010

July 25, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 14, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without Silica Gel Clean Up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B
Perchlorate by EPA Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for TPH as extractables with silica gel clean up. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for SVOCs and TPH as extractables with and without silica gel clean up. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH177	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicates were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminants were found in the trip blank.

Two equipment blanks were collected and analyzed for SVOCs, PCBs, TPH as gasoline, TPH as extractables with and without silica gel clean up, metals, dioxins and dibenzofurans and perchlorate. The equipment blanks had detections for SVOCs, metals TPH as extractables, dioxins and dibenzofurans and perchlorate. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH176) was collected and analyzed for SVOCs, PCBs, TPH as gasoline, TPH as extractables with and without silica gel clean up, metals, dioxins and dibenzofurans and perchlorate. The field blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-May-2014	TB1-051414	7465090	TB	5030B	8015M	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	3050B	6010C	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	3050B	6020A	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	3546	8015M	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	3546	8082A	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	3546	8270D SIM	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	METHOD	1613B	III
14-May-2014	FDG-SL-841-SA5B-SB-0.0-0.	7465091	N	METHOD	7471B	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	3050B	6010C	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	3050B	6020A	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	3546	8015M	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	3546	8082A	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	3546	8270D SIM	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	5035A	8015M	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	METHOD	1613B	III
14-May-2014	FDG-SL-841-SA5B-SB-4.0-5.	7465092	N	METHOD	7471B	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	3050B	6010C	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	3050B	6020A	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	3546	8015M	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	3546	8082A	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	3546	8270D SIM	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	5035A	8015M	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	METHOD	1613B	III
14-May-2014	FDG-SL-841-SA5B-SB-9.0-10	7465093	N	METHOD	7471B	III
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	3050B	6010C	III
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	3546	8082A	III
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	3546	8270D SIM	III
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	METHOD	1613B	III
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	METHOD	6850	III
14-May-2014	FDG-SL-757-SA5C-SB-0.0-0.	7465094	N	METHOD	7471B	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	3050B	6010C	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	3050B	6020A	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	3546	8082A	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	3546	8270D SIM	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	METHOD	1613B	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	METHOD	6850	III
14-May-2014	FDG-SL-757-SA5C-SB-4.0-5.	7465095	N	METHOD	7471B	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	3050B	6010C	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	3050B	6020A	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	3546	8082A	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	3546	8270D SIM	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	METHOD	1613B	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	METHOD	6850	III
14-May-2014	FDG-SL-757-SA5C-SB-8.0-9.	7465096	N	METHOD	7471B	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	3050B	6010C	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	3050B	6020A	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	3546	8015M	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	3546	8082A	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	3546	8270D SIM	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	METHOD	1613B	III
14-May-2014	FDG-SL-842-SA5B-SB-0.0-0.	7465097	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	3050B	6010C	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	3050B	6020A	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	3546	8015M	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	3546	8082A	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	3546	8270D SIM	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	5035A	8015M	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	METHOD	1613B	III
14-May-2014	FDG-SL-842-SA5B-SB-4.0-5.	7465098	N	METHOD	7471B	III
14-May-2014	EB1-051414	7465088	EB	3005A	6010C	III
14-May-2014	EB1-051414	7465088	EB	3510C	8015M	III
14-May-2014	EB1-051414	7465088	EB	3510C	8082A	III
14-May-2014	EB1-051414	7465088	EB	3510C	8270D SIM	III
14-May-2014	EB1-051414	7465088	EB	Gen Prep	6850	III
14-May-2014	EB1-051414	7465088	EB	M3010A	6020A	III
14-May-2014	EB1-051414	7465088	EB	METHOD	1613B	III
14-May-2014	EB1-051414	7465088	EB	METHOD	7470A	III
14-May-2014	EB2-051414	7465089	EB	3005A	6010C	III
14-May-2014	EB2-051414	7465089	EB	3510C	8015M	III
14-May-2014	EB2-051414	7465089	EB	3510C	8082A	III
14-May-2014	EB2-051414	7465089	EB	3510C	8270D SIM	III
14-May-2014	EB2-051414	7465089	EB	5030B	8015M	III
14-May-2014	EB2-051414	7465089	EB	Gen Prep	6850	III
14-May-2014	EB2-051414	7465089	EB	M3010A	6020A	III
14-May-2014	EB2-051414	7465089	EB	METHOD	1613B	III
14-May-2014	EB2-051414	7465089	EB	METHOD	7470A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: **EB1-051414** *Collected:* **5/14/2014 3:00:00** *Analysis Type:* **REA3** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.00034	J	0.00033	MDL	0.0100	PQL	mg/L	J	Z
BORON	0.0106	J	0.0084	MDL	0.100	PQL	mg/L	J	Z
MOLYBDENUM	0.0029	J	0.0017	MDL	0.0200	PQL	mg/L	J	Z

Sample ID: **EB2-051414** *Collected:* **5/14/2014 3:30:00** *Analysis Type:* **REA3** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	0.114	J	0.0980	MDL	1.00	PQL	mg/L	J	Z

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **FDG-SL-757-SA5C-SB-0.0-0.5** *Collected:* **5/14/2014 11:35:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	0.941	J	0.697	MDL	3.99	PQL	mg/Kg	J	Z
BERYLLIUM	0.542	J	0.0668	MDL	0.996	PQL	mg/Kg	J	Z
BORON	0.845	J	0.837	MDL	9.96	PQL	mg/Kg	U	B, F
MOLYBDENUM	0.524	J	0.169	MDL	1.99	PQL	mg/Kg	U	F
TIN	3.39	J	0.219	MDL	9.96	PQL	mg/Kg	U	B
Zirconium	3.41	J	0.837	MDL	4.98	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-757-SA5C-SB-4.0-5.0** *Collected:* **5/14/2014 11:50:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	1.24	J	0.751	MDL	4.29	PQL	mg/Kg	J	Z
BERYLLIUM	0.552	J	0.0719	MDL	1.07	PQL	mg/Kg	J	Z
MOLYBDENUM	0.686	J	0.182	MDL	2.15	PQL	mg/Kg	J	Z
TIN	3.68	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	2.94	J	0.901	MDL	5.36	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-757-SA5C-SB-8.0-9.0** *Collected:* **5/14/2014 12:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.61	J	0.718	MDL	4.10	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG-SL-757-SA5C-SB-8.0-9.0 **Collected: 5/14/2014 12:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.415	J	0.0687	MDL	1.03	PQL	mg/Kg	J	Z
SODIUM	89.9	J	17.1	MDL	103	PQL	mg/Kg	J	Z
TIN	2.93	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.14	J	0.861	MDL	5.13	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-0.0-0.5 **Collected: 5/14/2014 9:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.04	J	0.701	MDL	4.00	PQL	mg/Kg	J	Z
BERYLLIUM	0.692	J	0.0671	MDL	1.00	PQL	mg/Kg	J	Z
MOLYBDENUM	0.446	J	0.170	MDL	2.00	PQL	mg/Kg	U	F
TIN	3.69	J	0.220	MDL	10.0	PQL	mg/Kg	U	B
Zirconium	3.31	J	0.841	MDL	5.00	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-4.0-5.0 **Collected: 5/14/2014 9:25:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.99	J	0.752	MDL	4.30	PQL	mg/Kg	J	Z
BERYLLIUM	0.645	J	0.0720	MDL	1.07	PQL	mg/Kg	J	Z
BORON	0.976	J	0.902	MDL	10.7	PQL	mg/Kg	U	B
MOLYBDENUM	0.412	J	0.183	MDL	2.15	PQL	mg/Kg	J	Z
TIN	3.35	J	0.236	MDL	10.7	PQL	mg/Kg	U	B
Zirconium	3.52	J	0.902	MDL	5.37	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-9.0-10.0 **Collected: 5/14/2014 9:35:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.07	J	0.744	MDL	4.25	PQL	mg/Kg	J	Z
MOLYBDENUM	0.295	J	0.181	MDL	2.12	PQL	mg/Kg	J	Z
TIN	6.02	J	0.234	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	4.51	J	0.892	MDL	5.31	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: **FDG-SL-842-SA5B-SB-0.0-0.5** *Collected:* **5/14/2014 1:55:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.649	J	0.0684	MDL	1.02	PQL	mg/Kg	J	Z
BORON	1.03	J	0.857	MDL	10.2	PQL	mg/Kg	U	B, F
MOLYBDENUM	0.491	J	0.174	MDL	2.04	PQL	mg/Kg	U	F
SODIUM	87.1	J	17.0	MDL	102	PQL	mg/Kg	J	Z
TIN	3.22	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	3.48	J	0.857	MDL	5.10	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-842-SA5B-SB-4.0-5.0** *Collected:* **5/14/2014 2:25:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.880	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.877	J	0.176	MDL	2.07	PQL	mg/Kg	J	Z
TIN	3.77	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.63	J	0.868	MDL	5.17	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **FDG-SL-757-SA5C-SB-0.0-0.5** *Collected:* **5/14/2014 11:35:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.100	J	0.0996	MDL	0.399	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-757-SA5C-SB-0.0-0.5** *Collected:* **5/14/2014 11:35:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0508	J	0.0259	MDL	0.199	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-757-SA5C-SB-4.0-5.0** *Collected:* **5/14/2014 11:50:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0618	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG-SL-757-SA5C-SB-8.0-9.0 *Collected:* 5/14/2014 12:00:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0594	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-0.0-0.5 *Collected:* 5/14/2014 9:00:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0309	J	0.0260	MDL	0.200	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-4.0-5.0 *Collected:* 5/14/2014 9:25:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0287	J	0.0279	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-9.0-10.0 *Collected:* 5/14/2014 9:35:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.174	J	0.106	MDL	0.425	PQL	mg/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-9.0-10.0 *Collected:* 5/14/2014 9:35:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.202	J	0.0276	MDL	0.212	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: FDG-SL-842-SA5B-SB-0.0-0.5 *Collected:* 5/14/2014 1:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0128	J	0.010	MDL	0.0167	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: **EB1-051414** *Collected:* **5/14/2014 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.259	JB	0.0986	MDL	10.3	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.328	JBQ	0.0397	MDL	10.3	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.217	JB	0.0437	MDL	10.3	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.237	JBQ	0.126	MDL	10.3	PQL	pg/L	U	B
1,2,3,4,7,8-HXCDF	0.184	JBQ	0.0756	MDL	10.3	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.0756	JBQ	0.0738	MDL	10.3	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.308	JBQ	0.130	MDL	10.3	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.209	JBQ	0.0819	MDL	10.3	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.123	JBQ	0.0750	MDL	10.3	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.156	JBQ	0.0708	MDL	10.3	PQL	pg/L	U	B
2,3,7,8-TCDD	0.210	JB	0.200	MDL	2.06	PQL	pg/L	U	B
2,3,7,8-TCDF	0.156	JQ	0.0981	MDL	2.06	PQL	pg/L	J	Z
OCDD	5.72	JBQ	0.201	MDL	20.6	PQL	pg/L	U	B
OCDF	0.700	JBQ	0.140	MDL	20.6	PQL	pg/L	U	B

Sample ID: **EB2-051414** *Collected:* **5/14/2014 3:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.945	JB	0.157	MDL	11.2	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.349	JBQ	0.0558	MDL	11.2	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.206	JB	0.0631	MDL	11.2	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.185	JBQ	0.144	MDL	11.2	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.275	JBQ	0.0811	MDL	11.2	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDD	0.316	JBQ	0.149	MDL	11.2	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.260	JB	0.0739	MDL	11.2	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.412	JBQ	0.229	MDL	11.2	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.405	JBQ	0.100	MDL	11.2	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.237	JBQ	0.0794	MDL	11.2	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.122	JBQ	0.0986	MDL	11.2	PQL	pg/L	U	B
OCDD	1.42	JBQ	0.209	MDL	22.4	PQL	pg/L	U	B
OCDF	1.09	JB	0.172	MDL	22.4	PQL	pg/L	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-757-SA5C-SB-0.0-0.5 **Collected: 5/14/2014 11:35:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	1.21	J	0.0882	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	1.24	J	0.0900	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.768	J	0.0882	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	3.76	J	0.0945	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.635	J	0.0891	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	2.26	J	0.0940	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.376	J	0.0816	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.716	J	0.0674	MDL	5.05	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.315	JB	0.0463	MDL	5.05	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.867	J	0.0858	MDL	5.05	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.397	J	0.0426	MDL	5.05	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.108	JQ	0.0712	MDL	1.01	PQL	ng/Kg	J	Z

Sample ID: FDG-SL-757-SA5C-SB-4.0-5.0 **Collected: 5/14/2014 11:50:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	0.694	JQ	0.0674	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.485	J	0.104	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.430	J	0.0751	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	2.19	J	0.107	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.321	J	0.0747	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	1.25	J	0.0979	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.122	J	0.0762	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.364	JQ	0.0614	MDL	5.46	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.176	JBQ	0.0410	MDL	5.46	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.516	JQ	0.0735	MDL	5.46	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0922	JQ	0.0370	MDL	5.46	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0666	J	0.0510	MDL	1.09	PQL	ng/Kg	J	Z

Sample ID: FDG-SL-757-SA5C-SB-8.0-9.0 **Collected: 5/14/2014 12:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.426	JB	0.0371	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0999	JBQ	0.0132	MDL	5.27	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0420	JQ	0.0223	MDL	5.27	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **FDG-SL-757-SA5C-SB-8.0-9.0** ***Collected:*** **5/14/2014 12:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	0.0237	J	0.0202	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0248	JQ	0.0218	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0175	JQ	0.0174	MDL	5.27	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.0502	JBQ	0.0201	MDL	5.27	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0223	JQ	0.0192	MDL	5.27	PQL	ng/Kg	J	Z
OCDD	10.1	JB	0.0367	MDL	10.5	PQL	ng/Kg	J	Z
OCDF	0.287	JB	0.0534	MDL	10.5	PQL	ng/Kg	U	B

Sample ID: **FDG-SL-841-SA5B-SB-0.0-0.5** ***Collected:*** **5/14/2014 9:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.938	JB	0.0534	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.330	JB	0.0281	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0876	JQ	0.0426	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.132	JQ	0.0417	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0953	JQ	0.0371	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0375	JQ	0.0364	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.170	JQ	0.0367	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.104	J	0.0387	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	2.47	JB	0.0380	MDL	4.99	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0626	JQ	0.0372	MDL	4.99	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.110	JQ	0.0369	MDL	4.99	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0638	JQ	0.0483	MDL	0.999	PQL	ng/Kg	J	Z
OCDF	0.878	JBQ	0.0570	MDL	9.99	PQL	ng/Kg	J	Z

Sample ID: **FDG-SL-841-SA5B-SB-4.0-5.0** ***Collected:*** **5/14/2014 9:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.212	JBQ	0.0411	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.115	JBQ	0.0147	MDL	5.34	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0517	JQ	0.0261	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	0.0809	JQ	0.0466	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.164	JQ	0.0345	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.341	J	0.0459	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.158	J	0.0303	MDL	5.34	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-841-SA5B-SB-4.0-5.0 **Collected: 5/14/2014 9:25:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDD	0.541	J	0.0445	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.337	J	0.0351	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.210	JQ	0.0550	MDL	5.34	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.465	JBQ	0.0324	MDL	5.34	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0989	JQ	0.0336	MDL	5.34	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.265	J	0.0329	MDL	5.34	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.123	JQ	0.0807	MDL	1.07	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.156	J	0.0553	MDL	1.07	PQL	ng/Kg	J	Z
OCDD	1.69	JB	0.0349	MDL	10.7	PQL	ng/Kg	J	Z
OCDF	0.281	JBQ	0.0675	MDL	10.7	PQL	ng/Kg	U	B

Sample ID: FDG-SL-841-SA5B-SB-9.0-10.0 **Collected: 5/14/2014 9:35:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.182	JBQ	0.0435	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0286	JBQ	0.0143	MDL	5.32	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0495	J	0.0233	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.100	JQ	0.0305	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.0701	J	0.0470	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0727	JQ	0.0268	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.124	JQ	0.0480	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0302	JQ	0.0256	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.207	J	0.0618	MDL	5.32	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.215	JBQ	0.0337	MDL	5.32	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0534	JQ	0.0282	MDL	5.32	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.132	JQ	0.0328	MDL	5.32	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.131	JQ	0.0894	MDL	1.06	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0488	JQ	0.0476	MDL	1.06	PQL	ng/Kg	J	Z
OCDD	0.684	JBQ	0.0351	MDL	10.6	PQL	ng/Kg	U	B
OCDF	0.135	JBQ	0.0547	MDL	10.6	PQL	ng/Kg	U	B

Sample ID: FDG-SL-842-SA5B-SB-0.0-0.5 **Collected: 5/14/2014 1:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	2.80	J	0.112	MDL	4.99	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: FDG-SL-842-SA5B-SB-0.0-0.5 **Collected: 5/14/2014 1:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HxCDD	1.67	J	0.0867	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	1.26	J	0.113	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	3.04	J	0.0879	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	2.43	J	0.0948	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	3.56	J	0.0902	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.253	JQ	0.120	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.657	J	0.0630	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.169	JBQ	0.0475	MDL	4.99	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	2.18	J	0.104	MDL	4.99	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.167	JQ	0.0510	MDL	4.99	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.0880	JQ	0.0669	MDL	0.998	PQL	ng/Kg	J	Z

Sample ID: FDG-SL-842-SA5B-SB-4.0-5.0 **Collected: 5/14/2014 2:25:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	2.60	J	0.140	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	2.01	J	0.138	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	1.26	J	0.155	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	3.31	J	0.138	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	2.11	J	0.134	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	4.09	J	0.141	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.260	JQ	0.178	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.888	JQ	0.0793	MDL	5.24	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.165	JBQ	0.0614	MDL	5.24	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	2.17	J	0.148	MDL	5.24	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.170	JQ	0.0633	MDL	5.24	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.101	JQ	0.0775	MDL	1.05	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 6850 **Matrix: AQ**

Sample ID: **EB2-051414** *Collected:* **5/14/2014 3:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.40	J	0.20	MDL	1.0	PQL	ug/L	J	Z

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: **EB1-051414** *Collected:* **5/14/2014 3:00:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	0.098	U	0.049	MDL	0.098	PQL	mg/L	UJ	L
EFH (C21-C30) SG	0.098	U	0.049	MDL	0.098	PQL	mg/L	UJ	L
EFH (C8-C11) SG	0.098	U	0.049	MDL	0.098	PQL	mg/L	UJ	L

Sample ID: **EB2-051414** *Collected:* **5/14/2014 3:30:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	0.097	U	0.049	MDL	0.097	PQL	mg/L	UJ	L
EFH (C21-C30) SG	0.097	U	0.049	MDL	0.097	PQL	mg/L	UJ	L
EFH (C8-C11) SG	0.097	U	0.049	MDL	0.097	PQL	mg/L	UJ	L

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **FDG-SL-841-SA5B-SB-0.0-0.5** *Collected:* **5/14/2014 9:00:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L

Sample ID: **FDG-SL-841-SA5B-SB-4.0-5.0** *Collected:* **5/14/2014 9:25:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	3.7	J	2.2	MDL	5.5	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.3	J	4.4	MDL	11	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **FDG-SL-841-SA5B-SB-4.0-5.0** *Collected:* **5/14/2014 9:25:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L

Sample ID: **FDG-SL-841-SA5B-SB-9.0-10.0** *Collected:* **5/14/2014 9:35:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.5	U	2.2	MDL	5.5	PQL	mg/Kg	UJ	L

Sample ID: **FDG-SL-842-SA5B-SB-0.0-0.5** *Collected:* **5/14/2014 1:55:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	2.3	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z, L
EFH (C8-C11) SG	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L

Sample ID: **FDG-SL-842-SA5B-SB-0.0-0.5** *Collected:* **5/14/2014 1:55:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.9	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z
EFH (C30-C40)	9.8	J	4.1	MDL	10	PQL	mg/Kg	J	Z

Sample ID: **FDG-SL-842-SA5B-SB-4.0-5.0** *Collected:* **5/14/2014 2:25:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	11	U	4.2	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L, S

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA
Method: 8015M **Matrix: SO**

Method Category: SVOA
Method: 8082A **Matrix: SO**

Sample ID: FDG-SL-757-SA5C-SB-4.0-5.0 *Collected:* 5/14/2014 11:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	11	J	4.8	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA
Method: 8270D SIM **Matrix: AQ**

Sample ID: EB1-051414 *Collected:* 5/14/2014 3:00:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	0.49	J	0.057	MDL	1.1	PQL	ug/L	UJ	L, B
DIBENZO(A,H)ANTHRACENE	0.057	U	0.011	MDL	0.057	PQL	ug/L	UJ	L
Diethylphthalate	0.082	J	0.057	MDL	1.1	PQL	ug/L	U	B
Di-n-butylphthalate	0.27	J	0.057	MDL	1.1	PQL	ug/L	U	B
Di-n-octylphthalate	1.1	U	0.057	MDL	1.1	PQL	ug/L	UJ	L

Sample ID: EB2-051414 *Collected:* 5/14/2014 3:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	0.11	J	0.053	MDL	1.1	PQL	ug/L	UJ	L, B
DIBENZO(A,H)ANTHRACENE	0.053	U	0.011	MDL	0.053	PQL	ug/L	UJ	L
Diethylphthalate	0.084	J	0.053	MDL	1.1	PQL	ug/L	U	B
Di-n-butylphthalate	0.26	J	0.053	MDL	1.1	PQL	ug/L	U	B
Di-n-octylphthalate	1.1	U	0.053	MDL	1.1	PQL	ug/L	UJ	L

Method Category: SVOA
Method: 8270D SIM **Matrix: SO**

Sample ID: FDG-SL-757-SA5C-SB-0.0-0.5 *Collected:* 5/14/2014 11:35:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.35	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(A)ANTHRACENE	1.2	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: FDG-SL-757-SA5C-SB-0.0-0.5 **Collected: 5/14/2014 11:35:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	11	J	3.4	MDL	17	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	6.1	MDL	18	PQL	ug/Kg	J	Z
Butylbenzylphthalate	12	J	6.1	MDL	18	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.3	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PHENANTHRENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: FDG-SL-757-SA5C-SB-4.0-5.0 **Collected: 5/14/2014 11:50:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTHRACENE	0.54	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	5.2	J	3.7	MDL	19	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	12	J	6.6	MDL	20	PQL	ug/Kg	J	Z
DIBENZO(A,H)ANTHRACENE	0.81	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
INDENO(1,2,3-CD)PYRENE	1.3	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: FDG-SL-757-SA5C-SB-8.0-9.0 **Collected: 5/14/2014 12:00:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	8.2	J	6.4	MDL	19	PQL	ug/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-0.0-0.5 **Collected: 5/14/2014 9:00:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	9.7	J	6.2	MDL	19	PQL	ug/Kg	J	Z

Sample ID: FDG-SL-841-SA5B-SB-4.0-5.0 **Collected: 5/14/2014 9:25:00** **Analysis Type: RES-BASE/NEUTRAL** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	8.2	J	6.6	MDL	20	PQL	ug/Kg	J	Z
CHRYSENE	0.52	J	0.37	MDL	1.8	PQL	ug/Kg	J	Z
NAPHTHALENE	1.0	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **FDG-SL-841-SA5B-SB-9.0-10.0** *Collected:* **5/14/2014 9:35:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	0.85	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	8.4	J	6.6	MDL	20	PQL	ug/Kg	J	Z
PHENANTHRENE	0.78	J	0.74	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **FDG-SL-842-SA5B-SB-0.0-0.5** *Collected:* **5/14/2014 1:55:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BIS(2-ETHYLHEXYL)PHTHALATE	9.4	J	6.2	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.66	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	0.85	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **FDG-SL-842-SA5B-SB-4.0-5.0** *Collected:* **5/14/2014 2:25:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.87	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
BIS(2-ETHYLHEXYL)PHTHALATE	9.4	J	6.3	MDL	19	PQL	ug/Kg	J	Z
CHRYSENE	0.65	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.95	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
PHENANTHRENE	0.71	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.81	J	0.70	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
F	Equipment Blank Contamination
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH177

