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Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client:	Ogden 5510 Morehouse Drive San Diego, CA 92121	Date Sampled: Date Received: Job Number:	09/28/00 10/02/00 17132
Project:	Rocketdyne		

CASE NARRATIVE

The following information applies to samples which were received on 10/02/00 :

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 2419

DL . Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND · Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for

290 TENNESSEE STREET • REDLANDS, CA 92373 • (909) 798-9336 • FAX (909) 793-1559 • (800) 798-9336

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

* CORRECTED COPY *

Chain of Custody

17132

Control Number: COC RZ Ø57
Date 9/28/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed Ex
Comment:	

Cooler No: 333
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

SWMU
FIII AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RZØ57	SR BS2 (5Ø1)	0.5	9/28/00	1040	39		X		

Analysis	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Hg	moisture content	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RZØ57															X	X	HA			1

J.B. 9/28/00

	Date	Time
Samplers Signature: [signature]	9/28	11:00
Relinquished By: [signature]	9/29	14:00
Received By:		
Relinquished By:		
Received By (LAB): [signature]	10/2/00	2:05p

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number: 17132

Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N (Y circled)
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

*HOMOGENIZE BEFORE ANALYSIS.
PER DIXIE

unchilled, intact

F3

REV: 1

RJ786

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

DEC 6 2000

December 5, 2000

Ms. Dixie Hambrick
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ786. The 1 soil sample was taken from the field on November 2, 2000 and received at Ceimic Corporation on November 29, 2000.

These samples are reported under Ceimic Project Number 200838, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D.
Laboratory Manager

NP/saw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ786. Under this SDG there is 1 PCB analysis for 1 soil sample, which was received at Ceimic Corporation on November 29, 2000.

This data package includes the analyses for the following samples from SDG No. RJ786, all of which are billable:

(1)	Client ID	Ceimic ID	Analyses
	RJ786	200838-01	PCB

Sample Receipt

The submitted data covers the analysis of the PCB fraction and its associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

B. PCB

AD8: HP5890II using 30 m x 0.53 mm ID, DB-608 megabore column GC-7.

AD9: HP5890II using 30 m x 0.53 mm ID, DB-1701 megabore column GC-7.

(3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

B. PCB Fraction (Method 8082)

No nocompliances are noted.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

December 5, 2000

Date

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Ms. Karen Williamsen/Ceimic Corporation Fax No.: (401) 782-8905
From:	Jose L. Toledo *sign:* Jose L Toledo
Date:	11/29/00 There are 2 Pages to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ784	RJ786	SRBS21S01	11/02/00	TPH	**Change Ogden ID to SRBS23S01, Add 8082 (1 wk TAT). TPH.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change X
Other: Containers mislabeled __ ______

Thank you.

Chain-of-Custody

SAN DIEGO, CA 92121

200838 (4)

Chain of Custody

was 200794-15

Control Number: COC

Date 11 / 14 / 00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rockeldyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: FED-EX
Comment:

Cooler No: 3
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

Preservatives: 8260M VOC: HCL, pH<2, 4°C; 8015OG TPH: HCL, pH<2, 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4, pH<2, 4°C; 8330 ORDINANCE: 4°C; ILM02.IRT METALSHT: HNO3, pH<2, 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8081 PCBs: 4°C; IC HYDRAZ: 4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	ILM02.IRT METALSHT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ784	HVTS08S01	3'	11/2	0700	108		X						X	X		∅	X				X			X					1
RJ785	HVTS08D01	3'		0710	106								X	X		∅	X				X			X					1
RJ786	SRBS33S01	1'		1400	40						X											X							1
~~RJ787~~	~~SRBS32S01~~	1'		1640	40																							X	1
RJ788	SRTS02S01	4'		1510	41						X	X	X				X				X								
RJ789	SRTS02D01	4'		1515	41							X																	
RJ790	SRTS02S02	4'		1535	41							X																	
RJ791	SRTS02D02	4'		1440	41							X	X				X				X								
RJ792	CLBS63S01	1'	11/3/00	1230	90						X	X	X									X							
RJ793	AFBS16S01	0.5	"	1425	37		X							X														X	1
LAST ENTRY																													

SLCMU A1A0C

01A1

47CMU APTF

	Date	Time
Samplers Signature:	11/3/00	1500
Relinquished By:	11/14/00	0830
Received By:		
Relinquished By:		
Received By (LAB):		

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES
TWO WEEK TAT on RJ786 per DAH (11/15/00) -

8082 Added on 11/25/00 per DAH. (10K TAT).

REV. 1

RJ772

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

November 28, 2000

Mr Jose Toledo
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

NOV 29

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ772. The 22 soil samples were taken from the field on November 1, 2 and 3, 2000 and received at Ceimic Corporation on November 6, 2000.

These samples are reported under Ceimic Project Number 200794, which can be referenced when inquiring about this project.

Please note that this data package does not include Asbestos and Dioxin results. These analyses were performed at a subcontract laboratory, and the results will follow under a separate cover.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D.
Laboratory Manager

NP/djj

Enclosures

INDEX

Page #

PROJECT NARRATIVE

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ772. Under this SDG there are 15 TPH, 18 SIM and 11 PCB analyses for 22 soil samples which were received at Ceimic Corporation on November 6, 2000.

This data package includes the analyses for the following samples from SDG No. RJ772, all of which are billable:

(1)

Client ID	Ceimic ID	Analyses
RJ772	200794-01	TPH, PCB, SIM
RJ773	200794-02	TPH, PCB, SIM
RJ773 ms/msd	200794-02 ms/msd	TPH, PCB
RJ774	200794-03	TPH, PCB, SIM
RJ774 ms/msd	200794-03 ms/msd	SIM
RJ775	200794-04	TPH, PCB, SIM
RJ776	200794-05	TPH, PCB, SIM
RJ777	200794-06	PCB, SIM
RJ778	200794-07	SIM
RJ779	200794-08	SIM
RJ780	200794-09	SIM
RJ781	200794-10	TPH, PCB, SIM
RJ782	200794-11	TPH, PCB, SIM
RJ783	200794-12	SIM
RJ786	200794-15	TPH
RJ788	00794-16	TPH, SIM
RJ789	200794-17	TPH, SIM
RJ790	200794-18	TPH, SIM
RJ791	200794-19	TPH, SIM
RJ792	200794-20	TPH, PCB

Sample Receipt

The submitted data covers the analysis of the Volatiles (VOA), SIM, PCB and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. SIM

MS13: HP5970B GC/MS, 30 m, 25 mm ID, ZB-5 fused silica capillary column

GC Analysis

B. PCB

AD8: HP5890II using 30 m x 0.53 mm ID, DB-608 megabore column GC-7.

AD9: HP5890II using 30 m x 0.53 mm ID, DB-1701 megabore column GC-7.

C. TPH

AD24_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-9.

(3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

A. SIM Fraction (Method 8270)

The following samples had a matrix effect which interfered with the internal standard Chrysene-d12, so the compounds associated with this internal standard were quantitated with phenanthrene-d10.

The following samples were analyzed at a dilution:

Client ID:	Ceimic ID:	Dilution:
RJ773	200794-02	1:5
RJ775	200794-04	1:5
RJ789	200794-17	1:5
RJ790	200794-18	1:100

The following samples were reanalyzed at a dilution:

Client ID:	Ceimic ID:	Dilution:
RJ783	200794-12	1:5
RJ788	200794-16	1:00
RJ790	200794-18	1:100
RJ791	200794-19	1:100

Sample RJ775 (200794-04) was taken off hold on 11/16/00 and extracted on that date, but it was out of hold by that time.

B. PCB Fraction (Method 8082)

The AR1254 concentration found in RJ773 MS (1000 ppb) is very different from the results of RJ773 and RJ773 MSD (64 ppb). This indicates that even though the sample material was thoroughly homogenized before the three aliquots were taken, the sample is inhomogeneous. The average AR1254 concentration in the sample jar could be higher than reported.

C. TPH Fraction (Method 8015G)

Diesel Range Recovery in RJ773 MS is low (9 %) and Lubricant Oil Range recoveries are high in RJ773 MS (559 %) and RJ773 MSD (382 %), most likely due to slight inhomogeneity in the sample material. The spike concentrations are low compared to the concentration of TPH in the sample.

Surrogate p-Terphenyl is coeluted with TPH in sample RJ788 (324 %), RJ789 (307 %), RJ790 (372 %) and RJ791 (256 %).
The blank and LCS FBLK03/FLCS03 associated with sample RJ775 were contaminated. Therefore, the sample was re-extracted. The re-extract was analyzed 2 days out of hold time. The original data as well as the data of the re-extract are included in the data package.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

November 29, 2000

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200794
SDG No.: RJ772

The following samples were received at Ceimic Corporation on November 6, 2000:

RJ772	RJ773	RJ774 (MS/MSD)
RJ775	RJ776	RJ777
RJ778	RJ779	RJ780
RJ781	RJ782	RJ784
RJ785	RJ788	RJ789
RJ790	RJ791	

The above samples were digested and analyzed for total metals using SW846 methods 3050A/7471A/6010B in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV and CCV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 243) was used for the mercury LCSS sample and metals LCSS samples.

Observations:

Total metals were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Elevated levels of iron and other spectral interferants caused analytical signal suppression for the elements cadmium and selenium. The affected samples were re-analyzed and reported from diluted runs.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier — November 28, 2000

Neil Pothier
Laboratory Manager

Date

CHAIN OF CUSTODY

Chain of Custody

COC
Date 11/1/00 Page 1 of 1

Project Manager:	Dale Hambner
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method	FED EX
Comment:	

Cooler No: 3
QC Level: Level I
TAT: 14-day hardcopy summary, 28-day full package

SWMU 7.4

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC (HCL, pH<2, 4°C)	8015DO TPH (HCL, pH<2, 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H_2SO_4, pH<2, 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO_3, pH<2, 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	Asbestos	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ772	OCTS23S01	5.0	11/1/00	1115	60		X				X	X		X			X				X	X		X				3
RJ773	OCTS23D01	5.0		1120	60						X			X								X						3
RJ774	OCTS24S01	5.0		1130	61						X			X								X		X				3
RJ775	OCTS24D01	5.0		1140	61						X			X								X					X	3
RJ776	OCTS23S02	6.5		1245	60						X			X								X						1
RJ777	OCTS35S01	2'		1255	63									X								X		X				1
RJ778	OCTS38S01	0.5		1250	65									X								X		X				1
RJ779	OCTS39S01	1.0		1255	64									X										X				1
RJ780	OCTS37S01	1.0		1320	62									X										X				1
RJ781	OCTS24S02	6.5		1330	61		X				X	X		X			X				X	X						21

	Date	Time
Sampler's Signature: [signature]	11/1/00	1245
Relinquished By: [signature]	11/1/00	1345
Received By: [signature]	11/1/00	1345
Relinquished By: [signature]	11/4/00	1830
Received By (LAB):		

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLE CONTAINERS PER SAMPLE ID.
Please add Asbestos to RJ772, RJ774, RJ777, RJ778, RJ779, RJ780 per DAH (11/10/00).
RJ775 off Hold per DAH (11/14/00)

REV 1

60

SAN DIEGO, CA 92121

Chain of Custody

Control number: COC

Date 11/14/00 Page 1 of 1

Project Manager: Dixie Hambrick	Bill To: Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project name: Rocketdyne	Company: Ogden Environmental	Shipment Method: FED-EX	
Project number: 313150002	Address: 5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract			

Cooler No. 3

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

SLICKU
A1AOC
↓
A1USRE
↓
4.7 CRITE
APTF

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC (HCL, pH<2, 4°C)	8015OG TPH (HCL, pH<2, 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H_2SO_4, pH<2, 4°C)	8330 ORDINANCE (4°C)	1LIM02 IRT METALSRT (HNO3, pH<2, 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8081 PCBs (4°C)	IC HYDRAZ (4°C)	PERCLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ784	HVTS09S01	3'	11/2	0700	06		X						X	X		8	X				X			X					1
RJ785	HVTS08D01	3'	〃	0710	06								X	X		8	X				X			X					1
RJ786	SRBS21S01	1'		1600	40						X																		1
~~RJ787~~	~~SRBS22S01~~	~~1'~~		~~1640~~	~~40~~																							X	1
RJ788	SRTS02S01	7'X		1510	41						X	X	X				X				X								1
RJ789	SRTS02D01	7'X		1515	41							X																	1
RJ790	SRTS02S02	4'		1535	41							X																	1
RJ791	SRTS02D02	4'		1440	41							X	X				X				X								1
RJ792	CLBS63S01	1'	11/3/00	1230	90						X	X	X									X							1
RJ793	AFBS16S01	0.5'	〃	1425	37		X							X														X	1
	LAST ENTRY																												

	Date	Time
Samplers Signature: [signature]	11/3/00	1500
Relinquished By: [signature]	11/14/00	0830
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken containers: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES
TWO WEEK TAT ON RJ 786 for DAN
(11/15/00).

1 Original 2 Lab Copy 3 Field Copy

REV 1

NOV. 15. 2000 3:13PM OGDEN SAN DIEGO NO. 5171 P. 2

10

Chain of Custody

COC

Date 10/27/00 Page 1 of

Project Manager	Diane Hambrick
Project Name	Rocketdyne
Project Number	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method	
Comment	

Cooler No		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

SWMU 4 IAOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC (HCL, pH<2 4°C)	8015OC TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8280 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H_2SO_4, pH<2 4°C)	8330 ORDNANCE (4°C)	1LM02.1RT METAL&RT (HNO_3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ760	HV8SG9502	1	10/27		4		X																		X				X	1
RJ761	HV8SG9503	0.5	↓		9		X																		↓				X	1
RJ762	HV8SG9504	1	↓		8		X																		↓				X	1
RJ763	HV5WZ3SO1	–	↓	1430	15			X	40																↓					1
RJ764	HV5WZUSO1	–	↓	1510	9			X	40																↓					1

LAST ENTRY

	Date	Time
Samplers Signature		
Relinquished By:		
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken containers: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___ / ___ / ___
Temperature °C

HOMOGENIZE ALL SAMPLES
2 WEEK TURN ON RJ763, AND RJ764
Change Ogden ID on RJ763 from HV5WZ0SO1 to HV5WZ3SO1. per OH/H 11/10/00.

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

OGDEN

SAN DIEGO CA 92121
(619) 458-9044

Chain of Custody

Control Number COC RJ784
Date 11/14/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company	Ogden Environmental
Address	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: FED-EX
Comment:

Cooler No 3
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

SWMU
A1AOC
A1V SRF
4.7
APTF

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ784	HVTS08S01	3'	11/2	0700	106		X		
RJ785	HVTS08D01	3'	"	0710	106				
RJ786	SRBS21S01	1'		1600	40				
~~RJ787~~	~~SRBS22S01~~	1'		1640	40				
RJ788	SRTS02S01	4'		1510	41				
RJ789	SRTS02D01	4'		1515	41				
RJ790	SRTS02S02	4'		1535	41				
RJ791	SRTS02D02	4'		1440	41				
RJ792	CLBS63S01	1'	11/3/00	1230	90				
RJ793	AFBS16S01	0.5	"	1425	37		X		
LAST ENTRY									

Analyses

Sample ID	8260M VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D18 FORMALDEHYDE (H_2SO_4, pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.IRT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8081 PCBs (4°C)	IC HYDRAZ (4°C)	PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ784				X	X			X				X			X					1
RJ785				X	X			X				X			X					1
RJ786		X																		1
~~RJ787~~																			X	1
RJ788		X	X	X				X				X								1
RJ789			X																	1
RJ790			X																	1
RJ791			X	X				X				X								1
RJ792		X	X										X							1
RJ793					X														X	1

	Date	Time
Samplers Signature: [signature]	11/3/00	1800
Relinquished By: [signature]	11/4/00	0830
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

HOMOGENIZE ALL SAMPLES.

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

15

SAN DIEGO, CA 92121

Chain of Custody

Custody Number: COC 2.34

Date 11/01/00 Page 1 of 1

Project Manager	Dixie Hambrick
Project Name	Rocketdyne
Project Number	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions	Laboratory Disposal
Shipment Method	FEDEX
Comment	

Cooler No 3

QC Level. Level I

TAT: 14-day hardcopy summary; 28-day full package

Preservatives: HCL, pH<2 4°C (8260M VOC); HCL, pH<2 4°C (8015OC TPH); 4°C (8270SIM SVOC); 4°C (8270R EVOC); 4°C (8290 DIOXIN); H2SO4, pH<2 4°C (ASTM D19 FORMALDEHYDE); 4°C (8330 ORDINANCE); HNO3, pH<2 4°C (1LM02.IRT METALSRT); 4°C (7196 HEX CHROME); 4°C (340.2 FLUORIDE); 4°C (300 ANIONS); 4°C (9045/9040 pH); 4°C (8081 PCBs); 4°C (IC HYDRAZ)

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OC TPH	8270SIM SVOC	8270R EVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ782	0LBS26501	1.5	11/2/00	1700	70		X				X	X		X			X				X								1
RJ783	0LBS27501	0.5	"	1730	71		X					X		X															1

LAST ENTRY

Shelby 74

	Date	Time
Samplers Signature:	11/2/00	1400
Relinquished By:	11/2/00	1600
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

HOMOGENIZE ALL SAMPLES
Add Asbestos to RJ782 per DAH (11/10/00). Add SOP? to RJ782 per DAH (11/10/00)

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

Bill To: Purchasing

Company: Ogden Environmental

Address: 5510 Morehouse Drive, San Diego, CA 92121

...address above or as stated in contract

Cooler No: 3

QC Level: Level 4

TAT: 14-day hardcopy summary 28-day full package

SWMU 74

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OC TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALS RT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Asbestos		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ772	OCTS23S01	5.0	11/1/00	1115	60		X				X	X		X			X				X	X		X					3
RJ773	OCTS23D01	5.0		1120	6.0						X			X								X							3
RJ774	OCTS24S01	5.0		1130	61						X			X								X		X					3
RJ775	OCTS24D01	5.0		1140	61						X			X								X						X	3
RJ776	OCTS23S02	6.5		1245	60						X			X								X							1
RJ777	OCTS35S01	2'		1255	63									X								X		X					1
RJ778	OCTS38S01	0.5		1250	65									X										X					1
RJ779	OCTS39S01	1.0		1255	61	LD				[illegible]				X								[illegible]		X					1
RJ780	OCTS37S01	1.0		1320	62									X										X					1
RJ781	OCTS24S02	6.5		1330	61		X				X	X		X			X				X	X							[illegible]

	Date	Time
Sampler Signature: [signature]	11/1/00	1245
Relinquished By: [signature]	11/1/00	1345
Received By: [signature]	11/1/00	1345
Relinquished By: [signature]	11/4/00	1830
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

HOMOGENIZE ALL SAMPLE CONTAINERS PER SAMPLE ID.

Please add Asbestos to RJ772, RJ774, RJ777, RJ778, RJ779, RJ780 per DM (11/10/00).

RJ775 off Hold per DM (11/14/00)

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

NOV. 13. 2000 2:10PM OGDEN SAN DIEGO 8185484 NO. 5065 P. 4/6

(619) 458-9044

Chain of Custody

COC

Date 10/26/02 Page 1 of

Project Manager	Dixie Hambrick
Project Name:	Rocketdyne
Project Number	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method:

Comment

Cooler No:

QC Level: Level 4

TAT: 14-day hardcopy summary; 28-day full package

Preservatives: 8021 VOC: HCL, pH<2, 4°C; 8015OD TPH: HCL, pH<2, 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4, pH<2, 4°C; 8330 ORDINANCE: 4°C; 1LM02JRT METALSRT: HNO3, pH<2, 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8082 PCBs: 4°C; IC HYDRAZ: 4°C

SWMU 4.12

~~SWMU~~ ~~4 AOC~~

#1 AOC

Sample Data / Matrix / Analyses

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OD TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02JRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	M+	PERCHLORATE	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ748	LFBS38S01	1'	10/26	1540	65		X				X			X							X			X					3
RJ749	LFBS39S01	1'		1630	66						X			X							X			X				X	2
RJ752	LFBS40S01	1'		1655	67									X															2
RJ751	LFBS41S01	0.5		1710	69									X															2
RJ752	LFBS41S02	5'	10/27	1115	64																							X	1
RJ753	LFBS41S03	4.5'		1130	68																							X	1
RJ754	LFBS42S0[illegible]	0.5		1215	69															X	X			X					1
RJ755	~~LFBS~~ HVBS68S01	0.5		1334	105																				X		X	X	1
RJ756	HVBS68S02	3.0		1340	105																				X		X	X	1
RJ757	HVBS68S03	5'		1350	105																				X		X	X	1
RJ758	HVBS68S04	6.5'		1355	105																				X		X	X	1
~~RJ759~~	~~HVBS68S05~~	1'		1430	9																				X			X	1

	Date	Time
Samplers Signature		
Relinquished By		
Received By.		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C

HOMOGENIZE ALL SAMPLES

COMPOSITE RJ748, 749, 752, 4751

Change Ogden ID from RJ754 from LFBS42S04 to LFBS42S01 per DAH (11/10/00).