Method Blank Outlier Report

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PH177_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1360B371810	5/20/2014 6:10:00 PM	1,2,3,4,6,7,8-HPCDD	1.08 pg/L	EB1-051414
		1,2,3,4,6,7,8-HPCDF	0.515 pg/L	EB2-051414
		1,2,3,4,7,8,9-HPCDF	0.574 pg/L	
		1,2,3,4,7,8-HxCDD	0.303 pg/L	
		1,2,3,4,7,8-HXCDF	0.418 pg/L	
		1,2,3,6,7,8-HXCDD	0.312 pg/L	
		1,2,3,6,7,8-HXCDF	0.243 pg/L	
		1,2,3,7,8,9-HXCDD	0.356 pg/L	
		1,2,3,7,8,9-HXCDF	0.445 pg/L	
		1,2,3,7,8-PECDD	0.307 pg/L	
		1,2,3,7,8-PECDF	0.466 pg/L	
		2,3,4,6,7,8-HXCDF	0.153 pg/L	
		2,3,4,7,8-PECDF	0.402 pg/L	
		2,3,7,8-TCDD	0.258 pg/L	
		OCDD	5.19 pg/L	
		OCDF	1.10 pg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB1-051414(RES)	1,2,3,4,6,7,8-HPCDD	0.259 pg/L	0.259U pg/L
EB1-051414(RES)	1,2,3,4,6,7,8-HPCDF	0.328 pg/L	0.328U pg/L
EB1-051414(RES)	1,2,3,4,7,8,9-HPCDF	0.217 pg/L	0.217U pg/L
EB1-051414(RES)	1,2,3,4,7,8-HxCDD	0.237 pg/L	0.237U pg/L
EB1-051414(RES)	1,2,3,4,7,8-HXCDF	0.184 pg/L	0.184U pg/L
EB1-051414(RES)	1,2,3,6,7,8-HXCDF	0.0756 pg/L	0.0756U pg/L
EB1-051414(RES)	1,2,3,7,8,9-HXCDD	0.308 pg/L	0.308U pg/L
EB1-051414(RES)	1,2,3,7,8,9-HXCDF	0.209 pg/L	0.209U pg/L
EB1-051414(RES)	2,3,4,6,7,8-HXCDF	0.123 pg/L	0.123U pg/L
EB1-051414(RES)	2,3,4,7,8-PECDF	0.156 pg/L	0.156U pg/L
EB1-051414(RES)	2,3,7,8-TCDD	0.210 pg/L	0.210U pg/L
EB1-051414(RES)	OCDD	5.72 pg/L	5.72U pg/L
EB1-051414(RES)	OCDF	0.700 pg/L	0.700U pg/L
EB2-051414(RES)	1,2,3,4,6,7,8-HPCDD	0.945 pg/L	0.945U pg/L
EB2-051414(RES)	1,2,3,4,6,7,8-HPCDF	0.349 pg/L	0.349U pg/L
EB2-051414(RES)	1,2,3,4,7,8,9-HPCDF	0.206 pg/L	0.206U pg/L
EB2-051414(RES)	1,2,3,4,7,8-HxCDD	0.185 pg/L	0.185U pg/L
EB2-051414(RES)	1,2,3,6,7,8-HXCDF	0.275 pg/L	0.275U pg/L
EB2-051414(RES)	1,2,3,7,8,9-HXCDD	0.316 pg/L	0.316U pg/L
EB2-051414(RES)	1,2,3,7,8,9-HXCDF	0.260 pg/L	0.260U pg/L
EB2-051414(RES)	1,2,3,7,8-PECDD	0.412 pg/L	0.412U pg/L
EB2-051414(RES)	1,2,3,7,8-PECDF	0.405 pg/L	0.405U pg/L
EB2-051414(RES)	2,3,4,6,7,8-HXCDF	0.237 pg/L	0.237U pg/L
EB2-051414(RES)	2,3,4,7,8-PECDF	0.122 pg/L	0.122U pg/L
EB2-051414(RES)	OCDD	1.42 pg/L	1.42U pg/L
EB2-051414(RES)	OCDF	1.09 pg/L	1.09U pg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PH177_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1400B371613	5/22/2014 4:13:00 PM	1,2,3,4,6,7,8-HPCDD 1,2,3,4,6,7,8-HPCDF 1,2,3,7,8-PECDF OCDD OCDF	0.0895 ng/Kg 0.0247 ng/Kg 0.0521 ng/Kg 0.182 ng/Kg 0.137 ng/Kg	FDG-SL-757-SA5C-SB-0.0-0.5 FDG-SL-757-SA5C-SB-4.0-5.0 FDG-SL-757-SA5C-SB-8.0-9.0 FDG-SL-841-SA5B-SB-0.0-0.5 FDG-SL-841-SA5B-SB-4.0-5.0 FDG-SL-841-SA5B-SB-9.0-10.0 FDG-SL-842-SA5B-SB-0.0-0.5 FDG-SL-842-SA5B-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-757-SA5C-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.176 ng/Kg	0.176U ng/Kg
FDG-SL-757-SA5C-SB-8.0-9.0(RES)	1,2,3,4,6,7,8-HPCDD	0.426 ng/Kg	0.426U ng/Kg
FDG-SL-757-SA5C-SB-8.0-9.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0999 ng/Kg	0.0999U ng/Kg
FDG-SL-757-SA5C-SB-8.0-9.0(RES)	1,2,3,7,8-PECDF	0.0502 ng/Kg	0.0502U ng/Kg
FDG-SL-757-SA5C-SB-8.0-9.0(RES)	OCDF	0.287 ng/Kg	0.287U ng/Kg
FDG-SL-841-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDD	0.212 ng/Kg	0.212U ng/Kg
FDG-SL-841-SA5B-SB-4.0-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.115 ng/Kg	0.115U ng/Kg
FDG-SL-841-SA5B-SB-4.0-5.0(RES)	OCDF	0.281 ng/Kg	0.281U ng/Kg
FDG-SL-841-SA5B-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDD	0.182 ng/Kg	0.182U ng/Kg
FDG-SL-841-SA5B-SB-9.0-10.0(RES)	1,2,3,4,6,7,8-HPCDF	0.0286 ng/Kg	0.0286U ng/Kg
FDG-SL-841-SA5B-SB-9.0-10.0(RES)	1,2,3,7,8-PECDF	0.215 ng/Kg	0.215U ng/Kg
FDG-SL-841-SA5B-SB-9.0-10.0(RES)	OCDD	0.684 ng/Kg	0.684U ng/Kg
FDG-SL-841-SA5B-SB-9.0-10.0(RES)	OCDF	0.135 ng/Kg	0.135U ng/Kg
FDG-SL-842-SA5B-SB-0.0-0.5(RES)	1,2,3,7,8-PECDF	0.169 ng/Kg	0.169U ng/Kg
FDG-SL-842-SA5B-SB-4.0-5.0(RES)	1,2,3,7,8-PECDF	0.165 ng/Kg	0.165U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13637AB220940	5/21/2014 9:40:00 AM	BORON CALCIUM TIN	2.41 mg/Kg 15.4 mg/Kg 1.42 mg/Kg	FDG-SL-757-SA5C-SB-0.0-0.5 FDG-SL-757-SA5C-SB-4.0-5.0 FDG-SL-757-SA5C-SB-8.0-9.0 FDG-SL-841-SA5B-SB-0.0-0.5 FDG-SL-841-SA5B-SB-4.0-5.0 FDG-SL-841-SA5B-SB-9.0-10.0 FDG-SL-842-SA5B-SB-0.0-0.5 FDG-SL-842-SA5B-SB-4.0-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-757-SA5C-SB-0.0-0.5(RES)	BORON	0.845 mg/Kg	0.845U mg/Kg
FDG-SL-757-SA5C-SB-0.0-0.5(RES)	TIN	3.39 mg/Kg	3.39U mg/Kg
FDG-SL-757-SA5C-SB-4.0-5.0(RES)	TIN	3.68 mg/Kg	3.68U mg/Kg
FDG-SL-757-SA5C-SB-8.0-9.0(RES)	TIN	2.93 mg/Kg	2.93U mg/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Method Blank Outlier Report

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PH177_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG-SL-841-SA5B-SB-0.0-0.5(RES)	TIN	3.69 mg/Kg	3.69U mg/Kg
FDG-SL-841-SA5B-SB-4.0-5.0(RES)	BORON	0.976 mg/Kg	0.976U mg/Kg
FDG-SL-841-SA5B-SB-4.0-5.0(RES)	TIN	3.35 mg/Kg	3.35U mg/Kg
FDG-SL-841-SA5B-SB-9.0-10.0(RES)	TIN	6.02 mg/Kg	6.02U mg/Kg
FDG-SL-842-SA5B-SB-0.0-0.5(RES)	BORON	1.03 mg/Kg	1.03U mg/Kg
FDG-SL-842-SA5B-SB-0.0-0.5(RES)	TIN	3.22 mg/Kg	3.22U mg/Kg
FDG-SL-842-SA5B-SB-4.0-5.0(RES)	TIN	3.77 mg/Kg	3.77U mg/Kg

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P13637AB220441A	5/22/2014 4:41:00 AM	STRONTIUM	0.105 mg/Kg	FDG-SL-757-SA5C-SB-0.0-0.5 FDG-SL-757-SA5C-SB-4.0-5.0 FDG-SL-757-SA5C-SB-8.0-9.0 FDG-SL-841-SA5B-SB-0.0-0.5 FDG-SL-841-SA5B-SB-4.0-5.0 FDG-SL-841-SA5B-SB-9.0-10.0 FDG-SL-842-SA5B-SB-0.0-0.5 FDG-SL-842-SA5B-SB-4.0-5.0

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWB14B261357	5/23/2014 1:57:00 PM	BIS(2-ETHYLHEXYL)PHTHALATE Diethylphthalate Di-n-butylphthalate	0.12 ug/L 0.10 ug/L 0.18 ug/L	EB1-051414 EB2-051414

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB1-051414(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.49 ug/L	1.1U ug/L
EB1-051414(RES)	Diethylphthalate	0.082 ug/L	1.1U ug/L
EB1-051414(RES)	Di-n-butylphthalate	0.27 ug/L	1.1U ug/L
EB2-051414(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.11 ug/L	1.1U ug/L
EB2-051414(RES)	Diethylphthalate	0.084 ug/L	1.1U ug/L
EB2-051414(RES)	Di-n-butylphthalate	0.26 ug/L	1.1U ug/L

Surrogate Outlier Report

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PH177_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
FDG-SL-842-SA5B -SB-4.0-5.0 (REA2)	O-TERPHENYL	64	66.00-123.00	All Target Analytes	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P0WBLCSQ261427 **P0WBLCSY261456** (EB1-051414 EB2 -051414)	BIS(2-ETHYLHEXYL)PHTHALAT DIBENZO(A,H)ANTHRACENE Di-n-octylphthalate	52 59 39	46 - 36	70.00-143.00 66.00-133.00 57.00-145.00	- - -	BIS(2-ETHYLHEXYL)PHTHALA DIBENZO(A,H)ANTHRACENE Di-n-octylphthalate	J (all detects) UJ (all non-detects)

Method: 8015M
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P41395AQ321725A **P41395AY321747A** (EB1-051414 EB2 -051414)	EFH (C12-C14) SG EFH (C21-C30) SG EFH (C8-C11) SG	- 74 49	65 72 44	67.00-109.00 75.00-117.00 55.00-86.00	- - -	EFH (C12-C14) SG EFH (C21-C30) SG EFH (C8-C11) SG	J(all detects) UJ(all non-detects)

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P41416AQ321722A (FDG-SL-841-SA5B-SB-0.0-0.5 FDG -SL-841-SA5B-SB-4.0-5.0 FDG -SL-841-SA5B-SB-9.0-10.0 FDG -SL-842-SA5B-SB-0.0-0.5 FDG -SL-842-SA5B-SB-4.0-5.0)	EFH (C12-C14)	117	-	76.00-115.00	-	EFH (C12-C14)	J(all detects)
P41417AQ321743A (FDG-SL-841-SA5B-SB-0.0-0.5 FDG -SL-841-SA5B-SB-4.0-5.0 FDG -SL-841-SA5B-SB-9.0-10.0 FDG -SL-842-SA5B-SB-0.0-0.5 FDG -SL-842-SA5B-SB-4.0-5.0)	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	71 74 73 57	- - - -	76.00-115.00 78.00-127.00 77.00-127.00 60.00-115.00	- - - -	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	J(all detects) UJ(all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-051414	1,2,3,4,6,7,8-HPCDD	JB	0.259	10.3	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.328	10.3	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.217	10.3	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.237	10.3	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JBQ	0.184	10.3	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.0756	10.3	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JBQ	0.308	10.3	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.209	10.3	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.123	10.3	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.156	10.3	PQL	pg/L	
	2,3,7,8-TCDD	JB	0.210	2.06	PQL	pg/L	
	2,3,7,8-TCDF	JQ	0.156	2.06	PQL	pg/L	
	OCDD	JBQ	5.72	20.6	PQL	pg/L	
	OCDF	JBQ	0.700	20.6	PQL	pg/L	
EB2-051414	1,2,3,4,6,7,8-HPCDD	JB	0.945	11.2	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.349	11.2	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JB	0.206	11.2	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JBQ	0.185	11.2	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JBQ	0.275	11.2	PQL	pg/L	
	1,2,3,7,8,9-HXCDD	JBQ	0.316	11.2	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JB	0.260	11.2	PQL	pg/L	
	1,2,3,7,8-PECDD	JBQ	0.412	11.2	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.405	11.2	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JBQ	0.237	11.2	PQL	pg/L	
	2,3,4,7,8-PECDF	JBQ	0.122	11.2	PQL	pg/L	
	OCDD	JBQ	1.42	22.4	PQL	pg/L	
	OCDF	JB	1.09	22.4	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-051414	BARIUM	J	0.00034	0.0100	PQL	mg/L	J (all detects)
	BORON	J	0.0106	0.100	PQL	mg/L	
	MOLYBDENUM	J	0.0029	0.0200	PQL	mg/L	
EB2-051414	POTASSIUM	J	0.114	1.00	PQL	mg/L	J (all detects)

Method: 6850

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB2-051414	PERCHLORATE	J	0.40	1.0	PQL	ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-051414	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.49	1.1	PQL	ug/L	
	Diethylphthalate	J	0.082	1.1	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.27	1.1	PQL	ug/L	
EB2-051414	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.11	1.1	PQL	ug/L	
	Diethylphthalate	J	0.084	1.1	PQL	ug/L	J (all detects)
	Di-n-butylphthalate	J	0.26	1.1	PQL	ug/L	

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-757-SA5C-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	J	1.21	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	1.24	5.05	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.768	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	3.76	5.05	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.635	5.05	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	2.26	5.05	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.376	5.05	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.716	5.05	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.315	5.05	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	0.867	5.05	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.397	5.05	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.108	1.01	PQL	ng/Kg	
FDG-SL-757-SA5C-SB-4.0-5.0	1,2,3,4,7,8,9-HPCDF	JQ	0.694	5.46	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	0.485	5.46	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.430	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	2.19	5.46	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.321	5.46	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	1.25	5.46	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.122	5.46	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.364	5.46	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.176	5.46	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.516	5.46	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.0922	5.46	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.0666	1.09	PQL	ng/Kg	
FDG-SL-757-SA5C-SB-8.0-9.0	1,2,3,4,6,7,8-HPCDD	JB	0.426	5.27	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0999	5.27	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0420	5.27	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	0.0237	5.27	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0248	5.27	PQL	ng/Kg	J (all detects)
	1,2,3,6,7,8-HXCDF	JQ	0.0175	5.27	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0502	5.27	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0223	5.27	PQL	ng/Kg	
	OCDD	JB	10.1	10.5	PQL	ng/Kg	
	OCDF	JB	0.287	10.5	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**

Matrix: **SO**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-841-SA5B-SB-0.0-0.5	1,2,3,4,6,7,8-HPCDD	JB	0.938	4.99	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.330	4.99	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0876	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.132	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0953	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0375	4.99	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.170	4.99	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	J	0.104	4.99	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	2.47	4.99	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0626	4.99	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.110	4.99	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0638	0.999	PQL	ng/Kg	
	OCDF	JBQ	0.878	9.99	PQL	ng/Kg	
FDG-SL-841-SA5B-SB-4.0-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.212	5.34	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.115	5.34	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JQ	0.0517	5.34	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0809	5.34	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.164	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.341	5.34	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.158	5.34	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.541	5.34	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	J	0.337	5.34	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JQ	0.210	5.34	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.465	5.34	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0989	5.34	PQL	ng/Kg	
	2,3,4,7,8-PECDF	J	0.265	5.34	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.123	1.07	PQL	ng/Kg	
	2,3,7,8-TCDF	J	0.156	1.07	PQL	ng/Kg	
	OCDD	JB	1.69	10.7	PQL	ng/Kg	
	OCDF	JBQ	0.281	10.7	PQL	ng/Kg	
FDG-SL-841-SA5B-SB-9.0-10.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.182	5.32	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0286	5.32	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	J	0.0495	5.32	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JQ	0.100	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.0701	5.32	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0727	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JQ	0.124	5.32	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.0302	5.32	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.207	5.32	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.215	5.32	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0534	5.32	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.132	5.32	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.131	1.06	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0488	1.06	PQL	ng/Kg	
	OCDD	JBQ	0.684	10.6	PQL	ng/Kg	
	OCDF	JBQ	0.135	10.6	PQL	ng/Kg	
FDG-SL-842-SA5B-SB-0.0-0.5	1,2,3,4,7,8,9-HPCDF	J	2.80	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	J	1.67	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	1.26	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	3.04	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	2.43	4.99	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	3.56	4.99	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.253	4.99	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	J	0.657	4.99	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.169	4.99	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	2.18	4.99	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.167	4.99	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.0880	0.998	PQL	ng/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-842-SA5B-SB-4.0-5.0	1,2,3,4,7,8,9-HPCDF	J	2.60	5.24	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8-HxCDD	J	2.01	5.24	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	J	1.26	5.24	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	3.31	5.24	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	2.11	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	4.09	5.24	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JQ	0.260	5.24	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.888	5.24	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.165	5.24	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	2.17	5.24	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JQ	0.170	5.24	PQL	ng/Kg	
	2,3,7,8-TCDD	JQ	0.101	1.05	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-757-SA5C-SB-0.0-0.5	ARSENIC	J	0.941	3.99	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.542	0.996	PQL	mg/Kg	
	BORON	J	0.845	9.96	PQL	mg/Kg	
	MOLYBDENUM	J	0.524	1.99	PQL	mg/Kg	
	TIN	J	3.39	9.96	PQL	mg/Kg	
	Zirconium	J	3.41	4.98	PQL	mg/Kg	
FDG-SL-757-SA5C-SB-4.0-5.0	ARSENIC	J	1.24	4.29	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.552	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.686	2.15	PQL	mg/Kg	
	TIN	J	3.68	10.7	PQL	mg/Kg	
	Zirconium	J	2.94	5.36	PQL	mg/Kg	
FDG-SL-757-SA5C-SB-8.0-9.0	ARSENIC	J	2.61	4.10	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.415	1.03	PQL	mg/Kg	
	SODIUM	J	89.9	103	PQL	mg/Kg	
	TIN	J	2.93	10.3	PQL	mg/Kg	
	Zirconium	J	3.14	5.13	PQL	mg/Kg	
FDG-SL-841-SA5B-SB-0.0-0.5	ARSENIC	J	3.04	4.00	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.692	1.00	PQL	mg/Kg	
	MOLYBDENUM	J	0.446	2.00	PQL	mg/Kg	
	TIN	J	3.69	10.0	PQL	mg/Kg	
	Zirconium	J	3.31	5.00	PQL	mg/Kg	
FDG-SL-841-SA5B-SB-4.0-5.0	ARSENIC	J	2.99	4.30	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.645	1.07	PQL	mg/Kg	
	BORON	J	0.976	10.7	PQL	mg/Kg	
	MOLYBDENUM	J	0.412	2.15	PQL	mg/Kg	
	TIN	J	3.35	10.7	PQL	mg/Kg	
	Zirconium	J	3.52	5.37	PQL	mg/Kg	
FDG-SL-841-SA5B-SB-9.0-10.0	ARSENIC	J	4.07	4.25	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.295	2.12	PQL	mg/Kg	
	TIN	J	6.02	10.6	PQL	mg/Kg	
	Zirconium	J	4.51	5.31	PQL	mg/Kg	
FDG-SL-842-SA5B-SB-0.0-0.5	BERYLLIUM	J	0.649	1.02	PQL	mg/Kg	J (all detects)
	BORON	J	1.03	10.2	PQL	mg/Kg	
	MOLYBDENUM	J	0.491	2.04	PQL	mg/Kg	
	SODIUM	J	87.1	102	PQL	mg/Kg	
	TIN	J	3.22	10.2	PQL	mg/Kg	
	Zirconium	J	3.48	5.10	PQL	mg/Kg	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-842-SA5B-SB-4.0-5.0	BERYLLIUM	J	0.880	1.03	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.877	2.07	PQL	mg/Kg	
	TIN	J	3.77	10.3	PQL	mg/Kg	
	Zirconium	J	3.63	5.17	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-757-SA5C-SB-0.0-0.5	SELENIUM	J	0.100	0.399	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0508	0.199	PQL	mg/Kg	
FDG-SL-757-SA5C-SB-4.0-5.0	SILVER	J	0.0618	0.215	PQL	mg/Kg	J (all detects)
FDG-SL-757-SA5C-SB-8.0-9.0	SILVER	J	0.0594	0.205	PQL	mg/Kg	J (all detects)
FDG-SL-841-SA5B-SB-0.0-0.5	SILVER	J	0.0309	0.200	PQL	mg/Kg	J (all detects)
FDG-SL-841-SA5B-SB-4.0-5.0	SILVER	J	0.0287	0.215	PQL	mg/Kg	J (all detects)
FDG-SL-841-SA5B-SB-9.0-10.0	SELENIUM	J	0.174	0.425	PQL	mg/Kg	J (all detects)
	SILVER	J	0.202	0.212	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-842-SA5B-SB-0.0-0.5	MERCURY	J	0.0128	0.0167	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-841-SA5B-SB-4.0-5.0	EFH (C21-C30)	J	3.7	5.5	PQL	mg/Kg	J (all detects)
	EFH (C30-C40)	J	9.3	11	PQL	mg/Kg	
FDG-SL-842-SA5B-SB-0.0-0.5	EFH (C21-C30) SG	J	2.3	5.2	PQL	mg/Kg	J (all detects)
	EFH (C21-C30)	J	4.9	5.2	PQL	mg/Kg	
	EFH (C30-C40)	J	9.8	10	PQL	mg/Kg	

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG-SL-757-SA5C-SB-4.0-5.0	AROCLOR 1254	J	11	19	PQL	ug/Kg	J (all detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH177 **Laboratory: LL**

EDD Filename: PrepPH177 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FDG-SL-757-SA5C-SB-0.0-0.5	ANTHRACENE	J	0.35	1.7	PQL	ug/Kg	
	BENZO(A)ANTHRACENE	J	1.2	1.7	PQL	ug/Kg	
	BENZO(E)PYRENE	J	11	17	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	18	PQL	ug/Kg	J (all detects)
	Butylbenzylphthalate	J	12	18	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.3	1.7	PQL	ug/Kg	
	PHENANTHRENE	J	1.4	1.7	PQL	ug/Kg	
FDG-SL-757-SA5C-SB-4.0-5.0	ANTHRACENE	J	0.54	1.8	PQL	ug/Kg	
	BENZO(E)PYRENE	J	5.2	19	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	12	20	PQL	ug/Kg	J (all detects)
	DIBENZO(A,H)ANTHRACENE	J	0.81	1.8	PQL	ug/Kg	
	INDENO(1,2,3-CD)PYRENE	J	1.3	1.8	PQL	ug/Kg	
FDG-SL-757-SA5C-SB-8.0-9.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.2	19	PQL	ug/Kg	J (all detects)
FDG-SL-841-SA5B-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.7	19	PQL	ug/Kg	J (all detects)
FDG-SL-841-SA5B-SB-4.0-5.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.2	20	PQL	ug/Kg	
	CHRYSENE	J	0.52	1.8	PQL	ug/Kg	J (all detects)
	NAPHTHALENE	J	1.0	1.8	PQL	ug/Kg	
FDG-SL-841-SA5B-SB-9.0-10.0	BENZO(B)FLUORANTHENE	J	0.85	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	8.4	20	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	0.78	1.8	PQL	ug/Kg	
FDG-SL-842-SA5B-SB-0.0-0.5	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.4	19	PQL	ug/Kg	
	CHRYSENE	J	0.66	1.7	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.85	1.7	PQL	ug/Kg	
FDG-SL-842-SA5B-SB-4.0-5.0	2-METHYLNAPHTHALENE	J	0.87	1.8	PQL	ug/Kg	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	9.4	19	PQL	ug/Kg	
	CHRYSENE	J	0.65	1.8	PQL	ug/Kg	
	FLUORANTHENE	J	0.95	1.8	PQL	ug/Kg	J (all detects)
	PHENANTHRENE	J	0.71	1.8	PQL	ug/Kg	
	PYRENE	J	0.81	1.8	PQL	ug/Kg	

LDC #: 32031C4 **VALIDATION COMPLETENESS WORKSHEET** Date: 6/26/14

SDG #: PH177 ADR Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories 7471 7471B Reviewer: KK

2nd Reviewer: CN

METHOD: Metals (EPA SW 846 Method 6010C/6020A/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 5/14/14
II.	ICP/MS Tune	A	
III.	Calibration	—	
IV.	Blanks	SW	No qualifying hits, ICB/CCB
V.	ICP Interference Check Sample (ICS) Analysis	—	
VI.	Matrix Spike Analysis	N	
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB= 1,2 FB= FB-051314 SDG# PH176

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	EB1-051414 Water	11		21		31	~~EB~~
2	EB2-051414 ↓	12		22		32	
3	FDG-SL-841-SA5B-SB-0.0-0.5	13		23		33	
4	FDG-SL-841-SA5B-SB-4.0-5.0	14		24		34	
5	FDG-SL-841-SA5B-SB-9.0-10.0	15		25		35	
6	FDG-SL-757-SA5C-SB-0.0-0.5	16		26		36	
7	FDG-SL-757-SA5C-SB-4.0-5.0	17		27		37	
8	FDG-SL-757-SA5C-SB-8.0-9.0	18		28		38	
9	FDG-SL-842-SA5B-SB-0.0-0.5	19		29		39	
10	FDG-SL-842-SA5B-SB-4.0-5.0	20		30		40	

Notes: _____

LDC #: 30031C4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KK
2nd reviewer: cr

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
B-10	Soil	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
1-2	Water	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32031C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: KR
2nd Reviewer: CA

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 5/14/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: 3, 6, 9

Analyte	Blank ID	Sample Identification											
	1	Action Limit	3	6	9								
Ba	0.34	0.17											
B	10.6	5.30		0.845	~~1.00~~ 1.03								
Mo	2.90	1.45	~~0.45~~ 0.446	0.524	0.491								

APL 7/23/14

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 5/14/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: 4-5, 7-8, 10

Analyte	Blank ID	Sample Identification											
	2	Action Limit	No quals										
K	114	57.0											

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 5/14/14 Soil factor applied 100
Field blank type: (circle one) ~~Field Blank~~ / Rinsate / Other: Associated Samples: 3-10

Analyte	Blank ID	Sample Identification											
	FB-051314 SDG#PH176	Action Limit	No quals										
Mn	0.0012	0.60											
Zn	0.003	1.50											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 25, 2014

SUBJECT: Santa Susana Field Laboratory, SVL, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on June 24, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32032:

SDG #	Fraction
PH180, PH181, PH183 PH186, PH190, PH194 PH200, PH203, PH206 PH211, PH214	Volatiles