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

NOV. 13. 2000 2:09PM OGDEN SAN DIEGO NO. 5065 P. 3/6

12

2007.94 (4)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ782

Date 11/01/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED-EX
Comment:	

Cooler No: 3

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	
RJ782	OCBS26501	05	11/2/00	1700	70	11	X			
RJ783	OCBS27501	05	11/2/00	1730	71	12	X			

LAST ENTRY

Analyses

Analysis	Preservatives	RJ782	RJ783
8260M VOC	HCL, pH<2 4°C		
8015OG TPH	HCL, pH<2 4°C	X	
8270SIM SVOC	4°C	X	X
8270R SVOC	4°C		
8290 DIOXIN	4°C	X	X
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C		
8330 ORDINANCE	4°C		
1LM02.IRT METALSRT	HNO3, pH<2 4°C	X	
7196 HEX CHROME	4°C		
340.2 FLUORIDE	4°C		
300 ANIONS	4°C		
9045/9040 pH	4°C	X	
8081 PCBs	4°C		
IC HYDRAZ	4°C		
Sampling Method			
Extra Volume MS/MSD			
HOLD			
Total # of Bottles		1	1

		Date	Time
Samplers Signature	[signature]	11/2/00	1700
Relinquished By:	[signature]	11/4/00	0830
Received By:			
Relinquished By:			
Received By (LAB):	Robert Davis	11/6/00	10:00

For Lab Use

Lab Number:

HOMOGENIZE ALL SAMPLES

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 4

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

200494 (4)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ784
Date 11/14/00 Page 1 of 1

Project Manager: Dixie Hambrick	Bill To: Purchasing	Sample Disposal Instructions: Laboratory Disposal
Project Name: Rocketdyne	Company: Ogden Environmental	Shipment Method: FED-EX
Project Number: 313150002	Address: 5510 Morehouse Drive, San Diego, CA 92121	Comment:
Deliver results to the address above or as stated in contract		

Cooler No: 3
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

SWMU IAOC
EIVGRE
F7CTL
APTF

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ784	HVTS08S01	3'	11/2	0700	105	13	X							X	X			X				X								1
RJ785	HVTS08D01	3'	11/2	0710	105	14								X	X			X				X								1
RJ786	SRBS21S01	1'		1600	40	15						X																		1
~~RJ787~~	~~SRBS22S01~~	~~1'~~		~~1640~~	~~40~~	~~22~~						X																	X	1
RJ788	SRTS02S01	4'		1510	41	16						X		X				X				X								1
RJ789	SRTS02D01	4'		1515	41	17																								1
RJ790	SRTS02S02	4'		1535	41	18																								1
RJ791	SRTS02D02	4'		1440	41	19						X		X				X				X								1
RJ792	CLBS63S01	1'	11/3/00	1230	90	20						X											X							1
RJ793	AFBS16S01	0.5	"	1425	37	21	X								X														X	1
				LAST	ENTRY																									

	Date	Time
Samplers Signature: [signature]	11/3/00	1700
Relinquished By: [signature]	11/4/00	0830
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB): Robert Dane	11/6/00	10:00

For Lab Use

Lab Number:

HOMOGENIZE ALL SAMPLES

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 4

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 200794 — Cooler Number: 1

Client: ogden — Number of Coolers: 1

Project: rocketdyne — Date Received: 11/6/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 11/6/00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 11/6/00
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: Fx 823967509373
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: 2, front, side seal date: 11/4/00 seal name: QEC
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ______ YES NO
6. Chain of Custody #: # RJ772, RJ782, RJ784
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 4 °C Type of ice: cubes YES NO

B. LOG-IN PHASE: Date samples were logged-in: 11/6/00

by (print): RD (sign): RD

12. Describe type of packing in cooler: ______
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO
21. Laboratory labelling verified by: (Initials): RD (date): 11/6/00

QAT0261

Telephone Log

Client: Ogden

Telephone:

Contact: Sharon

Project: Rocketdyne

Date & Time: 11/7/00 12:30 P.M.

Ceimic's Contact: Karen W.

Summary:

Sharon called to say that RJ784 and RJ785 are to be analyzed for Metals, pH and perchlorate only. Also, COC incorrectly has checked 8270R for some samples - should be SIM for all.

CEIMIC

Corporation

"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: Robert Davis Date: 11/6/10

Client(s): ogden

Samples Affected: RJ787 (200794-22)

(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

RJ 787 crossed out on C.O.C. but sample arrived: Sample was assigned #22

Required Action:

(to be completed by the client or internal coordinator)

Faxed to Lisa Tucker and Elizabeth Wessling.

Name: Karen W Date: 11/7/00

Additional Comments:

(lab use only)

Name: ______________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax (619) 458-0943

FACSIMILE

To. Ms. Karen Williamson/Ceimic Corporation
Fax No.. (401) 782-8905

From: Jose L. Toledo sign Jo L Toledo

Date: 11/13/00 There are 6 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ760	RJ763	HVSW20S01	10/27/00	Perchlorate	**Change Ogden ID to HVSW23S01.**
RJ748	RJ754	LFBS42S01	10/27/00	Anions, pH , Metals.	**Change Ogden ID to LFBS42S01.**
RJ772	RJ772	OCTS23S01	11/01/00	TPH. 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290. Metals, pH,8082, **Asbestos**.
RJ772	RJ774	OCT S24S01	11/01/00	TPH, 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH, 8082, **Asbestos**
RJ772	RJ777	OCTS35S01	11/01/00	8270CSIM, 8290, Metals, pH,8082.	8270CSIM, 8290, Metals, pH, 8082, **Asbestos**.
RJ772	RJ778	OCTS38S01	11/01/00	8270CSIM. 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos**.
RJ772	RJ779	OCTS39S01	11/01/00	8270CSIM, 8290, Metals, pH	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ780	OCTS37S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ782	RJ782	OCBS26S01	11/02/00	TPH, 8270CSIM, 8290, Metals, pH.	TPH, 8270CSIM, 8290, Metals, pH, **8082, Asbestos**.
RJ792	RJ792	HSBS02S01	11/06/00	8021, TPH, Metals, pH, 8082.	**Change EPA ID to RJ817.**
RJ792	RJ793	HSBS02D01	11/06/00	8021, TPH, Metals, pH. 8082.	**Change EPA ID to RJ818.**

*Please Run for Requested Analyses Only

The reason for these changes is:

Incorrectly marked on COC form ______

Lack of sample volume ______

Ogden office personnel require this change X

Other Containers mislabeled ______

Thank you.

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax (619) 458 0943

FACSIMILE

To	Ms. Karen Williamson/Ceimic Corporation Fax No. (401) 782-8905
From:	Jose L. Toledo sign. Jose L. Toledo
Date:	11/15/00 There are 2 Pages to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ784	RJ786	SRBS21S01	11/02/00	TPH	**TPH (2 Week TAT)**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form	______
Lack of sample volume	______
Ogden office personnel require this change	*X*
Other: Containers mislabeled	______

Thank you.

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax. (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign:* Jose L. Toledo

Date: 07/13/00 There are 3 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

200794

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ772	RJ775	OCTS24D01	11/01/00	.On Hold	**TPH, 8270CSIM, 8290, METALSRT, pH, 8082**
RJ579	RJ583	BUTS03S01	09/01/00	METALSRT, pH, Asbestos.	**Reanalyze METALS RT extract for Ag only. Re-extract and analyze a new aliquot for Ag.**
RJ579	RJ584	BUTS03D01	09/01/00	METALSRT, pH, Asbestos.	**Reanalyze METALS RT extract for Ag only. Re-extract and analyze a new aliquot for Ag.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled _____

Thank you.

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

December 8, 2000

Mr. Jose Toledo
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the missing pH results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ772. The 22 soil samples were taken from the field on November 1, 2 and 3, 2000 and received at Ceimic Corporation on November 6, 2000.

These samples are reported under Ceimic Project Number 200794, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Manager

NP/djj

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Ceimic Corporation
Classical Chemistry Laboratory
Inorganic pH Logbook

Date / Time	Ceimic ID	Client ID	Matrix	Slope	Sample pH	Analyst	Review By
11/28/00 / 14:35	200826-18	RJ 833	S	98.1	7.08	ed	12/4/00 KBF
/	-19	RJ 834			6.82		
/	-20	RJ 835			6.90		
~~/~~	~~pH 8.00~~	~~IP000608D~~	~~A~~	~~98.1~~		~~ed~~	
11/28/00 / 15:00	200761-04	CAT #55	A	98.1	9.60	ed	
/	-04 Dup		A		9.60	ed	
/	pH 8.00	IP000608 D	A		8.00	ed	
11/28/00 / 16:05	pH 4.00	IP000608 A	A	98.1	4.00	ed	
/	7.00	B	A		7.00		
/	10.00	C	A		10.01		
/	200832-13	D03636	oil	98.1	3.70		
/	-14	D03637	oil	98.1	~~5.00~~ 6.19 11/28/00 ed		
/	pH 8.00 ~~-15~~	IP000608 A ~~DO~~ 11/28/00	A	98.1	8.00		
11/29/00 / 15:10	pH 4.00	I P000608 A	A	98.2	4.01	ed	
/	7.00	IP000608 B			7.00		
/	10.00	IP00608 C			10.01		
/	200832-13		oil		4.56		
/	-14				6.80		
/	-15				4.24		
/	-16				4.31		
/	-17	~~Diluted 1:1~~ 11/29/00 ed			12.94		
/	-18	Diluted 1:1 (because too low)			0.41 for 1:1		
/	-19				9.19		
/	pH 8.00	IP000608 D	A	98%	8.05		
12/04/00 / 10:10	pH 4.00	IP000608 A	A	98%	4.04	ed	
/	pH 7.00	B			7.04		
/	pH 10.00	C			10.04		
/	200794-04		S		7.63		
/	pH 8.00	IP000608 D	A		8.04		

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
~~11/02/00 12:00~~		200770-05										—
		-06		HG 11/02/00								—
11/06/00 11:00	11/07/00 8:30	200780-02	RJ654	0.98	7.93	6.95	7.68		6.70	96.4	HG/HG	KBF 11/08/00
		200782-01	RJ748	0.98	8.67	7.69	8.47		7.49	97.4		
		-07	RJ754	0.98	9.02	8.04	8.02		7.04	87.6		
		-16	RJ767	0.98	8.15	7.17	7.50		6.52	90.9		
		-18	RJ769	0.98	8.48	7.50	8.00		7.02	93.6		
11/08/00 11:00	11/09/00 8:30	200794-01	RJ772	0.98	8.41	7.43	8.16		7.18	96.6	HG	
		-02	RJ773	0.98	7.60	6.62	7.33		6.35	95.9		
		-03	RJ774 ~~[illegible]~~ HG 11/09/00	0.98	7.94	6.96	7.75		6.77	97.3		
		-03D	-ms	0.98	8.50	7.52	8.29		7.31	97.2		
		-05	RJ776	0.98	7.41	6.43	7.00		6.02	93.6		
		-06	RJ777	0.98	7.61	6.63	~~7.~~ 7.29 HG 11/09/00		6.31	86.6		
		-07	RJ778	0.98	8.02	7.04	7.75		6.77	87.4		
		-08	RJ779	0.98	7.88	6.90	7.57		6.59	95.5		
		-09	RJ780	0.98	7.80	HG 11/09/00 ~~6.~~ 6.82	7.51		6.53	95.7		
		-10	RJ781	0.98	7.27	6.29	6.96		5.98	95.1		
		-11	RJ782	0.98	7.56	6.58	7.40		6.42	97.6		

All weights must be carried out to 2 decimal places
% solids = (net dry weight/ net wet weight)*100

Dry samples ≥12 hours at 105°C to 105°C

* Use only when proving constant weight.

QAT0042

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Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
11/15/00	11/16/00 1422	200817-02	DO3382	0.99	7.12	~~7.15~~ 6.13	5.94	—	4.95	80.8	[illegible]	KBF 11/20
		-03	DO3383	0.98	7.45	6.47 11/15/00	6.18	—	5.20	80.4		
		-04	DO3384	0.99	7.44	6.45	5.99	—	5.009	77.5		
		-05	DO3385	0.99	7.60	6.61	6.75	—	5.76	87.1		
11/16/00 1600		200794-04	RJ775	0.99	7.07	6.08	6.89	—	5.90	97.0	UM	
11/21/00 1600	11/22/00 1210	200824-01	WYC-1 ~~RJ816~~	0.99	7.69	6.70	4.02		3.03	45.2	UM	KBF 11/22
		-02	WYC-2 ~~RJ817~~	0.99	7.30	6.31	3.52		2.53	40.1		
		-03	WYC3	0.99	7.31	6.32	3.67		2.68	42.4		
		200826-13	RJ828	~~0.99~~ 1.00	7.58	6.58	7.05		6.05	91.9		
		-14	RJ829	0.99	7.58	6.59	7.03		6.04	91.7		
		-15	RJ830	0.99	7.17	6.18	6.46		5.47	88.5		
		-16	RJ831	0.99	8.01	7.02	7.40		6.41	91.3		
		-17	RJ832	0.99	7.18	6.19	6.66		5.67	91.6		
		-18	RJ833	0.99	8.09	7.10	7.49		6.50	91.5		
		-19	RJ834	0.99	7.57	6.58	7.19		6.20	94.2		
		-20	RJ835	~~0.99~~ 1.00	7.76	6.76	7.39		6.39	88.9		
11/21/00 1045	11/22/00	200769-06	RJ745	0.973	8.52	7.55	8.24	8.2 ~~4~~	7.26	96.2	KBF	UM
11/27/00		200826-19	RJ834	0.98	5.91						TS	

All weights must be carried out to 2 decimal places
% solids = (net dry weight/ net wet weight)*100

Dry samples ≥ 12 hours at 103°C to 105°C

* Use only when proving constant weight.

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Ceimic Corporation

Classical Chemistry Laboratory

% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
11/08/00 11:00	11/09/00 3:30	200794-13	RJ784	0.98	7.70	6.72	6.93		5.95	88.5	HG	KBK 11/10
		-14	RJ785	0.98	7.59	6.61	6.77		5.79	87.6		
		-16	RJ788	0.98	7.94	6.96	7.65		6.67	95.8		
		-17	RJ789	0.98	7.72	6.74	7.41		6.43	95.4		
		-18	RJ790	0.98	7.54	6.56	6.90		5.92	90.2		
		-19	RJ791	0.98	8.29	7.31	7.53		6.55	89.6		
11/8/00 11:40	11/09/00	200793-01	Nike Rolloff	75.56	130.9	7.31 11/8/00 55.34	122.36 ~~118.00~~	—	46.8	84.6	es	
		-01 Dup	-ms	74.26	125.4	51.14	118.00	—	43.74	85.5	es	
11/8/00 13:30	11/09/00	200782-07	RJ754	0.98	7.210	6.230	6.417	—	5.437	87.3	es	
		15	RJ766	0.98	7.829	6.849	7.655	—	6.675	97.5		
		16	RJ767	0.98	6.173	5.193	5.706	—	4.726	91.0		
		17	RJ768	0.98	9.687	8.707	9.089	—	8.109	93.1		
11/15/00 1024	11/16/00 1422	200803-01	RJ817 ~~RJ792~~ 11/15/00	0.99	8.09	7.10	7.524	—	6.53	91.9	es	KBF 11/20
		-02	RJ818 ~~RJ793~~ 11/15/00	0.99	7.31	6.32	6.255	—	5.27	83.4		
		-03	RJ795	0.99	8.03	7.04	6.768	—	5.80	82.4		
		-03 Dup	RJ795 Dup	0.98	8.14	7.16	7.029	—	6.05	84.5		
		200817-01	DO3381	0.99	7.10	6.11	5.60	—	4.61	75.5		
		-01 Dup	DO3381 Dup	0.99	7.08	6.09	5.51	—	4.52	74.2		

All weights must be carried out to 2 decimal places

% solids = (net dry weight/ net wet weight)*100

Dry samples ≥12 hours at 103°C to 105°C

* Use only when proving constant weight.

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QAT: 0042

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

December 14, 2000
Fax: 303-935-6575

Ms. Elizabeth Wessling
Odgen Environmental, Inc.
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Dear Ms. Wessling:

Ceimic has been working very hard in support of your Rocketdyne project and we look forward to continuing our efforts and success in meeting your project needs.

As you know, Ceimic has received several phone requests from Ogden over the past few months to place an abundance of Ogden samples on hold, until further notice by your project management team. Before we received these requests, these samples were received, logged in, and approved by our project managers at a significant cost to Ceimic without any reimbursement. Only a small fraction of these "on hold" samples were later analyzed at Ogden's request.

Ceimic will continue to store these samples in our refrigerators until the last day of the year, December 31, 2000. After this day, all samples remaining on hold will be properly disposed of by Ceimic. If you would like to procure "on hold" sample storage at our facility after this point in time, we would be happy to discuss this with you and devise a plan that would be mutually beneficial.

I have enclosed copies of all Ceimic logins that contain Rocketdyne samples currently on hold. If you have any questions or would like to discuss this matter further, please feel free to call me. We appreciate your business and look forward to continuing our work with you on this important project.

Sincerely,

John F. McGarry, Jr.
President

RUSH

CHANGES MADE ON ANALYSES REQUESTED; 8082 ADDED TO RJ782

CEIMIC Corporation
Sample Log In Information

Date: 11/14/00 -09:43:56

Date Samples Received: 11/06/00 **Stored :** 4

Date Due: 11/20/00 **Ceimic Rep:** HOUSE

Client: Ogden Environmental **Coordinator:** NEIL

Project Name: Rocketdyne **Report To :** Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Client Task: 313150002

Client Contact: Dixie Hambrick **Attn :** Dixie Hambrick

Project #: 200794
SDG: RJ772
Case: 313150

Invoice To: Ogden Environmental
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Project Amount: $19,155.00 **Attn :** Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ772	3	SOIL	11/06/00	11/01/00	11:15:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-02A	RJ773	3	SOIL	11/06/00	11/01/00	11:20:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-02B	RJ773ms		SOIL	11/06/00	11/01/00	11:20:00	TPH(8015OG) PCB(8082)
-02C	RJ773msd/dup		SOIL	11/06/00	11/01/00	11:20:00	TPH(8015OG) PCB(8082) pH(9045)
-03A	RJ774	3	SOIL	11/06/00	11/01/00	11:30:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B)

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-03A	RJ774	3	SOIL	11/06/00	11/01/00	11:30:00	SIM(8270) TAL Metals(6010B), TRACE
-03B	RJ774ms		SOIL	11/06/00	11/01/00	11:30:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-03C	RJ774msd		SOIL	11/06/00	11/01/00	11:30:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-04A	RJ775	3	SOIL	11/06/00	11/01/00	11:40:00	Sample on hold
-05A	RJ776	1	SOIL	11/06/00	11/01/00	12:45:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-06A	RJ777	1	SOIL	11/06/00	11/01/00	12:55:00	PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-07A	RJ778	1	SOIL	11/06/00	11/01/00	12:50:00	Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-08A	RJ779	1	SOIL	11/06/00	11/01/00	12:55:00	Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-09A	RJ780	1	SOIL	11/06/00	11/01/00	13:20:00	Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE

Project #: 200794

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-10A	RJ781	1	SOIL	11/06/00	11/01/00	13:30:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-11A	RJ782	1	SOIL	11/06/00	11/02/00	17:00:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-12A	RJ783	1	SOIL	11/06/00	11/02/00	17:30:00	Dioxins(8290) SIM(8270)
-13A	RJ784	1	SOIL	11/06/00	11/02/00	07:00:00	Perchlorate pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-14A	RJ785	1	SOIL	11/06/00	11/02/00	07:10:00	Perchlorate pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-15A	RJ786	1	SOIL	11/06/00	11/02/00	16:00:00	TPH(8015OG)
-16A	RJ788	1	SOIL	11/06/00	11/02/00	15:10:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-17A	RJ789	1	SOIL	11/06/00	11/02/00	15:15:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-18A	RJ790	1	SOIL	11/06/00	11/02/00	15:35:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-19A	RJ791	1	SOIL	11/06/00	11/02/00	14:40:00	TPH(8015OG) pH(9045)

Project #: 200794

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-19A	RJ791	1	SOIL	11/06/00	11/02/00	14:40:00	TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-20A	RJ792	1	SOIL	11/06/00	11/03/00	12:30:00	TPH(8015OG) PCB(8082)
-21A	RJ793	1	SOIL	11/06/00	11/03/00	14:25:00	Sample on hold
-22A	RJ787	1	SOIL	11/06/00	11/02/00	16:40:00	Sample on hold

Comments:
Homogenize all samples

Requirements:
Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's for soils

K.T.: 02/18/01

LIMS Identifier: 0011016

LIMS Project Code: OGDEN_ROCKET

Approved by: 11/14/00

UUULN

SAN DIEGO, CA 92121

Chain of Custody

COC [illegible]

Date 11/1/02 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED EY
Comment:	

Cooler No: 3

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

SWMU 7.4

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC (HCL, pH<2 4°C)	8015OC TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8280 DIOXIN (4°C)	ASTM D18 FORMALDEHYDE (H_2SO_4, pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ772	OCTS23S01	5.0	11/1/02	1115	60		X				X	X		X			X				X	X							3
RJ773	OCTS23D01	5.0		1120	60						X			X								X							3
RJ774	OCTS24S01	5.0		1130	61						X			X								X							3
RJ775	OCTS24D01	5.0		1140	61						X			X								X						X	3
RJ776	OCTS23S02	6.5		1245	60						X			X								X							1
RJ777	OCTS35S01	2.1		1255	63									X								X							1
RJ778	OCTS38S01	0.5		1250	65									X															1
RJ779	OCTS39S01	1.0		1255	64 CD									X								CD							1
RJ780	OCTS37S01	1.0		1320	62									X															1
RJ781	OCTS24S02	6.5		1330	61		X				X	X		X			X				X	X							[illegible]

	Date	Time
Samplers Signature: [signature]	11/1/02	1245
Relinquished By: [signature]	11/1/02	1345
Received By: [signature]	11/1/02	1345
Relinquished By: [signature]	11/4/02	1430
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

HOMOGENIZE ALL SAMPLE CONTAINERS PER SAMPLE ID.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

NOV. 8.2000 10:51AM NO.520 P.2/4

OGDEN

SAN DIEGO, CA 92121
(619) 458-9040

Chain of Custody

Control Number: COC EJ782

Date 11/01/00 Page 1 of 1

Project Manager: Dixie Hambrick	Bill To: Purchasing	Sample Disposal Instructions: Laboratory Disposal
Project Name: Rocketdyne	Company: Ogden Environmental	Shipment Method: FEDEX
Project Number: 313150002	Address: 5510 Morehouse Drive, San Diego, CA 92121	Comment:
Deliver results to the address above or as stated in contract		

Cooler No: 3

QC Level: Level I

TAT: 14-day hardcopy summary; 28-day full package

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ782	DCBS26S01	0.5	11/2/00	1700	70		X		
RJ783	DCBS27S01	0.5	″	1730	71		X		

LAST ENTRY

SWMU 7.4

Analyses

Analysis	Preservatives	RJ782	RJ783
8260M VOC	HCL, pH<2 4°C		
8015OC TPH	HCL, pH<2 4°C	X	
8270SIM SVOC	4°C	X	X
8270R SVOC	4°C		
8290 DIOXIN	4°C	X	X
ASTM D19 FORMALDEHYDE	H_2SO_4, pH<2 4°C		
8330 ORDINANCE	4°C		
1LMD2.IRT METALSRT	HNO3, pH<2 4°C	X	
7196 HEX CHROME	4°C		
340.2 FLUORIDE	4°C		
300 ANIONS	4°C		
9045/9040 pH	4°C	X	
8081 PCBs	4°C		
IC HYDRAZ	4°C		
Sampling Method			
Extra Volume MS/MSD			
HOLD			
Total # of Bottles		1	1

	Date	Time
Samplers Signature: [signature]	11/2/00	1800
Relinquished By: [signature]	11/2/00	1800
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

HOMOGENIZE ALL SAMPLES

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

SAN DIEGO, CA 92121

Chain of Custody

Control Number: COC

Date 11 / 14 / 00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED-EX
Comment:	

Cooler No: 3

QC Level: Level4

TAT: 14-day hardcopy summary 28-day full package

Preservatives: 8260M VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02/IRT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROMG: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8081 PCBs: 4°C; IC HYDRAZ: 4°C

Sample Data

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02/IRT METALSRT	7196 HEX CHROMG	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SLOMU A1A0C	RJ784	HVTS08S01	3'	11/2	0700	106		X						X	X		ap	X				X			X					1
	RJ785	HVTS08D01	3'		0710	106								X	X		ap	X				X			X					1
A1USRE	RJ786	SRBS21S01	1'		1600	40						X																		1
	~~RJ787~~	~~SRBS22S01~~	1'		1640	40																							X	1
	RJ788	SRTS02S01	4'		1510	41						X	X	X				X				X								1
	RJ789	SRTS02D01	4'		1515	41							X																	1
	RJ790	SRTS02S02	4'		1535	41							X																	1
	RJ791	SRTS02D02	4'		1440	41							X	X				X				X								1
A7CHM	RJ792	CLBS63S01	1'	11/2/00	1230	90						X	X										X							1
APTF	RJ793	AFBS16S01	0.5	"	1425	37		X							X														X	1

LAB ENTRY

	Date	Time
Samplers Signature:	11/3/00	1500
Relinquished By:	11/14/00	0830
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

HOMOGENIZE ALL SAMPLES.

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*:________________

Date: 11/13/00 There are 6 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ760	RJ763	HVSW20S01	10/27/00	Perchlorate	**Change Ogden ID to HVSW23S01.**
RJ748	RJ754	LFBS42S01	10/27/00	Anions, pH , Metals.	**Change Ogden ID to LFBS42S01.**
RJ772	RJ772	OCTS23S01	11/01/00	TPH, 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH,8082, **Asbestos.**
RJ772	RJ774	OCT S24S01	11/01/00	TPH, 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH, 8082, **Asbestos.**
RJ772	RJ777	OCTS35S01	11/01/00	8270CSIM, 8290, Metals, pH,8082.	8270CSIM, 8290, Metals, pH, 8082, **Asbestos.**
RJ772	RJ778	OCTS38S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ779	OCTS39S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ780	OCTS37S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ782	RJ782	OCBS26S01	11/02/00	TPH, 8270CSIM, 8290, Metals, pH.	TPH, 8270CSIM, 8290, Metals, pH, **8082, Asbestos.**
RJ792	RJ792	HSBS02S01	11/06/00	8021, TPH, Metals, pH, 8082.	**Change EPA ID to RJ817.**
RJ792	RJ793	HSBS02D01	11/06/00	8021, TPH, Metals, pH, 8082.	**Change EPA ID to RJ818.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ____________

Lack of sample volume ____________

Ogden office personnel require this change ____X____

Other: Containers mislabeled __ ____________

Thank you.

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: Robert Davis Date: 11/6/00

Client(s): ogden
Samples Affected: RJ787 (200794-22)
(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

RJ 787 crossed out on C.O.C. but sample arrived: Sample was assigned #22

Required Action:
(to be completed by the client or internal coordinator)

Name: ______________ Date: __________

Additional Comments:
(lab use only)

Name: ______________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

RJ 514

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

September 15, 2000

Ms. Dixie Hambrick
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ514. The 3 aqueous and 17 soil samples were taken from the field on July 5, 6, 7 and 12, 2000 and received at Ceimic Corporation on July 8 and 13, 2000.

These samples are reported under Ceimic Project Number 200484, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D.
Laboratory Manager

NP/djj

Enclosures

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

December 14, 2000
Fax: 303-935-6575

Ms. Elizabeth Wessling
Odgen Environmental, Inc.
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Dear Ms. Wessling:

Ceimic has been working very hard in support of your Rocketdyne project and we look forward to continuing our efforts and success in meeting your project needs.

As you know, Ceimic has received several phone requests from Ogden over the past few months to place an abundance of Ogden samples on hold, until further notice by your project management team. Before we received these requests, these samples were received, logged in, and approved by our project managers at a significant cost to Ceimic without any reimbursement. Only a small fraction of these "on hold" samples were later analyzed at Ogden's request.

Ceimic will continue to store these samples in our refrigerators until the last day of the year, December 31, 2000. After this day, all samples remaining on hold will be properly disposed of by Ceimic. If you would like to procure "on hold" sample storage at our facility after this point in time, we would be happy to discuss this with you and devise a plan that would be mutually beneficial.

I have enclosed copies of all Ceimic logins that contain Rocketdyne samples currently on hold. If you have any questions or would like to discuss this matter further, please feel free to call me. We appreciate your business and look forward to continuing our work with you on this important project.

Sincerely,

John F. McGarry, Jr.
President

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ514. Under this SDG there are 11 VOA, 9 SIMS, 4 PCB, 7 TPH and 1 Explosive analyses for 3 aqueous and 15 soil samples which were received at Ceimic Corporation on July 8 and 13, 2000.

This data package includes the analyses for the following samples from SDG No. RJ514, all of which are billable:

(1)

Client ID	Ceimic ID	Analyses				
RJ514	200484-01			PCB		
RJ516	200484-03	VOA,	SIM,		TPH	
RJ517	200484-04	VOA,	SIM,		TPH	
RJ518	200484-05	VOA				
RJ519	200484-06	VOA				
RJ520	200484-07		SIM,		TPH	
RJ521	200484-08	VOA				
RJ522	200484-09	VOA				
RJ523	200484-10		SIM,		TPH	
RJ524	200484-11		SIM			
RJ525	200484-12	VOA,		PCB,	TPH	
RJ526	200484-13	VOA,		PCB,	TPH	
RJ527	200484-14	VOA				
RJ537	200484-16		SIM			
RJ539	200484-18		SIM			
RJ542	200484-20		SIM			
RJ543	200484-21	VOA,	SIM,	PCB,	TPH,	EXPL
RJ544	200484-22	VOA				

Sample Receipt

The submitted data covers the analysis of the Volatiles (VOA), SIM, PCB, TPH and Explosives (EXPL) fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. VOA

M12: HP5973 GC/MS using 20 m x 0.18 mm ID, 1 μm film thickness DB-624 megabore column (Hewlett-Packard).

MS2: HP5970B GC/MS using 75 m x 0.53 mm ID, 3 μm film thickness DB-624 megabore column (Hewlett-Packard).

MS6: HP5970B GC/MS using 75 m x 0.53 mm ID, 3 μm film thickness HP-624 megabore column (Hewlett-Packard).

B. SIM

MS9: HP5970B GC/MS using 30 m x 0.25 mm ID, ZB-5 fused silica capillary column (J.W. Scientific).

GC Analysis

C. PCB

AD19_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-3.

AD20_1: HP5890II using 30 m x 0.25 mm ID, DB-17 capillary column GC-3.

D. TPH

AD24_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-9.

E. EXPLOSIVES

HPLC_2: Waters Millennium HPLC using 4.6 x 150 mm LUNA Phenyl-Hexyl column.

(3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

A. VOA Fraction (Method 8260B)

The following compounds: 2-Chloroethylvinyl ether; 1,1,2-Trichlorotrifluoroethane; Chlorotrifluoroethylene; Chlorofluoroethylene and

Chlorotrifluoroethane which were requested as part of the Rocketdyne analyte list, were determined using a TIC approach. That is, these compounds were not part of the calibration, instead, a library search was performed on each sample. Since these compounds respond similar to the reported compounds, they would have been detected at the CRQL of 5.0 ppb.

The calibrations analyzed on MS2 show a calibration date of 04/22/83 and 04/23/83. This mistake has been manually corrected to reflect the accurate dates of 07/19/00 and 07/20/00.

The pH of the water samples was:

Client ID:	Ceimic ID:	pH:
RJ527	200484-14	1
RJ543	200484-21	1
RJ544	200484-22	1

Sample RJ526 (200484-13) had low internal standard recoveries and a low surrogate recovery. The observation of low internal standard recoveries in the reanalysis of this sample confirms a matrix effect.

The low soil sample RJ517 (200484-04) was reanalyzed as a medium soil.

The following samples were associated with VLCSBA, which had low recoveries for Dichlorodifluoromethane and Chloromethane.

Client ID:	Ceimic ID:
RJ527	200484-14
RJ543	200484-21
RJ544	200484-22

Sample RJ517DL (200484-04DL) was associated with VLCSFI, which had high recoveries for Bromomethane, trans-1,3-Dichloropropene, and Bromoform, and a low recovery for Methylene Chloride.

\

B. SIM Fraction (Method 8270)

The quantitation ion for bis-(2-chloroethyl) ether was changed to the secondary ion 63, rather than the primary ion 93, because there is interference with the ion 93 from aniline, which is present in the standard mix.

Sample RJ537 (200484-16) was analyzed at a dilution of 1:5.

C. PCB Fraction (Method 8082)

Sample and QC sample extracts underwent sulfuric acid cleanup prior to analysis.

Due to software limitations the forms VI are laboratory instrument forms that document the five level calibration. These forms include retention times and their windows, response factors, %RSD areas and amounts for each compound at each level. The continuing calibrations percent differences are documented on the chromatographic reports.

Aroclor 1254 was detected above the quantitation limit in sample RJ514.

Trace levels of Aroclor 1254 were apparent in the chromatograms of samples RJ525 and RJ526 however their concentrations were well below the quantitation limit and therefore reported as non detected.

D. TPH Fraction

Three surrogates were spiked into the samples prior to extraction, n-decane, n-eicosane and terphenyl. In addition to surrogates lab control samples and matrix spike samples were spiked with C11, C13, C15, C19, C21 and C28.

Sample extracts in methylene chloride were analyzed by GC/FID calibrated from C8 to C30 as specified by the SW8015B Ogden modified method.

Results are reported in four ranges including gasoline (C8-C11), kerosene (C11-C14), diesel (C14-C20) and lubrication oil range (C20-C30).

The chromatographic area response contributed by surrogates are subtracted from the area response attributable to positive results for petroleum hydrocarbons.

E. EXPLOSIVES Fraction (Method 8330)

All sample extracts were analyzed by HPLC/Photodiode Array Detection (PDA). The PDA provides the ultraviolet (UV) spectra of chromatographic peaks in order to compare them with the standard spectra of target analytes thereby providing the ability to positively confirm the presence of target analytes using spectral matching. Nitroaromatics residues are confirmed when the response of compound results in a chromatographic peak at the retention time window of the target compound and and its UV spectrum matches the corresponding standard UV spectrum of the target compound.. Second column confirmation is used as well. If the compound is positively confirmed by UV spectrum on both columns, the target is reported. The UV spectra of nitroaromatics detected in the sample were compared to the reference spectra of nitroaromatics standards stored in the library computer. The UV spectra are printed out and provided in the data package directly behind each sample quantitation report. Analysts note matches and nonmatches on the copy of the spectrum. Chromatographic peaks eluting in the retention time window of nitroaromatic target compounds are not positively identified if the spectra do not match. Standard spectra from the continuing calibration are included as an example of spectral matches.

There were no target analytes detected in the samples.

2-amino-4,6-DNT and 4-NT coeluted with some lab contaminant in the analysis resulting in high recovery. The spectra of the contaminant did not match the target analyte.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

September 15, 2000

Date

CEIMIC CORPORATION
BNA Compliance Summary

Client : *Ogden Environmental*
Project: *200484*
Case : 313150 313150002

Sample compliant with method/project, except where noted with an "X":

SAMPLES Ceimic ID	Client ID	Hold Time	Prep Blank	Initial CaL	Continuing CaL	LCS Recovery	MS Recovery	MS RPD	Surrogates	Internal Std
200484-03	RJ516									
200484-04	RJ517									
200484-07	RJ520									
200484-10	RJ523									
200484-11	RJ524									
200484-16	RJ537									
200484-18	RJ539									
200484-20	RJ542									
200484-21	RJ543									

Approved by: ill

CEIMIC CORPORATION
VOA Compliance Summary

Client : *Ogden Environmental*
Project: *200484*
Case : 313150 313150002

Sample compliant with method/project, except where noted with an "X":

SAMPLES

Ceimic ID	Client ID	Hold Time	Method Blank	Initial CaL	Continuing CaL	LCS Recovery	MS Recovery	MS RPD	Surrogates	Internal Std
200484-03	RJ516									
200484-04	RJ517					X				
200484-05	RJ518									
200484-06	RJ519									
200484-08	RJ521									
200484-09	RJ522									
200484-12	RJ525									
200484-13	RJ526									
200484-14	RJ527					X				
200484-21	RJ543					X				
200484-22	RJ544					X				

Approved by: [illegible]

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200484
SDG No.: RJ514

The following samples were received at Ceimic Corporation on July 8, 2000:

RJ516	RJ517	RJ520
RJ523		

The above samples were digested and analyzed for total metal using SW846 methods 3005A/3050B/6010B/7471A/7470A in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on July 13, 2000:

RJ537	RJ539	RJ542
RJ543		

The above samples were digested and analyzed for total metal using SW846 methods 3005A/3050B/6010B/7471A/7470A in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV and LCSW for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the CCV sample for the ICP metals. Environmental Resource Associates standard (lot# 243) was used for the mercury LCSS sample and metals LCSS samples. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

The soil preparation blank (PBS) was above the CRDL for the elements chromium and lead. However, all associated samples contained lead and chromium at concentrations greater than ten times the concetration of these elements in the PBS.

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier
Laboratory Manager

September 13 2000
Date

Chain-of-Custody

CEIMIC
CORPORATION

"Analytical Chemistry for Environmental Management"

Fax Cover Sheet

To: Elizabeth Wessling

Fax #: 303-935-6575

From: Karen Williamsen

Date: 10/18/00

Re: subbed out samples for Ag

Of pages: 3
(includes cover sheet)

Here is a copy of our signed COC from STL of what samples we sent to them. I sent you an e-mail about RJ035 so when you get a chance let me know what the replacement sample is.

Thanks!

10 Dean Knauss Drive, Narragansett, RI 02882 Tel: (401)782-8900 Fax: (401)782-8905

Fax message

SEVERN TRENT SERVICES

Date:	October 18. 2000
To:	Karen Williamson
Company:	Ceimic Corporation
Fax:	401-782-8905
From:	Jim Madison
Subject:	Rocketdyne Samples
Pages:	2

STL Burlington
208 South Park Drive, Suite 1
Colchester, VT 05446

Tel 802 655 1203
Fax 802 655 1248
www.stl-inc.com

Karen:

Enclosed is the signed COC for the samples we received this morning. The cooler temperature was 2 degrees Celsius.

Jim.

subbed out to:
STL - VT

Chain of Custody

Original Chain of Custody goes to Laboratory

Page ______ of ______

Project #	Project Name	Cooler Temp.
	Rocketdyne	
Samplers (please print)		Cooler #

Lab ID	Date	Time	Comp. / Grab	Sample Identification	Sample Matrix	No. of Containers	&	pH	pH	pH	pH	pH	pH	pH	Remarks
	SDG RJ553			RJ561	S	1	X								
				RJ563			X								
				RJ553			X								
	RJ514			~~RJ035~~ KLO 10/17/00			X								
				RJ539			X								
				RJ523			X								
	RJ020			RJ528			X								
	RJ553			RJ570			X								
	RJ579			RJ587			X								
	RJ514			RJ516			X								

Celmic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	Karen Williamson	10/17/00 5:00	[signature]	10-18-00 0945
Storage Location	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	Relinquished by (signature)	Date/Time	Received by Celmic (signature)	Date/Time

Remarks: * 10 day TAT for all samples

▒ = Lab Use Only

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

550 S. Wadsworth Blvd. Suite 500
Denver, CO 80226
303.935.6505
fax: 303.935.6575

FACSIMILE

To: Jim Madison/STL-VT
Fax No.: (802) 655-1248

From: E. Wessling *sign:*

Date: 10/17/00 There are 1 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please anticipate the following samples from Ceimic Corp to arrive tomorrow under chain of custody requesting a 10 day TAT for Ag only. Include this form with the final data deliverables for these samples, which will be sent directly to Ogden Denver. Please fax completed chain-of-custody following receipt of samples at STL-VT to Ceimic at 401.782.8905; attn: Neil Pothier. Please call upon receipt of the samples. The EPA IDs will change following the table below.