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

1,037 pages-CD

Attachment 1

90/10 ADR/IV

LDC #32032 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, SVL)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH180	06/24/14	07/23/14	1	2																																
B	PH181	06/24/14	07/23/14	1	2																																
C	PH183	06/24/14	07/23/14	1	6																																
D	PH186	06/24/14	07/23/14	1	4																																
E	PH190	06/24/14	07/23/14	2	2																																
F	PH194	06/24/14	07/23/14	1	2																																
G	PH200	06/24/14	07/23/14	1	3																																
H	PH203	06/24/14	07/23/14	1	3																																
I	PH206	06/24/14	07/23/14	2	2																																
J	PH211	06/24/14	07/23/14	1	4																																
K	PH214	06/24/14	07/23/14	1	7																																
Total	T/SM			13	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH180

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 13, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks and field duplicate samples. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for several VOCs. No data were qualified for due to high %Rs since the associated results were non-detected.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH180	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

One field duplicate pair was collected and analyzed for VOCs. No VOCs were detected in the field duplicates.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH178) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH180 **Laboratory: LL**

EDD Filename: PH180_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **TB2-051314** ***Collected:*** **5/13/2014 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH180 **Laboratory: LL**

EDD Filename: PH180_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation
Q	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-May-2014	TB2-051314	7466838	TB	5030B	8260B	III
13-May-2014	SVL-532-SA5B-SB-4.0-5.0	7466839	N	5035A	8260B	III
13-May-2014	SVL-532-SA5B-SB-4.0-5.0MS	7466840	MS	M5035A	8260B	III
13-May-2014	SVL-532-SA5B-SB-4.0-5.0MD	7466841	MSD	M5035A	8260B	III
13-May-2014	SVL-832-SA5B-SB-4.0-5.0	7466842	FD	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Quality Control Outlier Reports

PH180

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH180 **Laboratory: LL**

EDD Filename: PH180_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: 8260B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SVL-532-SA5B-SB-4.0-5.0 MS	1,2-DICHLOROETHANE	149	-	54.00-143.00	-	1,2-DICHLOROETHANE	
SVL-532-SA5B-SB-4.0-5.0 MSD	CHLOROFORM	144	-	61.00-142.00	-	CHLOROFORM	
(SVL-532-SA5B-SB-4.0-5.0)	DIBROMOCHLOROMETHANE	129	-	51.00-128.00	-	DIBROMOCHLOROMETHANE	J (all detects)
	IODOMETHANE	148	-	52.00-139.00	-	IODOMETHANE	
	METHYLENE CHLORIDE	188	238	60.00-149.00	-	METHYLENE CHLORIDE	
	TETRACHLOROETHENE	151	-	42.00-149.00	-	TETRACHLOROETHENE	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH180 **Laboratory: LL**

EDD Filename: PH180_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY99Q212135A **LCSY99Y212156A** (TB2-051314)	Chlorotrifluoroethylene	42	42	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH181

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 22, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 16, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH181	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH178) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-May-2014	TB-051614	7467784	TB	5030B	8260B	III
16-May-2014	SVL-504-SA8-SB-2.0-2.5	7467785	N	5035A	8260B	III
16-May-2014	SVL-519-SA8-SB-7.5-8.0	7467786	N	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH181 **Laboratory: LL**

EDD Filename: PH181_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **TB-051614** ***Collected:*** **5/16/2014 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH181 **Laboratory: LL**

EDD Filename: PH181_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH181

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH181 **Laboratory: LL**

EDD Filename: PH181_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY99Q212135A **LCSY99Y212156A** (TB-051614)	Chlorotrifluoroethylene	42	42	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH183

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 19, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH183	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH190) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-May-2014	TB1-051914	7470166	TB	5030B	8260B	III
19-May-2014	SVL-517-SA8-SB-5.0-6.0	7470160	N	5035A	8260B	III
19-May-2014	SVL-517-SA8-SB-10.0-11.0	7470161	N	5035A	8260B	III
19-May-2014	SVL-517-SA8-SB-15.5-16.5	7470162	N	5035A	8260B	III
19-May-2014	SVL-524-SA8-SB-4.5-5.5	7470163	N	5035A	8260B	III
19-May-2014	SVL-528-SA8-SB-5.0-6.0	7470164	N	5035A	8260B	III
19-May-2014	SVL-528-SA8-SB-11.0-12.0	7470165	N	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH183 **Laboratory: LL**

EDD Filename: PH183_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **TB1-051914** ***Collected:*** **5/19/2014 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH183 **Laboratory: LL**

EDD Filename: PH183_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH183

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH183 **Laboratory: LL**

EDD Filename: PH183_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

***Method:* 8260B**
***Matrix:* AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY18Q211044A (TB1-051914)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH186

Prepared for

CDM Smith
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Prepared by

Laboratory Data Consultants, Inc.
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Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 20, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH186	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH190) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-May-2014	TB2-052014	7471511	TB	5030B	8260B	III
20-May-2014	SVL-525-SA5C-SB-5.0-6.0	7471515	N	5035A	8260B	III
20-May-2014	SVL-525-SA5C-SB-10.0-11.0	7471512	N	5035A	8260B	III
20-May-2014	SVL-525-SA5C-SB-15.0-16.0	7471513	N	5035A	8260B	III
20-May-2014	SVL-531-SA5C-SB-2.5-2.9	7471514	N	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH186 **Laboratory: LL**

EDD Filename: PH186_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: TB2-052014 *Collected:* 5/20/2014 8:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

Method Category: VOA

Method: 8260B **Matrix: SO**

Sample ID: SVL-525-SA5C-SB-5.0-6.0 *Collected:* 5/20/2014 11:44:00 *Analysis Type:* RES *Dilution:* 0.81

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	4	J	4	MDL	9	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH186 **Laboratory: LL**

EDD Filename: PH186_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH186

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH186 **Laboratory: LL**

EDD Filename: PH186_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY18Q211044A (TB2-052014)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH186 **Laboratory: LL**

EDD Filename: PH186_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8260B**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SVL-525-SA5C-SB-5.0-6.0	2-BUTANONE (MEK)	J	4	9	PQL	ug/Kg	J (all detects)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH190

Prepared for

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Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
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July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 21, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH190	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-May-2014	TB2-052114	7473394	TB	5030B	8260B	III
21-May-2014	SVL-512-SA5D-SB-5.0-6.0	7473395	N	5035A	8260B	III
21-May-2014	EB-052114	7473397	EB	5030B	8260B	III
21-May-2014	SVL-515-SA5D-SB-5.0-6.0	7473396	N	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH190 **Laboratory: LL**

EDD Filename: PH190_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: **EB-052114** *Collected:* **5/21/2014 2:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

Sample ID: **TB2-052114** *Collected:* **5/21/2014 8:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH190 **Laboratory: LL**

EDD Filename: PH190_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
L	Laboratory Control Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH190

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH190 **Laboratory: LL**

EDD Filename: PH190_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY18Q211044A (EB-052114 TB2-052114)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH194

Prepared for

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Prepared by

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July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 22, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks and field duplicate samples. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for several VOCs. No data were qualified for due to RPDs outside of QC limits since the associated results were non-detected.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for chlorotrifluoroethylene. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH194	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

One field duplicate pair was collected and analyzed for VOCs. No VOCs were detected in the field duplicates.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH190) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	TB2-052214	7475236	TB	5030B	8260B	III
22-May-2014	SVL-511-SA5D-4.5-5.5	7475237	N	5035A	8260B	III
22-May-2014	SVL-511-SA5D-4.5-5.5MS	7475238	MS	5035A	8260B	III
22-May-2014	SVL-511-SA5D-4.5-5.5MSD	7475239	MSD	5035A	8260B	III
22-May-2014	SVL-811-SA5D-4.5-5.5	7475240	FD	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH194 **Laboratory: LL**

EDD Filename: PH194_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **TB2-052214** ***Collected:*** **5/22/2014 8:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH194 **Laboratory: LL**

EDD Filename: PH194_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Reason Code Legend

Reason Code	*Description*
E	Matrix Spike Precision
L	Laboratory Control Spike Lower Estimation
Q	Matrix Spike Precision

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

PH194

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH194 **Laboratory: LL**

EDD Filename: PH194_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

Method: **8260B**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SVL-511-SA5D-4.5-5.5MSD (SVL-511-SA5D-4.5-5.5)	1,2,3-TRICHLOROBENZENE	-	-	10.00-140.00	33 (30.00)	1,2,3-TRICHLOROBENZENE	J (all detects)
	1,2,4-TRICHLOROBENZENE	-	-	10.00-136.00	33 (30.00)	1,2,4-TRICHLOROBENZENE	
	HEXACHLOROBUTADIENE	-	-	10.00-155.00	53 (30.00)	HEXACHLOROBUTADIENE	
	N-BUTYLBENZENE	-	-	40.00-140.00	42 (30.00)	N-BUTYLBENZENE	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH194 **Laboratory: LL**

EDD Filename: PH194_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

***Method:* 8260B**
***Matrix:* AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCSY18Q211044A (TB2-052214)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH200

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on May 27, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, surrogates, internal standards, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the initial and continuing calibrations and internal standards, which were reviewed manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH200	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH206) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels. All data are deemed useable for the intended use.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
27-May-2014	TB2-052714	7479338	TB	5030B	8260B	IV
27-May-2014	SVL-550-SA5D-SB-5.0-6.0	7479337	N	5035A	8260B	IV
27-May-2014	SVL-546-SA5D-SB-5.0-6.0	7479336	N	5035A	8260B	IV
27-May-2014	SVL-532-SA5D-SB-4.0-4.5	7479339	N	5035A	8260B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH200 **Laboratory: LL**

EDD Filename: PH200_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH200

(No Outliers)

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: May 27, 2014

LDC Report Date: July 2, 2014

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): PH200

Sample Identification

SVL-546-SA5D-SB-5.0-6.0
SVL-550-SA5D-SB-5.0-6.0
TB2-052714
SVL-532-SA5D-SB-4.0-4.5

Introduction

This data review covers 3 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a Laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB2-052714 was identified as a trip blank. No volatile contaminants were found.

Sample EB2-052914 (from SDG PH206) was identified as an equipment blank. No volatile contaminants were found.

Sample FB-051314 (from SDG PH176) was identified as a field blank. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH200	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Volatiles - Data Qualification Summary - SDG PH200

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH200	SVL-546-SA5D-SB-5.0-6.0 SVL-550-SA5D-SB-5.0-6.0 TB2-052714 SVL-532-SA5D-SB-4.0-4.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Volatiles - Laboratory Blank Data Qualification Summary - SDG PH200

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Volatiles - Field Blank Data Qualification Summary - SDG PH200

No Sample Data Qualified in this SDG

LDC #: 32032G1a **VALIDATION COMPLETENESS WORKSHEET** Date: 6/30/14
SDG #: PH200 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/27/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%, r²
IV.	Continuing calibration/ICV	~~A~~ SW for ICV/CCV ≤ 25%	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 3 EB = EB2-052914 (SDG# PH200) FB = FB-051314 (SDG #171)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil + Water

1	SVL-546-SA5D-SB-5.0-6.0	11		21		31	VBLK577
2	SVL-550-SA5D-SB-5.0-6.0	12		22		32	VBLKY36
3	TB2-052714 W	13		23		33	
4	SVL-532-SA5D-SB-4.0-4.5	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 32032G1a

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: SM

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30%/~~15%~~ 25% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ ~~20%~~ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC # 32032G1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

$\%RSD = 100 * (S/X)$ — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	6/3/2014	tert-Butyl alcohol (IS1)	1.0694	1.0694	1.1390	1.1390	10	10
			Trichloroethene (IS2)	0.2701	0.2701	0.2659	0.2659	6	6
			Tetrachloroethene (IS3)	0.4433	0.4433	0.4293	0.4294	6	6.5
			1,1,2,2-Tetrachloroethane (IS4)	0.6798	0.6798	0.6837	0.6837	5	5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 32032G1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (300 std)	Recalculated RRF (300 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	6/4/2014	Vinyl acetate (IS1)	0.2664	0.2664	0.2607	0.2607	8	8

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 32032G1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (100 std)	Recalculated RRF (100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09935	5/19/2014	tert-Butyl alcohol (IS1)	1.4155	1.4155	1.4269	1.4269	4	4
			Trichloroethene (IS2)	0.3206	0.3206	0.3112	0.3112	8	8
			Tetrachloroethene (IS3)	0.4916	0.4916	0.4899	0.4900	9	9
			1,1,2,2-Tetrachloroethane (IS4)	1.3664	1.3664	1.3609	1.3609	6	6

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 32032G1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	3/27/2014	Vinyl acetate (IS1)	0.7194	0.7194	0.6990	0.6990	5	5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 32032G1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	bu05c10a	6/5/2014	tert-Butyl alcohol (IS1)	1.1390	1.1797	1.1797	4	4
			Trichloroethene (IS2)	0.2659	0.2780	0.2780	5	5
			Tetrachloroethene (IS3)	0.4293	0.4379	0.4379	2	2
			1,1,2,2-Tetrachloroethane (IS4)	0.6837	0.7227	0.7227	6	6
2	bu05c11	6/5/2014	Vinyl acetate (IS1)	0.2607	0.2349	0.2349	10	10

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 32032G1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	yu04c01	6/4/2014	tert-Butyl alcohol (IS1)	1.4269	1.3499	1.3499	5	5
			Trichloroethene (IS2)	0.3112	0.2945	0.2945	5	5
			Tetrachloroethene (IS3)	0.4899	0.4739	0.4739	3	3
			1,1,2,2-Tetrachloroethane (IS4)	1.3609	1.1901	1.1901	13	13
2	yu04c02	6/4/2014	Vinyl acetate (IS1)	0.6990	0.7498	0.7498	7	7

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32032G1k

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: GM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.00	53.227	106	106	0
1,2-Dichloroethane-d4	↓	53.201	106	106	0
Toluene-d8		49.344	99	99	0
Bromofluorobenzene		46.558	93	93	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 32832G 1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS434 / LCD434

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene	20	20	21.5	21.71	108	108	109	109	1	1
Trichloroethene	↓	↓	19.55	19.85	98	98	99	99	1	1.5
Benzene			18.64	19.06	93	93	95	95	2	2
Toluene			18.78	19.04	94	94	95	95	1	1
Chlorobenzene			18.91	19.2	95	95	98	96	2	1.5

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 320326 1A

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. A11 , NJD :

LCSB77 S = 20.68ug/kg

Conc. = $\frac{(116263)(50)(5)}{(1057247)(0.2659)(5)}$

= 20.67839041 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH203

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 28, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH203	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH206) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels. All data are deemed useable for the intended use.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
28-May-2014	TB2-052814	7480324	TB	5030B	8260B	III
28-May-2014	SVL-507-SA5C-SB-5.0-6.0	7480323	N	5035	8260B	III
28-May-2014	SVL-545-SA5C-SB-3.0-3.5	7480326	N	5035	8260B	III
28-May-2014	SVL-551-SA5C-SB-2.0-2.8	7480325	N	5035	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH203 **Laboratory: LL**

EDD Filename: PH203_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH203

(No Outliers)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH206

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 29, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH206	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels. All data are deemed useable for the intended use.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-May-2014	TB2-052914	7482077	TB	5030B	8260B	III
29-May-2014	EB2-052914	7482079	EB	5030B	8260B	III
29-May-2014	SVL-557-SA5C-SB-3.0-3.5	7482076	N	5035	8260B	III
29-May-2014	SVL-559-SA5C-SB-2.5-3.0	7482078	N	5035	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH206 **Laboratory: LL**

EDD Filename: PH206_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH206

(No Outliers)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH211

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on June 2, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH211	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

Two equipment blanks (from SDG PH216) were collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels. All data are deemed useable for the intended use.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Jun-2014	TB3-060214	7484901	TB	5030B	8260B	III
02-Jun-2014	SVL-563-SA5C-SB-1.0-1.5	7484900	N	5035A	8260B	III
02-Jun-2014	SVL-518-SA5C-SB-5.5-6.0	7484903	N	5035A	8260B	III
02-Jun-2014	SVL-518-SA5C-SB-11.0-11.5	7484902	N	5035A	8260B	III
02-Jun-2014	SVL-576-SA5B-SB-4.0-4.3	7484904	N	5035A	8260B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH211 **Laboratory: LL**

EDD Filename: PH211_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH211

(No Outliers)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH214

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 23, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on June 3, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH214	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH216) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels. All data are deemed useable for the intended use.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Jun-2014	TB1-060314	7486861	TB	5030B	8260B	III
03-Jun-2014	SVL-602-SA5B-SB-4.5-5.0	7486854	N	5035A	8260B	III
03-Jun-2014	SVL-553-SA5D-SB-4.5-5.5	7486855	N	5035A	8260B	III
03-Jun-2014	SVL-553-SA5D-SB-9.0-10.0	7486856	N	5035A	8260B	III
03-Jun-2014	SVL-553-SA5D-SB-14.0-15.0	7486857	N	5035A	8260B	III
03-Jun-2014	SVL-553-SA5D-SB-19.0-20.0	7486858	N	5035A	8260B	III
03-Jun-2014	SVL-556-SA5D-SB-4.5-5.5	7486859	N	5035A	8260B	III
03-Jun-2014	SVL-556-SA5D-SB-10.0-11.0	7486860	N	5035A	8260B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH214 **Laboratory: LL**

EDD Filename: PH214_v1 **eQAPP Name: CDM_SSFL_140113_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH214

(No Outliers)

LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 29, 2014

SUBJECT: Santa Susana Field Laboratory, FDG Block 2, Data Validation

Dear Mrs. Zakowski,

Enclosed is the final validation report for the fractions listed below. This SDG was received on June 27, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32094:

SDG #	Fraction
PH196	Volatiles, Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Formaldehyde, Total Petroleum Hydrocarbons as Gasolines, Total Petroleum Hydrocarbons as Extractables, Dioxins and Dibenzofurans

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, January 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

73 pages-CD

Attachment 1

90/10 ADR/IV

LDC #32094 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, FDG Block 2)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)		SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)		Formal dehyde (8315A)															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH196	06/27/14	07/28/14	1	0	2	5	1	0	2	5	2	7	3	6	4	18	1	0	1	0														
Total	T/SM			1	0	2	5	1	0	2	5	2	7	3	6	4	18	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup FDG Block 2

SDG: PH196

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

July 29, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 22, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Semivolatiles (SVOCs) by EPA SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081B
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, 7470A and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without silica gel clean up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B
Formaldehyde by EPA Method 8315A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria with the exception of one cooler. All non-detected VOC and TPH as gasoline results for samples EB1-052214 and EB2-052214 were qualified as rejected (R) due to temperatures grossly outside of QC limits (>15°C). The remainder of associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PH196/ 6010C	ICB/CCB	Zirconium	11.5 ug/L	EB1-052214 EB2-052214

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
PH196/ 6010C	EB1-052214	Zirconium	0.0109 mg/L	0.0109U mg/L
PH196/ 6010C	EB2-052214	Zirconium	0.0108 mg/L	0.0108U mg/L

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for TPH as extractables with silica gel clean up. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for VOCs and SVOCs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH196	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicate samples were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were detected in the trip blank.

Two equipment blanks were collected and analyzed for VOCs, SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up and dioxins and dibenzofurans. The equipment blank had detections for VOCs, SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank (from SDG PH191) was collected and analyzed for VOCs, SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, dioxins and dibenzofurans and formaldehyde. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

XV. Overall Assessment of Data

Several VOC and TPH as gasoline results in two samples were rejected due to temperature exceeding QC limits. These results are not useable for all purposes.

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	TB1-052214	7475819	TB	5030B	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-0.0-0.	7475820	N	3546	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-4.0-5.	7475821	N	3546	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-4.0-5.	7475821	N	5035A	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	3050B	6010C	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	3050B	6020A	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	3546	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	3546	8082A	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	3546	8270D SIM	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	5035A	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-9.0-10	7475822	N	METHOD	7471B	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	3050B	6010C	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	3050B	6020A	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	3546	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	3546	8082A	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	3546	8270D SIM	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	5035A	8015M	III
22-May-2014	FDG2-SL-628-SA8-SB-14.0-1	7475823	N	METHOD	7471B	III
22-May-2014	FDG2-SL-578-NBZ-SB-0.0-0.	7475824	N	3050B	6010C	III
22-May-2014	FDG2-SL-578-NBZ-SB-0.0-0.	7475824	N	3050B	6020A	III
22-May-2014	FDG2-SL-578-NBZ-SB-0.0-0.	7475824	N	3546	8015M	III
22-May-2014	FDG2-SL-578-NBZ-SB-0.0-0.	7475824	N	3546	8082A	III
22-May-2014	FDG2-SL-578-NBZ-SB-0.0-0.	7475824	N	3546	8270D SIM	III
22-May-2014	FDG2-SL-578-NBZ-SB-0.0-0.	7475824	N	METHOD	7471B	III
22-May-2014	FDG2-SL-581-NBZ-SB-0.0-0.	7475825	N	3050B	6010C	III
22-May-2014	FDG2-SL-581-NBZ-SB-0.0-0.	7475825	N	3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	FDG2-SL-581-NBZ-SB-0.0-0.	7475825	N	3546	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-0.0-0.	7475825	N	METHOD	7471B	III
22-May-2014	FDG2-SL-581-NBZ-SB-4.0-5.	7475826	N	3050B	6010C	III
22-May-2014	FDG2-SL-581-NBZ-SB-4.0-5.	7475826	N	3050B	6020A	III
22-May-2014	FDG2-SL-581-NBZ-SB-4.0-5.	7475826	N	3546	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-4.0-5.	7475826	N	5035A	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-4.0-5.	7475826	N	METHOD	7471B	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	3050B	6010C	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	3050B	6020A	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	3546	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	3546	8082A	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	3546	8270D SIM	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	5035A	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-9.0-10	7475827	N	METHOD	7471B	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	3050B	6010C	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	3050B	6020A	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	3546	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	3546	8082A	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	3546	8270D SIM	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	5035A	8015M	III
22-May-2014	FDG2-SL-581-NBZ-SB-13.0-1	7475828	N	METHOD	7471B	III
22-May-2014	EB1-052214	7475817	EB	3005A	6010C	III
22-May-2014	EB1-052214	7475817	EB	3510C	8015M	III
22-May-2014	EB1-052214	7475817	EB	3510C	8082A	III
22-May-2014	EB1-052214	7475817	EB	3510C	8270D SIM	III
22-May-2014	EB1-052214	7475817	EB	5030B	8015M	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-May-2014	EB1-052214	7475817	EB	5030B	8260B	III
22-May-2014	EB1-052214	7475817	EB	M3010A	6020A	III
22-May-2014	EB1-052214	7475817	EB	METHOD	7470A	III
22-May-2014	EB2-052214	7475818	EB	3005A	6010C	III
22-May-2014	EB2-052214	7475818	EB	3510C	8015M	III
22-May-2014	EB2-052214	7475818	EB	3510C	8081B	III
22-May-2014	EB2-052214	7475818	EB	3510C	8082A	III
22-May-2014	EB2-052214	7475818	EB	3510C	8270D SIM	III
22-May-2014	EB2-052214	7475818	EB	5030B	8015M	III
22-May-2014	EB2-052214	7475818	EB	M3010A	6020A	III
22-May-2014	EB2-052214	7475818	EB	METHOD	1613B	III
22-May-2014	EB2-052214	7475818	EB	METHOD	7470A	III
22-May-2014	EB2-052214	7475818	EB	METHOD	8315A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: EB1-052214 **Collected: 5/22/2014 3:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	0.0109	J	0.0084	MDL	0.100	PQL	mg/L	U	B, B

Sample ID: EB2-052214 **Collected: 5/22/2014 3:30:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	0.0108	J	0.0084	MDL	0.100	PQL	mg/L	U	B, B

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG2-SL-578-NBZ-SB-0.0-0.5 **Collected: 5/22/2014 11:26:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.46	J	0.885	MDL	10.5	PQL	mg/Kg	U	B
CADMIUM	0.100	J	0.0800	MDL	1.05	PQL	mg/Kg	J	Z
MOLYBDENUM	0.544	J	0.179	MDL	2.11	PQL	mg/Kg	J	Z
TIN	4.40	J	0.232	MDL	10.5	PQL	mg/Kg	U	B

Sample ID: FDG2-SL-578-NBZ-SB-0.0-0.5 **Collected: 5/22/2014 11:26:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	4.54	J	0.885	MDL	5.27	PQL	mg/Kg	U	F

Sample ID: FDG2-SL-581-NBZ-SB-0.0-0.5 **Collected: 5/22/2014 1:10:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.166	J	0.0779	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.318	J	0.174	MDL	2.05	PQL	mg/Kg	J	Z
TIN	4.04	J	0.226	MDL	10.3	PQL	mg/Kg	U	B

Sample ID: FDG2-SL-581-NBZ-SB-13.0-14.0 **Collected: 5/22/2014 1:41:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CADMIUM	0.178	J	0.0818	MDL	1.08	PQL	mg/Kg	J	Z
MOLYBDENUM	0.320	J	0.183	MDL	2.15	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: FDG2-SL-581-NBZ-SB-13.0-14.0 **Collected: 5/22/2014 1:41:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TIN	4.54	J	0.237	MDL	10.8	PQL	mg/Kg	U	B

Sample ID: FDG2-SL-581-NBZ-SB-4.0-5.0 **Collected: 5/22/2014 1:20:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	10.5	J	0.900	MDL	10.7	PQL	mg/Kg	J	Z
CADMIUM	0.261	J	0.0814	MDL	1.07	PQL	mg/Kg	J	Z
MOLYBDENUM	0.437	J	0.182	MDL	2.14	PQL	mg/Kg	J	Z
TIN	4.40	J	0.236	MDL	10.7	PQL	mg/Kg	U	B