COC No.	EPA Sample ID	OGDEN Sample ID	NEW EPA ID	Method (s) Originally Requested	Method (s) Now Requested*
	RJ561	BATS05S01	RZ561		Ag(Subcon to STL)
	RJ563	BATS07S01	RZ563		Ag(Subcon to STL)
	RJ553	CTTS02S01	RZ553		Ag(Subcon to STL)
	RJ035	R1BS18S01	RZ035		Ag(Subcon to STL)
	RJ539	CDBS35S01	RZ539A		Ag(Subcon to STL)
	RJ523	CDTS01S01	RZ523		Ag(Subcon to STL)
	RJ528	CDBS25S01	RZ528		Ag(Subcon to STL)
	RJ570	CABS28S01	RZ570		Ag(Subcon to STL)
	RJ587	BATS15S02	RZ587		Ag(Subcon to STL)
	RJ516	SRBS10S01	RZ516		Ag(Subcon to STL)

The reason for these changes is:

Incorrectly marked on COC form ________
Lack of sample volume ________
Ogden office personnel require this change ________
Other: Special Request X

Thank you.

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

200484
3, VOA

Chain of Custody

Control Number: COC RJ514
Date 7/05/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: 12971
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	(Containment)	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles	
RJ514	SNBS17SØ2	3.0	7/5/00	1000	100		X																X				HA			1	01
RJ515	SNBS10SØ2	5.0	7/5/00	1100	9		X																X				HA		X	1	02
RJ516	SRBS10SØ1	0.5	7/5/00	1430	21		X			X	X	X	X					X				X					HA			4	03
RJ517	SRBS11SØ1	0.5	7/5/00	1545	00		X			X	X	X	X					X				X					HA			4	04

	Date	Time
Samplers Signature	7/5/00	1545
Relinquished By:	7/7/00	1600
Received By:		
Relinquished By:		
Received By (LAB):	7/8/00	10 00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

* Homogenize all samples except RJ516 & RJ517.

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

200484
3, VOA

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: **COC** RJ518
Date 7/06/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:	12971	
QC Level:	Level4	TAT: 14-day hardcopy summary, 28-day full package

Preservatives: 8021 VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02.IRT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8082 PCBs: 4°C; IC HYDRAZ: 4°C

Margin	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles	Margin
[illegible]	RJ518	SRBS09S01	0.5	7/6/00	0830	32		X			X														IIA			4	05
[illegible]	RJ519	~~SRBS??~~ SRSU61	0.85	7/6/00	0900	16		X			X																	4	06
8	RJ520	SWBS16S01	0.5	7/6/00	1120	12		X				X	X					X				X						1	07
.5	RJ521	SLBS30S01	0.5	7/6/00	1350	50		X			X																	4	08
.5	RJ522	SLBS30S02	2.0	7/6/00	1400	50		X			X																	4	09

	Signature	Date	Time
Samplers Signature	[signature]	7/6/00	1400
Relinquished By:	[signature]	7/6/00	1600
Received By:			
Relinquished By:			
Received By (LAB):	[illegible] Williams	7/7/00	10:00

For Lab Use

Lab Number:

HOMOGENIZE

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

3, VOA
200484

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ523
Date 07107100 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	
Comment:	* HOLD FOR 8290

Cooler No: 12971

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ523	CDT5Φ15Φ1	1'	7/7/00	0810	3D		X		
RJ524	CDT5Φ15Φ2	4'	7/7/00	0820	3D		X		
RJ525	RZBSΦ15Φ1	1.5'	7/7/00	1040	3		X		
RJ526	RZBSΦ2.5Φ1	4'	7/7/00	1200	1				
RJ527	RZQWΦ1TΦ1	–	7/07/00	1230	–			X	

Preservatives / Analyses

Sample ID	8021 VOC (HCL, pH<2 4°C)	8015G TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4,pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles	
RJ523			X		X												HA		*	1	10
RJ524			X		X												HA		*	1	11
RJ525	X	X			X								X				HA			5	12
RJ526	X	X			X					X			X				HA			5	13
RJ527	X																				14

	Date	Time
Samplers Signature: [signature]	7/7/00	1230
Relinquished By: [signature]	7/7/00	16:05
Received By:		
Relinquished By:		
Received By (LAB): [signature]	7/8/00	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

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REV: 1

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: Karen Williamson Date: 7/14/00

Client(s): ogden
Samples Affected:
(reference both Ceimic and client IDs)
200484

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)
The only samples that arrived from COC RJ536 were 8 aqueous bottles with ID RJ543, 1 bottle for RJ542, 2 voa vials for RJ54 and 2 vials for RJ544. No soils arrived.

7/14/00 - soil samples arrived in diff. cooler; assuming vials with ID RJ54 are RJ543 because times match; adding RJ544 to COC
- assuming water sample with ID RJ542 is RJ543 because times match

Required Action:
(to be completed by the client or internal coordinator)
FAX to L. Tucker @ Ogden / San Diego

Name: Neil Date: 7/17

Additional Comments:
(lab use only)

Name: ______________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-3900 · Fax: (401) 782-8905

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Corrective Action Form

Name: Debra W. Holt   Date: 07/26/00

Out of Control Situation: Sample extracted out of hold-time because the extraction code was not entered into LIMS system for TPH analysis

Client(s): Ogden

Samples Affected: client ID RJ543. ceimic ID: 20040421 Aqueous

Action Taken: Reported to Manager.

Date sampled 7/12
Extraction date 7/26

Name: Debra W. Holt   Date: 07/26/00

Proof of Return to Control:

Copy to project folder & SDG Narrative

Supervisor: Debra W. Holt   QA/QC Officer: [illegible]

Date: 07/26/00   Date: 7/31/00

0019

Corrective Action Tracking # 000054

QAT0046   Page # ________

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Corrective Action Form

Name: Duc Vuong   Date: 07/28/00

Out of Control Situation:
(describe what happened, when, where and how, and who discovered the problem)
MS2: RTL Acquisition system has an incorrect date so All analysis ~~date~~ is incorrect for file BGD51 – BGD89
07/19/00 → 07/21/00. – correct date & year
04/22/2083 → 04/24/2083 on target software

Client(s):
Samples Affected:
(reference both Ceimic and client IDs)
JJ, Ogden A84, A97, A98
time stamped is correct with ~~the 24 hours cycle~~ cycle.

Action Taken:
(if client contacted, reference client contact name and date)
The correct date & year was changed at the start of the BFB injection on 07/21/00 with file BGD91

Name: Duc Vuong   Date: ~~08~~ 07/28/00

Proof of Return to Control:
Correct date & year stamped on subsequent Analyses

Supervisor: Duc Vuong
Date: 07/28/00

QA/QC Officer: [signature]
Date: 7/31/00

20

Corrective Action Tracking # 00V006

QAT0237   Page # 022

ADDED -15 TO -22

CEIMIC Corporation
Sample Log In Information

Date: 07/18/00 15:33:00

Date Samples Received: 07/08/00		Stored :	3,19,VOA
Date Due: 08/10/00		Ceimic Rep:	HOUSE
Client: Ogden Environmental		Coordinator:	NEIL
Project Name: Rocketdyne		Report To :	Ogden Environmental 5510 Morehouse Drive San Diego, CA 92121
Client Task: 313150002			
Client Contact: Dixie Hambrick		Attn :	Dixie Hambrick
Project #: 200484 SDG: RJ514 Case: 313150		Invoice To:	Ogden Environmental 5510 Morehouse Dr. Suite 300 San Diego, CA 92121
Project Amount: $14,505.00		Attn :	Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ514	1	SOIL	07/08/00	07/05/00	10:00:00	PCB(8082)
-02A	RJ515	1	SOIL	07/08/00	07/05/00	11:00:00	Sample on hold
-03A	RJ516	4	SOIL	07/08/00	07/05/00	14:30:00	TPH(8015OG) Volatiles(8260B) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-04A	RJ517	4	SOIL	07/08/00	07/05/00	15:45:00	TPH(8015OG) Volatiles(8260B) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-05A	RJ518	4	SOIL	07/08/00	07/06/00	08:30:00	Volatiles(8260B)
-06A	RJ519	4	SOIL	07/08/00	07/06/00	09:00:00	Volatiles(8260B)
-07A	RJ520	1	SOIL	07/08/00	07/06/00	11:20:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE

Project #: 200484

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-08A	RJ521	4	SOIL	07/08/00	07/06/00	13:50:00	Volatiles(8260B)
-09A	RJ522	4	SOIL	07/08/00	07/06/00	14:00:00	Volatiles(8260B)
-10A	RJ523	1	SOIL	07/08/00	07/07/00	08:10:00	TPH(8015OG) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-11A	RJ524	1	SOIL	07/08/00	07/07/00	08:20:00	Dioxins(8290) SIM(8270)
-12A	RJ525	5	SOIL	07/08/00	07/07/00	10:40:00	TPH(8015OG) PCB(8082) Volatiles(8260B) Dioxins(8290)
-13A	RJ526	5	SOIL	07/08/00	07/07/00	12:00:00	Fluoride(300.0) TPH(8015OG) PCB(8082) Volatiles(8260B) Dioxins(8290)
-14A	RJ527	2	AQUEOUS	07/08/00	07/07/00	12:30:00	Volatiles(8260B)
-15A	RJ536	1	SOIL	07/08/00	07/12/00	08:30:00	Dioxins(8290)
-16A	RJ537	1	SOIL	07/13/00	07/12/00	09:30:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-17A	RJ538	1	SOIL	07/13/00	07/12/00	10:30:00	Sample on hold
-18A	RJ539	1	SOIL	07/13/00	07/12/00	11:30:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-19A	RJ540	1	SOIL	07/13/00	07/12/00	12:30:00	Dioxins(8290)
-20A	RJ542	1	SOIL	07/13/00	07/12/00	14:00:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-21A	RJ543		AQUEOUS	07/13/00	07/12/00	15:30:00	Fluoride(300.0)

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-21A	RJ543		AQUEOUS	07/13/00	07/12/00	15:30:00	TPH(8015OG) Volatiles(8260B) Explosives(8330) Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-21B	RJ543		AQUEOUS	07/13/00	07/12/00	15:30:00	Inorganic Anions (300) Hexavalent Chromium(7196A) PCB(8082) pH(9045)
-22A	RJ544	2	AQUEOUS	07/13/00	07/12/00	15:30:00	Volatiles(8260B)

Comments:

Homogenize all samples except -03,-04
Dioxins on-hold -10
8260B to include TIC's for soils

Requirements:

Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos subcontracted
8260B to include TIC's for soils

K.T.: 11/08/00

LIMS Identifier: 0007028

LIMS Project Code: OGDEN_ROCKET

Approved by: [signature]
7/18/00

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

200484
VOA, 19

Chain of Custody

Control Number: COC RJ536
Date 7/12/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: 12971 / ~~12972~~ 12973
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Margin	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015G TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
mu 15	RJ536	CDBS31S02	3.5	7/12/00	0830	25		X						X		X			X									HA			1
16	RJ537	CDBS34S01	0.5	7/12/00	0930	31		X						X		X			X									HA			1
17	RJ538	CDBS34S02	0.5	7/12/00	1030	36		X						X		X			X									HA			1
18	RJ539	CDBS35S01	0.5	7/12/00	1130	37		X						X		X			X									HA			1
19	RJ540	CDBS36S01	0.5	7/12/00	1230	38		X						X		X			X									HA			1
(20)	~~RJ541~~	~~CDBS37S01~~	~~0.5~~	~~7/12/00~~	~~1300~~			X						X		X			X									HA			1
20	RJ542	CDBS38S01	0.5	7/12/00	1400	20		X						X		X			X									HA			1
21	RJ543	CDQW01F01	—	7/12/00	1530	—			X			X	X	X		X		X	X	X	X	X	X	X				G			
22	RJ544			7/12/00	15:30				X																						

J.B. 7/12/00

	Date	Time
Samplers Signature: [signature]	7/12/00	1400
Relinquished By: [signature]	7/12/00	1700
Received By:		
Relinquished By:		
Received By (LAB): Karen Williamson	7/13/00	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 200484 Cooler Number: 1

Client: Ogden Number of Coolers: 1

Project: Rocketdyne Date Received: 7 / ~~10~~ 8 / 00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7 / ~~10~~ 8 / 00

1. Have designated person initial here to acknowledge receipt of cooler: KW (date): 7 / ~~10~~ 8 / 00

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 3470339773

3. Were custody seals on outside of cooler? .... YES NO

How many & where: 2 seal date: couldn't read under tape / / seal name: Ceimic

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ND YES NO

6. Chain of Custody #:

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 6 °C Type of ice: YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7 / 8 / 00

by (print): KW (sign): KW

12. Describe type of packing in cooler:

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: YES NO 16

21. Laboratory labelling verified by: (Initials): KW (date): 7 / 8 / 00

QAT0261

Sample Receiving Checklist

LIMS #: 200484

Cooler Number: 1

Client: Ogden

Number of Coolers: 1

Project: Rocketdyne

Date Received: 7/13/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7/13/00

1. Have designated person initial here to acknowledge receipt of cooler: KW (date): 7/13/00

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 3470339795

3. Were custody seals on outside of cooler? .... YES NO

How many & where: 1 seal date: 7/12/00 seal name: Ceimic

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ND YES NO

6. Chain of Custody #: RJ536

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 4 °C Type of ice: cubes YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7/13/00

by (print): KW (sign): KW

12. Describe type of packing in cooler:

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: ________ YES NO

21. Laboratory labelling verified by: (Initials): KW (date): 7/13/00

QAT0261

G 2301

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ ~~545~~ 543
Date 7/12/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: 12-9-72
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
SWMU AI AOC RJ ~~545~~ 549	CDQWØ1FØ1	—	7/12/00	1530	—			X	

Analyses

Analysis	Preservatives	RJ 549
8021 VOC	HCL, pH<2 4°C	
8015OG TPH	HCL, pH<2 4°C	
8270SIM SVOC	4°C	
8270R SVOC	4°C	
8290 DIOXIN	4°C	
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C	X
8330 ORDINANCE	4°C	
1LM02.IRT METALSRT	HNO3, pH<2 4°C	
7196 HEX CHROME	4°C	
340.2 FLUORIDE	4°C	
300 ANIONS	4°C	
9045/9040 pH	4°C	
8082 PCBs	4°C	
IC HYDRAZ	4°C	
Sampling Method		G
Extra Volume MS/MSD		
HOLD		
Total # of Bottles		1

J.B. 7/12/00

	Signature	Date	Time
Samplers Signature	[signature]	7/12/00	1530
Relinquished By:	[signature]	7/12/00	1700
Received By:	[signature]	7/13/00	11:30 Am
Relinquished By:			
Received By (LAB):			

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

06

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010419
SDG No.: RJ417

The following sample was received at Ceimic Corporation on May 26, 2001:

RJ436

The above sample was analyzed for Perchlorate (314.0).

Comments on Data Package:

Sample Receipt:

All samples were received at a reduced temperature and were intact and properly preserved.

Observations:

The perchlorate sample was subjected to an ASTM shake-out at a 1:10 mass to volume ratio with deionized water.

Deviations from SOW:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier
Laboratory Manager

June 12, 2001
Date

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: **COC** RJ409
Date 5/18/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed Ex
Comment:	

Cooler No:	
QC Level:	TAT:

SWMU AIV ADL — 7.10 — AIV ADL

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ409	L2TS08S02	6	5/17/01	1115	-		X		
RJ410	L2TS09S01	2	5/17/01	1145	-		X		
RJ411	PUTS04S01	1	5/18/01	0835	-		X		
RJ412	PUTS07S01	1	5/18/01	0855	-		X		
RJ413	PUTS01S01	1	5/18/01	0950	-		X		
RJ414	SRBS37S01	0.5	5/18/01	1325	-		X		
RJ415	SRBS38S01			1330	-		X		
RJ416	SRBS39S01			1410	-		X		
RJ417	SRBS40S01			1425	-		X		
RJ418	SRBS41S01			1430	-		X		
RJ419	SRBS42S01			1440	-		X		

Sample ID	8021 VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8280 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H_2SO_4, pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.IRT METALSRT (HNO_3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	~~Silver (Ag)~~ (~~4°C~~ SS 5/29/01)	Mercury	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ409		X															TS		X	1
RJ410		X																		1
RJ411		X	X					X				X	X							1
RJ412		X	X					X				X	X							1
RJ413		X	X					X				X	X							1
RJ414															X	X	HA			1
RJ415															X	X				1
RJ416															X	X				1
RJ417															X	X				1
RJ418															X	X				1
RJ419															X	X				1

SS

	Date	Time
Samplers Signature [signature]	5/18/01	1500
Relinquished By: [signature]	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = Trench Sample
HA = Hand Auger
RJ414 → RJ419 – Analyze for Mercury instead of Silver per DAH. 5/29/01 SS.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign:* Jose L. Toledo

Date: 05/29/01 There are 5 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ382	RJ386	LXTS03S01	05/14/01	ON HOLD	**TPH, METALSRT, PH**
RJ397	RJ404	PUTS08S02	05/16/01	ON HOLD	**TPH**
RJ301	RJ307	EVBS89S01	04/26/01	MERCURY	**FULL METALS**
RJ409	RJ414	SRBS37S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ415	SRBS38S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ416	SRBS39S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ417	SRBS40S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ418	SRBS41S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ419	SRBS42S01	05/18/01	SILVER	**MERCURY**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change __X__
Other: Containers mislabeled ______

Thank you.

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ420
Date 5/23/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No:
QC Level: TAT:

SWMU 4IV AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015CG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8230 ORDINANCE	1LMe2 IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Mercury		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ420	SRBS39S02	2.5	5/22/01	1335	-		X																	X		HA		X	1
RJ421	SRBS39D02	2.5		1340	-		X																	X				X	1
RJ422	SRBS41S02	3		1435	-		X																	X					1
RJ423	SRBS13S02	3		1415	-		X																	X					1

	Date	Time
Samplers Signature	5/23/01	1200
Relinquished By:	5/23/01	1200
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

HA = Hand Augur

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN
5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ424
Date 5/23/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No:
QC Level: TAT:

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					

SWMU
AIG AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015DG TPH	8270SIM SVOC	8270R SVOC	8280 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Mercury (HA)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ424	~~SRBS13 D002~~ SRBS13D002 8/3/01	3	5/22/01	1420	1		X																	X		HA			1

Samplers Signature	Date 5/23/01	Time 1200
Relinquished By:	Date 5/23/01	Time 1200
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use
Lab Number:
Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HA = Hand Augur
Changed Ogden ID to SRBS13D002 per TB 8/3/01

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: **COC** RJ425
Date 5/25/01 Page 1 of 1

Project Manager: Dixie Hambrick	Bill To: Purchasing	Sample Disposal Instructions: Laboratory Disposal
Project Name: Rocketdyne	Company: Ogden Environmental	Shipment Method: Fed-Ex
Project Number: 313150002	Address: 5510 Morehouse Drive, San Diego, CA 92121	Comment:
Deliver results to the address above or as stated in contract		

Cooler No:
QC Level: TAT:

SWMU 5.2

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	0330 ORDINANCE	TLM02,IRT METALS/HT	7199 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Mercury (Hg)	Perchlorate	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ425	EVBS915Ø2	3	5/24/01	1015	–		X																	X		HA			1
~~RJ426~~																													
RJ427	EVBS945Ø1	0.5	5/24/01	1030	–		X																	X		HA			1
RJ428	EVBS94DØ1	0.5		1035	–		X																	X					1
RJ429	EVBS945Ø2	2.5		1040	–		X																	X				X	1
RJ430	EVBS955Ø1	0.5		1050	–		X																	X				X	1
RJ431	EVBS965Ø1	0.5		1100	–		X																	X					1
RJ432	EVBS975Ø1	0.5		1110	–		X																	X					1
RJ433	EVBS975Ø2	3		1115	–		X																	X				X	1
RJ434	EVBS985Ø1	0.25		1125	–		X																	X					1
RJ435	EVBS995Ø1	0.25		1135	–		X																	X					1
RJ436	BSTS185Ø1	1	5/25/01	0820	–		X																		X	TS			1

AI AOC

	Date	Time
Samplers Signature:	5/25/01	1200
Relinquished By:	5/25/01	1200
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

HA = Hand Auger
TS = Trench Sample
Note: 14-day TAT on samples not held

RJ430 - Run Mercury Analysis. 7 DAY TAT JK 7/9/01.

Do not hold RJ430.

RJ427, RJ428, RJ430, RJ431, RJ432 homogenized from 0-1 ft.

RJ434 and RJ435 homogenized from 0-0.5 ft
RJ436 homogenized from 0-2 ft

REV. 1

Figure A.5-2 Example Chain-of-Custody Form

NO.268 P.8/11

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*: Jose L. Toledo

Date: 07/09/01 There are 2 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ425	RJ430	EVBS95S01	05/24/01	ON HOLD	**Mercury, 7 day TAT**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change ___X___
Other: Containers mislabeled ______

Thank you.

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ437
Date 5/25/01 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	Fed-Ex
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					
Cooler No:					
QC Level:	TAT:				

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | Perchlorate

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270B SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDNANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Perchlorate		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ437	BSTS18SØ2	3.5	5/25/01	0830	-		X																	X		TS		X	1
RJ438	BSTS18SØ3	7.5		0840	-		X																	X				X	1
RJ439	BSTS15SØ1	1		0850	-		X																	X					1
RJ440	BSTS15SØ2	3.5		0905	-		X																	X				X	1
RJ441	BSTS15SØ3	7.5		0915	-		X																	X				X	1
RJ442	BSBS47SØ1	1		0930	-		X																	X		BS			1
RJ443	BSBS47SØ2	3.5		0940	-		X																	X				X	1
RJ444	BSBS47SØ3	6.5		0945	-		X																	X				X	1
RJ445	BSBS48SØ1	1		1000	-		X																	X					1
RJ446	BSBS48SØ2	3.5		1005	-		X																	X				X	1
RJ447	BSBS49SØ1	1		1015	-		X																	X					1
RJ448	BSBS50SØ1	0.25		1025	-		X																	X					1

SWMU AI AOL

	Date	Time
Samplers Signature	5/25/01	1200
Relinquished By:	5/25/01	1200
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = Trench Sample
~~BOS~~
Note: RJ442-448 sampling method should be HA = Hand Aug.
14-day TAT on all samples not held
RJ437, RJ440, RJ443, RJ446 homogenized from 2-5 ft.
RJ448, RJ441 homogenized from 5-10 ft.
RJ439, RJ442, RJ445, RJ447 homogenized from 0-2 ft.
RJ444 homogenized from 5-8 ft

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

ADDED -09...-20; CHANGED -01...-03 TO MERCURY ANALYSIS

CEIMIC Corporation
Sample Log In Information

Date: 05/30/01 -12:12:33

Date Samples Received: 05/19/01

Date Due: 06/09/01

Client: AMEC

Project Name: Rocketdyne

Client Task: 2000-32R-69813

Client Contact: Dixie Hambrick

Project #: 010419
SDG: RJ417
Case: 313150

Project Amount: $822.50

Stored : 20

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : AMEC
5510 Morehouse Drive
San Diego, CA 92121

Attn : Jose Toledo

Invoice To: AMEC
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ417	1	SOIL	05/19/01	05/18/01	14:25:00	T Mercury
-02A	RJ418	1	SOIL	05/19/01	05/18/01	14:30:00	T Mercury
-03A	RJ419	1	SOIL	05/19/01	05/18/01	14:40:00	T Mercury
-04A	RJ420	1	SOIL	05/24/01	05/22/01	13:35:00	Sample on hold
-05A	RJ421	1	SOIL	05/24/01	05/22/01	13:40:00	Sample on hold
-06A	RJ422	1	SOIL	05/24/01	05/22/01	14:35:00	T Mercury
-07A	RJ423	1	SOIL	05/24/01	05/22/01	14:15:00	T Mercury
-08A	RJ424	1	SOIL	05/24/01	05/22/01	14:20:00	T Mercury
-09A	RJ425	1	SOIL	05/26/01	05/24/01	10:15:00	T Mercury
-10A	RJ427	1	SOIL	05/26/01	05/24/01	10:30:00	T Mercury
-11A	RJ428	1	SOIL	05/26/01	05/24/01	10:35:00	T Mercury
-12A	RJ429	1	SOIL	05/26/01	05/24/01	10:40:00	Sample on hold

Project #: 010419

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-13A	RJ430	1	SOIL	05/26/01	05/24/01	10:50:00	Sample on hold
-14A	RJ431	1	SOIL	05/26/01	05/24/01	11:00:00	T Mercury
-15A	RJ432	1	SOIL	05/26/01	05/24/01	11:10:00	T Mercury
-16A	RJ433	1	SOIL	05/26/01	05/24/01	11:15:00	Sample on hold
-17A	RJ434	1	SOIL	05/26/01	05/24/01	11:25:00	T Mercury
-18A	RJ435	1	SOIL	05/26/01	05/24/01	11:35:00	T Mercury
-19A	RJ436	1	SOIL	05/26/01	05/25/01	08:20:00	Perchlorate
-20A	RJ437	1	SOIL	05/26/01	05/25/01	08:30:00	Sample on hold

Comments:

Requirements:

Level IV; 28 day TAT
TPH = Ogden 4 ranges(SOP No.:8015BET) 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's and Freons for soils.

K.T.: 09/07/01

LIMS Identifier: 0105060

LIMS Project Code: AMEC_ROCKET

Approved by: [signature]
5/30/01

NO.500 P.8/39

amec

397
417
164

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo sign: José L. Toledo

Date: 05/29/01 There are 5 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ382	RJ386	LXTS03S01	05/14/01	ON HOLD	**TPH, METALSRT, PH**
RJ397	RJ404	PUTS08S02	05/16/01	ON HOLD	**TPH**
RJ301	RJ307	EVBS89S01	04/26/01	MERCURY	**FULL METALS**
RJ409	RJ414	SRBS37S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ415	SRBS38S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ416	SRBS39S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ417	SRBS40S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ418	SRBS41S01	05/18/01	SILVER	**MERCURY**
RJ409	RJ419	SRBS42S01	05/18/01	SILVER	**MERCURY**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______

Lack of sample volume ______

Ogden office personnel require this change X

Other: Containers mislabeled ______

Thank you.

ple Receiving Checklist

LIMS #: 010418 Cooler Number: 1

Client: AMEC Number of Coolers: 1

Project: Rocketdyne Date Received: 5/19/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 5/19/01

1. Have designated person initial here to acknowledge receipt of cooler: JL (date): 5/19/01
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 828437662074
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: ____ seal date: / / seal name:
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO N/A
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 CPM YES NO
6. Chain of Custody #: RJ397, RJ409
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 16 °C Type of ice: Blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 5/21/01

by (print): J. Cannon (sign): J. Cannon

12. Describe type of packing in cooler: Bubble Wrap
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ____ YES NO
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO
22. Laboratory labelling verified by: (Initials): JL (date): 5/21/01

LIMS #: [illegible]

Client: [illegible]

Project: [illegible]

Cooler Number: 1

Number of Coolers: 1

Date Received: 5/24/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 5/24/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 5/24/01

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: Fx 824470763263

3. Were custody seals on outside of cooler? .... YES NO

How many & where: ________ seal date: / / seal name: NA

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: OC.0 mR YES NO

6. Chain of Custody #: RJ 420

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 15°C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 5/24/01

by (print): J. Carson (sign): J. Carson

12. Describe type of packing in cooler: ——

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO NA

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: ________ YES NO NA

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 5/24/01

QAT0261

LIMS #: [illegible]

Client: [illegible]

Project: [illegible]

Cooler Number: 1

Number of Coolers: 3

Date Received: 5/24/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 5/24/01

1. Have designated person initial here to acknowledge receipt of cooler: [illegible] (date): 5/24/01

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 828213766 2019

3. Were custody seals on outside of cooler? .... YES NO

How many & where: Top seal date: 5/23/01 seal name: [illegible]

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 cpm YES NO

6. Chain of Custody #: RJ 424

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 6 °C Type of ice: Blue Cube YES NO

B. LOG-IN PHASE: Date samples were logged-in: 5/24/01

by (print): J. Carron (sign): J. Carron

12. Describe type of packing in cooler: bubble

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: ____ YES NO NA

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 5/24/01

RJ 397

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

July 3, 2001

Mr. Jose Toledo
AMEC
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of AMEC's Rocketdyne Project, Case No. 313150, SDG No. RJ397. The samples were taken from the field from May 15 through May 18, 2001 and received at Ceimic Corporation on May 19, 2001.

These samples are reported under the Ceimic Project Number 010418, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D.
Laboratory Director

NP/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to AMEC's Rocketdyne Project, Project No. 313150, SDG No. RJ397. Under this SDG there are 3 VOA, 9 SIM, 6 PCB and 13 TPH analyses for 20 soil samples which were received at Ceimic Corporation on May 19, 2001.

This data package includes the analyses for the following samples from SDG No. RJ397:

(1)

Client ID	Ceimic ID	Analysis
RJ398 MS/MSD	010418-02 MS/MSD	VOA, TPH
RJ403	010418-07	SIM, PCB, TPH
RJ403 MS/MSD	010418-07 MS/MSD	SIM, PCB
RJ404	010418-08	TPH
RJ405	010418-09	SIM, TPH
RJ406	010418-10	SIM, TPH
RJ407	010418-11	SIM, TPH
RJ408	010418-12	TPH
RJ410	010418-14	TPH
RJ411	010418-15	SIM, PCB, TPH
RJ412	010418-16	SIM, PCB, TPH
RJ413	010418-17	SIM, PCB, TPH

The submitted data covers the analyses of the VOA (Volatiles), SIM, PCB and TPH fractions and tl associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analy performed for this case:

(2) Sample Receipt

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

MS/GC Analysis

A. VOA

MS12: HP5973 GC/MS,20 m, 0.18mm ID, 1um, DB-624 capillary column
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. SIM

MS9: HP5970B GC/MS,30 m,25 mm ID, ZB-5 fused silica capillary column

GC Analysis

C. PCB

AD8: HP5890II using 30 m x 0.53 mm ID, DB-608 megabore column, GC7

AD9: HP5890II using 30 m x 0.25 mm ID DB-1701 megabore column, GC7

D. TPH

AD23_1: HP5890II using 30 m x 0.25 mm ID DB-5 capillary column, GC9

(4) Sample Information

A. VOA (Method 8260B)

The continuing calibration had %D's greater than 20% for Dichlorodifluoromethane, Trichlorofluoromethane, 1,1,-Dichloroethene, and 1,1,2-trichlorofluoroethane.

B. SIM Fraction (Method 8270)

The following samples were analyzed at a dilution.

Client ID:	CEIMIC ID:	DILUTION:
RJ403	010418-07	1:10
RJ403MS	010418-07MS	1:10
RJ403MSD	010418-07MSD	1:10

C. PCB Fraction (Method 8082)

Aroclor 1016 and Aroclor 1260 recoveries in RJ403 MS/MSD are slightly high (105% - 109%).

D. TPH Fraction (Method 8015OG)

Lubricant Oil Range recovery is low in F0605-LCS6 (66%) and F0523-LCS2 (69%).

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Director

July 3, 2001

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010418
SDG No.: RJ397

The following samples were received at Ceimic Corporation on May 19, 2001:

RJ398 (MS/MSD)	RJ403	RJ405
RJ406	RJ407	RJ411
RJ412	RJ413	

The above samples were digested and analyzed for total metals using SW846 methods 3050A/6010B/7471A and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on May 19, 2001:

RJ399	RJ401

The above samples were digested and analyzed for total silver using SW846 methods 3050A/6010B and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on May 19, 2001:

RJ414	RJ415	RJ416

The above samples were digested and analyzed for total mercury using SW846 method 7471A and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures Qcplus+ Second Source QCP-CICV-1, QCP-CICV-2, and QCP-CICV-3 were used for the ICV and CCV for the ICP metals. Inorganic Ventures CLPP CAL-1, CLPP CAL-2 and CLPP CAL-3 were used for the calibration standards for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 248) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).
A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Potl

Neil Pothier
Laboratory Manager

June 29, 2001
Date

Chain-of-Custody

010418 Fridge#20

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ397
Date 5/18/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed-Ex
Comment:	

Cooler No:

QC Level: TAT:

Sample Data / Matrix

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
Area IV AOC	RJ397	SRBS305Ø1	1.0	5/15/01	1530	–	01	✓		
	RJ398	SRBS305Ø2	7.5	5/16/01	1015	–	02	✓		
6.9	RJ399	ELBS115Ø1	1.0	5/16/01	1535	–	03	✓		
	RJ400	ELBS115Ø2	4.0	5/16/01	1549	–	04	✓		
	RJ401	ELBS125Ø1	0.5	5/16/01	1611	–	05	✓		
	RJ402	ELBS125Ø2	3.0	5/16/01	1630	–	06	✓		
7.10	RJ403	PUTSØ85Ø1	1	5/16/01	0850	–	07	X		
	RJ404	PUTSØ85Ø2	4.5	5/16/01	0910	–	08	X		
4.15	RJ405	BATS255Ø1	2.5	5/17/01	0845	–	09	X		
	RJ406	BATS2[illegible]5Ø1	2.5	5/17/01	0930	–	10	X		
	RJ407	BATS275Ø1	1.5	5/17/01	1000	–	11	X		
AIV AOC	RJ408	L2TSØ85Ø1	2	5/17/01	1105	–	12	X		

Analyses

Sample ID	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Ag (Silver)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ397	X	X						X				X					HA		X	7
RJ398	X	X						X				X					HA			5
RJ399															X		HA			1
RJ400															X		HA		X	1
RJ401															X		HA			1
RJ402															X		HA		X	1
RJ403		X	X					X				X	X				TS			1
RJ404		X	X					X				X	X						X	1
RJ405								X												1
RJ406								X												1
RJ407								X											X	1
RJ408		X																		1

	Date	Time
Samplers Signature: [signature]	5/18/01	1500
Relinquished By: [signature]	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB): [signature]	5/19/01	11:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

HA = handauger
TS = Trench Sample

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

010418

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ409
Date 5/18/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No:
QC Level: TAT:

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					
Analysis	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Silver (Ag)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles

SWMU AII AOL

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Silver (Ag)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ409	L2TS08502	6	5/17/01	1115	-	13 01	X				X														TS		X	1
RJ410	L2TS09501	2	5/17/01	1145	-	14 02	X				X																	1
RJ411	PUTS04501	1	5/18/01	0835	-	15 03	X				X	X					X				X	X						1
RJ412	PUTS07501	1	5/18/01	0855	-	16 04	X				X	X					X				X	X						1
RJ413	PUTS01501	1	5/18/01	0950	-	17 05	X				X	X					X				X	X						1
RJ414	SRBS37501	0.5	5/18/01	1325	-	18 06	X																	X	HA			1
RJ415	SRBS38501			1330	-	19 07	X																	X				1
RJ416	SRBS39501			1410	-	20 08	X																	X				1
RJ417	SRBS40501			1425	-	[illegible]	X																	X				1
RJ418	SRBS41501			1430	-	[illegible]	X																	X				1
RJ419	SRBS42501			1440	-	[illegible]	X																	X				1

7.10

AII AOL

13

	Date	Time
Samplers Signature	5/18/01	1500
Relinquished By:	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB): J. Carmon	5/19/01	11:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = Trench Sample
HA = Hand Augur

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ397A
Date 5/15/01 Page 1 of 1

Project Manager: Dixie Hambrick	Bill To: Purchasing	Sample Disposal Instructions: Laboratory Disposal
Project Name: Rocketdyne	Company: Ogden Environmental	Shipment Method: Fed. Ex
Project Number: 313150002	Address: 5510 Morehouse Drive, San Diego, CA 92121	Comment:
Deliver results to the address above or as stated in contract		

Cooler No:
QC Level:
TAT:

Preservatives: HCL, pH<2 4°C (8021 VOC); HCL, pH<2 4°C (8015G TPH); 4°C (8270SIM SVOC); 4°C (8270R SVOC); 4°C (8290 DIOXIN); H2SO4, pH<2 4°C (ASTM D19 FORMALDEHYDE); 4°C (8330 ORDNANCE); HNO3, pH<2 4°C (11 MERCURY METALS); 4°C (7196 HEX CHROME); 4°C (340.2 FLUORIDE); 4°C (300 ANIONS); 4°C (9045/9040 pH); 4°C (8082 PCBs); 4°C (IC HYDRAZ)

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015G TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDNANCE	11 MERCURY METALS	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Ag (4 hr ...)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SAMPLED Trad'n'Aug	RJ397	SRBS305S01	1.0	5/15/01	1530	–		✓			X	X						X				X					HA		X	1
	RJ398	SRBS305S02	2.5	5/16/01	1015	–		✓			X	X						X				X					HA			1
4.19	RJ399	ELBS11S01	1.0	5/16/01	1515	–		✓																	X		HA			1
	RJ400	ELBS11S02	4.0	5/16/01	1549	–		✓																	X		HA		X	1
	RJ401	ELBS12S01	0.5	5/16/01	1611	–		✓																	X		HA			1
	RJ402	ELBS12S02	3.0	5/16/01	1630	–		✓																	X		HA		X	1
9.10	RJ403	PUTS08S01	1'	5/16/01	0850	–		X				X	X					X				X	X				TS			1
	RJ404	PUTS08S02	4.5	5/16/01	0810	–		X				X	X					X				X	X				↓		X	1
4.15	RJ405	BATS25S01	2.5	5/17/01	0845	–		X				X		X				X				X								1
	RJ406	BATS26S01	2.5	5/16/01	0930	–		X				X		X				X				X								1
	RJ407	BATS27S01	1.5	5/17/01	1000	–		X				X		X				X				X							X	1
All ADL	RJ408	L2TS08S01	2	5/17/01	1105	–		X				X															↓			1

	Date	Time
Samplers Signature: [signature]	5/18/01	1500
Relinquished By: [signature]	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

HA = Handauger
TS = Trench Sample
RJ397 OFF HOLD ON 5/22/01 per B.S. TWO WK TAT
RJ398 - TWO WK TAT per B.S. 5/22/01
Run SVOC, metals, pH + TPH analysis on RJ405, RJ406 + RJ407 per TB 5/21/01.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ409
Date 5/18/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed-Ex
Comment:	

Cooler No:	
QC Level:	TAT:

SWMU 4 IV AOC

7.10

A IV AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	11 M02,1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Silver (Ag)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ409	L2TS08S02	6	5/17/01	1115	-		X				X															TS		X	1
RJ410	L2TS09S01	2	5/17/01	1145	-		X				X																		1
RJ411	PU7S045Ø1	1	5/18/01	0835	-		X				X	X					X				X	X							1
RJ412	PU7S075Ø1	1	5/18/01	0855	-		X				X	X					X				X	X							1
RJ413	PU7S015Ø1	1	5/18/01	0950	-		X				X	X					X				X	X							1
RJ414	SRBS375Ø1	0.5	5/18/01	1325	-		X																	X		HA			1
RJ415	SRBS385Ø1			1330	-		X																	X					1
RJ416	SRBS395Ø1			1410	-		X																	X					1
RJ417	SRBS40SØ1			1425	-		X																	X					1
RJ418	SRBS415Ø1			1430	-		X																	X					1
RJ419	SRBS425Ø1			1440	-		X																	X					1

	Date	Time
Samplers Signature	5/18/01	1500
Relinquished By:	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = Trench Sample
HA = Hand Auger

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC RJ397

Date 5/15/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No:	
QC Level:	TAT:

Margin	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC (HCL, pH<2 4°C)	8015G TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	1LMIGURT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9040/9045 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	Ag (Silver)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
5 JUN 01	RJ397	SRBS305S01	1.0	5/15/01	1530	–		✓			X	X						X				X					HA		X	1
	RJ398	SRBS305S02	7.5	5/16/01	1015	–		✓			X	X						X				X					HA			1
6.9	RJ399	ELBS11S01	1.0	5/16/01	1515	–		✓																	X		HA			1
	RJ400	ELBS11S02	4.0	5/16/01	1549	–		✓																	X		HA		X	1
	RJ401	ELBS12S01	0.5	5/16/01	1611	–		✓																	X		HA			1
	RJ402	ELBS12S02	3.0	5/16/01	1630	–		✓																	X		HA		X	1
7.10	RJ403	PU1508S01	1'	5/16/01	0850	–		X				X	X					X				X	X				TS			1
	RJ404	PU1508S02	4.5	5/16/01	0910	–		X				X	X					X				X	X						X	1
4.15	RJ405	BATS25S01	7.5	5/17/01	0845	–		X				X		X				X				X								1
	RJ406	BATS26S01	7.5	5/18/01	0930	–		X				X		X				X				X								1
	RJ407	BATS27S01	1.5	5/17/01	1000	–		X				X		X				X				X							X	1
ADL	RJ408	L27508S01	2	5/17/01	1105	–		X				X																		1

	Date	Time
Samplers Signature: [signature]	5/18/01	1500
Relinquished By: [signature]	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB):		

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HA = hand-auger
TS = Trench Sample
RJ397 OFF HOLD ON 5/22/01 per B.S. TWO WK TAT
RJ398 - TWO WK TAT per B.S. 5/22/01
Run SVOC, metals, pH + TPH analysis on RJ405, RJ406 + RJ407 per TB 5/21/01
RJ404 - TPH OFF HOLD per DAH 5/21/01 5/29/01

REV. 1

Figure A.5-2 Example Chain-of-Custody Form

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo sign: José L. Toledo

Date: 05/29/01 There are 5 Pages to transmit including this cover page

Subject. **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ382	RJ386	LXTS03S01	05/14/01	ON HOLD	TPH, METALSRT, PH
RJ397	RJ404	PUTS08S02	05/16/01	ON HOLD	TPH
362-02 → RJ301	RJ307	EVBS89S01	04/26/01	MERCURY	FULL METALS
RJ409	RJ414	SRBS37S01	05/18/01	SILVER	MERCURY
RJ409	RJ415	SRBS38S01	05/18/01	SILVER	MERCURY
RJ409	RJ416	SRBS39S01	05/18/01	SILVER	MERCURY
RJ409	RJ417	SRBS40S01	05/18/01	SILVER	MERCURY
RJ409	RJ418	SRBS41S01	05/18/01	SILVER	MERCURY
RJ409	RJ419	SRBS42S01	05/18/01	SILVER	MERCURY

*Please Run for Requested Analyses Only.