Sample ID: FDG2-SL-581-NBZ-SB-9.0-10.0 **Collected: 5/22/2014 1:30:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.457	J	0.191	MDL	2.24	PQL	mg/Kg	J	Z
TIN	4.60	J	0.247	MDL	11.2	PQL	mg/Kg	U	B

Sample ID: FDG2-SL-628-SA8-SB-14.0-15.0 **Collected: 5/22/2014 9:20:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.857	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
CADMIUM	0.367	J	0.0785	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.479	J	0.176	MDL	2.07	PQL	mg/Kg	J	Z
TIN	3.06	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	5.15	J	0.868	MDL	5.16	PQL	mg/Kg	U	F

Sample ID: FDG2-SL-628-SA8-SB-9.0-10.0 **Collected: 5/22/2014 8:52:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.959	J	0.0707	MDL	1.06	PQL	mg/Kg	J	Z
CADMIUM	0.339	J	0.0802	MDL	1.06	PQL	mg/Kg	J	Z
MOLYBDENUM	0.334	J	0.179	MDL	2.11	PQL	mg/Kg	J	Z
TIN	2.99	J	0.232	MDL	10.6	PQL	mg/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS
Method: 6010C **Matrix: SO**

Sample ID: FDG2-SL-628-SA8-SB-9.0-10.0 *Collected:* 5/22/2014 8:52:00 *Analysis Type:* REA2 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Zirconium	4.90	J	0.887	MDL	5.28	PQL	mg/Kg	U	F

Method Category: METALS
Method: 6020A **Matrix: SO**

Sample ID: FDG2-SL-581-NBZ-SB-0.0-0.5 *Collected:* 5/22/2014 1:10:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.128	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-581-NBZ-SB-13.0-14.0 *Collected:* 5/22/2014 1:41:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.191	J	0.0280	MDL	0.215	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-581-NBZ-SB-4.0-5.0 *Collected:* 5/22/2014 1:20:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0997	J	0.0279	MDL	0.214	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-581-NBZ-SB-9.0-10.0 *Collected:* 5/22/2014 1:30:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0426	J	0.0292	MDL	0.224	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-628-SA8-SB-14.0-15.0 *Collected:* 5/22/2014 9:20:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0359	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-628-SA8-SB-14.0-15.0 *Collected:* 5/22/2014 9:20:00 *Analysis Type:* REA3 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.273	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: FDG2-SL-628-SA8-SB-9.0-10.0 *Collected:* 5/22/2014 8:52:00 *Analysis Type:* REA2 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0277	J	0.0274	MDL	0.211	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-628-SA8-SB-9.0-10.0 *Collected:* 5/22/2014 8:52:00 *Analysis Type:* REA3 *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.307	J	0.106	MDL	0.422	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: FDG2-SL-578-NBZ-SB-0.0-0.5 *Collected:* 5/22/2014 11:26:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0117	J	0.0105	MDL	0.0174	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-581-NBZ-SB-0.0-0.5 *Collected:* 5/22/2014 1:10:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0122	J	0.0107	MDL	0.0178	PQL	mg/Kg	J	Z

Sample ID: FDG2-SL-581-NBZ-SB-13.0-14.0 *Collected:* 5/22/2014 1:41:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0173	J	0.0106	MDL	0.0176	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB2-052214 *Collected:* 5/22/2014 3:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.709	JBQ	0.111	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,6,7,8-HPCDF	0.704	JBQ	0.0530	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,7,8,9-HPCDF	0.626	JBQ	0.0674	MDL	9.78	PQL	pg/L	U	B
1,2,3,4,7,8-HxCDD	0.438	JB	0.113	MDL	9.78	PQL	pg/L	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: AQ**

Sample ID: EB2-052214 *Collected:* 5/22/2014 3:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8-HXCDF	0.487	JB	0.0936	MDL	9.78	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDD	0.450	JBQ	0.120	MDL	9.78	PQL	pg/L	U	B
1,2,3,6,7,8-HXCDF	0.596	JB	0.0938	MDL	9.78	PQL	pg/L	U	B
1,2,3,7,8,9-HXCDF	0.600	JBQ	0.0824	MDL	9.78	PQL	pg/L	U	B
1,2,3,7,8-PECDD	0.485	JBQ	0.172	MDL	9.78	PQL	pg/L	U	B
1,2,3,7,8-PECDF	0.471	JBQ	0.0806	MDL	9.78	PQL	pg/L	U	B
2,3,4,6,7,8-HXCDF	0.567	JB	0.0853	MDL	9.78	PQL	pg/L	U	B
2,3,4,7,8-PECDF	0.621	JB	0.0727	MDL	9.78	PQL	pg/L	U	B
2,3,7,8-TCDD	0.235	JBQ	0.188	MDL	1.96	PQL	pg/L	U	B
2,3,7,8-TCDF	0.119	JQ	0.116	MDL	1.96	PQL	pg/L	J	Z
OCDD	3.50	JB	0.152	MDL	19.6	PQL	pg/L	U	B
OCDF	1.75	JB	0.102	MDL	19.6	PQL	pg/L	U	B

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: EB1-052214 *Collected:* 5/22/2014 3:00:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C15-C20) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C21-C30) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C30-C40) SG	0.50	U	0.10	MDL	0.50	PQL	mg/L	UJ	H
EFH (C8-C11) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H

Sample ID: EB1-052214 *Collected:* 5/22/2014 3:00:00 *Analysis Type:* REA2 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	50	U	20	MDL	50	PQL	ug/L	R	H

Sample ID: EB1-052214 *Collected:* 5/22/2014 3:00:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C15-C20)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: AQ**

Sample ID: **EB1-052214** *Collected:* **5/22/2014 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C30-C40)	0.50	U	0.10	MDL	0.50	PQL	mg/L	UJ	H
EFH (C8-C11)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H

Sample ID: **EB2-052214** *Collected:* **5/22/2014 3:30:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C15-C20) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C21-C30) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C30-C40) SG	0.50	U	0.10	MDL	0.50	PQL	mg/L	UJ	H
EFH (C8-C11) SG	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H

Sample ID: **EB2-052214** *Collected:* **5/22/2014 3:30:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS (C5-C12)	50	U	20	MDL	50	PQL	ug/L	R	H

Sample ID: **EB2-052214** *Collected:* **5/22/2014 3:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C15-C20)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C21-C30)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H
EFH (C30-C40)	0.50	U	0.10	MDL	0.50	PQL	mg/L	UJ	H
EFH (C8-C11)	0.10	U	0.050	MDL	0.10	PQL	mg/L	UJ	H

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **FDG2-SL-581-NBZ-SB-0.0-0.5** *Collected:* **5/22/2014 1:10:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	2.6	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: **FDG2-SL-581-NBZ-SB-9.0-10.0** *Collected:* **5/22/2014 1:30:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S
EFH (C15-C20) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S
EFH (C21-C30) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S
EFH (C30-C40) SG	11	U	4.5	MDL	11	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.6	U	2.2	MDL	5.6	PQL	mg/Kg	UJ	S

Sample ID: **FDG2-SL-628-SA8-SB-0.0-0.5** *Collected:* **5/22/2014 8:20:00** *Analysis Type:* **REA** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30) SG	3.9	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z
EFH (C30-C40) SG	5.5	J	4.2	MDL	10	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-628-SA8-SB-0.0-0.5** *Collected:* **5/22/2014 8:20:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	4.2	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-628-SA8-SB-14.0-15.0** *Collected:* **5/22/2014 9:20:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30) SG	2.4	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-628-SA8-SB-14.0-15.0** *Collected:* **5/22/2014 9:20:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.1	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: **FDG2-SL-628-SA8-SB-4.0-5.0** *Collected:* **5/22/2014 8:30:00** *Analysis Type:* **REA2** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30) SG	3.7	J	2.2	MDL	5.6	PQL	mg/Kg	J	Z
EFH (C30-C40) SG	4.6	J	4.4	MDL	11	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: **EB2-052214** *Collected:* **5/22/2014 3:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.018	U	0.0046	MDL	0.018	PQL	ug/L	UJ	H
4,4'-DDE	0.018	U	0.0046	MDL	0.018	PQL	ug/L	UJ	H
4,4'-DDT	0.018	U	0.0048	MDL	0.018	PQL	ug/L	UJ	H
ALDRIN	0.0092	U	0.0018	MDL	0.0092	PQL	ug/L	UJ	H
ALPHA-BHC	0.0092	U	0.0028	MDL	0.0092	PQL	ug/L	UJ	H
BETA-BHC	0.0092	U	0.0031	MDL	0.0092	PQL	ug/L	UJ	H
Chlordane	0.46	U	0.15	MDL	0.46	PQL	ug/L	UJ	H
DELTA-BHC	0.0092	U	0.0031	MDL	0.0092	PQL	ug/L	UJ	H
DIELDRIN	0.018	U	0.0049	MDL	0.018	PQL	ug/L	UJ	H
ENDOSULFAN I	0.0092	U	0.0040	MDL	0.0092	PQL	ug/L	UJ	H
ENDOSULFAN II	0.018	U	0.014	MDL	0.018	PQL	ug/L	UJ	H
ENDOSULFAN SULFATE	0.018	U	0.0053	MDL	0.018	PQL	ug/L	UJ	H
ENDRIN	0.018	U	0.0075	MDL	0.018	PQL	ug/L	UJ	H
ENDRIN ALDEHYDE	0.092	U	0.018	MDL	0.092	PQL	ug/L	UJ	H
ENDRIN KETONE	0.018	U	0.0046	MDL	0.018	PQL	ug/L	UJ	H
gamma-BHC (Lindane)	0.0092	U	0.0018	MDL	0.0092	PQL	ug/L	UJ	H
HEPTACHLOR	0.0092	U	0.0018	MDL	0.0092	PQL	ug/L	UJ	H
HEPTACHLOR EPOXIDE	0.0092	U	0.0021	MDL	0.0092	PQL	ug/L	UJ	H
METHOXYCHLOR	0.092	U	0.028	MDL	0.092	PQL	ug/L	UJ	H
MIREX	0.046	U	0.0092	MDL	0.046	PQL	ug/L	UJ	H
TOXAPHENE	0.92	U	0.28	MDL	0.92	PQL	ug/L	UJ	H

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: **EB1-052214** *Collected:* **5/22/2014 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.020	J	0.010	MDL	0.051	PQL	ug/L	J	Z, H, L

Sample ID: **EB1-052214** *Collected:* **5/22/2014 3:00:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.030	J	0.010	MDL	0.051	PQL	ug/L	J	Z, H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: **EB1-052214** ***Collected:*** **5/22/2014 3:00:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
ACENAPHTHYLENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
ANTHRACENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BENZO(A)ANTHRACENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BENZO(A)PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BENZO(B)FLUORANTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BENZO(E)PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BENZO(G,H,I)PERYLENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BENZO(K)FLUORANTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
BIS(2-ETHYLHEXYL)PHTHALATE	0.20	J	0.051	MDL	1.0	PQL	ug/L	UJ	H, L, E, B
Butylbenzylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	H
CHRYSENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
DIBENZO(A,H)ANTHRACENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
Diethylphthalate	0.053	J	0.051	MDL	1.0	PQL	ug/L	J	Z, H
Dimethylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	H
Di-n-butylphthalate	0.090	J	0.051	MDL	1.0	PQL	ug/L	J	Z, H
Di-n-octylphthalate	1.0	U	0.051	MDL	1.0	PQL	ug/L	UJ	H
FLUORANTHENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
FLUORENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
INDENO(1,2,3-CD)PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
NAPHTHALENE	0.11		0.031	MDL	0.051	PQL	ug/L	J	H
N-NITROSODIMETHYLAMINE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H
PHENANTHRENE	0.051	U	0.031	MDL	0.051	PQL	ug/L	UJ	H
PYRENE	0.051	U	0.010	MDL	0.051	PQL	ug/L	UJ	H

Sample ID: **EB2-052214** ***Collected:*** **5/22/2014 3:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.033	J	0.011	MDL	0.054	PQL	ug/L	J	Z, H, L

Sample ID: **EB2-052214** ***Collected:*** **5/22/2014 3:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	0.052	J	0.011	MDL	0.054	PQL	ug/L	J	Z, H
ACENAPHTHENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: AQ**

Sample ID: EB2-052214 *Collected:* 5/22/2014 3:30:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHYLENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
ANTHRACENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BENZO(A)ANTHRACENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BENZO(A)PYRENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BENZO(B)FLUORANTHENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BENZO(E)PYRENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BENZO(G,H,I)PERYLENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BENZO(K)FLUORANTHENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
BIS(2-ETHYLHEXYL)PHTHALATE	0.095	J	0.054	MDL	1.1	PQL	ug/L	UJ	H, L, E, B
Butylbenzylphthalate	1.1	U	0.054	MDL	1.1	PQL	ug/L	UJ	H
CHRYSENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
DIBENZO(A,H)ANTHRACENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
Diethylphthalate	1.1	U	0.054	MDL	1.1	PQL	ug/L	UJ	H
Dimethylphthalate	1.1	U	0.054	MDL	1.1	PQL	ug/L	UJ	H
Di-n-butylphthalate	0.10	J	0.054	MDL	1.1	PQL	ug/L	J	Z, H
Di-n-octylphthalate	1.1	U	0.054	MDL	1.1	PQL	ug/L	UJ	H
FLUORANTHENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
FLUORENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
INDENO(1,2,3-CD)PYRENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
NAPHTHALENE	0.15		0.032	MDL	0.054	PQL	ug/L	J	H
N-NITROSODIMETHYLAMINE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H
PHENANTHRENE	0.054	U	0.032	MDL	0.054	PQL	ug/L	UJ	H
PYRENE	0.054	U	0.011	MDL	0.054	PQL	ug/L	UJ	H

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: FDG2-SL-578-NBZ-SB-0.0-0.5 *Collected:* 5/22/2014 11:26:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.6	MDL	18	PQL	ug/Kg	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **FDG2-SL-581-NBZ-SB-13.0-14.0** *Collected:* **5/22/2014 1:41:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.6	MDL	18	PQL	ug/Kg	UJ	L
CHRYSENE	0.38	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **FDG2-SL-581-NBZ-SB-9.0-10.0** *Collected:* **5/22/2014 1:30:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	19	U	3.8	MDL	19	PQL	ug/Kg	UJ	L

Sample ID: **FDG2-SL-628-SA8-SB-14.0-15.0** *Collected:* **5/22/2014 9:20:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	L
BIS(2-ETHYLHEXYL)PHTHALATE	14	J	6.4	MDL	19	PQL	ug/Kg	J	Z

Sample ID: **FDG2-SL-628-SA8-SB-9.0-10.0** *Collected:* **5/22/2014 8:52:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.6	MDL	18	PQL	ug/Kg	UJ	L
BIS(2-ETHYLHEXYL)PHTHALATE	18	J	6.4	MDL	19	PQL	ug/Kg	J	Z

Method Category: SVOA

Method: 8315A **Matrix: AQ**

Sample ID: **EB2-052214** *Collected:* **5/22/2014 3:30:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FORMALDEHYDE	50	U	30	MDL	50	PQL	ug/L	UJ	H

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: **EB1-052214** *Collected:* **5/22/2014 3:00:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1,2-TETRACHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: EB1-052214 **Collected: 5/22/2014 3:00:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,1,2,2-TETRACHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	U	2	MDL	5	PQL	ug/L	R	H
1,1,2-TRICHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,1-DICHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,1-DICHLOROETHENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,1-DICHLOROPROPENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,2,3-TRICHLOROBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,2,3-TRICHLOROPROPANE	5	U	1	MDL	5	PQL	ug/L	R	H
1,2,4-TRICHLOROBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,2,4-TRIMETHYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,2-DIBROMO-3-CHLOROPROPANE	5	U	2	MDL	5	PQL	ug/L	R	H
1,2-Dibromoethane (EDB)	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,2-DICHLOROBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,2-DICHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,2-DICHLOROPROPANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,3,5-TRIMETHYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,3-DICHLOROBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1,3-DICHLOROPROPANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
1,4-DICHLOROBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
1-CHLOROHEXANE	5	U	1	MDL	5	PQL	ug/L	R	H
2,2-DICHLOROPROPANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
2-BUTANONE (MEK)	10	U	3	MDL	10	PQL	ug/L	R	H
2-Chloro-1,1,1-trifluoroethane	5	U	2	MDL	5	PQL	ug/L	R	H
2-CHLOROETHYL VINYL ETHER	10	U	2	MDL	10	PQL	ug/L	R	H
2-CHLOROTOLUENE	5	U	1	MDL	5	PQL	ug/L	R	H
2-HEXANONE	10	U	3	MDL	10	PQL	ug/L	R	H
4-CHLOROTOLUENE	5	U	1	MDL	5	PQL	ug/L	R	H
4-METHYL-2-PENTANONE (MIBK)	10	U	3	MDL	10	PQL	ug/L	R	H
ACETONE	20	U	6	MDL	20	PQL	ug/L	R	H
ACROLEIN	100	U	40	MDL	100	PQL	ug/L	R	H
ACRYLONITRILE	20	U	4	MDL	20	PQL	ug/L	R	H
BENZENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
BROMOBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: EB1-052214 **Collected:** 5/22/2014 3:00:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOCHLOROMETHANE	5	U	1	MDL	5	PQL	ug/L	R	H
BROMODICHLOROMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
BROMOFORM	5	U	0.5	MDL	5	PQL	ug/L	R	H
BROMOMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
CARBON DISULFIDE	5	U	1	MDL	5	PQL	ug/L	R	H
CARBON TETRACHLORIDE	5	U	0.5	MDL	5	PQL	ug/L	R	H
CHLOROBENZENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
CHLOROETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
CHLOROFORM	0.6	J	0.5	MDL	5	PQL	ug/L	J	Z, H
CHLOROMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
Chlorotrifluoroethylene	5	U	2	MDL	5	PQL	ug/L	R	H
CIS-1,2-DICHLOROETHENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
CIS-1,3-DICHLOROPROPENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
DIBROMOCHLOROMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
DIBROMOMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
DICHLORODIFLUOROMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
Diisopropyl ether	5	U	0.5	MDL	5	PQL	ug/L	R	H
ETHYL TERTIARY BUTYL ETHER (ETBE)	5	U	0.5	MDL	5	PQL	ug/L	R	H
ETHYLBENZENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
HEXACHLOROBUTADIENE	5	U	2	MDL	5	PQL	ug/L	R	H
IODOMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
ISOPROPYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
m,p-Xylene	5	U	0.5	MDL	5	PQL	ug/L	R	H
METHYL TERT-BUTYL ETHER (MTBE)	5	U	0.5	MDL	5	PQL	ug/L	R	H
METHYLENE CHLORIDE	7		2	MDL	5	PQL	ug/L	J	H
N-BUTYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
N-PROPYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
O-XYLENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
P-ISOPROPYLTOLUENE	5	U	1	MDL	5	PQL	ug/L	R	H
SEC-BUTYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
STYRENE	5	U	1	MDL	5	PQL	ug/L	R	H
TERT-BUTYLBENZENE	5	U	1	MDL	5	PQL	ug/L	R	H
TERTIARY AMYL METHYL ETHER (TAME)	5	U	0.5	MDL	5	PQL	ug/L	R	H
Tertiary butyl alcohol	50	U	5	MDL	50	PQL	ug/L	R	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **EB1-052214** ***Collected:*** **5/22/2014 3:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
TETRACHLOROETHENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
TOLUENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
TRANS-1,2-DICHLOROETHENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
TRANS-1,3-DICHLOROPROPENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
TRICHLOROETHENE	5	U	0.5	MDL	5	PQL	ug/L	R	H
TRICHLOROFLUOROMETHANE	5	U	0.5	MDL	5	PQL	ug/L	R	H
VINYL ACETATE	10	U	2	MDL	10	PQL	ug/L	R	H
VINYL CHLORIDE	5	U	0.5	MDL	5	PQL	ug/L	R	H

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Calibration Blank Contamination
B	Method Blank Contamination
E	Laboratory Control Precision
F	Equipment Blank Contamination
H	Temperature Estimation
H	Temperature Rejection
L	Laboratory Control Precision
L	Laboratory Control Spike Lower Estimation
L	Laboratory Control Spike Upper Estimation
S	Surrogate/Tracer Recovery Lower Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

Quality Control Outlier Reports

PH196

Temperature Outliers

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8015M
Matrix: AQ

SampleID	Analyte	Temperarture	Criteria	Flag
EB1-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) UJ (all non-detects)
EB2-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) UJ (all non-detects)

Method: 8081B
Matrix: AQ

SampleID	Analyte	Temperarture	Criteria	Flag
EB2-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) UJ (all non-detects)

Method: 8260B
Matrix: AQ

SampleID	Analyte	Temperarture	Criteria	Flag
EB1-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) R (all non-detects)

Method: 8270D SIM
Matrix: AQ

SampleID	Analyte	Temperarture	Criteria	Flag
EB1-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) UJ (all non-detects)
EB2-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) UJ (all non-detects)

Method: 8315A
Matrix: AQ

SampleID	Analyte	Temperarture	Criteria	Flag
EB2-052214	All TCLs	15.3 °C	11.00 °C	J (all detects) UJ (all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1530B370239	6/5/2014 2:39:00 AM	1,2,3,4,6,7,8-HPCDD	1.48 pg/L	EB2-052214
		1,2,3,4,6,7,8-HPCDF	0.896 pg/L	
		1,2,3,4,7,8,9-HPCDF	0.700 pg/L	
		1,2,3,4,7,8-HxCDD	0.447 pg/L	
		1,2,3,4,7,8-HXCDF	0.904 pg/L	
		1,2,3,6,7,8-HXCDD	0.340 pg/L	
		1,2,3,6,7,8-HXCDF	0.611 pg/L	
		1,2,3,7,8,9-HXCDD	0.401 pg/L	
		1,2,3,7,8,9-HXCDF	0.782 pg/L	
		1,2,3,7,8-PECDD	0.681 pg/L	
		1,2,3,7,8-PECDF	0.578 pg/L	
		2,3,4,6,7,8-HXCDF	0.441 pg/L	
		2,3,4,7,8-PECDF	0.774 pg/L	
		2,3,7,8-TCDD	0.380 pg/L	
		OCDD	3.59 pg/L	
		OCDF	2.01 pg/L	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB2-052214(RES)	1,2,3,4,6,7,8-HPCDD	0.709 pg/L	0.709U pg/L
EB2-052214(RES)	1,2,3,4,6,7,8-HPCDF	0.704 pg/L	0.704U pg/L
EB2-052214(RES)	1,2,3,4,7,8,9-HPCDF	0.626 pg/L	0.626U pg/L
EB2-052214(RES)	1,2,3,4,7,8-HxCDD	0.438 pg/L	0.438U pg/L
EB2-052214(RES)	1,2,3,4,7,8-HXCDF	0.487 pg/L	0.487U pg/L
EB2-052214(RES)	1,2,3,6,7,8-HXCDD	0.450 pg/L	0.450U pg/L
EB2-052214(RES)	1,2,3,6,7,8-HXCDF	0.596 pg/L	0.596U pg/L
EB2-052214(RES)	1,2,3,7,8,9-HXCDF	0.600 pg/L	0.600U pg/L
EB2-052214(RES)	1,2,3,7,8-PECDD	0.485 pg/L	0.485U pg/L
EB2-052214(RES)	1,2,3,7,8-PECDF	0.471 pg/L	0.471U pg/L
EB2-052214(RES)	2,3,4,6,7,8-HXCDF	0.567 pg/L	0.567U pg/L
EB2-052214(RES)	2,3,4,7,8-PECDF	0.621 pg/L	0.621U pg/L
EB2-052214(RES)	2,3,7,8-TCDD	0.235 pg/L	0.235U pg/L
EB2-052214(RES)	OCDD	3.50 pg/L	3.50U pg/L
EB2-052214(RES)	OCDF	1.75 pg/L	1.75U pg/L

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14835BB221845	5/29/2014 6:45:00 PM	Zirconium	0.0110 mg/L	EB1-052214 EB2-052214

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB1-052214(RES)	Zirconium	0.0109 mg/L	0.0109U mg/L
EB2-052214(RES)	Zirconium	0.0108 mg/L	0.0108U mg/L

Method Blank Outlier Report

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14937AB220850	6/2/2014 8:50:00 AM	ALUMINUM BERYLLIUM BORON CALCIUM TIN	7.59 mg/Kg 0.0890 mg/Kg 1.60 mg/Kg 21.3 mg/Kg 1.59 mg/Kg	FDG2-SL-578-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-13.0-14.0 FDG2-SL-581-NBZ-SB-4.0-5.0 FDG2-SL-581-NBZ-SB-9.0-10.0 FDG2-SL-628-SA8-SB-14.0-15.0 FDG2-SL-628-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-578-NBZ-SB-0.0-0.5(REA)	BORON	7.46 mg/Kg	7.46U mg/Kg
FDG2-SL-578-NBZ-SB-0.0-0.5(REA)	TIN	4.40 mg/Kg	4.40U mg/Kg
FDG2-SL-581-NBZ-SB-0.0-0.5(REA)	TIN	4.04 mg/Kg	4.04U mg/Kg
FDG2-SL-581-NBZ-SB-13.0-14.0(REA)	TIN	4.54 mg/Kg	4.54U mg/Kg
FDG2-SL-581-NBZ-SB-4.0-5.0(REA)	TIN	4.40 mg/Kg	4.40U mg/Kg
FDG2-SL-581-NBZ-SB-9.0-10.0(REA)	TIN	4.60 mg/Kg	4.60U mg/Kg
FDG2-SL-628-SA8-SB-14.0-15.0(REA)	TIN	3.06 mg/Kg	3.06U mg/Kg
FDG2-SL-628-SA8-SB-9.0-10.0(REA)	TIN	2.99 mg/Kg	2.99U mg/Kg