The reason for these changes is.

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled	

Thank you.

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.. (401) 782-8905

From: Jose L. Toledo *sign*: Jose L. Toledo

Date: 05/23/01 There are 3 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ397	RJ398	SRBS30S02	05/16/01	VOC, TPH, METALSRT, PH	**VOC, TPH, METALSRT, PH. 2 WK TAT.**
RJ409	RJ414	SRBS37S01	05/18/01	SILVER	**SILVER. 2 WK TAT**
RJ409	RJ415	SRBS38S01	05/18/01	SILVER	**SILVER. 2 WK TAT**
RJ409	RJ416	SRBS39S01	05/18/01	SILVER	**SILVER. 2 WK TAT**
RJ409	RJ417	SRBS40S01	05/18/01	SILVER	**SILVER. 2 WK TAT**
RJ409	RJ418	SRBS41S01	05/18/01	SILVER	**SILVER. 2 WK TAT**
RJ409	RJ419	SRBS42S01	05/18/01	SILVER	**SILVER. 2 WK TAT**
RJ397	RJ405	BATS25S01	05/17/01	METALSRT	**SVOC, METALSRT, PH, TPH.**
RJ397	RJ406	BATS26S01	05/17/01	METALSRT	**SVOC, METALSRT, PH, TPH.**
RJ397	RJ407	BATS27S01	05/17/01	ON HOLD	**SVOC, METALSRT, PH, TPH.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change X
Other: Containers mislabeled ______

Thank you.

F A X

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-239-3888
Fax: 619-239-3895

Date: **01/07/04**

To: INTERNAL PURPOSE ONLY

Fax No:

From: Edmund Sarao
sign: Edmund Sarao

Subject: **Database-change Request**

No. of Pages: 3 (including cover)

---

per : SWMU 7.10 boundaries and TJB e-mail dated 01/07/04

EPA Sample ID	Original Ogden ID	Date Collected	Changes to Database being made*
RJ399	ELBS11S01	05/16/2001	Assign to "**SWMU 7.10**" and change Ogden ID from ELBS11S01 to **"PUBS16S01"**
RJ400	ELBS11S02	05/16/2001	Assign to "**SWMU 7.10**" and change Ogden ID from ELBS11S02 to **"PUBS16S02"**
RJ401	ELBS12S01	05/16/2001	Assign to "**SWMU 7.10**" and change Ogden ID from ELBS12S01 to **"PUBS17S01"**
RJ402	ELBS12S02	05/16/2001	Assign to "**SWMU 7.10**" and change Ogden ID from ELBS12S02 to **"PUBS17S02"**

*Changes made on main COC, Analytes and Analyses database of folder ROCKET_00

The reasons for these changes:

Incorrectly marked on COC form	
Lack of sample volume	
MWH office personnel require this change	*X*
Other: Containers mislabeled	

Thank you.

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: **COC** RJ397
Date 5/18/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed-Ex
Comment:	

Cooler No:

QC Level: TAT:

Preservatives: 8021 VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02.1RT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8082 PCBs: 4°C; IC HYDRAZ: 4°C

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ397	SPBS30S01	1.0	5/16/01	1530	–		✓		
RJ398	SPBS30S02	2.5	5/16/01	1015	–		✓		
RJ399	~~EABS16S01~~	1.0	5/16/01	1515	–		✓		
RJ400	~~EABS16S02~~	1.0	5/16/01	1519	–		✓		
RJ401	~~EABS17S01~~	1.5	5/16/01	1611	–		✓		
RJ402	~~EABS17S02~~	2.0	5/16/01	1130	–		✓		
RJ503	PU15B8S01	1	5/16/01	0850	–		X		
RJ504	PU15B8S02	4.5	5/16/01	0910	–		X		
RJ505	BA1S25S01	2.5	5/17/01	0845	–		X		
RJ506	BA1S3KS01	2.5	5/17/01	0930	–		X		
RJ507	BA1S27S01	1.5	5/17/01	1000	–		X		
RJ509	L27S08S01	2	5/17/01	1105	–		X		

Analyses

Sample ID	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Ag (silver)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ397	X	X						X				X				HA		X	1
RJ398	X	X						X				X				HA			1
RJ399															X	HA			1
RJ400															X	HA		X	1
RJ401															X	HA			1
RJ402															X	HA		X	1
RJ503		X	X					X				X	X			TS			1
RJ504		X	X					X				X	X			↓		X	1
RJ505								X								↓			1
RJ506								X								↓			1
RJ507								X								↓		X	1
RJ509		X														↓			1

	Date	Time
Samplers Signature	5/18/01	1500
Relinquished By:	5/18/01	1500
Received By:		
Relinquished By:		
Received By (LAB):		

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HA = handauger
TS = Trench Sample
01-07-04 OGDEN ID CHANGES: (EL-PU-00_010704.DOC)
RJ399 → PUBS16S01
RJ400 → PUBS16S02
RJ401 → PUBS17S01
RJ402 → PUBS17S02

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

Thomas J Burton

01/07/2004 04:28 PM

To: Edmund M Sarao/User/Americas/Montgomery Watson@MW
cc: lisa.tucker@mwhglobal.com, Alex S Christensen/User/Americas/Montgomery Watson@MW, Kristine McIlvenna/User/Americas/Montgomery Watson@MW
Subject: EEL sample ID changes to PDU (17th Street Pond)

Edmund-

Per discussions this morning, please change the sample IDs of the following locations in the database:

ELSV07 to PUSV33

ELBS08 to PUBS14
ELBS09 to PUBS15
ELBS11 to PUBS16
ELBS12 to PUBS17

These EEL samples were near the 17th Street Pond, which was later sampled as part of PDU characterization.

Thanks,
Tom

CELMIC CORPORATION
Sample Receiving Checklist

LIMS #: 010419

Cooler Number: 1

Client: AMEC

Number of Coolers: 1

Project: Rocketdyne

Date Received: 5/19/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 5/19/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 5/19/01
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 828437662074
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: ______ seal date: __/__/__ seal name: NA
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0cpm YES NO
6. Chain of Custody #: RJ409
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 19°C Type of ice: Blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 5/21/01

by (print): J. Carano (sign): J. Carano

12. Describe type of packing in cooler: ——
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO NA
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO NA
22. Laboratory labelling verified by: (Initials): JL (date): 5/21/01

QAT0261

CEIMIC

Corporation

"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: J. Cannon Date: 5/19/01

Client(s): AMEC

Samples Affected: 010418 (1-20)

(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

Cooler temp = 18°C upon receipt

Required Action:

(to be completed by the client or internal coordinator)

Name: ______________ Date: ___________

Additional Comments:

(lab use only)

Name: ______________ Date: ___________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

RJ 258

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

May 30, 2001

Mr. Jose Toledo
AMEC
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of AMEC's Rocketdyne Project, Case No. 313150, SDG No. RJ258. The samples were taken from the field on April 23, 24 and 25, 2001 and received at Ceimic Corporation on April 26, 2001.

These samples are reported under the Ceimic Project Number 010358, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Director

NP/klw

Enclosures

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to AMEC's Rocketdyne Project, Project No. 313150, SDG No. RJ258. Under this SDG there are 15 DIOXANE, 8 VOA, 1 SIM and 1 TPH analyses for 20 soil samples which were received at Ceimic Corporation on April 26, 2001.

This data package includes the analyses for the following samples from SDG No. RJ258:

(1)

Client ID	Ceimic ID	Analysis
RJ258	010358-01	DIOXANE
RJ259	010358-02	DIOXANE
RJ260	010358-03	DIOXANE
RJ261	010358-04	DIOXANE
RJ262	010358-05	DIOXANE
RJ263	010358-06	DIOXANE
RJ264	010358-07	DIOXANE
RJ265	010358-08	DIOXANE
RJ266	010358-09	DIOXANE
RJ267	010358-10	DIOXANE
RJ268	010358-11	DIOXANE
RJ269	010358-12	DIOXANE
RJ271	010358-13	SIM, TPH
RJ284	010358-14	VOA
RJ285 ms/msd	010358-15	VOA, DIOXANE
RJ287	010358-17	VOA
RJ288	010358-18	VOA
RJ289	010358-19	VOA
RJ290	010358-20	VOA

The submitted data covers the analyses of the Volatiles (VOA), 1-4 Dioxane, SIM and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

MS/GC Analysis

A. VOA and 1-4 Dioxane

MS12: HP5973 GC/MS,20 m, 0.18mm ID, 1um, DB-624 capillary column
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. SIM

MS9: HP5970B GC/MS,30 m,25 mm ID, ZB-5 fused silica capillary column

C. TPH

AD23_1: HP5890II using 30 m x 0.25 mm ID DB-5 capillary column, GC9.

(4) Sample Information

A. VOA (Method 8260B)

These samples were analyzed using 8260/5035

B. 1-4 Dioxane

These samples were analyzed for 1,4-Dioxane using 8260 SIM (selective ion monitoring) to achieve the low detection limits.

Sample RJ261 (010358-04) had a low surrogate recovery. The observation of this low recovery in the reanalysis of this sample confirms a matrix effect.

C. SIM Fraction (Method 8270)

These samples were analyzed by SIM (selective ion monitoring) to acieve low detection limits.

Sample RJ271 (010358-13) was associated with an LCS that had no recovery for two surrogates. This sample was re-extracted out of hold time. Results from the analysis of both extracts were reported.

D. TPH Fraction (Method 8015B)

No noncompliances are noted.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Director

May 30, 2001

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010358
SDG No.: RJ258

The following samples were received at Ceimic Corporation on April 26, 2001:

RJ271

The above samples were digested and analyzed for total metals using SW846 methods 3050A/6010B/ 7471A and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards and the CCV for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 248) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier | May 25, 2001

Neil Pothier
Laboratory Manager

Date

Chain-of-Custody

010359 #3 VOA

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ271

Date 4 /25/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed-Ex
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ271	SRTS09S01	6	4/25/01	0830	-	13	X				X	X					X									TS			1

SWMU AIV AOC

	Date	Time
Samplers Signature	4/25/01	1500
Relinquished By:	4/25/01	1500
Received By:		
Relinquished By:		
Received By (LAB): J. Carson	4/26/01	10:00

For Lab Use

Lab Number:

TS = Trench Sample

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

60

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

010358 #3, VOH

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ258
Date 4/25/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed EX
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: 8260M VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02.IRT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8081 PCBs: 4°C; IC HYDRAZ: 4°C; 1-4 Dioxane

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 010358	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1-4 Dioxane	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
4.3	RJ258	ILB502507	24.0	4/23/01	0740		01	✓																	✓				4
	RJ259	ILB502D07	24.0	4/23/01	0740		02	✓																	✓				3
4.14	RJ260	CNB525501	10.5	4/23/01	0840		03	✓																	✓				4
5.18	RJ261	CAB529506	5.0	4/23/01	0920		04	✓																	✓				4
	RJ262	CAB529507	10.0	4/23/01	0930		05	✓																	✓				4
	RJ263	CAB529508	16.0	4/23/01	0955		06	✓																	✓				4
5.2	RJ264	EVB503504	8.0	4/23/01	1110		07	✓																	✓				4
5.23	RJ265	DAB511501	8.0	4/23/01	1100		08	✓																	✓				4
5.13	RJ266	BVB508503	6.0	4/23/01	1125		09	✓																	✓				4
5.9	RJ267	AAB506504	4.0	4/23/01	1305		10	✓																	✓				4
	RJ268	AAB506505	8.0	4/23/01	1315		11	✓																	✓				4
	RJ269	AAB506506	12.0	4/23/01	1325		12	✓																	✓				4

	Date	Time
Samplers Signature		
Relinquished By:		
Received By:		
Relinquished By:		
Received By (LAB): J. Cunne	4/26/01	10:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

Note: Analyze samples for 1-4 Dioxane only.

10

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ258
Date 4/25/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed EX
Comment:	

Cooler No:	
QC Level:	Level4
TAT:	14-day hardcopy summary; 28-day full package

Preservatives / Analyses:

Analysis	Preservative
8260B VOC	HCL, pH<2, 4°C
8015M TPH	HCL, pH<2, 4°C
8270M SVOC	4°C
8270 SVOC	4°C
8290 DIOXIN	4°C
ASTM D19 FORMALDEHYDE	H2SO4, pH<2, 4°C
8330 ORDNANCE	4°C
TLM/CLP METAL/CLP	HNO3, pH<2, 4°C
7199 HEX CHROME	4°C
340.2 FLUORIDE	4°C
300 ANIONS	4°C
9040/9045 pH	4°C
8081 PCBs	4°C
IC HYDRAZ	4°C
1-4 Dioxane	1-4 Dioxane
Sampling Method	
Extra Volume MS/MSD	
Hold	

SHMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULB Number	Lab ID	Soil	Water	Product	1-4 Dioxane	Total # of Bottles
4.3	RJ258	ILBS02S07	34.0	4/23/01	0740			✓			✓	4
|	RJ259	ILBS02D07	34.0	4/23/01	0740			✓			✓	3
4.14	RJ260	CNBS25S01	1.5	4/23/01	0840			✓			✓	4
5.18	RJ261	CABS29S06	5.0	4/23/01	0920			✓			✓	4
|	RJ262	CABS29S07	10.0	4/23/01	0930			✓			✓	4
|	RJ263	CABS29S08	16.0	4/23/01	0955			✓			✓	4
5.2	RJ264	EVBS03S04	8.0	4/23/01	1410			✓			✓	4
5.23	RJ265	DABS11S01	8.0	4/23/01	1100			✓			✓	4
5.13	RJ266	BVBS08S03	6.0	4/23/01	1125			✓			✓	4
5.9	RJ267	AABS06S04	4.0	4/23/01	1305			✓			✓	4
|	RJ268	AABS06S05	8.0	4/23/01	1315			✓			✓	4
|	RJ269	AABS06S06	12.0	4/23/01	1325			✓			✓	4

	Date	Time
Samplers Signature: [signature]	5/18/01	1100
Relinquished By: [signature]	5/18/01	1100
Received By:		
Relinquished By:		
Received By (LAB):		

3/5 5/18/01

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

Note: Analyze samples for 1-4 Dioxane only.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

010358 #3 (Copy - see 010359)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ284
Date 4/25/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed-Ex
Comment:	

Cooler No:			
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package	

SWMU 4.5

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 010358	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1-4-Dioxane		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ284	LXBS13S01	1.0	4/24/01	0940	–	14	✓				X																GP			4
RJ285	LXBS13S02	6.0	4/24/01	0950	–	15	✓				X														X					6
RJ286	LXBS13S03	12.0	4/24/01	1000	–	16	✓				X																		X	4
RJ287	LXBS14S01	1.0	4/24/01	1025	–	17	✓				X																			4
RJ288	LXBS14S02	5.0	4/24/01	1035	–	18	✓				X																			4
RJ289	LXBS14S03	12.0	4/24/01	1045	–	19	✓				X																			4
RJ290	LXBS15S01	1.0	4/24/01	1110	–	20	✓				X																			4
RJ291	LXBS15S02	10.0	4/24/01	1120	–		✓				X																			4
RJ292	LXBS15S03	19.0	4/24/01	1135	–		✓				X														X					6
RJ293	LXBS16S01	1.0	4/24/01	1305	–		✓				X																			4
RJ294	LXBS16S02	5.0	4/24/01	1320	–		✓				X																			4
RJ295	LXBS16S03	10.0	4/24/01	1335	–		✓				X																		X	4

	Date	Time
Samplers Signature	4/25/01	1500
Relinquished By:	4/25/01	1500
Received By:		
Relinquished By:		
Received By (LAB): J. Carr	4/26/01	

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

GP= Geoprobe

Note: 14-day TAT

1 Original, 2 Lab Copy, 3 Field Copy

CELMIC CORPORATION
Sample Receiving Checklist

LIMS #: 010358 | Cooler Number: 1

Client: AMEC | Number of Coolers: 2

Project: Rocketdyne | Date Received: 4/26/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/26/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/26/01

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: Fx 827042515590

3. Were custody seals on outside of cooler? .... YES NO

How many & where: 1 Top seal date: / / seal name:

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 cpm YES NO

6. Chain of Custody #: RJ 258, RJ 271

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 10 °C Type of ice: Blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 4/26/01

by (print): J. Cerna (sign): J. Cerna

12. Describe type of packing in cooler: bubble wrap / blue ice block

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO NA

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: YES NO NA

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 4/26/01

Sample Receiving Notification Form

Name: J. Cannon Date: 4/26/01

Client(s): Amec
Samples Affected: Rockaleyre (Ben Stewart)
(reference both Ceimic and client IDs)
Fx 827042515950 (010358)

RJ258 - RJ269, RJ271

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

- Cooler temp was 10°C upon arrival.
  Blue ice only
- Chain of Custody RJ258 was not signed by the sampler

Required Action:
(to be completed by the client or external coordinator)

Faxed to Jose Toledo 4/27/01

Name: Karen W Date: 4/27/01

Additional Comments:
(lab use only)

Name: ______ Date: ______

Note: The original of this form will be included in the final data package.

QAT0296

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
4/30/01 1300	5/1/01 900	010329-15	RJ233	1.00gm	6.77	5.77	6.22		5.22	90.5	UM	KBF 5/2/01
		-17	RJ235		7.36	6.36	6.87		5.87	92.3		
		-18	RJ236		7.87	6.87	6.98		5.98	87.0		
		-11	RJ229		9.70	8.70	8.36		7.36	84.6		
		-12	RJ230		8.91	7.91	8.14		7.14	90.3		
		010340-01	RJ249		9.58	8.58	8.84		7.84	91.4		
		-03	RJ251		8.82	7.82	8.15		7.15	91.4		
		-05	RJ255		8.65	7.65	7.73		6.73	88.0		
		010330-18	RJ246		8.37	7.37	7.60		6.60	89.6		
		010362-01	RJ306	1.00gm	6.29	5.29	5.92		4.92	93.0	UM	
		02	RJ307		6.93	5.93	6.56		5.56	93.8		
		03	RJ308		8.67	7.67	7.66		6.66	86.8		
		04	RJ309		6.29	5.29	5.69		4.69	88.7		
		05	RJ310		6.18	5.18	5.64		4.64	89.6		
		06	RJ311		7.12	6.12	6.30		5.30	86.6		
		07	RJ312		6.83	5.83	6.19		5.19	89.0		
		010358-13	RJ271	1.00gm	6.22	5.22	5.71	—	4.71	90.2		
5/1/01 2:00pm	5/2/01 11:30 AM	010340-01	RJ249	1.00gm	11.03	10.03	10.19	—	9.19	91.6	TS	

All weights must be carried out to 2 decimal places
% solids = (net dry weight/ net wet weight)*100

Dry samples ≥12 hours at 103°C to 105°C

* Use only when proving constant weight.

RUSH

CEIMIC Corporation
Sample Log In Information

Date: 04/27/01 -08:59:07

Date Samples Received: 04/26/01

Date Due: 05/10/01

Client: AMEC

Project Name: Rocketdyne

Client Task: 2000-32R-69813

Client Contact: Dixie Hambrick

Project #: 010358
SDG: RJ258
Case: 313150

Project Amount: $3,735.00

Stored : 3,VOA

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : AMEC
5510 Morehouse Drive
San Diego, CA 92121

Attn : Jose Toledo

Invoice To: AMEC
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ258	4	SOIL	04/26/01	04/23/01	07:40:00	1-4 Dioxane (SIM)
-02A	RJ259	3	SOIL	04/26/01	04/23/01	07:40:00	1-4 Dioxane (SIM)
-03A	RJ260	4	SOIL	04/26/01	04/23/01	08:40:00	1-4 Dioxane (SIM)
-04A	RJ261	4	SOIL	04/26/01	04/23/01	09:20:00	1-4 Dioxane (SIM)
-05A	RJ262	4	SOIL	04/26/01	04/23/01	09:30:00	1-4 Dioxane (SIM)
-06A	RJ263	4	SOIL	04/26/01	04/23/01	09:55:00	1-4 Dioxane (SIM)
-07A	RJ264	4	SOIL	04/26/01	04/23/01	14:10:00	1-4 Dioxane (SIM)
-08A	RJ265	4	SOIL	04/26/01	04/23/01	11:00:00	1-4 Dioxane (SIM)
-09A	RJ266	4	SOIL	04/26/01	04/23/01	11:25:00	1-4 Dioxane (SIM)
-10A	RJ267	4	SOIL	04/26/01	04/23/01	13:05:00	1-4 Dioxane (SIM)
-11A	RJ268	4	SOIL	04/26/01	04/23/01	13:15:00	1-4 Dioxane (SIM)

Project #: 010358

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-12A	RJ269	4	SOIL	04/26/01	04/23/01	13:25:00	1-4 Dioxane (SIM)
-13A	RJ271	1	SOIL	04/26/01	04/25/01	08:30:00	TPH(8015OG) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-14A	RJ284	4	SOIL	04/26/01	04/24/01	09:40:00	Volatiles(8260B/5035)
-15A	RJ285	6	SOIL	04/26/01	04/24/01	09:50:00	Volatiles(8260B/5035) 1-4 Dioxane (SIM)
-15B	RJ285 ms		SOIL	04/26/01	04/24/01	09:50:00	Volatiles(8260B/5035) 1-4 Dioxane (SIM)
-15C	RJ285 msd		SOIL	04/26/01	04/24/01	09:50:00	Volatiles(8260B/5035) 1-4 Dioxane (SIM)
-16A	RJ286	4	SOIL	04/26/01	04/24/01	10:00:00	Sample on hold
-17A	RJ287	4	SOIL	04/26/01	04/24/01	10:25:00	Volatiles(8260B/5035)
-18A	RJ288	4	SOIL	04/26/01	04/24/01	10:35:00	Volatiles(8260B/5035)
-19A	RJ289	4	SOIL	04/26/01	04/24/01	10:45:00	Volatiles(8260B/5035)
-20A	RJ290	4	SOIL	04/26/01	04/24/01	11:10:00	Volatiles(8260B/5035)

Corporation

"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: J. Carson   Date: 4/26/01

Client(s): Amec

Samples Affected: Rocketdyne (Ben Stewart)

(reference both Celmic and client IDs)

Fr 827042515950   (010358)

RJ258 - RJ269, RJ271

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

- Cooler temp was 10°C upon arrival.
  Blue ice only
- Chain of Custody RJ258 was not signed by the sampler

Required Action:

(to be completed by the client or internal coordinator)

Faxed to Jose Toledo 4/27/01

Name: Karen W   Date: 4/27/01

Additional Comments:

(lab use only)

Name: ______________   Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

RJ249

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

May 24, 2001

MAY 2

Mr. Jose Toledo
AMEC
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of AMEC's Rocketdyne Project, Case No. 313150, SDG No. RJ249. The samples were taken from the field on April 17, 18 and 19, 2001 and received at Ceimic Corporation on April 19 and 21, 2001.

These samples are reported under the Ceimic Project Number 010340, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Director

NP/klw

Enclosures

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to AMEC's Rocketdyne Project, Project No. 313150, SDG No. RJ249. Under this SDG there are 4 DIOXANE, 3 SIM, 3 TPH and 1 EXPLOSIVES analyses for 9 soil samples which were received at Ceimic Corporation on April 17, 18 and 19, 2001.

This data package includes the analyses for the following samples from SDG No. RJ249:

(1)

Client ID	Ceimic ID	Analysis
RJ249	010340-01	VOA, SIM, TPH, EXPL
RJ251	010340-03	SIM, TPH
RJ253	010340-05	SIM, TPH
RJ254	010340-06	DIOXANE
RJ255	010340-07	DIOXANE
RJ256	010340-08	DIOXANE
RJ257	010340-09	DIOXANE

The submitted data covers the analyses of the Volatiles (VOA), 1-4 Dioxane, SIM, TPH and Explosives fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

MS/GC Analysis

A. VOA and 1-4 Dioxane

MS12: HP5973 GC/MS,20 m, 0.18mm ID, 1um, DB-624 capillary column
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. SIM

MS9: HP5970B GC/MS,30 m, 25 mm ID, ZB-5 fused silica capillary column

GC Analysis

C. TPH

AD23_1: HP5890II using 30m x 0.25mm ID DB-5 capillary column, GC9.

D. EXPLOSIVES

HPLC2: Waters Millennium HPLC using 4.6 x 150 mm Luna Phenyl-hexyl column.

(4) Sample Information

A. VOA (Method 8260B)

Sample RJ249 (010340-01) was reanalyzed at 1.0gm with a dilution of 1:10.

B. 1-4 Dioxane

The 1,4-Dioxane analyses were performed using SIM (selective ion monitoring) to achieve the low detection limit.

C. SIM (Method 8270)

Sample RJ249 (010340-01) had high surrogate recoveries. This sample was re-extracted out of hold time. The observation of a high surrogate recovery confirms a matrix effect.

D. TPH Fraction (Method 8015B)

No noncompliances are noted

E. Explosives Fraction (Method 8330)

Samples were extracted according to method SW8330 for nitroaromatic explosive residues.

Samples were extracted and analyzed within holding times.

All surrogate and lab control spike recoveries were acceptable.

No target analytes were detected in sample RJ249.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier, Laboratory Director

May 24, 2001

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010340
SDG No.: RJ249

The following samples were received at Ceimic Corporation on April 19, 2001:

RJ249	RJ251	RJ253

The above samples were digested and analyzed for total metals using SW846 methods 3050A/7471A/6010B and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards and the CCV for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 248) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier   May 9, 2001

Neil Pothier
Laboratory Manager

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010340
SDG No.: RJ249

The following sample was received at Ceimic Corporation on April 19, 2001:

RJ249

The above sample was analyzed for Inorganic Anions (300.0).

Comments on Data Package:

Sample Receipt:

All samples were received at a reduced temperature and were intact and properly preserved.

Observations:

The soil sample was subjected to an ASTM shake-out at a 1:10 mass to volume ratio with deionized water.

The sample was analyzed past holding time for Nitrate and Nitrite.

Deviations from SOW:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier
Laboratory Manager

May 8, 2001
Date

Chain-of-Custody

010340 #

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ254
Date 4/20/01 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing
Project Name:	Rocketdyne	Company:	Ogden Environmental
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121
Deliver results to the address above or as stated in contract			

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
Analysis	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1-4 Dioxane		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles

Sample Data

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 010340	Soil	Water	Product	1-4 Dioxane	Sampling Method	Total # of Bottles
JMU 1.3	RJ254	ILBS55S01	0.5'	4/19/01	0920	–	06	✓			X	GP	6
1.15	RJ255	BABS55S01	8.5'	4/19/01	1340	–	07	✓			X	↓	6
1.7	RJ256	CLBS76S01	13.0'	4/19/01	1420	–	08	✓			X	↓	6
1.7	RJ257	CLBS77S01	7.0'	4/19/01	1455	–	09	✓			X	↓	6

RJ

	Date	Time
Samplers Signature: [signature]	4/20/01	1530
Relinquished By: [signature]	4/20/01	1530
Received By:		
Relinquished By:		
Received By (LAB): J. Carson	4/21/01	10:30

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

GP = Geoprobe

* 14-day TAT

10

REV: 1

vol. 2

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ242
Date 4/17/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed-Ex
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Sample Data							Matrix		
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ242	PPQWE01	-	4/16/01	1630	-			X	
RJ243	PPTS07S01	3'	4/16/01	0945	-		X		
RJ244	LFTS12S01	7'	4/17/01	1045	-		X		
RJ245	LFTS12S02	4'	4/17/01	1055	-		X		
RJ246	LFTS12S03	1'	4/17/01	1110	-		X		
RJ247	BTTS19S01	9'	4/17/01	1345	-		X		
RJ248	BTTS19S02	6'	4/17/01	1355	-	~~310~~	X		
RJ249	ECTS06S01	1.5	4/17/01	1445	-	01	X		
RJ250	ECTS06S02	4.5	4/17/01	1510	-	02	X		
RJ251	SRTS06S01	9	4/18/01	1055	-	03	X		
RJ252	SRTS06S02	6	4/18/01	1105	-	04	X		
RJ253	SRTS07S01	5.5	4/18/01	1335	-	05	X		

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Perchlorate	Silver (Ag)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ242		X						X									-			5
RJ243		X	X				X	X				X	X		X		TS			1
RJ244								X												1
RJ245								X												1
RJ246								X												1
RJ247								X								X				1
RJ248																X				1
RJ249	X	X	X			X	X	X			X									4
RJ250	X	X	X			X	X	X			X								X	4
RJ251		X	X					X									TS			1
RJ252		X	X					X											X	1
RJ253		X	X					X												1

	Date	Time
Samplers Signature	4/17/01	1700
Relinquished By:	4/18/01	1630
Received By:		
Relinquished By:		
Received By (LAB): J. Carr	4/19/01	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = Trench Sample
Note: 7-day TAT

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

11

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 010340 Cooler Number: 1

Client: AMEC Number of Coolers: 1

Project: Rocketdyne Date Received: 4/21/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/21/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/21/01

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 827042515983

3. Were custody seals on outside of cooler? .... YES NO

How many & where: ______ seal date: / / seal name: NA

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 cpm YES NO

6. Chain of Custody #: RJ 254

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 15°C Type of ice: block YES NO

B. LOG-IN PHASE: Date samples were logged-in: 4/21/01

by (print): J. Cannon (sign): J. Cannon

12. Describe type of packing in cooler: bubble

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO NA

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO NA

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 4/21/01

QAT0261

CELMIC CORPORATION
Sample Receiving Checklist

LIMS #: 010340 | Cooler Number: 1
Client: AMEC | Number of Coolers: 1
Project: Rockledge | Date Received: 4/19/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/19/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/19/01
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 827042515917
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: ______ seal date: __/__/__ seal name:
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO N/A
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 cpm YES NO
6. Chain of Custody #: RJ242
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 6 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 4/19/01
   by (print): J. Carr (sign): J Carr
12. Describe type of packing in cooler: bubble
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO NA
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO
22. Laboratory labelling verified by: (Initials): JC (date): 4/19/01

QAT0261

Sample Receiving Notification Form

Name: J. [illegible] Date: 4/14/01

Client(s): AMEC
Samples Affected: *RJ214 - RJ222
(reference both Ceimic and client IDs)
RJ215 - 010330-02

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

Sample jar arrived broken, but intact due to improper packing
→ transfered to new jar
* cooler temp ≈ 15°C upon receipt

Required Action:
(to be completed by the client or internal coordinator)

Name: ______ Date: ______

Additional Comments:
(lab use only)

Name: ______ Date: ______

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
4/30/01 1300	5/1/01 900	010329 -15	RJ233	1.00gm	6.77	5.77	6.22		5.22	90.5	UM	KBF 5/2/01
		-17	RJ235		7.36	6.36	6.87		5.87	92.3		
		-18	RJ236		7.87	6.87	6.98		5.98	87.0		
		-11	RJ229		9.70	8.70	8.36		7.36	84.6		
		-12	RJ230		8.91	7.91	8.14		7.14	90.3		
		010340 -01	RJ249		9.58	8.58	8.84		7.84	91.4		
		-03	RJ251		8.82	7.82	8.15		7.15	91.4		
		-05	RJ255	253?	8.65	7.65	7.73		6.73	88.0		
		010330-18	RJ246		8.37	7.37	7.60		6.60	89.6		
		010362-01	RJ306	1.00gm	6.29	5.29	5.92		4.92	93.0	UM	
		02	RJ307		6.93	5.93	6.56		5.56	93.8		
		03	RJ308		8.67	7.67	7.66		6.66	86.8		
		04	RJ309		6.29	5.29	5.69		4.69	88.7		
		05	RJ310		6.18	5.18	5.64		4.64	89.6		
		06	RJ311		7.12	6.12	6.30		5.30	86.6		
		07	RJ312		6.83	5.83	6.19		5.19	89.0		
		010358-13	RJ271	1.00gm	6.22	5.22	5.71	—	4.71	90.2		
5/1/01 3:00pm	5/2/01 11:30 AM	010340-01	RJ249	1.00gm	11.03	10.03	10.19	—	9.19	91.6	TS	

All weights must be carried out to 2 decimal places
% solids = (net dry weight/ net wet weight)*100

Dry samples ≥12 hours at 103°C to 105°C

* Use only when proving constant weight.

QAT0042

Page # 036

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RUSH

SAMPLES -06...-09 DUE 5/5/01

CEIMIC Corporation
Sample Log In Information

Date: 04/23/01 -08:32:37

Date Samples Received: 04/19/01

Date Due: 04/26/01

Client: AMEC

Project Name: Rocketdyne

Client Task: 2000-32R-69813

Client Contact: Dixie Hambrick

Project #: 010340
SDG: RJ249
Case: 313150

Project Amount: $1,975.00

Stored : VOA,2

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : AMEC
5510 Morehouse Drive
San Diego, CA 92121

Attn : Jose Toledo

Invoice To: AMEC
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ249	4	SOIL	04/19/01	04/17/01	14:45:00	Inorganic Anions (300) TPH(8015OG) Volatiles(8260B/5035) Formaldehyde(8315) Explosives(8330) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-02A	RJ250	4	SOIL	04/19/01	04/17/01	15:10:00	Sample on hold
-03A	RJ251	1	SOIL	04/19/01	04/18/01	10:55:00	TPH(8015OG) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-04A	RJ252	1	SOIL	04/19/01	04/18/01	11:05:00	Sample on hold
-05A	~~RJ253~~ RJ253	1	SOIL	04/19/01	04/18/01	13:35:00	TPH(8015OG) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-06A	RJ254	6	SOIL	04/21/01	04/19/01	09:20:00	1-4 Dioxane (SIM)
-07A	RJ255	6	SOIL	04/21/01	04/19/01	13:40:00	1-4 Dioxane (SIM)

Project #: 010340

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-08A	RJ256	6	SOIL	04/21/01	04/19/01	14:20:00	1-4 Dioxane (SIM)
-09A	RJ257	6	SOIL	04/21/01	04/19/01	14:55:00	1-4 Dioxane (SIM)

Comments:
SAMPLES -06…-09 DUE 5/5/01

Requirements:
Level IV; 28 day TAT
TPH = Ogden 4 ranges (SOP No.:8015BET) 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's and Freons for soils.

K.T.: 07/25/01

LIMS Identifier: 0104069

LIMS Project Code: AMEC_ROCKET

Approved by: [signature]
4/23/01

RJ210

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

May 18, 2001

Mr. Jose Toledo
AMEC
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of AMEC's Rocketdyne Project, Case No. 313150, SDG No. RJ210. The samples were taken from the field April 10, 12 and 13, 2001 and received at Ceimic Corporation on April 13 and 14, 2001.

These samples are reported under the Ceimic Project Number 010329, which can be referenced when inquiring about this project.

Please note that this data package does not include Dioxin results. These samples have been subcontracted to another laboratory, and the results will be delivered under a separate cover.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Director

NP/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to AMEC's Rocketdyne Project, Project No. 313150, SDG No. RJ210. Under this SDG there are 4 VOA, 2 SIM, 4 PCB, 1 PAH, 4 TPH and 4 EXPLOSIVES analyses for 18 soil and water samples which were received at Ceimic Corporation on April 13 and 14, 2001.

This data package includes the analyses for the following samples from SDG No. RJ210:

(1)

Client ID	Ceimic ID	Analysis
RJ210	010329-01	VOA
RJ211	010329-02	VOA, PCB
RJ212	010329-03	VOA, PCB
RJ213	010329-04	VOA, PAH
RJ229	010329-11	SIM, PCB, TPH, EXPL
RJ229 ms/msd	010329-11	TPH, EXPL
RJ230	010329-12	SIM, PCB, TPH, EXPL

The submitted data covers the analyses of the Volatiles (VOA), SIM, PCB, PAH and TPH fractions their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to analyses performed for this case:

(2) Sample Receipt

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

MS/GC Analysis

A. VOA

MS5: HP5971 GC/MS,105 m, 0.53 mm ID, 3 um, VOCOL megabore column
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. SIM

MS9: HP5970B GC/MS,30 m, 25 mm ID, ZB-5 fused silica capillary column

GC Analysis

C. PCB

AD8: HP5890II using 30m x 0.53 mm ID DB-608 megabore column, GC7.

AD9: HP5890II using 30m x 0.53 mm ID DB-1701 megabore column, GC7.

D. PAH

HPLC1: Waters Millennium using 4.6 x 150mm Supelco LC-PAH column.

E. TPH

AD23_1: HP5890II using 30m x 0.25mm ID DB-5 capillary column, GC9.

(4) Sample Information

A. Volatiles Fraction (Method 8260)

The pH of the water samples was:

Client ID:	Ceimic ID:	pH:
RJ210	010329-01	1
RJ211	010329-02	7
RJ212	010329-03	1
RJ213	010329-04	1

B. SIM (Method 8270)

These are the results for SIM (8270) for low detection of PAH's.

C. PCB Fraction (Method 8082)

No noncompliances are noted.

D. PAH Fraction

Sample RJ213 was extracted out of hold time (13 days after date sampled).

E. TPH Fraction (Method 8015B)

Gasoline range recoveries for RJ229 MS/MSD are low (-9%, -12%) due to apparent inhomogeneity in the sample material.

F. Explosives Fraction (Method 8330)

No noncompliances are noted.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier, Laboratory Director

May 18, 2000

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010329
SDG No.: RJ210

The following samples were received at Ceimic Corporation on April 13, 2001:

RJ210	RJ211	RJ212
RJ213	RJ229	RJ230(MS/MSD)

The above samples were digested and analyzed for total metals using SW846 methods 3050A/3005A/7471A/7470A/6010B and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on April 13, 2001:

RJ223	RJ225	RJ226
RJ227	RJ231	RJ232
RJ233	RJ235	RJ236

The above samples were digested and analyzed for total mercury using SW846 method 7471A and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards and the CCV for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 248) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier — May 8, 2001

Neil Pothier
Laboratory Manager

Date

Chain-of-Custody

010338
#4

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ229
Date 4/13/01 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed-Ex
Comment:	

Cooler No:

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

Preservatives	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 010339	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Mercury (Hg)	Perchlorate	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ229	PPTS035Ø1	4'	4/12/01	1015	–	11	X				X	X				X	X				X	X			X	TS			1
RJ230	PPTSØ45Ø1	3'	4/12/01	1025	–	12	X				X	X				X	X				X	X			X	TS			1
RJ231	EVBS875Ø1	0.5	4/13/01	1307	–	13	X																	X		HA			1
RJ232	EVBS885Ø1	0.5		1311	–	14	X																	X					1
RJ233	EVBS895Ø1	0.5		1315	–	15	X																	X					1
RJ234	EVBS905Ø1	0.5		1320	–	16	X																	X					1
RJ235	EVBS915Ø1	0.5		1324	–	17	X																	X					1
RJ236	EVBS925Ø1	0.5		1328	–	18	X																	X					1
RJ237	EVBS935Ø1	0.5		1335	–	19	X																	X					1
~~RJ238~~	2S 4/13/01																												

Samplers Signature	Date	Time
[signature]	4/13/01	1630
Relinquished By: [signature]	4/13/01	1630
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = Trench Sample
HA = Hand Augur
Note: For RJ231 thru RJ237, 7-day TAT.
RJ229 to RJ230, 14-day TAT

JMU 4.17

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

010329
#4

Chain of Custody

Control Number: COC RJ223
Date 4/13/01 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Hg		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ223	SRBS32S01	0.5	4/12/01	1418		05	✓																	✓		HA			1
RJ224	SRBS32S02	4.0	4/12/01	1440		06	✓																	✓		HA		✓	1
RJ225	SRBS33S01	0.5	4/12/01	1502		07	✓																	✓		HA			1
RJ226	SRBS34S01	0.5	4/12/01	1524		08	✓																	✓		HA			1
RJ227	SRBS35S01	0.5	4/12/01	1549		09	✓																	✓		HA			1
RJ228	SRBS35S02	0.5	4/12/01	1620		10	✓																	✓		HA		✓	1

WMU
IV AOC

	Date	Time
Samplers Signature	4/13/01	1600
Relinquished By:	4/13/01	1600
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

* HA = Handauger

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

3

010339

#4

Chain of Custody

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal ...