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14937AB221403A	6/2/2014 2:03:00 PM	STRONTIUM	0.103 mg/Kg	FDG2-SL-578-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-13.0-14.0 FDG2-SL-581-NBZ-SB-4.0-5.0 FDG2-SL-581-NBZ-SB-9.0-10.0 FDG2-SL-628-SA8-SB-14.0-15.0 FDG2-SL-628-SA8-SB-9.0-10.0

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
PLKWN14B260205	6/3/2014 2:05:00 AM	BIS(2-ETHYLHEXYL)PHTHALATE	0.056 ug/L	EB1-052214 EB2-052214

Method Blank Outlier Report

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB1-052214(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.20 ug/L	1.0U ug/L
EB2-052214(RES)	BIS(2-ETHYLHEXYL)PHTHALATE	0.095 ug/L	1.1U ug/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB2-052214(RES)	5/22/2014 3:30:00 PM	Zirconium	0.0108 mg/L	FDG2-SL-578-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-13.0-14.0 FDG2-SL-581-NBZ-SB-4.0-5.0 FDG2-SL-581-NBZ-SB-9.0-10.0 FDG2-SL-628-SA8-SB-0.0-0.5 FDG2-SL-628-SA8-SB-14.0-15.0 FDG2-SL-628-SA8-SB-4.0-5.0 FDG2-SL-628-SA8-SB-9.0-10.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FDG2-SL-578-NBZ-SB-0.0-0.5(REA2)	Zirconium	4.54 mg/Kg	4.54U mg/Kg
FDG2-SL-628-SA8-SB-14.0-15.0(REA)	Zirconium	5.15 mg/Kg	5.15U mg/Kg
FDG2-SL-628-SA8-SB-9.0-10.0(REA2)	Zirconium	4.90 mg/Kg	4.90U mg/Kg

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P4WNLCSQ260235 **P4WNLCSY260304** (EB1-052214 EB2-052214)	1-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALAT	84 160	- -	86.00-130.00 70.00-143.00	- 77 (30.00)	1-METHYLNAPHTHALENE BIS(2-ETHYLHEXYL)PHTHALA	J (all detects) UJ (all non-detects)

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCSY18Q211044A (EB1-052214)	Chlorotrifluoroethylene	46	-	47.00-120.00	-	Chlorotrifluoroethylene	J(all detects) UJ(all non-detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P5LALCSQ260113 (FDG2-SL-578-NBZ-SB-0.0-0.5 FDG2-SL-581-NBZ-SB-13.0-14.0 FDG2-SL-581-NBZ-SB-9.0-10.0 FDG2-SL-628-SA8-SB-14.0-15.0 FDG2-SL-628-SA8-SB-9.0-10.0)	BENZO(E)PYRENE	80	-	81.00-110.00	-	BENZO(E)PYRENE	J(all detects) UJ(all non-detects)

Surrogate Outlier Report

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
FDG2-SL-581-NBZ-SB-9.0-10.0 (REA2)	O-TERPHENYL	60	66.00-123.00	All Target Analytes	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB2-052214	1,2,3,4,6,7,8-HPCDD	JBQ	0.709	9.78	PQL	pg/L	J (all detects)
	1,2,3,4,6,7,8-HPCDF	JBQ	0.704	9.78	PQL	pg/L	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.626	9.78	PQL	pg/L	
	1,2,3,4,7,8-HxCDD	JB	0.438	9.78	PQL	pg/L	
	1,2,3,4,7,8-HXCDF	JB	0.487	9.78	PQL	pg/L	
	1,2,3,6,7,8-HXCDD	JBQ	0.450	9.78	PQL	pg/L	
	1,2,3,6,7,8-HXCDF	JB	0.596	9.78	PQL	pg/L	
	1,2,3,7,8,9-HXCDF	JBQ	0.600	9.78	PQL	pg/L	
	1,2,3,7,8-PECDD	JBQ	0.485	9.78	PQL	pg/L	
	1,2,3,7,8-PECDF	JBQ	0.471	9.78	PQL	pg/L	
	2,3,4,6,7,8-HXCDF	JB	0.567	9.78	PQL	pg/L	
	2,3,4,7,8-PECDF	JB	0.621	9.78	PQL	pg/L	
	2,3,7,8-TCDD	JBQ	0.235	1.96	PQL	pg/L	
	2,3,7,8-TCDF	JQ	0.119	1.96	PQL	pg/L	
	OCDD	JB	3.50	19.6	PQL	pg/L	
	OCDF	JB	1.75	19.6	PQL	pg/L	

Method: 6010C

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-052214	Zirconium	J	0.0109	0.100	PQL	mg/L	J (all detects)
EB2-052214	Zirconium	J	0.0108	0.100	PQL	mg/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-052214	CHLOROFORM	J	0.6	5	PQL	ug/L	J (all detects)

Method: 8270D SIM

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB1-052214	1-METHYLNAPHTHALENE	J	0.020	0.051	PQL	ug/L	J (all detects)
	2-METHYLNAPHTHALENE	J	0.030	0.051	PQL	ug/L	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.20	1.0	PQL	ug/L	
	Diethylphthalate	J	0.053	1.0	PQL	ug/L	
	Di-n-butylphthalate	J	0.090	1.0	PQL	ug/L	
EB2-052214	1-METHYLNAPHTHALENE	J	0.033	0.054	PQL	ug/L	J (all detects)
	2-METHYLNAPHTHALENE	J	0.052	0.054	PQL	ug/L	
	BIS(2-ETHYLHEXYL)PHTHALATE	J	0.095	1.1	PQL	ug/L	
	Di-n-butylphthalate	J	0.10	1.1	PQL	ug/L	

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-578-NBZ-SB-0.0-0.5	BORON	J	7.46	10.5	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.100	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.544	2.11	PQL	mg/Kg	
	TIN	J	4.40	10.5	PQL	mg/Kg	
	Zirconium	J	4.54	5.27	PQL	mg/Kg	
FDG2-SL-581-NBZ-SB-0.0-0.5	CADMIUM	J	0.166	1.03	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.318	2.05	PQL	mg/Kg	
	TIN	J	4.04	10.3	PQL	mg/Kg	
FDG2-SL-581-NBZ-SB-13.0-14.0	CADMIUM	J	0.178	1.08	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.320	2.15	PQL	mg/Kg	
	TIN	J	4.54	10.8	PQL	mg/Kg	
FDG2-SL-581-NBZ-SB-4.0-5.0	BORON	J	10.5	10.7	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.261	1.07	PQL	mg/Kg	
	MOLYBDENUM	J	0.437	2.14	PQL	mg/Kg	
	TIN	J	4.40	10.7	PQL	mg/Kg	
FDG2-SL-581-NBZ-SB-9.0-10.0	MOLYBDENUM	J	0.457	2.24	PQL	mg/Kg	J (all detects)
	TIN	J	4.60	11.2	PQL	mg/Kg	
FDG2-SL-628-SA8-SB-14.0-15.0	BERYLLIUM	J	0.857	1.03	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.367	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.479	2.07	PQL	mg/Kg	
	TIN	J	3.06	10.3	PQL	mg/Kg	
	Zirconium	J	5.15	5.16	PQL	mg/Kg	
FDG2-SL-628-SA8-SB-9.0-10.0	BERYLLIUM	J	0.959	1.06	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.339	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.334	2.11	PQL	mg/Kg	
	TIN	J	2.99	10.6	PQL	mg/Kg	
	Zirconium	J	4.90	5.28	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-581-NBZ-SB-0.0-0.5	SILVER	J	0.128	0.205	PQL	mg/Kg	J (all detects)
FDG2-SL-581-NBZ-SB-13.0-14.0	SILVER	J	0.191	0.215	PQL	mg/Kg	J (all detects)
FDG2-SL-581-NBZ-SB-4.0-5.0	SILVER	J	0.0997	0.214	PQL	mg/Kg	J (all detects)
FDG2-SL-581-NBZ-SB-9.0-10.0	SILVER	J	0.0426	0.224	PQL	mg/Kg	J (all detects)
FDG2-SL-628-SA8-SB-14.0-15.0	SELENIUM	J	0.273	0.413	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0359	0.207	PQL	mg/Kg	
FDG2-SL-628-SA8-SB-9.0-10.0	SELENIUM	J	0.307	0.422	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0277	0.211	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH196 **Laboratory: LL**

EDD Filename: PrepPH196_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-578-NBZ-SB-0.0-0.5	MERCURY	J	0.0117	0.0174	PQL	mg/Kg	J (all detects)
FDG2-SL-581-NBZ-SB-0.0-0.5	MERCURY	J	0.0122	0.0178	PQL	mg/Kg	J (all detects)
FDG2-SL-581-NBZ-SB-13.0-14.0	MERCURY	J	0.0173	0.0176	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-581-NBZ-SB-0.0-0.5	EFH (C15-C20)	J	2.6	5.3	PQL	mg/Kg	J (all detects)
FDG2-SL-628-SA8-SB-0.0-0.5	EFH (C15-C20) SG EFH (C21-C30) SG EFH (C30-C40) SG	J J J	4.2 3.9 5.5	5.2 5.2 10	PQL PQL PQL	mg/Kg mg/Kg mg/Kg	J (all detects)
FDG2-SL-628-SA8-SB-14.0-15.0	EFH (C21-C30) SG EFH (C21-C30)	J J	2.4 4.1	5.3 5.3	PQL PQL	mg/Kg mg/Kg	J (all detects)
FDG2-SL-628-SA8-SB-4.0-5.0	EFH (C21-C30) SG EFH (C30-C40) SG	J J	3.7 4.6	5.6 11	PQL PQL	mg/Kg mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FDG2-SL-581-NBZ-SB-13.0-14.0	CHRYSENE	J	0.38	1.8	PQL	ug/Kg	J (all detects)
FDG2-SL-628-SA8-SB-14.0-15.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	14	19	PQL	ug/Kg	J (all detects)
FDG2-SL-628-SA8-SB-9.0-10.0	BIS(2-ETHYLHEXYL)PHTHALATE	J	18	19	PQL	ug/Kg	J (all detects)

LDC #: 32094A4
SDG #: PH196
Laboratory: Eurofins Lancaster Laboratories

VALIDATION COMPLETENESS WORKSHEET

ADR

7470A

Date: 7/7/14
Page: 1 of 1
Reviewer: KK
2nd Reviewer: CC

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7090~~)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 5/22/14
II.	ICP/MS Tune	N	
III.	Calibration	—	
IV.	Blanks	SW	~~CCB hits, no quals~~
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	N	
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB = 1, 2 FB = FB-052114 (SDG: PH191)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	EB1-052214 Water	11		21		31	
2	EB2-052214 ↓	12		22		32	
3	FDG2-SL-628-SA8-SB-9.0-10.0	13		23		33	
4	FDG2-SL-628-SA8-SB-14.0-15.0	14		24		34	
5	FDG2-SL-578-NBZ-SB-0.0-0.5	15		25		35	
6	FDG2-SL-581-NBZ-SB-0.0-0.5	16		26		36	
7	FDG2-SL-581-NBZ-SB-4.0-5.0	17		27		37	
8	FDG2-SL-581-NBZ-SB-9.0-10.0	18		28		38	
9	FDG2-SL-581-NBZ-SB-13.0-14.0	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32094A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KY
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-2	W	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
3-9	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

LDC #: 32094A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: VL
2nd Reviewer: G

METHOD: Trace Metals (EPA SW846 6010C/6020A/7470A)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 5/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: None

Analyte	Blank ID	Sample Identification										
	1	Action Limit										
Zr	10.9	5.45										

METHOD: Trace Metals (EPA SW846 6010C/6020A/7470A)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 5/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: ~~All~~ 3-9

Analyte	Blank ID	Sample Identification										
	2	Action Limit	3	4	5							
Zr	10.8	5.40	4.90	5.20	4.5							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 32094A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: KK
2nd Reviewer: SR

METHOD: Trace metals (EPA SW 864 Method 6010C/6020A/7470A)
Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: ~~ug/l~~ mg/L
Associated Samples: 1-2

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1	2									
Zr			11.5	0.0575 ~~57.5~~	0.0109	0.0108									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

July 30, 2014

SUBJECT: Santa Susana Field Laboratory, Trench, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on June 27, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32095:

SDG #	Fraction
PH192 PH199 PH201	Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Dioxins and Dibenzofurans

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, January 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

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Attachment 1

90/10 ADR/IV

LDC #32095 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, Trench)

LDC	SDG#	DATE REC'D	(4) DATE DUE	SVOA (8270D -SIM)		Pest. (8081B)		PCBs (8082A)		Metals & Hg (SW846)		TPH-G (8015M)		TPH-E (8015M)		Dioxins (1613B)																					
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH192	06/27/14	07/28/14	0	3	-	-	0	3	0	3	1	2	0	6	0	3																		
B	PH199	06/27/14	07/28/14	0	3	-	-	0	3	0	3	1	2	0	6	0	3																		
C	PH201	06/27/14	07/28/14	0	5	0	5	0	5	0	5	1	3	0	10	0	5																		
Total	T/SM			0	11	0	5	0	11	0	11	3	7	0	22	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup Trench

SDG: PH192

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 27, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 21, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without silica gel clean up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for SVOCs. The associated sample results were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH192	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicate samples were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were detected in the trip blank.

One equipment blank (from SDG PH195) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-May-2014	TB3-052114	7473410	TB	5030B	8015M	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	3050B	6010C	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	3050B	6020A	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	3546	8015M	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	3546	8082A	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	3546	8270D SIM	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	METHOD	1613B	III
21-May-2014	SL-686-SA6-TR-0.5	7473411	N	METHOD	7471B	III
21-May-2014	SL-686-SA6-TR-0.5MSD	P473411M260629	MSD	3546	8270D SIM	III
21-May-2014	SL-686-SA6-TR-0.5MS	P473411R260557	MS	3546	8270D SIM	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	3050B	6010C	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	3050B	6020A	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	3546	8015M	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	3546	8082A	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	3546	8270D SIM	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	5035A	8015M	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	METHOD	1613B	III
21-May-2014	SL-686-SA6-TR-5.0	7473412	N	METHOD	7471B	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	3050B	6010C	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	3050B	6020A	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	3546	8015M	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	3546	8082A	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	3546	8270D SIM	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	5035A	8015M	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	METHOD	1613B	III
21-May-2014	SL-686-SA6-TR-11.0	7473413	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-686-SA6-TR-0.5 **Collected:** 5/21/2014 8:02:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.11	J	0.709	MDL	4.05	PQL	mg/Kg	J	Z
BERYLLIUM	0.502	J	0.0679	MDL	1.01	PQL	mg/Kg	J	Z
BORON	5.22	J	0.851	MDL	10.1	PQL	mg/Kg	J	Z
CADMIUM	0.817	J	0.0770	MDL	1.01	PQL	mg/Kg	J	Z
SODIUM	71.2	J	16.9	MDL	101	PQL	mg/Kg	J	Z
TIN	2.50	J	0.223	MDL	10.1	PQL	mg/Kg	U	B
Zirconium	3.10	J	0.851	MDL	5.07	PQL	mg/Kg	U	F
MOLYBDENUM	0.396	J	0.172	MDL	2.03	PQL	mg/Kg	J	Z

Sample ID: SL-686-SA6-TR-11.0 **Collected:** 5/21/2014 10:58:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.76	J	0.719	MDL	4.11	PQL	mg/Kg	J	Z
BERYLLIUM	0.585	J	0.0688	MDL	1.03	PQL	mg/Kg	J	Z
BORON	4.31	J	0.862	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	0.433	J	0.0780	MDL	1.03	PQL	mg/Kg	J	Z
TIN	2.71	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.33	J	0.862	MDL	5.13	PQL	mg/Kg	U	F

Sample ID: SL-686-SA6-TR-5.0 **Collected:** 5/21/2014 8:20:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.911	J	0.0707	MDL	1.06	PQL	mg/Kg	J	Z
BORON	4.95	J	0.887	MDL	10.6	PQL	mg/Kg	J	Z
CADMIUM	0.561	J	0.0803	MDL	1.06	PQL	mg/Kg	J	Z
MOLYBDENUM	0.413	J	0.180	MDL	2.11	PQL	mg/Kg	J	Z
TIN	2.68	J	0.232	MDL	10.6	PQL	mg/Kg	U	B
Zirconium	4.35	J	0.887	MDL	5.28	PQL	mg/Kg	U	F

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.157	J	0.101	MDL	0.405	PQL	mg/Kg	J	Z

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.133	J	0.0263	MDL	0.203	PQL	mg/Kg	J	Z

Sample ID: SL-686-SA6-TR-11.0 *Collected:* 5/21/2014 10:58:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0462	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: SL-686-SA6-TR-5.0 *Collected:* 5/21/2014 8:20:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.135	J	0.106	MDL	0.422	PQL	mg/Kg	J	Z

Sample ID: SL-686-SA6-TR-5.0 *Collected:* 5/21/2014 8:20:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0617	J	0.0275	MDL	0.211	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	1.28	JB	0.0471	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	1.56	JB	0.0571	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.938	J	0.0525	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.698	JB	0.0521	MDL	4.91	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	4.34	J	0.0756	MDL	4.91	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8-PECDF	1.77	J	0.0376	MDL	4.91	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	1.25	J	0.0536	MDL	4.91	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	1.44	JB	0.0359	MDL	4.91	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.424	J	0.0515	MDL	0.982	PQL	ng/Kg	J	Z

Sample ID: SL-686-SA6-TR-11.0 *Collected:* 5/21/2014 10:58:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	1.08	JB	0.0318	MDL	5.14	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.129	JBQ	0.0177	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0387	JBQ	0.0260	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0507	JQ	0.0242	MDL	5.14	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0578	JBQ	0.0163	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0622	JQ	0.0261	MDL	5.14	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0371	JQ	0.0146	MDL	5.14	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.0530	JQ	0.0241	MDL	5.14	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0541	JB	0.0175	MDL	5.14	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0356	JQ	0.0112	MDL	5.14	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0215	JQ	0.0147	MDL	5.14	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0190	JBQ	0.0113	MDL	5.14	PQL	ng/Kg	U	B
OCDF	0.364	JB	0.0247	MDL	10.3	PQL	ng/Kg	U	B

Sample ID: SL-686-SA6-TR-5.0 *Collected:* 5/21/2014 8:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	2.42	JBQ	0.0415	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.273	JBQ	0.0243	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0420	JBQ	0.0356	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0604	JQ	0.0271	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	0.0947	JB	0.0252	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0889	JQ	0.0293	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0737	JQ	0.0229	MDL	5.09	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-686-SA6-TR-5.0 *Collected:* 5/21/2014 8:20:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDD	0.129	J	0.0268	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0776	JBQ	0.0241	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.116	J	0.0359	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.119	JQ	0.0196	MDL	5.09	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.0398	JQ	0.0242	MDL	5.09	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.103	JB	0.0186	MDL	5.09	PQL	ng/Kg	U	B
OCDF	0.586	JBQ	0.0376	MDL	10.2	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C15-C20)	3.1	J	2.0	MDL	5.1	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, Q
2-METHYLNAPHTHALENE	1.4	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, Q, Q
ACENAPHTHYLENE	0.64	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
ANTHRACENE	1.8		0.34	MDL	1.7	PQL	ug/Kg	J	Q, Q
BENZO(A)ANTHRACENE	3.9		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
BENZO(A)PYRENE	3.7		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
BENZO(B)FLUORANTHENE	13		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
BENZO(E)PYRENE	5.5	J	3.4	MDL	17	PQL	ug/Kg	J	Z, Q, Q
BENZO(G,H,I)PERYLENE	3.4		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
BENZO(K)FLUORANTHENE	3.9		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix:** SO

Sample ID: SL-686-SA6-TR-0.5 *Collected:* 5/21/2014 8:02:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHRYSENE	14		0.34	MDL	1.7	PQL	ug/Kg	J	Q, Q
DIBENZO(A,H)ANTHRACENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, Q, Q
Di-n-butylphthalate	7.6	J	6.1	MDL	18	PQL	ug/Kg	J	Z
FLUORANTHENE	16		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
FLUORENE	0.88	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, Q, Q
INDENO(1,2,3-CD)PYRENE	3.0		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
NAPHTHALENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z, Q
PHENANTHRENE	7.4		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q
PYRENE	11		0.68	MDL	1.7	PQL	ug/Kg	J	Q, Q

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
E	Matrix Spike Precision
F	Field Blank Contamination
Q	Matrix Spike Precision
Q	Matrix Spike Upper Estimation
S	Surrogate/Tracer Recovery Upper Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH192

Method Blank Outlier Report

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1490B370621	5/31/2014 6:21:00 AM	1,2,3,4,6,7,8-HPCDD	0.141 ng/Kg	SL-686-SA6-TR-0.5
		1,2,3,4,6,7,8-HPCDF	0.0566 ng/Kg	SL-686-SA6-TR-11.0
		1,2,3,4,7,8,9-HPCDF	0.0442 ng/Kg	SL-686-SA6-TR-5.0
		1,2,3,4,7,8-HXCDF	0.0521 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0589 ng/Kg	
		2,3,4,7,8-PECDF	0.0348 ng/Kg	
		OCDD	0.666 ng/Kg	
		OCDF	0.153 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-686-SA6-TR-11.0(RES)	1,2,3,4,6,7,8-HPCDF	0.129 ng/Kg	0.129U ng/Kg
SL-686-SA6-TR-11.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0387 ng/Kg	0.0387U ng/Kg
SL-686-SA6-TR-11.0(RES)	1,2,3,4,7,8-HXCDF	0.0578 ng/Kg	0.0578U ng/Kg
SL-686-SA6-TR-11.0(RES)	1,2,3,7,8,9-HXCDF	0.0541 ng/Kg	0.0541U ng/Kg
SL-686-SA6-TR-11.0(RES)	2,3,4,7,8-PECDF	0.0190 ng/Kg	0.0190U ng/Kg
SL-686-SA6-TR-11.0(RES)	OCDF	0.364 ng/Kg	0.364U ng/Kg
SL-686-SA6-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.273 ng/Kg	0.273U ng/Kg
SL-686-SA6-TR-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0420 ng/Kg	0.0420U ng/Kg
SL-686-SA6-TR-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0947 ng/Kg	0.0947U ng/Kg
SL-686-SA6-TR-5.0(RES)	1,2,3,7,8,9-HXCDF	0.0776 ng/Kg	0.0776U ng/Kg
SL-686-SA6-TR-5.0(RES)	2,3,4,7,8-PECDF	0.103 ng/Kg	0.103U ng/Kg
SL-686-SA6-TR-5.0(RES)	OCDF	0.586 ng/Kg	0.586U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14737BB222033	5/28/2014 8:33:00 PM	ALUMINUM	9.28 mg/Kg	SL-686-SA6-TR-0.5
		BORON	0.858 mg/Kg	SL-686-SA6-TR-11.0
		CALCIUM	12.8 mg/Kg	SL-686-SA6-TR-5.0
		TIN	1.36 mg/Kg	
		ZINC	0.956 mg/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-686-SA6-TR-0.5(RES)	TIN	2.50 mg/Kg	2.50U mg/Kg
SL-686-SA6-TR-11.0(RES)	TIN	2.71 mg/Kg	2.71U mg/Kg
SL-686-SA6-TR-5.0(RES)	TIN	2.68 mg/Kg	2.68U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	SL-686-SA6-TR-0.5 SL-686-SA6-TR-11.0 SL-686-SA6-TR-5.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-686-SA6-TR-0.5(RES)	Zirconium	3.10 mg/Kg	3.10U mg/Kg
SL-686-SA6-TR-11.0(RES)	Zirconium	3.33 mg/Kg	3.33U mg/Kg
SL-686-SA6-TR-5.0(RES)	Zirconium	4.35 mg/Kg	4.35U mg/Kg

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
SL-686-SA6-TR-0.5MS	1-METHYLNAPHTHALENE	-	-	59.00-139.00	38 (30.00)	1-METHYLNAPHTHALENE	
SL-686-SA6-TR-0.5MSD	2-METHYLNAPHTHALENE	150	-	46.00-147.00	49 (30.00)	2-METHYLNAPHTHALENE	
(SL-686-SA6-TR-0.5)	ACENAPHTHENE	523	-	48.00-127.00	139 (30.00)	ACENAPHTHENE	
	ANTHRACENE	828	-	52.00-126.00	157 (30.00)	ANTHRACENE	
	BENZO(A)ANTHRACENE	2123	-	44.00-143.00	179 (30.00)	BENZO(A)ANTHRACENE	
	BENZO(A)PYRENE	1356	-	49.00-137.00	173 (30.00)	BENZO(A)PYRENE	
	BENZO(B)FLUORANTHENE	1617	-	26.00-142.00	168 (30.00)	BENZO(B)FLUORANTHENE	
	BENZO(E)PYRENE	731	-	63.00-111.00	154 (30.00)	BENZO(E)PYRENE	
	BENZO(G,H,I)PERYLENE	521	-	33.00-141.00	156 (30.00)	BENZO(G,H,I)PERYLENE	J (all detects)
	BENZO(K)FLUORANTHENE	838	-	49.00-144.00	160 (30.00)	BENZO(K)FLUORANTHENE	
	CHRYSENE	2194	-	43.00-141.00	178 (30.00)	CHRYSENE	
	DIBENZO(A,H)ANTHRACENE	274	-	25.00-145.00	119 (30.00)	DIBENZO(A,H)ANTHRACENE	
	FLUORANTHENE	5514	-	38.00-153.00	189 (30.00)	FLUORANTHENE	
	FLUORENE	371	-	57.00-130.00	126 (30.00)	FLUORENE	
	INDENO(1,2,3-CD)PYRENE	613	-	26.00-139.00	158 (30.00)	INDENO(1,2,3-CD)PYRENE	
	NAPHTHALENE	-	-	52.00-136.00	41 (30.00)	NAPHTHALENE	
	PHENANTHRENE	5273	-	50.00-137.00	191 (30.00)	PHENANTHRENE	
	PYRENE	4103	-	26.00-143.00	188 (30.00)	PYRENE	

Reporting Limit Outliers

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA6-TR-0.5	1,2,3,4,7,8,9-HPCDF	JB	1.28	4.91	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	1.56	4.91	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	J	0.938	4.91	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.698	4.91	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	4.34	4.91	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	J	1.77	4.91	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	J	1.25	4.91	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	1.44	4.91	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.424	0.982	PQL	ng/Kg	
SL-686-SA6-TR-11.0	1,2,3,4,6,7,8-HPCDD	JB	1.08	5.14	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.129	5.14	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0387	5.14	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0507	5.14	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0578	5.14	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0622	5.14	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0371	5.14	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JQ	0.0530	5.14	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.0541	5.14	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.0356	5.14	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0215	5.14	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0190	5.14	PQL	ng/Kg	
	OCDF	JB	0.364	10.3	PQL	ng/Kg	
SL-686-SA6-TR-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	2.42	5.09	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.273	5.09	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0420	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JQ	0.0604	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0947	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0889	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JQ	0.0737	5.09	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	J	0.129	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0776	5.09	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	0.116	5.09	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JQ	0.119	5.09	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JQ	0.0398	5.09	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.103	5.09	PQL	ng/Kg	
	OCDF	JBQ	0.586	10.2	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA6-TR-0.5	ARSENIC	J	3.11	4.05	PQL	mg/Kg	
	BERYLLIUM	J	0.502	1.01	PQL	mg/Kg	
	BORON	J	5.22	10.1	PQL	mg/Kg	
	CADMIUM	J	0.817	1.01	PQL	mg/Kg	J (all detects)
	MOLYBDENUM	J	0.396	2.03	PQL	mg/Kg	
	SODIUM	J	71.2	101	PQL	mg/Kg	
	TIN	J	2.50	10.1	PQL	mg/Kg	
	Zirconium	J	3.10	5.07	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH192 **Laboratory: LL**

EDD Filename: PrepPH192_v3 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA6-TR-11.0	ARSENIC	J	3.76	4.11	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.585	1.03	PQL	mg/Kg	
	BORON	J	4.31	10.3	PQL	mg/Kg	
	CADMIUM	J	0.433	1.03	PQL	mg/Kg	
	TIN	J	2.71	10.3	PQL	mg/Kg	
	Zirconium	J	3.33	5.13	PQL	mg/Kg	
SL-686-SA6-TR-5.0	BERYLLIUM	J	0.911	1.06	PQL	mg/Kg	J (all detects)
	BORON	J	4.95	10.6	PQL	mg/Kg	
	CADMIUM	J	0.561	1.06	PQL	mg/Kg	
	MOLYBDENUM	J	0.413	2.11	PQL	mg/Kg	
	TIN	J	2.68	10.6	PQL	mg/Kg	
	Zirconium	J	4.35	5.28	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA6-TR-0.5	SELENIUM	J	0.157	0.405	PQL	mg/Kg	J (all detects)
	SILVER	J	0.133	0.203	PQL	mg/Kg	
SL-686-SA6-TR-11.0	SILVER	J	0.0462	0.205	PQL	mg/Kg	J (all detects)
SL-686-SA6-TR-5.0	SELENIUM	J	0.135	0.422	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0617	0.211	PQL	mg/Kg	

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA6-TR-0.5	EFH (C15-C20)	J	3.1	5.1	PQL	mg/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-686-SA6-TR-0.5	1-METHYLNAPHTHALENE	J	1.1	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	
	ACENAPHTHYLENE	J	0.64	1.7	PQL	ug/Kg	
	BENZO(E)PYRENE	J	5.5	17	PQL	ug/Kg	
	DIBENZO(A,H)ANTHRACENE	J	1.0	1.7	PQL	ug/Kg	
	Di-n-butylphthalate	J	7.6	18	PQL	ug/Kg	
	FLUORENE	J	0.88	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.0	1.7	PQL	ug/Kg	

LDC #: 32095A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 7/8/14

SDG #: PH192 ADR Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: KK

2nd Reviewer: Q

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~) 7471B

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: ~~5/23~~ 5/21/14
II.	ICP/MS Tune	N	
III.	Calibration	~~A~~	
IV.	Blanks	A	~~CCB hits, no quals~~ APL 7/9/14
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~	
VI.	Matrix Spike Analysis	N	
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB = EB3-052114 SDG# PH191 FB = FB-052114 SDG# PH191

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sol

1	SL-686-SA6-TR-0.5	11		21		31	
2	SL-686-SA6-TR-5.0	12		22		32	
3	SL-686-SA6-TR-11.0	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #:32095A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KM
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32095A4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: KL
2nd Reviewer: a

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 5/21/14 and 5/22/14 Soil factor applied: 100
Field blank type: (circle one) ~~Field Blank~~ / Rinsate / Other: EB Associated Samples: All

Analyte	EB	FB	Sample Identification								
	EB3-052214 SDG#PH195	FB-052114 SDG#PH191	Action Limit	1	2	3					
Zr		0.0110	5.50	3.10	4.35	3.33					
Mn	0.00090		0.450								
Ca	0.150		75								
Sr	0.00046		0.23								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup Trench

SDG: PH199

Prepared for

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Prepared by

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July 27, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 23, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without silica gel clean up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of two blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VIII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for SVOCs. The associated sample results were qualified as non-detected

estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH199	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicate samples were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were detected in the trip blank.

One equipment blank (from SDG PH195) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	3050B	6010C	III
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	3050B	6020A	III
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	3546	8015M	III
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	3546	8082A	III
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	3546	8270D SIM	III
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	METHOD	1613B	III
23-May-2014	SL-636-SA5A-TR-0.5	7476638	N	METHOD	7471B	III
23-May-2014	TB3-052314	7476637	TB	5030B	8015M	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	3050B	6010C	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	3050B	6020A	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	3546	8015M	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	3546	8082A	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	3546	8270D SIM	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	5035A	8015M	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	METHOD	1613B	III
23-May-2014	SL-636-SA5A-TR-7.5	7476640	N	METHOD	7471B	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	3050B	6010C	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	3050B	6020A	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	3546	8015M	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	3546	8082A	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	3546	8270D SIM	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	5035A	8015M	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	METHOD	1613B	III
23-May-2014	SL-636-SA5A-TR-3.5	7476639	N	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-636-SA5A-TR-0.5 *Collected:* 5/23/2014 7:46:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	2.91	J	0.699	MDL	4.00	PQL	mg/Kg	J	Z
BERYLLIUM	0.380	J	0.0669	MDL	0.999	PQL	mg/Kg	J	Z
BORON	3.55	J	0.839	MDL	9.99	PQL	mg/Kg	U	B
CADMIUM	0.428	J	0.0759	MDL	0.999	PQL	mg/Kg	J	Z
Zirconium	2.36	J	0.839	MDL	4.99	PQL	mg/Kg	U	F
TIN	2.40	J	0.220	MDL	9.99	PQL	mg/Kg	U	B

Sample ID: SL-636-SA5A-TR-3.5 *Collected:* 5/23/2014 8:47:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	3.49	J	0.723	MDL	4.13	PQL	mg/Kg	J	Z
BERYLLIUM	0.565	J	0.0692	MDL	1.03	PQL	mg/Kg	J	Z
BORON	4.61	J	0.868	MDL	10.3	PQL	mg/Kg	J	Z
CADMIUM	0.590	J	0.0785	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.329	J	0.176	MDL	2.07	PQL	mg/Kg	J	Z
TIN	2.32	J	0.227	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	3.67	J	0.868	MDL	5.17	PQL	mg/Kg	U	F

Sample ID: SL-636-SA5A-TR-7.5 *Collected:* 5/23/2014 8:41:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.915	J	0.0704	MDL	1.05	PQL	mg/Kg	J	Z
BORON	6.78	J	0.883	MDL	10.5	PQL	mg/Kg	J	Z
CADMIUM	0.711	J	0.0799	MDL	1.05	PQL	mg/Kg	J	Z
MOLYBDENUM	0.261	J	0.179	MDL	2.10	PQL	mg/Kg	J	Z
TIN	3.26	J	0.231	MDL	10.5	PQL	mg/Kg	U	B
Zirconium	4.60	J	0.883	MDL	5.26	PQL	mg/Kg	U	F

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-636-SA5A-TR-3.5 *Collected:* 5/23/2014 8:47:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.141	J	0.103	MDL	0.413	PQL	mg/Kg	J	Z

Sample ID: SL-636-SA5A-TR-3.5 *Collected:* 5/23/2014 8:47:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0338	J	0.0269	MDL	0.207	PQL	mg/Kg	J	Z

Sample ID: SL-636-SA5A-TR-7.5 *Collected:* 5/23/2014 8:41:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.129	J	0.105	MDL	0.420	PQL	mg/Kg	J	Z

Sample ID: SL-636-SA5A-TR-7.5 *Collected:* 5/23/2014 8:41:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0811	J	0.0273	MDL	0.210	PQL	mg/Kg	J	Z

Method Category: METALS

Method: 7471B **Matrix: SO**

Sample ID: SL-636-SA5A-TR-0.5 *Collected:* 5/23/2014 7:46:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.0143	J	0.0100	MDL	0.0167	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-636-SA5A-TR-0.5 *Collected:* 5/23/2014 7:46:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	3.52	JB	0.0373	MDL	4.95	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **SVOA**

Method: **1613B** ***Matrix:*** **SO**

Sample ID: SL-636-SA5A-TR-0.5 ***Collected:*** 5/23/2014 7:46:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	0.686	JB	0.0173	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.0658	JB	0.0240	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0985	JBQ	0.0309	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.156	JB	0.0341	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.214	JBQ	0.0319	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.218	JBQ	0.0290	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.171	JB	0.0297	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.138	JB	0.0347	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.158	JBQ	0.0446	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	3.08	JB	0.0278	MDL	4.95	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.134	JB	0.0330	MDL	4.95	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.178	JBQ	0.0286	MDL	4.95	PQL	ng/Kg	U	B
OCDF	1.56	JB	0.0425	MDL	9.90	PQL	ng/Kg	J	Z

Sample ID: SL-636-SA5A-TR-3.5 ***Collected:*** 5/23/2014 8:47:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.320	JB	0.0264	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.128	JBQ	0.0107	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0309	JBQ	0.0223	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0278	JBQ	0.0261	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0765	JB	0.0238	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.291	JBQ	0.0281	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.545	JB	0.0268	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.282	JBQ	0.0289	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.134	JB	0.0362	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.184	JB	0.0175	MDL	5.09	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0307	JBQ	0.0227	MDL	5.09	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0749	JB	0.0194	MDL	5.09	PQL	ng/Kg	U	B
2,3,7,8-TCDD	0.0593	JBQ	0.0461	MDL	1.02	PQL	ng/Kg	U	B
OCDD	3.87	JB	0.0227	MDL	10.2	PQL	ng/Kg	J	Z
OCDF	0.195	JBQ	0.0504	MDL	10.2	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-636-SA5A-TR-7.5 *Collected:* 5/23/2014 8:41:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.0665	JBQ	0.0270	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0678	JB	0.00919	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0440	JB	0.0174	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.0281	JBQ	0.0223	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0419	JB	0.0218	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0595	JBQ	0.0235	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDF	0.0544	JBQ	0.0191	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0663	JBQ	0.0226	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDF	0.0904	JBQ	0.0258	MDL	5.12	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0362	JBQ	0.0164	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0258	JBQ	0.0204	MDL	5.12	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0342	JBQ	0.0176	MDL	5.12	PQL	ng/Kg	U	B
OCDD	0.598	JB	0.0205	MDL	10.2	PQL	ng/Kg	U	B
OCDF	0.147	JBQ	0.0483	MDL	10.2	PQL	ng/Kg	U	B

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-636-SA5A-TR-3.5 *Collected:* 5/23/2014 8:47:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	4.8	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 8082A **Matrix: SO**

Sample ID: SL-636-SA5A-TR-0.5 *Collected:* 5/23/2014 7:46:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	8.4	J	4.5	MDL	17	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-636-SA5A-TR-0.5** *Collected:* **5/23/2014 7:46:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	17	U	3.4	MDL	17	PQL	ug/Kg	UJ	L
BENZO(G,H,I)PERYLENE	1.5	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-636-SA5A-TR-3.5** *Collected:* **5/23/2014 8:47:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	L

Sample ID: **SL-636-SA5A-TR-7.5** *Collected:* **5/23/2014 8:41:00** *Analysis Type:* **RES-BASE/NEUTRAL** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH199

Method Blank Outlier Report

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1530B370625	6/5/2014 6:25:00 AM	1,2,3,4,6,7,8-HPCDD	0.0893 ng/Kg	SL-636-SA5A-TR-0.5
		1,2,3,4,6,7,8-HPCDF	0.0727 ng/Kg	SL-636-SA5A-TR-3.5
		1,2,3,4,7,8,9-HPCDF	0.0705 ng/Kg	SL-636-SA5A-TR-7.5
		1,2,3,4,7,8-HxCDD	0.0830 ng/Kg	
		1,2,3,4,7,8-HXCDF	0.0629 ng/Kg	
		1,2,3,6,7,8-HXCDD	0.0643 ng/Kg	
		1,2,3,6,7,8-HXCDF	0.0439 ng/Kg	
		1,2,3,7,8,9-HXCDD	0.0684 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0800 ng/Kg	
		1,2,3,7,8-PECDD	0.0540 ng/Kg	
		1,2,3,7,8-PECDF	0.103 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0522 ng/Kg	
		2,3,4,7,8-PECDF	0.105 ng/Kg	
		2,3,7,8-TCDD	0.0448 ng/Kg	
		2,3,7,8-TCDF	0.0491 ng/Kg	
		OCDD	0.452 ng/Kg	
		OCDF	0.182 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-636-SA5A-TR-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0658 ng/Kg	0.0658U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,4,7,8-HxCDD	0.0985 ng/Kg	0.0985U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.156 ng/Kg	0.156U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,6,7,8-HXCDD	0.214 ng/Kg	0.214U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,6,7,8-HXCDF	0.218 ng/Kg	0.218U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,7,8,9-HXCDD	0.171 ng/Kg	0.171U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,7,8,9-HXCDF	0.138 ng/Kg	0.138U ng/Kg
SL-636-SA5A-TR-0.5(RES)	1,2,3,7,8-PECDD	0.158 ng/Kg	0.158U ng/Kg
SL-636-SA5A-TR-0.5(RES)	2,3,4,6,7,8-HXCDF	0.134 ng/Kg	0.134U ng/Kg
SL-636-SA5A-TR-0.5(RES)	2,3,4,7,8-PECDF	0.178 ng/Kg	0.178U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,4,6,7,8-HPCDD	0.320 ng/Kg	0.320U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,4,6,7,8-HPCDF	0.128 ng/Kg	0.128U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0309 ng/Kg	0.0309U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,4,7,8-HxCDD	0.0278 ng/Kg	0.0278U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,4,7,8-HXCDF	0.0765 ng/Kg	0.0765U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,6,7,8-HXCDD	0.291 ng/Kg	0.291U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,7,8,9-HXCDF	0.282 ng/Kg	0.282U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,7,8-PECDD	0.134 ng/Kg	0.134U ng/Kg
SL-636-SA5A-TR-3.5(RES)	1,2,3,7,8-PECDF	0.184 ng/Kg	0.184U ng/Kg
SL-636-SA5A-TR-3.5(RES)	2,3,4,6,7,8-HXCDF	0.0307 ng/Kg	0.0307U ng/Kg
SL-636-SA5A-TR-3.5(RES)	2,3,4,7,8-PECDF	0.0749 ng/Kg	0.0749U ng/Kg
SL-636-SA5A-TR-3.5(RES)	2,3,7,8-TCDD	0.0593 ng/Kg	0.0593U ng/Kg
SL-636-SA5A-TR-3.5(RES)	OCDF	0.195 ng/Kg	0.195U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,4,6,7,8-HPCDD	0.0665 ng/Kg	0.0665U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0678 ng/Kg	0.0678U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,4,7,8,9-HPCDF	0.0440 ng/Kg	0.0440U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,4,7,8-HxCDD	0.0281 ng/Kg	0.0281U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,4,7,8-HXCDF	0.0419 ng/Kg	0.0419U ng/Kg

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Method Blank Outlier Report

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-636-SA5A-TR-7.5(RES)	1,2,3,6,7,8-HXCDD	0.0595 ng/Kg	0.0595U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,6,7,8-HXCDF	0.0544 ng/Kg	0.0544U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,7,8,9-HXCDD	0.0663 ng/Kg	0.0663U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,7,8,9-HXCDF	0.0904 ng/Kg	0.0904U ng/Kg
SL-636-SA5A-TR-7.5(RES)	1,2,3,7,8-PECDF	0.0362 ng/Kg	0.0362U ng/Kg
SL-636-SA5A-TR-7.5(RES)	2,3,4,6,7,8-HXCDF	0.0258 ng/Kg	0.0258U ng/Kg
SL-636-SA5A-TR-7.5(RES)	2,3,4,7,8-PECDF	0.0342 ng/Kg	0.0342U ng/Kg
SL-636-SA5A-TR-7.5(RES)	OCDD	0.598 ng/Kg	0.598U ng/Kg
SL-636-SA5A-TR-7.5(RES)	OCDF	0.147 ng/Kg	0.147U ng/Kg

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14737BB222033	5/28/2014 8:33:00 PM	ALUMINUM BORON CALCIUM TIN ZINC	9.28 mg/Kg 0.858 mg/Kg 12.8 mg/Kg 1.36 mg/Kg 0.956 mg/Kg	SL-636-SA5A-TR-0.5 SL-636-SA5A-TR-3.5 SL-636-SA5A-TR-7.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-636-SA5A-TR-0.5(RES)	BORON	3.55 mg/Kg	3.55U mg/Kg
SL-636-SA5A-TR-0.5(RES)	TIN	2.40 mg/Kg	2.40U mg/Kg
SL-636-SA5A-TR-3.5(RES)	TIN	2.32 mg/Kg	2.32U mg/Kg
SL-636-SA5A-TR-7.5(RES)	TIN	3.26 mg/Kg	3.26U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	SL-636-SA5A-TR-0.5 SL-636-SA5A-TR-3.5 SL-636-SA5A-TR-7.5

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-636-SA5A-TR-0.5(RES)	Zirconium	2.36 mg/Kg	2.36U mg/Kg
SL-636-SA5A-TR-3.5(RES)	Zirconium	3.67 mg/Kg	3.67U mg/Kg
SL-636-SA5A-TR-7.5(RES)	Zirconium	4.60 mg/Kg	4.60U mg/Kg

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
P5LALCSQ260113 (SL-636-SA5A-TR-0.5 SL-636-SA5A-TR-3.5 SL-636-SA5A-TR-7.5)	BENZO(E)PYRENE	80	-	81.00-110.00	-	BENZO(E)PYRENE	J (all detects) UJ (all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-0.5	1,2,3,4,6,7,8-HPCDD	JB	3.52	4.95	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.686	4.95	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0658	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0985	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.156	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.214	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.218	4.95	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JB	0.171	4.95	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.138	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JBQ	0.158	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	3.08	4.95	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	0.134	4.95	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.178	4.95	PQL	ng/Kg	
	OCDF	JB	1.56	9.90	PQL	ng/Kg	
SL-636-SA5A-TR-3.5	1,2,3,4,6,7,8-HPCDD	JB	0.320	5.09	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.128	5.09	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JBQ	0.0309	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0278	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0765	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.291	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JB	0.545	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.282	5.09	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDD	JB	0.134	5.09	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.184	5.09	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0307	5.09	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0749	5.09	PQL	ng/Kg	
	2,3,7,8-TCDD	JBQ	0.0593	1.02	PQL	ng/Kg	
	OCDD	JB	3.87	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.195	10.2	PQL	ng/Kg	
SL-636-SA5A-TR-7.5	1,2,3,4,6,7,8-HPCDD	JBQ	0.0665	5.12	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.0678	5.12	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0440	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.0281	5.12	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	0.0419	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JBQ	0.0595	5.12	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0544	5.12	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	JBQ	0.0663	5.12	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.0904	5.12	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JBQ	0.0362	5.12	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0258	5.12	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0342	5.12	PQL	ng/Kg	
	OCDD	JB	0.598	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.147	10.2	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-0.5	ARSENIC	J	2.91	4.00	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.380	0.999	PQL	mg/Kg	
	BORON	J	3.55	9.99	PQL	mg/Kg	
	CADMIUM	J	0.428	0.999	PQL	mg/Kg	
	TIN	J	2.40	9.99	PQL	mg/Kg	
	Zirconium	J	2.36	4.99	PQL	mg/Kg	
SL-636-SA5A-TR-3.5	ARSENIC	J	3.49	4.13	PQL	mg/Kg	J (all detects)
	BERYLLIUM	J	0.565	1.03	PQL	mg/Kg	
	BORON	J	4.61	10.3	PQL	mg/Kg	
	CADMIUM	J	0.590	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.329	2.07	PQL	mg/Kg	
	TIN	J	2.32	10.3	PQL	mg/Kg	
	Zirconium	J	3.67	5.17	PQL	mg/Kg	
SL-636-SA5A-TR-7.5	BERYLLIUM	J	0.915	1.05	PQL	mg/Kg	J (all detects)
	BORON	J	6.78	10.5	PQL	mg/Kg	
	CADMIUM	J	0.711	1.05	PQL	mg/Kg	
	MOLYBDENUM	J	0.261	2.10	PQL	mg/Kg	
	TIN	J	3.26	10.5	PQL	mg/Kg	
	Zirconium	J	4.60	5.26	PQL	mg/Kg	

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-3.5	SELENIUM	J	0.141	0.413	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0338	0.207	PQL	mg/Kg	
SL-636-SA5A-TR-7.5	SELENIUM	J	0.129	0.420	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0811	0.210	PQL	mg/Kg	

Method: 7471B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-0.5	MERCURY	J	0.0143	0.0167	PQL	mg/Kg	J (all detects)

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-3.5	EFH (C21-C30)	J	4.8	5.3	PQL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: PH199 **Laboratory: LL**

EDD Filename: PrepPH199_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8082A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-0.5	AROCLOR 1254	J	8.4	17	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-636-SA5A-TR-0.5	BENZO(G,H,I)PERYLENE	J	1.5	1.7	PQL	ug/Kg	J (all detects)

LDC #: 32095B4

VALIDATION COMPLETENESS WORKSHEET

Date: 7/8/14

SDG #: PH199

ADR

Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories

Reviewer: VK

2nd Reviewer: a

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 5/23/14
II.	ICP/MS Tune	N	
III.	Calibration	~~A~~	
IV.	Blanks	A	~~CCB hits, no quals~~ APL 7/9/14
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~	
VI.	Matrix Spike Analysis	N	
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	N	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB = EB3-052214 SDG# PH195 FB= FB-052114 SDG# PH191

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-636-SA5A-TR-0.5	11		21		31	
2	SL-636-SA5A-TR-3.5	12		22		32	
3	SL-636-SA5A-TR-7.5	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32095B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KJ
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32095B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: KA
2nd Reviewer: AR

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 5/21/14 & 5/22/14 Soil factor applied 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	EB	FB	Sample Identification							
	EB3-052214 SDG#PH195	FB-052114 SDG#PH191	Action Limit	1	2	3				
Zr		0.0110	5.50	2.36	3.67	4.60				
Mn	0.00090		0.450							
Ca	0.150		75							
Sr	0.00046		0.23							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup Trench

SDG: PH201

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, California 92010

July 27, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on May 27, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008), Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) and for Inorganic Data Review (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Semivolatiles (SVOCs) by Environmental Protection Agency (EPA) SW 846 Method 8270D utilizing Selective Ion Monitoring (SIM)
Pesticides by EPA SW 846 Method 8081A
Polychlorinated Biphenyls (PCBs) by EPA SW 846 Method 8082A
Metals by EPA SW 846 Method 6010C, 6020A, and 7471B.
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables with and without silica gel clean up by EPA SW 846 Method 8015M
Dioxins and Dibenzofurans by EPA Method 1613B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards (dioxins and dibenzofurans only), matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with the exception of ICB/CCBs, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of several blanks for metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for TPH as extractables with silica gel clean up. The associated sample results were qualified as non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VI. ICP Interference Check Sample (ICS) Analysis

ICP interference check data were not reviewed for level III.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

IV. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two LCS/LCSD pairs for SVOCs and TPH as extractables with silica gel clean up. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

X. Internal Standards

Internal standards were reviewed for dioxins and dibenzofurans. Percent recoveries (%R) were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH201	All compounds reported as detected below the RL.	J (all detects)	A

XIII. Field Duplicate Samples

No field duplicate samples were identified in this SDG.

XIV. Field Blank Samples

One trip blank was collected and analyzed for TPH as gasoline. No contaminant concentrations were detected in the trip blank.

One equipment blank (from SDG PH207) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, and dioxins and dibenzofurans. The equipment blank had detections for SVOCs, metals, and dioxins and dibenzofurans. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.

One field blank (from SDG PH191) was collected and analyzed for SVOCs, pesticides, PCBs, metals, TPH as gasoline, TPH as extractables with and without silica gel clean up, and dioxins and dibenzofurans. The field blank had detections for SVOCs, metals and dioxins and dibenzofurans. The associated sample results were qualified as non-detected (U) due to field blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the field blank were not qualified. The field blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
27-May-2014	TB3-052714	7479356	TB	5030B	8015M	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	3050B	6010C	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	3050B	6020A	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	3546	8015M	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	3546	8081B	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	3546	8082A	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	3546	8270D SIM	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	METHOD	1613B	III
27-May-2014	SL-707-SA5B-TR-0.5	7479354	N	METHOD	7471B	III
27-May-2014	SL-707-SA5B-TR-0.5MSD	P479354M260647	MSD	3546	8270D SIM	III
27-May-2014	SL-707-SA5B-TR-0.5MSD	P479354M320311A	MSD	3546	8015M	III
27-May-2014	SL-707-SA5B-TR-0.5MSD	P479354M321816A	MSD	3546	8015M	III
27-May-2014	SL-707-SA5B-TR-0.5MS	P479354R260615	MS	3546	8270D SIM	III
27-May-2014	SL-707-SA5B-TR-0.5MS	P479354R320249A	MS	3546	8015M	III
27-May-2014	SL-707-SA5B-TR-0.5MS	P479354R321754A	MS	3546	8015M	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	3050B	6010C	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	3050B	6020A	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	3546	8015M	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	3546	8081B	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	3546	8082A	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	3546	8270D SIM	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	5035A	8015M	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	METHOD	1613B	III
27-May-2014	SL-707-SA5B-TR-3.0	7479355	N	METHOD	7471B	III
27-May-2014	SL-707-SA5B-TR-3.0DUP	P479355D222115	DUP	METHOD	7471B	III
27-May-2014	SL-707-SA5B-TR-3.0MSD	P479355M222119	MSD	METHOD	7471B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
27-May-2014	SL-707-SA5B-TR-3.0MS	P479355R222117	MS	METHOD	7471B	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	3050B	6010C	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	3050B	6020A	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	3546	8015M	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	3546	8081B	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	3546	8082A	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	3546	8270D SIM	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	METHOD	1613B	III
27-May-2014	SL-693-SA5B-TR-0.5	7479357	N	METHOD	7471B	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	3050B	6010C	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	3050B	6020A	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	3546	8015M	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	3546	8081B	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	3546	8082A	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	3546	8270D SIM	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	5035A	8015M	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	METHOD	1613B	III
27-May-2014	SL-693-SA5B-TR-3.5	7479358	N	METHOD	7471B	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	3050B	6010C	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	3050B	6020A	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	3546	8015M	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	3546	8081B	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	3546	8082A	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	3546	8270D SIM	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	5035A	8015M	III
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	METHOD	1613B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
27-May-2014	SL-693-SA5B-TR-5.0	7479359	N	METHOD	7471B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-693-SA5B-TR-0.5 **Collected: 5/27/2014 10:17:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.909	J	0.0669	MDL	0.998	PQL	mg/Kg	J	Z
BORON	5.59	J	0.839	MDL	9.98	PQL	mg/Kg	U	B
CADMIUM	0.324	J	0.0759	MDL	0.998	PQL	mg/Kg	J	Z
SODIUM	93.0	J	16.7	MDL	99.8	PQL	mg/Kg	J	Z
TIN	3.12	J	0.220	MDL	9.98	PQL	mg/Kg	U	B
Zirconium	4.24	J	0.839	MDL	4.99	PQL	mg/Kg	U	F
MOLYBDENUM	0.427	J	0.170	MDL	2.00	PQL	mg/Kg	U	F

Sample ID: SL-693-SA5B-TR-3.5 **Collected: 5/27/2014 1:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	6.43	J	0.858	MDL	10.2	PQL	mg/Kg	U	B
CADMIUM	0.178	J	0.0776	MDL	1.02	PQL	mg/Kg	J	Z
MOLYBDENUM	0.388	J	0.174	MDL	2.04	PQL	mg/Kg	U	F
TIN	3.28	J	0.225	MDL	10.2	PQL	mg/Kg	U	B
Zirconium	4.88	J	0.858	MDL	5.10	PQL	mg/Kg	U	F

Sample ID: SL-693-SA5B-TR-5.0 **Collected: 5/27/2014 1:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.898	J	0.0688	MDL	1.03	PQL	mg/Kg	J	Z
BORON	4.81	J	0.863	MDL	10.3	PQL	mg/Kg	U	B
CADMIUM	0.128	J	0.0781	MDL	1.03	PQL	mg/Kg	J	Z
MOLYBDENUM	0.347	J	0.175	MDL	2.05	PQL	mg/Kg	J	Z
TIN	2.97	J	0.226	MDL	10.3	PQL	mg/Kg	U	B
Zirconium	4.46	J	0.863	MDL	5.14	PQL	mg/Kg	U	F

Sample ID: SL-707-SA5B-TR-0.5 **Collected: 5/27/2014 8:13:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.825	J	0.0658	MDL	0.983	PQL	mg/Kg	J	Z
BORON	5.48	J	0.825	MDL	9.83	PQL	mg/Kg	U	B
CADMIUM	0.240	J	0.0747	MDL	0.983	PQL	mg/Kg	J	Z
MOLYBDENUM	0.457	J	0.167	MDL	1.97	PQL	mg/Kg	U	F
SODIUM	97.2	J	16.4	MDL	98.3	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: SL-707-SA5B-TR-0.5 *Collected:* 5/27/2014 8:13:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TIN	2.96	J	0.216	MDL	9.83	PQL	mg/Kg	U	B
Zirconium	4.75	J	0.825	MDL	4.91	PQL	mg/Kg	U	F

Sample ID: SL-707-SA5B-TR-3.0 *Collected:* 5/27/2014 8:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.987	J	0.0668	MDL	0.997	PQL	mg/Kg	J	Z
BORON	5.41	J	0.838	MDL	9.97	PQL	mg/Kg	U	B
CADMIUM	0.128	J	0.0758	MDL	0.997	PQL	mg/Kg	J	Z
MOLYBDENUM	0.352	J	0.170	MDL	1.99	PQL	mg/Kg	U	F
TIN	3.08	J	0.219	MDL	9.97	PQL	mg/Kg	U	B
Zirconium	4.29	J	0.838	MDL	4.99	PQL	mg/Kg	U	F

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: SL-693-SA5B-TR-0.5 *Collected:* 5/27/2014 10:17:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.389	J	0.0998	MDL	0.399	PQL	mg/Kg	J	Z

Sample ID: SL-693-SA5B-TR-0.5 *Collected:* 5/27/2014 10:17:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0459	J	0.0260	MDL	0.200	PQL	mg/Kg	J	Z

Sample ID: SL-693-SA5B-TR-3.5 *Collected:* 5/27/2014 1:15:00 *Analysis Type:* REA *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.267	J	0.102	MDL	0.408	PQL	mg/Kg	J	Z

Sample ID: SL-693-SA5B-TR-3.5 *Collected:* 5/27/2014 1:15:00 *Analysis Type:* RES *Dilution:* 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0610	J	0.0265	MDL	0.204	PQL	mg/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: METALS

Method: 6020A **Matrix: SO**

Sample ID: **SL-693-SA5B-TR-5.0** *Collected:* **5/27/2014 1:40:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.273	J	0.103	MDL	0.411	PQL	mg/Kg	J	Z

Sample ID: **SL-693-SA5B-TR-5.0** *Collected:* **5/27/2014 1:40:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0448	J	0.0267	MDL	0.205	PQL	mg/Kg	J	Z

Sample ID: **SL-707-SA5B-TR-0.5** *Collected:* **5/27/2014 8:13:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.274	J	0.0983	MDL	0.393	PQL	mg/Kg	J	Z

Sample ID: **SL-707-SA5B-TR-3.0** *Collected:* **5/27/2014 8:55:00** *Analysis Type:* **REA** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	0.272	J	0.0997	MDL	0.399	PQL	mg/Kg	J	Z

Sample ID: **SL-707-SA5B-TR-3.0** *Collected:* **5/27/2014 8:55:00** *Analysis Type:* **RES** *Dilution:* **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.0347	J	0.0259	MDL	0.199	PQL	mg/Kg	J	Z

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: **SL-693-SA5B-TR-0.5** *Collected:* **5/27/2014 10:17:00** *Analysis Type:* **RES** *Dilution:* **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	2.17	JB	0.0249	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.200	JB	0.0485	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.137	JB	0.0499	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.100	JBQ	0.0539	MDL	4.95	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.572	JQ	0.0521	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.190	JB	0.0452	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDD	0.665	J	0.0492	MDL	4.95	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-693-SA5B-TR-0.5 **Collected: 5/27/2014 10:17:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,7,8,9-HXCDF	0.450	JBQ	0.0518	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	0.126	JQ	0.0357	MDL	4.95	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.243	JB	0.0199	MDL	4.95	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	0.157	JBQ	0.0464	MDL	4.95	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0787	JBQ	0.0206	MDL	4.95	PQL	ng/Kg	J	Z
OCDF	5.75	JB	0.0356	MDL	9.91	PQL	ng/Kg	J	Z

Sample ID: SL-693-SA5B-TR-3.5 **Collected: 5/27/2014 1:15:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.195	JB	0.0279	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,6,7,8-HPCDF	0.0703	JBQ	0.0151	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0232	JBQ	0.0189	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.0540	JQ	0.0251	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0263	JB	0.0170	MDL	5.11	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.0802	JQ	0.0255	MDL	5.11	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0626	JBQ	0.0187	MDL	5.11	PQL	ng/Kg	U	B
OCDD	1.70	JB	0.0395	MDL	10.2	PQL	ng/Kg	J	Z
OCDF	0.177	JBQ	0.0394	MDL	10.2	PQL	ng/Kg	U	B

Sample ID: SL-693-SA5B-TR-5.0 **Collected: 5/27/2014 1:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDD	0.885	JBQ	0.0317	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,4,6,7,8-HPCDF	0.210	JB	0.0108	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,4,7,8,9-HPCDF	0.0351	JB	0.0191	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.0383	JBQ	0.0162	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,6,7,8-HXCDD	0.103	J	0.0223	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0504	JB	0.0139	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.178	J	0.0230	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.171	JBQ	0.0149	MDL	5.21	PQL	ng/Kg	U	B
1,2,3,7,8-PECDD	0.0450	JQ	0.0272	MDL	5.21	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.139	JB	0.0145	MDL	5.21	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.0344	JBQ	0.0151	MDL	5.21	PQL	ng/Kg	U	B
2,3,4,7,8-PECDF	0.0216	JB	0.0144	MDL	5.21	PQL	ng/Kg	U	B

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 1613B **Matrix: SO**

Sample ID: SL-693-SA5B-TR-5.0 **Collected: 5/27/2014 1:40:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
OCDD	7.98	JB	0.0224	MDL	10.4	PQL	ng/Kg	J	Z
OCDF	0.516	JB	0.0289	MDL	10.4	PQL	ng/Kg	U	B

Sample ID: SL-707-SA5B-TR-0.5 **Collected: 5/27/2014 8:13:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,7,8,9-HPCDF	3.83	JB	0.102	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HxCDD	3.45	JB	0.101	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,4,7,8-HXCDF	2.09	JB	0.121	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	1.66	JB	0.103	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.839	JB	0.115	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDD	1.88	J	0.0851	MDL	4.99	PQL	ng/Kg	J	Z
1,2,3,7,8-PECDF	0.381	JB	0.0438	MDL	4.99	PQL	ng/Kg	J	Z
2,3,4,6,7,8-HXCDF	2.32	JB	0.106	MDL	4.99	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.580	JBQ	0.0435	MDL	4.99	PQL	ng/Kg	J	Z
2,3,7,8-TCDD	0.179	J	0.0582	MDL	0.998	PQL	ng/Kg	J	Z
2,3,7,8-TCDF	0.101	JQ	0.0873	MDL	0.998	PQL	ng/Kg	J	Z

Sample ID: SL-707-SA5B-TR-3.0 **Collected: 5/27/2014 8:55:00** **Analysis Type: RES** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,3,4,6,7,8-HPCDF	2.55	JB	0.0208	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,4,7,8,9-HPCDF	0.196	JBQ	0.0423	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8-HxCDD	0.111	JBQ	0.0428	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,4,7,8-HXCDF	0.134	JBQ	0.0438	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDD	0.389	J	0.0435	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,6,7,8-HXCDF	0.0699	JBQ	0.0366	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,7,8,9-HXCDD	0.313	J	0.0425	MDL	5.09	PQL	ng/Kg	J	Z
1,2,3,7,8,9-HXCDF	0.0833	JBQ	0.0410	MDL	5.09	PQL	ng/Kg	U	B
1,2,3,7,8-PECDF	0.0652	JB	0.0166	MDL	5.09	PQL	ng/Kg	U	B
2,3,4,6,7,8-HXCDF	0.134	JBQ	0.0398	MDL	5.09	PQL	ng/Kg	J	Z
2,3,4,7,8-PECDF	0.0696	JBQ	0.0172	MDL	5.09	PQL	ng/Kg	U	B
OCDF	9.89	JB	0.0389	MDL	10.2	PQL	ng/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-693-SA5B-TR-0.5 **Collected: 5/27/2014 10:17:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L, S
EFH (C15-C20) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L, S
EFH (C21-C30) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L, S
EFH (C30-C40) SG	10	U	4.1	MDL	10	PQL	mg/Kg	UJ	S
EFH (C8-C11) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L, S

Sample ID: SL-693-SA5B-TR-3.5 **Collected: 5/27/2014 1:15:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L

Sample ID: SL-693-SA5B-TR-5.0 **Collected: 5/27/2014 1:40:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	5.0	J	2.1	MDL	5.3	PQL	mg/Kg	J	Z

Sample ID: SL-693-SA5B-TR-5.0 **Collected: 5/27/2014 1:40:00** **Analysis Type: REA2** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.3	U	2.1	MDL	5.3	PQL	mg/Kg	UJ	L

Sample ID: SL-707-SA5B-TR-0.5 **Collected: 5/27/2014 8:13:00** **Analysis Type: REA** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L
EFH (C15-C20) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L
EFH (C21-C30) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L
EFH (C8-C11) SG	5.1	U	2.0	MDL	5.1	PQL	mg/Kg	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8015M **Matrix: SO**

Sample ID: SL-707-SA5B-TR-3.0 *Collected:* 5/27/2014 8:55:00 *Analysis Type:* REA *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C21-C30)	3.2	J	2.1	MDL	5.2	PQL	mg/Kg	J	Z

Sample ID: SL-707-SA5B-TR-3.0 *Collected:* 5/27/2014 8:55:00 *Analysis Type:* REA2 *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
EFH (C12-C14)	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C15-C20)	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C21-C30)	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L
EFH (C8-C11)	5.2	U	2.1	MDL	5.2	PQL	mg/Kg	UJ	L

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: SL-693-SA5B-TR-0.5 *Collected:* 5/27/2014 10:17:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.40	J	0.36	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-707-SA5B-TR-0.5 *Collected:* 5/27/2014 8:13:00 *Analysis Type:* DL *Dilution:* 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	45	J	18	MDL	86	PQL	ug/Kg	J	Z

Sample ID: SL-707-SA5B-TR-0.5 *Collected:* 5/27/2014 8:13:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	1.4	J	0.33	MDL	1.7	PQL	ug/Kg	J	Z
ENDOSULFAN II	0.56	J	0.33	MDL	1.7	PQL	ug/Kg	J	Z
ENDRIN KETONE	0.92	J	0.61	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: SL-707-SA5B-TR-3.0 *Collected:* 5/27/2014 8:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	1.1	J	0.36	MDL	1.8	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: **SL-693-SA5B-TR-0.5** ***Collected:*** **5/27/2014 10:17:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(B)FLUORANTHENE	1.0	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	17	U	3.4	MDL	17	PQL	ug/Kg	UJ	L
CHRYSENE	1.3	J	0.34	MDL	1.7	PQL	ug/Kg	J	Z
FLUORANTHENE	1.1	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
NAPHTHALENE	0.73	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z
PYRENE	0.81	J	0.68	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-693-SA5B-TR-3.5** ***Collected:*** **5/27/2014 1:15:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	L

Sample ID: **SL-693-SA5B-TR-5.0** ***Collected:*** **5/27/2014 1:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	L
CHRYSENE	0.68	J	0.35	MDL	1.8	PQL	ug/Kg	J	Z
FLUORANTHENE	0.82	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z
PYRENE	0.71	J	0.71	MDL	1.8	PQL	ug/Kg	J	Z

Sample ID: **SL-707-SA5B-TR-0.5** ***Collected:*** **5/27/2014 8:13:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	0.92	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: **SL-707-SA5B-TR-0.5** ***Collected:*** **5/27/2014 8:13:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZO(A)ANTHRACENE	0.71	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	17	U	3.4	MDL	17	PQL	ug/Kg	UJ	L
NAPHTHALENE	1.4	J	0.67	MDL	1.7	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: SVOA

Method: 8270D SIM **Matrix: SO**

Sample ID: SL-707-SA5B-TR-3.0 *Collected:* 5/27/2014 8:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1-METHYLNAPHTHALENE	1.0	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z

Sample ID: SL-707-SA5B-TR-3.0 *Collected:* 5/27/2014 8:55:00 *Analysis Type:* RES-BASE/NEUTRAL *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-METHYLNAPHTHALENE	1.3	J	0.69	MDL	1.7	PQL	ug/Kg	J	Z
BENZO(E)PYRENE	18	U	3.5	MDL	18	PQL	ug/Kg	UJ	L

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
B	Method Blank Contamination
F	Equipment Blank Contamination
F	Field Blank Contamination
L	Laboratory Control Spike Lower Estimation
S	Surrogate/Tracer Recovery Lower Estimation
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

PH201

Method Blank Outlier Report

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **1613B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
BLK1540B371251	6/5/2014 12:51:00 PM	1,2,3,4,6,7,8-HPCDD	0.0576 ng/Kg	SL-693-SA5B-TR-0.5
		1,2,3,4,6,7,8-HPCDF	0.0496 ng/Kg	SL-693-SA5B-TR-3.5
		1,2,3,4,7,8,9-HPCDF	0.0536 ng/Kg	SL-693-SA5B-TR-5.0
		1,2,3,4,7,8-HxCDD	0.0420 ng/Kg	SL-707-SA5B-TR-0.5
		1,2,3,4,7,8-HXCDF	0.0223 ng/Kg	SL-707-SA5B-TR-3.0
		1,2,3,6,7,8-HXCDF	0.0187 ng/Kg	
		1,2,3,7,8,9-HXCDF	0.0558 ng/Kg	
		1,2,3,7,8-PECDF	0.0470 ng/Kg	
		2,3,4,6,7,8-HXCDF	0.0179 ng/Kg	
		2,3,4,7,8-PECDF	0.0155 ng/Kg	
		OCDD	0.308 ng/Kg	
		OCDF	0.159 ng/Kg	

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-693-SA5B-TR-0.5(RES)	1,2,3,4,7,8,9-HPCDF	0.200 ng/Kg	0.200U ng/Kg
SL-693-SA5B-TR-0.5(RES)	1,2,3,4,7,8-HxCDD	0.137 ng/Kg	0.137U ng/Kg
SL-693-SA5B-TR-0.5(RES)	1,2,3,4,7,8-HXCDF	0.100 ng/Kg	0.100U ng/Kg
SL-693-SA5B-TR-3.5(RES)	1,2,3,4,6,7,8-HPCDD	0.195 ng/Kg	0.195U ng/Kg
SL-693-SA5B-TR-3.5(RES)	1,2,3,4,6,7,8-HPCDF	0.0703 ng/Kg	0.0703U ng/Kg
SL-693-SA5B-TR-3.5(RES)	1,2,3,4,7,8-HXCDF	0.0232 ng/Kg	0.0232U ng/Kg
SL-693-SA5B-TR-3.5(RES)	1,2,3,6,7,8-HXCDF	0.0263 ng/Kg	0.0263U ng/Kg
SL-693-SA5B-TR-3.5(RES)	1,2,3,7,8,9-HXCDF	0.0626 ng/Kg	0.0626U ng/Kg
SL-693-SA5B-TR-3.5(RES)	OCDF	0.177 ng/Kg	0.177U ng/Kg
SL-693-SA5B-TR-5.0(RES)	1,2,3,4,6,7,8-HPCDF	0.210 ng/Kg	0.210U ng/Kg
SL-693-SA5B-TR-5.0(RES)	1,2,3,4,7,8,9-HPCDF	0.0351 ng/Kg	0.0351U ng/Kg
SL-693-SA5B-TR-5.0(RES)	1,2,3,4,7,8-HXCDF	0.0383 ng/Kg	0.0383U ng/Kg
SL-693-SA5B-TR-5.0(RES)	1,2,3,6,7,8-HXCDF	0.0504 ng/Kg	0.0504U ng/Kg
SL-693-SA5B-TR-5.0(RES)	1,2,3,7,8,9-HXCDF	0.171 ng/Kg	0.171U ng/Kg
SL-693-SA5B-TR-5.0(RES)	1,2,3,7,8-PECDF	0.139 ng/Kg	0.139U ng/Kg
SL-693-SA5B-TR-5.0(RES)	2,3,4,6,7,8-HXCDF	0.0344 ng/Kg	0.0344U ng/Kg
SL-693-SA5B-TR-5.0(RES)	2,3,4,7,8-PECDF	0.0216 ng/Kg	0.0216U ng/Kg
SL-693-SA5B-TR-5.0(RES)	OCDF	0.516 ng/Kg	0.516U ng/Kg
SL-707-SA5B-TR-3.0(RES)	1,2,3,4,7,8,9-HPCDF	0.196 ng/Kg	0.196U ng/Kg
SL-707-SA5B-TR-3.0(RES)	1,2,3,4,7,8-HxCDD	0.111 ng/Kg	0.111U ng/Kg
SL-707-SA5B-TR-3.0(RES)	1,2,3,6,7,8-HXCDF	0.0699 ng/Kg	0.0699U ng/Kg
SL-707-SA5B-TR-3.0(RES)	1,2,3,7,8,9-HXCDF	0.0833 ng/Kg	0.0833U ng/Kg
SL-707-SA5B-TR-3.0(RES)	1,2,3,7,8-PECDF	0.0652 ng/Kg	0.0652U ng/Kg
SL-707-SA5B-TR-3.0(RES)	2,3,4,7,8-PECDF	0.0696 ng/Kg	0.0696U ng/Kg

Method Blank Outlier Report

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14937AB220850	6/2/2014 8:50:00 AM	ALUMINUM	7.59 mg/Kg	SL-693-SA5B-TR-0.5
		BERYLLIUM	0.0890 mg/Kg	SL-693-SA5B-TR-3.5
		BORON	1.60 mg/Kg	SL-693-SA5B-TR-5.0
		CALCIUM	21.3 mg/Kg	SL-707-SA5B-TR-0.5
		TIN	1.59 mg/Kg	SL-707-SA5B-TR-3.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-693-SA5B-TR-0.5(RES)	BORON	5.59 mg/Kg	5.59U mg/Kg
SL-693-SA5B-TR-0.5(RES)	TIN	3.12 mg/Kg	3.12U mg/Kg
SL-693-SA5B-TR-3.5(RES)	BORON	6.43 mg/Kg	6.43U mg/Kg
SL-693-SA5B-TR-3.5(RES)	TIN	3.28 mg/Kg	3.28U mg/Kg
SL-693-SA5B-TR-5.0(RES)	BORON	4.81 mg/Kg	4.81U mg/Kg
SL-693-SA5B-TR-5.0(RES)	TIN	2.97 mg/Kg	2.97U mg/Kg
SL-707-SA5B-TR-0.5(RES)	BORON	5.48 mg/Kg	5.48U mg/Kg
SL-707-SA5B-TR-0.5(RES)	TIN	2.96 mg/Kg	2.96U mg/Kg
SL-707-SA5B-TR-3.0(RES)	BORON	5.41 mg/Kg	5.41U mg/Kg
SL-707-SA5B-TR-3.0(RES)	TIN	3.08 mg/Kg	3.08U mg/Kg

Method: **6020A**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
P14937AB221403A	6/2/2014 2:03:00 PM	STRONTIUM	0.103 mg/Kg	SL-693-SA5B-TR-0.5 SL-693-SA5B-TR-3.5 SL-693-SA5B-TR-5.0 SL-707-SA5B-TR-0.5 SL-707-SA5B-TR-3.0

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
EB1-052914(REA2)	5/29/2014 3:00:00 PM	CALCIUM MAGNESIUM MOLYBDENUM	0.108 mg/L 0.0252 mg/L 0.0054 mg/L	SL-693-SA5B-TR-0.5 SL-693-SA5B-TR-3.5 SL-693-SA5B-TR-5.0 SL-707-SA5B-TR-0.5 SL-707-SA5B-TR-3.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-693-SA5B-TR-0.5(RES)	MOLYBDENUM	0.427 mg/Kg	0.427U mg/Kg
SL-693-SA5B-TR-3.5(RES)	MOLYBDENUM	0.388 mg/Kg	0.388U mg/Kg
SL-707-SA5B-TR-0.5(RES)	MOLYBDENUM	0.457 mg/Kg	0.457U mg/Kg
SL-707-SA5B-TR-3.0(RES)	MOLYBDENUM	0.352 mg/Kg	0.352U mg/Kg

Field Blank Outlier Report

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **6010C**
Matrix: **SO**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
FB-052114(RES)	5/21/2014 2:00:00 PM	Zirconium	0.011 mg/L	SL-693-SA5B-TR-0.5 SL-693-SA5B-TR-3.5 SL-693-SA5B-TR-5.0 SL-707-SA5B-TR-0.5 SL-707-SA5B-TR-3.0

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
SL-693-SA5B-TR-0.5(RES)	Zirconium	4.24 mg/Kg	4.24U mg/Kg
SL-693-SA5B-TR-3.5(RES)	Zirconium	4.88 mg/Kg	4.88U mg/Kg
SL-693-SA5B-TR-5.0(RES)	Zirconium	4.46 mg/Kg	4.46U mg/Kg
SL-707-SA5B-TR-0.5(RES)	Zirconium	4.75 mg/Kg	4.75U mg/Kg
SL-707-SA5B-TR-3.0(RES)	Zirconium	4.29 mg/Kg	4.29U mg/Kg

Surrogate Outlier Report

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8015M**
Matrix: **SO**

Sample ID (Analysis Type)	*Surrogate*	*Sample % Recovery*	*% Recovery Limits*	*Affected Compounds*	*Flag*
SL-693-SA5B-TR-0.5 (REA)	O-TERPHENYL	62	66.00-123.00	All Target Analytes	J (all detects) UJ (all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PrepPH201_v2 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 8015M
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P41547AQ321653A (SL-693-SA5B-TR-0.5 SL -693-SA5B-TR-3.5 SL -693-SA5B-TR-5.0 SL -707-SA5B-TR-0.5 SL -707-SA5B-TR-3.0)	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	66 68 68 54	- - - -	76.00-115.00 78.00-127.00 77.00-127.00 60.00-115.00	- - - -	EFH (C12-C14) SG EFH (C15-C20) SG EFH (C21-C30) SG EFH (C8-C11) SG	J (all detects) UJ (all non-detects)

Method: 8270D SIM
Matrix: SO

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
P1LELCSQ260406 (SL-693-SA5B-TR-0.5 SL -693-SA5B-TR-3.5 SL -693-SA5B-TR-5.0 SL -707-SA5B-TR-0.5 SL -707-SA5B-TR-3.0)	BENZO(E)PYRENE	79	-	81.00-110.00	-	BENZO(E)PYRENE	J(all detects) UJ(all non-detects)

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Reporting Limit Outliers

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-693-SA5B-TR-0.5	1,2,3,4,6,7,8-HPCDF	JB	2.17	4.95	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.200	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	0.137	4.95	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.100	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.572	4.95	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.190	4.95	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.665	4.95	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.450	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.126	4.95	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.243	4.95	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.157	4.95	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0787	4.95	PQL	ng/Kg	
	OCDF	JB	5.75	9.91	PQL	ng/Kg	
SL-693-SA5B-TR-3.5	1,2,3,4,6,7,8-HPCDD	JB	0.195	5.11	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JBQ	0.0703	5.11	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0232	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	JQ	0.0540	5.11	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0263	5.11	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDD	JQ	0.0802	5.11	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0626	5.11	PQL	ng/Kg	
	OCDD	JB	1.70	10.2	PQL	ng/Kg	
	OCDF	JBQ	0.177	10.2	PQL	ng/Kg	
SL-693-SA5B-TR-5.0	1,2,3,4,6,7,8-HPCDD	JBQ	0.885	5.21	PQL	ng/Kg	
	1,2,3,4,6,7,8-HPCDF	JB	0.210	5.21	PQL	ng/Kg	
	1,2,3,4,7,8,9-HPCDF	JB	0.0351	5.21	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.0383	5.21	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.103	5.21	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	0.0504	5.21	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.178	5.21	PQL	ng/Kg	J (all detects)
	1,2,3,7,8,9-HXCDF	JBQ	0.171	5.21	PQL	ng/Kg	
	1,2,3,7,8-PECDD	JQ	0.0450	5.21	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.139	5.21	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.0344	5.21	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JB	0.0216	5.21	PQL	ng/Kg	
	OCDD	JB	7.98	10.4	PQL	ng/Kg	
	OCDF	JB	0.516	10.4	PQL	ng/Kg	
SL-707-SA5B-TR-0.5	1,2,3,4,7,8,9-HPCDF	JB	3.83	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JB	3.45	4.99	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JB	2.09	4.99	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JB	1.66	4.99	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JB	0.839	4.99	PQL	ng/Kg	
	1,2,3,7,8-PECDD	J	1.88	4.99	PQL	ng/Kg	J (all detects)
	1,2,3,7,8-PECDF	JB	0.381	4.99	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JB	2.32	4.99	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.580	4.99	PQL	ng/Kg	
	2,3,7,8-TCDD	J	0.179	0.998	PQL	ng/Kg	
	2,3,7,8-TCDF	JQ	0.101	0.998	PQL	ng/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 1613B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-707-SA5B-TR-3.0	1,2,3,4,6,7,8-HPCDF	JB	2.55	5.09	PQL	ng/Kg	J (all detects)
	1,2,3,4,7,8,9-HPCDF	JBQ	0.196	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HxCDD	JBQ	0.111	5.09	PQL	ng/Kg	
	1,2,3,4,7,8-HXCDF	JBQ	0.134	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDD	J	0.389	5.09	PQL	ng/Kg	
	1,2,3,6,7,8-HXCDF	JBQ	0.0699	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDD	J	0.313	5.09	PQL	ng/Kg	
	1,2,3,7,8,9-HXCDF	JBQ	0.0833	5.09	PQL	ng/Kg	
	1,2,3,7,8-PECDF	JB	0.0652	5.09	PQL	ng/Kg	
	2,3,4,6,7,8-HXCDF	JBQ	0.134	5.09	PQL	ng/Kg	
	2,3,4,7,8-PECDF	JBQ	0.0696	5.09	PQL	ng/Kg	
	OCDF	JB	9.89	10.2	PQL	ng/Kg	

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-693-SA5B-TR-0.5	BERYLLIUM	J	0.909	0.998	PQL	mg/Kg	J (all detects)
	BORON	J	5.59	9.98	PQL	mg/Kg	
	CADMIUM	J	0.324	0.998	PQL	mg/Kg	
	MOLYBDENUM	J	0.427	2.00	PQL	mg/Kg	
	SODIUM	J	93.0	99.8	PQL	mg/Kg	
	TIN	J	3.12	9.98	PQL	mg/Kg	
	Zirconium	J	4.24	4.99	PQL	mg/Kg	
SL-693-SA5B-TR-3.5	BORON	J	6.43	10.2	PQL	mg/Kg	J (all detects)
	CADMIUM	J	0.178	1.02	PQL	mg/Kg	
	MOLYBDENUM	J	0.388	2.04	PQL	mg/Kg	
	TIN	J	3.28	10.2	PQL	mg/Kg	
	Zirconium	J	4.88	5.10	PQL	mg/Kg	
SL-693-SA5B-TR-5.0	BERYLLIUM	J	0.898	1.03	PQL	mg/Kg	J (all detects)
	BORON	J	4.81	10.3	PQL	mg/Kg	
	CADMIUM	J	0.128	1.03	PQL	mg/Kg	
	MOLYBDENUM	J	0.347	2.05	PQL	mg/Kg	
	TIN	J	2.97	10.3	PQL	mg/Kg	
	Zirconium	J	4.46	5.14	PQL	mg/Kg	
SL-707-SA5B-TR-0.5	BERYLLIUM	J	0.825	0.983	PQL	mg/Kg	J (all detects)
	BORON	J	5.48	9.83	PQL	mg/Kg	
	CADMIUM	J	0.240	0.983	PQL	mg/Kg	
	MOLYBDENUM	J	0.457	1.97	PQL	mg/Kg	
	SODIUM	J	97.2	98.3	PQL	mg/Kg	
	TIN	J	2.96	9.83	PQL	mg/Kg	
	Zirconium	J	4.75	4.91	PQL	mg/Kg	
SL-707-SA5B-TR-3.0	BERYLLIUM	J	0.987	0.997	PQL	mg/Kg	J (all detects)
	BORON	J	5.41	9.97	PQL	mg/Kg	
	CADMIUM	J	0.128	0.997	PQL	mg/Kg	
	MOLYBDENUM	J	0.352	1.99	PQL	mg/Kg	
	TIN	J	3.08	9.97	PQL	mg/Kg	
	Zirconium	J	4.29	4.99	PQL	mg/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: 6020A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-693-SA5B-TR-0.5	SELENIUM	J	0.389	0.399	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0459	0.200	PQL	mg/Kg	
SL-693-SA5B-TR-3.5	SELENIUM	J	0.267	0.408	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0610	0.204	PQL	mg/Kg	
SL-693-SA5B-TR-5.0	SELENIUM	J	0.273	0.411	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0448	0.205	PQL	mg/Kg	
SL-707-SA5B-TR-0.5	SELENIUM	J	0.274	0.393	PQL	mg/Kg	J (all detects)
SL-707-SA5B-TR-3.0	SELENIUM	J	0.272	0.399	PQL	mg/Kg	J (all detects)
	SILVER	J	0.0347	0.199	PQL	mg/Kg	

Method: 8015M

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-693-SA5B-TR-5.0	EFH (C21-C30)	J	5.0	5.3	PQL	mg/Kg	J (all detects)
SL-707-SA5B-TR-3.0	EFH (C21-C30)	J	3.2	5.2	PQL	mg/Kg	J (all detects)

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-693-SA5B-TR-0.5	4,4'-DDT	J	0.40	1.7	PQL	ug/Kg	J (all detects)
SL-707-SA5B-TR-0.5	4,4'-DDD	J	1.4	1.7	PQL	ug/Kg	J (all detects)
	4,4'-DDT	J	45	86	PQL	ug/Kg	
	ENDOSULFAN II	J	0.56	1.7	PQL	ug/Kg	
	ENDRIN KETONE	J	0.92	1.8	PQL	ug/Kg	
SL-707-SA5B-TR-3.0	4,4'-DDT	J	1.1	1.8	PQL	ug/Kg	J (all detects)

Method: 8270D SIM

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
SL-693-SA5B-TR-0.5	BENZO(B)FLUORANTHENE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
	CHRYSENE	J	1.3	1.7	PQL	ug/Kg	
	FLUORANTHENE	J	1.1	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	0.73	1.7	PQL	ug/Kg	
	PYRENE	J	0.81	1.7	PQL	ug/Kg	
SL-693-SA5B-TR-5.0	CHRYSENE	J	0.68	1.8	PQL	ug/Kg	J (all detects)
	FLUORANTHENE	J	0.82	1.8	PQL	ug/Kg	
	PYRENE	J	0.71	1.8	PQL	ug/Kg	

Reporting Limit Outliers

Lab Reporting Batch ID: PH201 **Laboratory: LL**

EDD Filename: PH201_v2. **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8270D SIM**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SL-707-SA5B-TR-0.5	1-METHYLNAPHTHALENE	J	0.92	1.7	PQL	ug/Kg	J (all detects)
	BENZO(A)ANTHRACENE	J	0.71	1.7	PQL	ug/Kg	
	NAPHTHALENE	J	1.4	1.7	PQL	ug/Kg	
SL-707-SA5B-TR-3.0	1-METHYLNAPHTHALENE	J	1.0	1.7	PQL	ug/Kg	J (all detects)
	2-METHYLNAPHTHALENE	J	1.3	1.7	PQL	ug/Kg	

LDC #: 32095C4 **VALIDATION COMPLETENESS WORKSHEET** Date: 7/8/14

SDG #: PH201 ADR Page: 1 of 1

Laboratory: Eurofins Lancaster Laboratories Reviewer: KL

2nd Reviewer: a

METHOD: Metals (EPA SW 846 Method 6010C/6020A/~~7000~~ 7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	—	Sampling dates: 5/27/14
II.	ICP/MS Tune	N	
III.	Calibration	~~SW~~ —	
IV.	Blanks	A	~~CCB hits, no quals~~ APL 7-9-14
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~	
VI.	Matrix Spike Analysis	N	MS/D
VII.	Duplicate Sample Analysis	N	DUP
VIII.	Laboratory Control Samples (LCS)	N	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	N	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	EB=EB1-052914 SDG#PH207 FB-052114 SDG#PH191

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	SL-707-SA5B-TR-0.5	11		21		31	
2	SL-707-SA5B-TR-3.0	12		22		32	
3	SL-693-SA5B-TR-0.5	13		23		33	
4	SL-693-SA5B-TR-3.5	14		24		34	
5	SL-693-SA5B-TR-5.0	15		25		35	
6	SL-707-SA5B-TR-3.0 MS	16		26		36	
7	SL-707-SA5B-TR-3.0 MSD	17		27		37	
8	SL-707-SA5B-TR-3.0 DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 32095C4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KK
2nd reviewer: a

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
QC6-8	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, P, K, Se, Ag, Na, Sr, Tl, Sn, Ti, V, Zn, Zr

Comments: Mercury by CVAA if performed

LDC #: 32095C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: KK
2nd Reviewer: CR

METHOD: Trace Metals (EPA SW846 6010C/6020A/7471B)

Blank units: mg/L **Associated sample units:** mg/kg
Sampling date: 5/27/14 and 5/29/14 Soil factor applied: 100
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	EB	FB	Sample Identification								
	EB1-052914 SDG#PH207	FB-052114 SDG#PH191	Action Limit	1	2	3	4	5			
Zr		0.0110	5.50	4.75	4.29	4.24	4.88	4.46			
Ca	0.108		54								
Mg	0.0252		12.6								
Mo	0.0054		2.70	0.457 ~~0.46~~	0.352	0.427 ~~0.43~~	0.388 ~~0.39~~	0.347 ~~0.35~~			
Sr	0.00042		0.21								

APL 7/29/14

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

CDM
555 17th Street, Suite 1100
Denver, CO 80202
ATTN: Mrs. Cherie Zakowski

August 4, 2014

SUBJECT: Santa Susana Field Laboratory, SVL, Data Validation

Dear Mrs. Zakowski,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on July 11, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #32177:

SDG #	Fraction
PH216, PH219, PH222 PH223, PH226, PH228 PH230	Volatiles

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Santa Susana Field Laboratory, RCRA Facility Investigation, Surficial Media Operable Unit, March 2009, Revision 4
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar
Project Manager/Chemist

953 pages-CD

Attachment 1

90/10 ADR/IV

LDC #32177 (CDM Federal Programs-Chantilly VA / Santa Susana Field Laboratory, SVL)

LDC	SDG#	DATE REC'D	(4) DATE DUE	VOA (8260B)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	PH216	07/11/14	08/08/14	5	7																																
B	PH219	07/11/14	08/08/14	1	3																																
C	PH222	07/11/14	08/08/14	1	1																																
D	PH223	07/11/14	08/08/14	1	4																																
E	PH226	07/11/14	08/08/14	1	4																																
F	PH228	07/11/14	08/08/14	5	4																																
G	PH230	07/11/14	08/08/14	1	3																																
Total	T/SM			15	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41

Shaded cells indicate Level IV validation (all other cells are ADR review). These sample counts do not include MS/MSD, and DUPs

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH216

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

July 30, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on June 4, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Please note that some sample names have been truncated due to database limitations. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks and field duplicate samples. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one pair for 2-Chloro-1,1,1-trifluoroethane. No data were qualified for due to high %Rs since the associated results were non-detected.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH216	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

One field duplicate pair was collected and analyzed for VOCs. No VOCs were detected in the field duplicates.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

Four equipment blanks were collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Jun-2014	EB1-060414	7488107	EB	5030B	8260B	III
04-Jun-2014	EB4-060414	7488109	EB	5030B	8260B	III
04-Jun-2014	EB2-060414	7488108	EB	5030B	8260B	III
04-Jun-2014	EB5-060414	7488110	EB	5030B	8260B	III
04-Jun-2014	TB3-060414	7488097	TB	5030B	8260B	III
04-Jun-2014	SVL-577-SA5B-SB-5.3-5.8	7488098	N	5035A	8260B	III
04-Jun-2014	586-SA5B-SB-3.75-4.25	7488099	N	5035A	8260B	III
04-Jun-2014	586-SA5B-SB-3.75-4.25MS	7488100	MS	5035A	8260B	III
04-Jun-2014	586-SA5B-SB-3.75-4.25MSD	7488101	MSD	5035A	8260B	III
04-Jun-2014	SVL-986-SA5B-SB-3.75-4.25	7488102	FD	5035A	8260B	III
04-Jun-2014	SVL-576-SA5A-SB-2.5-3.0	7488103	N	5035A	8260B	III
04-Jun-2014	SVL-574-SA5A-SB-1.5-2.0	7488105	N	5035A	8260B	III
04-Jun-2014	SVL-571-SA5A-SB-2.5-3.0	7488104	N	5035A	8260B	III
04-Jun-2014	SVL-566-SA5A-SB-3.0-3.5	7488106	N	5035A	8260B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH216 **Laboratory: LL**

EDD Filename: PH216_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

Quality Control
Outlier Reports

PH216

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: PH216 **Laboratory: LL**

EDD Filename: PH216_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

***Method:* 8260B**
***Matrix:* SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
SVL-586-SA5B-SB-3.75-4.25MSD (SVL-586-SA5B-SB-3.75-4.25)	2-Chloro-1,1,1-trifluoroethane	-	132	61.00-131.00	-	2-Chloro-1,1,1-trifluoroethane	J (all detects)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH219

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

July 30, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level IV data validation results for samples collected on June 5, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level IV data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, surrogates, internal standards, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks, field blanks and the raw data to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the initial and continuing calibrations and internal standards, which were reviewed manually. Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH219	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH216) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels. All data are deemed useable for the intended use.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Jun-2014	TB2-060514	7489860	TB	5030B	8260B	IV
05-Jun-2014	SVL-552-SA5A-SB-1.5-2.0	7489861	N	5035A	8260B	IV
05-Jun-2014	SVL-554-SA5A-SB-1.5-2.0	7489862	N	5035A	8260B	IV
05-Jun-2014	SVL-529-SA5A-SB-4.0-4.5	7489863	N	5035A	8260B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH219 **Laboratory: LL**

EDD Filename: PH219_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

Quality Control
Outlier Reports

PH219

(No Outliers)

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Santa Susana Field Laboratory

Collection Date: June 5, 2014

LDC Report Date: August 3, 2014

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): PH219

Sample Identification

TB2-060514
SVL-552-SA5A-SB-1.5-2.0
SVL-554-SA5A-SB-1.5-2.0
SVL-529-SA5A-SB-4.0-4.5

Introduction

This data review covers 3 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a Laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB2-060514 was identified as a trip blank. No volatile contaminants were found.

Sample EB1-060414 (from SDG PH216) was identified as an equipment blank. No volatile contaminants were found.

Sample FB-051314 (from SDG PH176) was identified as a field blank. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH219	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Santa Susana Field Laboratory
Volatiles - Data Qualification Summary - SDG PH219

SDG	Sample	Compound	Flag	A or P	Reason (Code)
PH219	TB2-060514 SVL-552-SA5A-SB-1.5-2.0 SVL-554-SA5A-SB-1.5-2.0 SVL-529-SA5A-SB-4.0-4.5	All compounds reported below the RL.	J (all detects)	A	Compound quantitation (Z)

Santa Susana Field Laboratory
Volatiles - Laboratory Blank Data Qualification Summary - SDG PH219

No Sample Data Qualified in this SDG

Santa Susana Field Laboratory
Volatiles - Field Blank Data Qualification Summary - SDG PH219

No Sample Data Qualified in this SDG

LDC #: 32177B1a **VALIDATION COMPLETENESS WORKSHEET** Date: 7/24/14
SDG #: PH219 Level IV Page: 1 of 1
Laboratory: Eurofins Lancaster Laboratories Reviewer: Bn
2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 6/5/14
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%, r^2
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1 EB = EB1-060414 (SDG # PH216) FB = FB-051314 (SDG # PH176)

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Soil + water

1	TB2-060514	11		21		31	VBLKY54
2	SVL-552-SA5A-SB-1.5-2.0	12		22		32	VBLKB82
3	SVL-554-SA5A-SB-1.5-2.0	13		23		33	
4	SVL-529-SA5A-SB-4.0-4.5	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 32177B1a

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: CM

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of $\geq$ 0.990?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 30% and relative response factors (RRF) $\geq$ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) $\leq$ 25% and relative response factors (RRF) $\geq$ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 32177B4

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: SM

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC # 32177B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (300 std)	Recalculated RRF (300 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	6/4/2014	Vinyl acetate (IS1)	0.2664	0.2664	0.2607	0.2607	8	8

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 32177B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer: [signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

$\%RSD = 100 * (S/X)$ — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09953	6/3/2014	tert-Butyl alcohol (IS1)	1.0694	1.0694	1.1390	1.1390	10	10
			Trichloroethene (IS2)	0.2701	0.2701	0.2659	0.2659	6	6
			Tetrachloroethene (IS3)	0.4433	0.4433	0.4293	0.4294	6	6.5
			1,1,2,2-Tetrachloroethane (IS4)	0.6798	0.6798	0.6837	0.6837	5	5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 32177B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (100 std)	Recalculated RRF (100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09355	5/19/2014	tert-Butyl alcohol (IS1)	1.4155	1.4155	1.4269	1.4269	4	4
			Trichloroethene (IS2)	0.3206	0.3206	0.3112	0.3112	8	8
			Tetrachloroethene (IS3)	0.4916	0.4916	0.4899	0.4900	9	9
			1,1,2,2-Tetrachloroethane (IS4)	1.3664	1.3664	1.3609	1.3609	6	6

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 32177B1a

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HP09355	3/27/2014	Vinyl acetate (IS1)	0.7194	0.7194	0.6990	0.6990	5	5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 32177B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	bu10c05	6/10/2014	tert-Butyl alcohol (IS1)	1.1390	1.1016	1.1016	3	3
			Trichloroethene (IS2)	0.2659	0.2866	0.2866	8	8
			Tetrachloroethene (IS3)	0.4293	0.4550	0.4550	6	6
			1,1,2,2-Tetrachloroethane (IS4	0.6837	0.7166	0.7166	5	5
2	bu10c06	6/10/2014	Vinyl acetate (IS1)	0.2607	0.2676	0.2676	3	3

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 32177B1a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	yu11c01	6/11/2014	tert-Butyl alcohol (IS1)	1.4269	1.4223	1.4223	0	0
			Trichloroethene (IS2)	0.3112	0.3144	0.3144	1	1
			Tetrachloroethene (IS3)	0.4899	0.5030	0.5030	3	3
			1,1,2,2-Tetrachloroethane (IS4)	1.3609	1.2480	1.2480	8	8
2	yu11c02	6/11/2014	Vinyl acetate (IS1)	0.6990	0.6888	0.6888	1	1

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32177B4

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.00	50.595	101	101	0
1,2-Dichloroethane-d4		49.721	99	99	0
Toluene-d8		48.423	97	97	0
Bromofluorobenzene		47.338	95	95	0

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	50.00	54.098	108	108	0
1,2-Dichloroethane-d4		52.388	105	105	0
Toluene-d8		49.487	99	99	0
Bromofluorobenzene		46.830	94	94	0

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 32177B1a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS882

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene	20	—	23.16	—	116	116				
Trichloroethene	↓	↓	21.59	↓	108	108				
Benzene			21.19		106	106				
Toluene			20.44		102	102				
Chlorobenzene			20.75		104	104				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 32177BK

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: SM

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. A11, ND:

LCSB82: S = 21.59 ug/kg

Conc. = (1187375)(50)(5) / (1033990)(0.2659)(5)

= 21.59341842 ug/kg

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH222

Prepared for

CDM Smith
555 17th Street, Suite 1100
Denver, CO 80202

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

July 30, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on June 6, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH222	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicate samples were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

One equipment blank (from SDG PH216) was collected and analyzed for VOCs. No contaminant concentrations were found in the equipment blank.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Jun-2014	TB2-060614	7491488	TB	5030B	8260B	III
06-Jun-2014	SVL-627-SA5A-SB-3.0-3.5	7491489	N	5035A	8260B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH222 **Laboratory: LL**

EDD Filename: PH222_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **SVL-627-SA5A-SB-3.0-3.5** ***Collected:*** **6/6/2014 9:13:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1.04**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ACETONE	16	J	8	MDL	22	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH222 **Laboratory: LL**

EDD Filename: PH222_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

Quality Control Outlier Reports

PH222

Reporting Limit Outliers

Lab Reporting Batch ID: PH222 **Laboratory: LL**

EDD Filename: PH222_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8260B**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SVL-627-SA5A-SB-3.0-3.5	ACETONE	J	16	22	PQL	ug/Kg	J (all detects)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH223

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July 30, 2014

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected on June 9, 2014. Data validation was performed in accordance with the Quality Assurance Project Plan (QAPP) for Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit (March 2009, Revision 4) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFGs) for Superfund Organic Methods Data Review (June 2008). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatiles (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, surrogates, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment blanks and field blanks. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013). Quality assurance (QA)/QC criteria specified in the QAPP and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

Initial Calibration data were not reviewed for level III.

III. Continuing Calibration

Continuing calibration data were not reviewed for level III.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks.

V. Surrogate Spikes

Surrogate percent recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

VII. Laboratory Duplicates Sample

The laboratory has indicated that there were no laboratory duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

Internal standards were not reviewed for level III.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG PH223	All compounds reported as detected below the RL.	J (all detects)	A

XI. Field Duplicate Samples

No field duplicate samples were identified in this SDG.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. No contaminant concentrations were found in the trip blank.

Two equipment blanks (from SDG PH228) were collected and analyzed for VOCs. The equipment blanks had detections for methylene chloride. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

One field blank (from SDG PH176) was collected and analyzed for VOCs. No contaminant concentrations were found in the field blank.

XIII. Overall Assessment of Data

The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. The remainder of the data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Jun-2014	TB-060914	7492845	TB	5030B	8260B	III
09-Jun-2014	SVL-611-SA5A-SB-1.35-1.85	7492844	N	5035A	8260B	III
09-Jun-2014	SVL-527-SA6-SB-2.0-3.0	7492846	N	5035A	8260B	III
09-Jun-2014	SVL-630-SA5A-SB-1.5-2.0	7492848	N	5035A	8260B	III
09-Jun-2014	SVL-574-SA6-SB-3.8-4.3	7492847	N	5035A	8260B	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: PH223 **Laboratory: LL**

EDD Filename: PH223_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **SVL-574-SA6-SB-3.8-4.3** ***Collected:*** **6/9/2014 2:48:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **0.96**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ACETONE	11	J	7	MDL	20	PQL	ug/Kg	J	Z

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Data Qualifier Summary

Lab Reporting Batch ID: PH223 **Laboratory: LL**

EDD Filename: PH223_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Reason Code Legend

Reason Code	*Description*
Z	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 1204-002-001-AL - SSFL Area IV Phase 3

Enclosure I

Level III ADR Outliers

Quality Control
Outlier Reports

PH223

Reporting Limit Outliers

Lab Reporting Batch ID: PH223 **Laboratory: LL**

EDD Filename: PH223_v1 **eQAPP Name: CDM_SSFL_140617_Lan**

Method: **8260B**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
SVL-574-SA6-SB-3.8-4.3	ACETONE	J	11	20	PQL	ug/Kg	J (all detects)

Data Validation Report
Santa Susana Field Laboratory

Go Backs, Subgroup SVL

SDG: PH226

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July 30, 2014