Shipment Method: Fed.

Comment:

Cooler No:

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

Analysis	Preservatives
8260M VOC	HCL, pH<2 4°C
8015OG TPH	HCL, pH<2 4°C
8270SIM SVOC	4°C
8270R SVOC	4°C
8290 DIOXIN	4°C
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C
8330 ORDINANCE	4°C
1LM02.IRT METALSRT	HNO3, pH<2 4°C
7196 HEX CHROME	4°C
340.2 FLUORIDE	4°C
300 ANIONS	4°C
9045/9040 pH	4°C
8081 PCBs	4°C
IC HYDRAZ	4°C

SWMK	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 010339	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	total M+	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
6.8	RJ210	SNSW04SØ1	0.5'	4/10/01	1020		01		✓		✓				✓			✓							✓		SW			6
5.18	RJ211	CASW01SØ1	0.5'	4/10/01	1335		02		✓		✓				✓			✓					✓		✓					8
4.17	RJ212	PPSW01SØ1	0.5'	4/10/01	1451		03		✓		✓							✓					✓		✓					6
4.16	RJ213	RISW01SØ1	0.5'	4/10/01	1615		04		✓		✓							✓							✓	✓				6

ZB

	Date	Time
Samplers Signature: [signature]	4/11/01	1500
Relinquished By: [signature]	4/11/01	1500
Received By:		
Relinquished By:		
Received By (LAB): J. Curran	4/13/01	10:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

SW = Surface Water

Note: 14-Day TAT

10

REV: 1

210

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo sign:

Date: 04/20/00 There are 3 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form.
Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ160	RJ164	BSTS11S02	03/28/01	METALSRT	**HOLD METALS EXTRACT**
RJ160	RJ166	BSTS13S01	03/28/01	METALSRT	**HOLD METALS EXTRACT**
RJ210	RJ210	SNSW04S01	04/10/01	8260B, 8290, Metals (6010B), Mercury.	**8260B, 8290, Metals (6010B).**
RJ210	RJ211	CASW01S01	04/10/01	8082, 8260B, Metals(6010B), 8290, Mercury.	**8082, 8260B, Metals(6010B), 8290.**
RJ210	RJ212	PPSW01S01	04/10/01	8082, 8260B, Metals(6010B), Mercury.	**8082, 8260B, Metals(6010B).**
RJ210	RJ213	R1SW01S01	04/10/01	8260B, PAH(8310), Metals (6010B), Mercury.	**8260B, PAH(8310), Metals (6010B).**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form X

Thank you

Sample Receiving Checklist

LIMS #: 210329 Cooler Number: 2

Client: AMEC Number of Coolers: 3

Project: Rocketdyne Date Received: 4/13/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/14/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/14/01
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 827042515906
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: ______ seal date: / / seal name: NA
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ocpm YES NO
6. Chain of Custody #: RJ223, RJ229
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 15 °C Type of ice: block YES NO

B. LOG-IN PHASE: Date samples were logged-in: 4/14/01

by (print): J. Carson (sign): J Carson

12. Describe type of packing in cooler: insufficient
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO NA
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO NA
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO
22. Laboratory labelling verified by: (Initials): JC (date): 4/14/01 11

Sample Receiving Checklist

LIMS # 010329 — Cooler Number: 1

Client: AMEC — Number of Coolers: 3

Project: Rocketdyne — Date Received: 4/13/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/14/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/14/01
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO — YES
   If YES, enter carrier name & airbill number here: FX 827042515880
3. Were custody seals on outside of cooler? .... YES NO — NO
   How many & where: — seal date: — / — / — seal name: N/A
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ocpm YES NO — YES
6. Chain of Custody #: RJ210
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO — YES
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO — YES
9. Did you sign custody papers in the appropriate place? .... YES NO — YES
10. Was project identifiable from custody papers? .... YES NO — YES
11. If required, was enough ice used? .... Cooler Temperature: 15 °C Type of ice: blue YES NO — NO

B. LOG-IN PHASE: Date samples were logged-in: 4/14/01

by (print): J. Carson (sign): J Carson

12. Describe type of packing in cooler: Insufficient
13. Were all bottles sealed in separate plastic bags? .... YES NO — NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO — NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO — YES
16. Did all bottle labels agree with custody papers? .... YES NO — YES
17. Were correct containers used for the tests indicated? .... YES NO — YES
18. Were samples received at the correct pH? .... YES NO NA
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO — YES
20. Were bubbles absent in VOA samples? If NO, list by sample#: .... YES NO — YES
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO
22. Laboratory labelling verified by: (Initials): JC (date): 4/14/01

12

QAT0261

Sample Receiving Notification Form

Name: J. Carron

Date: 4/14/01

Client(s): AMEC

Samples Affected:

(reference both Ceimic and client IDs)

RJ210 - RJ213 / * RJ211, RJ213

010329 (1 - 4) / 010329 (2, 4)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

Cooler Temp was 15° C upon reciept. Not enough ice used.

*1 of 3 VOA vials arrived broken due to insufficient packing. RJ211, RJ213

Required Action:

(to be completed by the client or internal coordinator)

Faxed to Jose Toledo 4/17/01

Name: ______________

Date: ______________

Additional Comments:

(lab use only)

Name: ______________

Date: ______________

Note: The original of this form will be included in the final data package.

QAT0296

Corporation
"Analytic.l Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: J. Carro Date: 4/14/01

Client(s): AMEC

Samples Affected:

(reference both Ceimic and client IDs)

RJ234, RJ237

010329-(16, 19)

* RJ229 - RJ237

010329 (11-19)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

Above Samples were smashed, unintact upon arrival

* Cooler temp upon reciept ≃ 15°C

Required Action:

(to be completed by the client c... ternal coordinator)

Faxed to Jose Toledo 4/17/01
- no sample for RJ234 or RJ237

Name: Karen Williamsen Date: 4/17/01

Additional Comments:

(lab use only)

Name: __________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, N· ragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

Sample Receiving Notification Form

Name: J. Carron Date: 4/4/01

Client(s): AMEC

Samples Affected:

(reference both Ceimic and client IDs)

RJ210 - RJ213 / * RJ211, RJ213

010329 -(1 - 4) / 010329 (2, 4)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

Cooler Temp was 15° C upon reciept. Not enough ice used.

*1 of 3 VOA vials arrived broken due to insufficient packing. RJ211, RJ213

Required Action:

(to be completed by the client or external coordinator)

Name: ______________ Date: __________

Additional Comments:

(lab use only)

Name: ______________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

CEIMIC

Corporation

"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: J. Carson

Date: 4/14/01

Client(s): AMEC

Samples Affected:

(reference both Ceimic and client IDs)

RJ234, RJ237

010329-(16, 19)

* RJ229 - RJ237

010329-(11-19)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

Above Samples were smashed, unintact upon arrival

* Cooler temp upon reciept ≃ 15°C

Required Action:

(to be completed by the client or external coordinator)

Name: ______________ Date: ______________

Additional Comments:

(lab use only)

Name: ______________ Date: ______________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

Ceimic Corporation

Classical Chemistry Laboratory

% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
4/20/01 1400	4/21/01 1145	010297-14	RJ200	1.00	5.49	4.49	5.00	—	4.00	89.1	UM	CBF 4/27/01
		15	RJ201		5.00	4.00	4.53		3.53	88.2		
		16	RJ202		5.57	4.57	4.98		3.98	87.1		
		20	RJ203		7.30	6.30	6.53		5.53	87.8		
		dup spk UM 4/30/01	dup		7.46	6.46	6.72		5.72	88.5		
—	—	~~spk dup~~	-		—	-	-	-	-	—	-	—
4/24/01 9:30	4/25/01 11:30	010330-15	RJ243	1.00g	8.29	7.29	7.66	—	6.66	91.3	TS	
4/30/01 1300	5/1/01 900	0100330-05	RJ218	1.00gM	7.25	6.25	6.86	—	5.86	93.8	UM	TBF 5/2/01
		-16	RJ244		8.02	7.02	7.26		6.26	89.2		
		-17	RJ245		7.48	6.48	6.65		5.65	87.2		
		-19	RJ247		7.38	6.38	6.63		5.63	88.2		
		-20	RJ248		8.29	7.29	7.38		6.38	87.5		
		010329-05	RJ223		7.50	6.50	6.86		5.86	90.2		
		-07	RJ225		~~8.80~~ 7.45	~~7.80~~ 6.45 UM 4/30/01	7.10		6.10	91.7		
		-08	RJ226		8.80	7.80	7.83		6.83	87.6		
		-09	RJ227		7.91	6.91	7.21		6.21	89.9		
		-13	RJ231		7.47	6.47	6.64		5.64	87.2		
		-14	RJ232		7.94	6.94	6.84		5.84	84.1		

All weights must be carried out to 2 decimal places   Dry samples ≥12 hours at 103°C to 105°C   * Use only when proving constant weight.

% solids = (net dry weight/ net wet weight)*100

QAT0042

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
4/30/01 1300	5/1/01 900	010329-15	RJ233	1.00gm	6.77	5.77	6.22		5.22	90.5	UM	KBF 5/2/01
		-17	RJ235		7.36	6.36	6.87		5.87	92.3		
		-18	RJ236		7.87	6.87	6.98		5.98	87.0		
		-11	RJ229		9.70	8.70	8.36		7.36	84.6		
		-12	RJ230		8.91	7.91	8.14		7.14	90.3		
		010340-01	RJ249		9.58	8.58	8.84		7.84	91.4		
		-03	RJ251		8.82	7.82	8.15		7.15	91.4		
		-05	RJ255		8.65	7.65	7.73		6.73	88.0		
		010330-18	RJ246		8.37	7.37	7.60		6.60	89.6		
		010362-01	RJ306	1.00gm	6.29	5.29	5.92		4.92	93.0	UM	
		02	RJ307		6.93	5.93	6.56		5.56	93.8		
		03	RJ308		8.67	7.67	7.66		6.66	86.8		
		04	RJ309		6.29	5.29	5.69		4.69	88.7		
		05	RJ310		6.18	5.18	5.64		4.64	89.6		
		06	RJ311		7.12	6.12	6.30		5.30	86.6		
		07	RJ312		6.83	5.83	6.19		5.19	89.0		
		010358-13	RJ271	1.00gm	6.22	5.22	5.71	—	4.71	90.2		
5/1/01 2:00pm	5/2/01 11:30 AM	010340-01	RJ249	1.00gm	11.03	10.03	10.19	—	9.19	91.6	TS	

All weights must be carried out to 2 decimal places Dry samples ≥12 hours at 103°C to 105°C * Use only when proving constant weight.
% solids = (net dry weight/ net wet weight)*100

919

QAT0042

Page # 036

RUSH

SAMPLES -11 AND -12 ARE DUE 4/27/01; NO HG FOR RJ210...RJ213

CEIMIC Corporation
Sample Log In Information

Date: 04/23/01 -08:37:29

Date Samples Received: 04/13/01

Date Due: 04/20/01

Client: AMEC

Project Name: Rocketdyne

Client Task: 2000-32R-69813

Client Contact: Dixie Hambrick

Project #: 010329
SDG: RJ210
Case: 313150

Project Amount: $5.232.50

Stored : 4

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : AMEC
5510 Morehouse Drive
San Diego, CA 92121

Attn : Jose Toledo

Invoice To: AMEC
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ210	6	WATER	04/13/01	04/10/01	10:20:00	Volatiles(8260B) Dioxins(8290) TAL Metals(6010B) TAL Metals(6010B), TRACE
-02A	RJ211	8	WATER	04/13/01	04/10/01	13:35:00	PCB(8082) Volatiles(8260B) Dioxins(8290) TAL Metals(6010B) TAL Metals(6010B), TRACE
-03A	RJ212	6	WATER	04/13/01	04/10/01	14:51:00	PCB(8082) Volatiles(8260B) TAL Metals(6010B) TAL Metals(6010B), TRACE
-04A	RJ213	6	WATER	04/13/01	04/10/01	16:15:00	Volatiles(8260B) PAH(8310) TAL Metals(6010B) TAL Metals(6010B), TRACE
-05A	RJ223	1	SOIL	04/13/01	04/12/01	14:18:00	T Mercury
-06A	RJ224	1	SOIL	04/13/01	04/12/01	14:40:00	Sample on hold
-07A	RJ225	1	SOIL	04/13/01	04/12/01	15:02:00	T Mercury

Project #: 010329

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-08A	RJ226	1	SOIL	04/13/01	04/12/01	15:24:00	T Mercury
-09A	RJ227	1	SOIL	04/13/01	04/12/01	15:49:00	T Mercury
-10A	RJ228	1	SOIL	04/13/01	04/12/01	16:20:00	Sample on hold
-11A	RJ229	1	SOIL	04/13/01	04/12/01	10:15:00	Perchlorate TPH(8015OG) PCB(8082) Explosives(8330) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-11B	RJ229 ms		SOIL	04/13/01	04/12/01	10:15:00	Perchlorate TPH(8015OG) Explosives(8330)
-11C	RJ229 msd		SOIL	04/13/01	04/12/01	10:15:00	Perchlorate TPH(8015OG) Explosives(8330)
-12A	RJ230	1	SOIL	04/13/01	04/12/01	10:25:00	Perchlorate TPH(8015OG) PCB(8082) Explosives(8330) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-12B	RJ230 ms		SOIL	04/13/01	04/12/01	10:25:00	pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-12C	RJ230 msd		SOIL	04/13/01	04/12/01	10:25:00	pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-13A	RJ231	1	SOIL	04/13/01	04/13/01	13:07:00	T Mercury
-14A	RJ232	1	SOIL	04/13/01	04/13/01	13:11:00	T Mercury
-15A	RJ233	1	SOIL	04/13/01	04/13/01	13:15:00	T Mercury
-17A	RJ235	1	SOIL	04/13/01	04/13/01	13:24:00	T Mercury

Project #: 010329

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-18A	RJ236	1	SOIL	04/13/01	04/13/01	13:28:00	T Mercury

Comments:

Requirements:

Level IV: 28 day TAT
TPH = Ogden 4 ranges(SOP No.:8015BET) 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's and Freons for soils.

K.T.: 07/19/01

LIMS Identifier: 0104059

LIMS Project Code: AMEC_ROCKET

Approved by: [signature]
4/23/01

RJ186

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

MAY 18

May 15, 2001

Mr. Jose Toledo
AMEC
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of AMEC's Rocketdyne Project, Case No. 313150, SDG No. RJ186. The samples were taken from the field April 2, 3 ,4 and 6, 2001 and received at Ceimic Corporation on April 6 and 7, 2001.

These samples are reported under the Ceimic Project Number 010297, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D.
Laboratory Director

NP/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

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Page #

Project Narrative

SDG Narrative

The enclosed data package is in response to AMEC's Rocketdyne Project, Project No. 313150, SDG No. RJ186. Under this SDG there is 1 SIM and 1 TPH analyses for 20 soil samples which were received at Ceimic Corporation on April 6 and 7, 2001.

This data package includes the analyses for the following samples from SDG No. RJ186:

(1)

Client ID	Ceimic ID	Analysis
RJ202	010297-16	TPH
RJ203	010297-20	SIM

The submitted data covers the analyses of the SIM and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

MS/GC Analysis

A. SIM

MS9: HP5970B GC/MS,30 m, 25 mm ID, ZB-5 fused silica capillary column

GC Analysis

C. TPH

AD23_1: HP5890II using 30m x 0.25mm ID DB-5 capillary column, GC9.

(4) Sample Information

A. SIM (Method 8270)

No noncompliances are noted.

B. TPH Fraction (Method 8015B)

Sample RJ202 accidentally dried up in the extraction jar and had to be re-extracted out of hold time.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Director

May 15, 2001

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010297
SDG No.: RJ186

The following samples were received at Ceimic Corporation on April 6, 2001:

RJ186	RJ188	RJ190
RJ192	RJ194	RJ195
RJ196	RJ197	RJ199
RJ200	RJ201	

The above samples were digested and analyzed for total silver using SW846 methods 3050A/6010B and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on April 7, 2001:

RJ202	RJ203

The above samples were digested and analyzed for total metals using SW846 methods 3050A/7471A/6010B and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on April 7, 2001:

RJ133	RJ141	RJ142

The above samples were digested and analyzed for total mercury using SW846 method 7471A and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards and the CCV for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 248) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier
Laboratory Manager

May 4, 2001
Date

Chain-of-Custody

#2

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ 186
Date 4/4/01 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED EX
Comment:	

Cooler No:

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

WMU
7-AOC

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	a0297 Lab ID	Soil	Water	Product	
RJ186	BTTS02S02	7.0	4/3/01	0933		01	X			
RJ187	BTTS05S02	11.5	4/3/01	0925		02	X			
RJ188	BTTS05S03	9.0	4/2/01	0945		03	X			
RJ189	BTTS09S01	11.5	4/2/01	1415		04	X			
~~RJ190~~	~~BTTS02~~ →D									
RJ190	BTTS09S02	8.0	4/2/01	1430		05	X			
RJ191	BTTS14S01	11.5	4/2/01	0830		06	X			
RJ192	BTTS14S02	7.5	4/2/01	0845		07	X			
RJ193	BTTS15S01	13.0	4/2/01	0800		08	X			
RJ194	BTTS15S02	8.0	4/2/01	0815		09	X			
RJ195	BTTS16S01	9.0	4/2/01	1045		10	X			
RJ196	BTTS16S02	10.5	4/2/01	1110		11	X			

Analyses

Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Ag (Silver)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
RJ186															X		TS			1
RJ187															X		TS		X	1
RJ188															X		TS			1
RJ189															X		TS		X	1
~~RJ190~~																				
RJ190															X		TS			1
RJ191															X		TS		X	1
RJ192															X		TS			1
RJ193															X		TS		X	1
RJ194															X		TS			1
RJ195															X		TS			1
RJ196															X		TS			1

	Date	Time
Samplers Signature: [signature]	4/4/01	1500
Relinquished By: [signature]	4/4/01	1500
Received By:		
Relinquished By:		
Received By (LAB): J. [signature]	4/6/01	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = trench sample

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

80

010297
#2

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC 197
Date 4/4/01 Page 2 of 2

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED EX
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 010297	Soil	Water	Product	
RJ197	BTTS175Ø1	6.5	4/2/01	1350		12	X			
RJ199	BTTS175Ø2	5.0	4/3/01	0907		13	X			
RJ200	BTTS175Ø3	8.0	4/4/01	0815		14	X			
RJ201	BTTS185Ø1	9.0	4/3/01	1105		15	X			

Analysis	Preservatives	RJ197	RJ199	RJ200	RJ201
8260M VOC	HCL, pH<2 4°C				
8015OG TPH	HCL, pH<2 4°C				
8270SIM SVOC	4°C				
8270R SVOC	4°C				
8290 DIOXIN	4°C				
ASTM D19 FORMALDEHYDE	H_2SO_4,pH<2 4°C				
8330 ORDINANCE	4°C				
1LM02.IRT METALSRT	HNO3, pH<2 4°C				
7196 HEX CHROME	4°C				
340.2 FLUORIDE	4°C				
300 ANIONS	4°C				
9045/9040 pH	4°C				
8081 PCBs	4°C				
IC HYDRAZ	4°C				
Ag (Silver)	4°C	X	X	X	X
Sampling Method		TS	TS	TS	TS
Extra Volume MS/MSD					
HOLD					
Total # of Bottles		1	1	1	1

BS

JMU

	Date	Time
Samplers Signature: [signature]	4/4/01	1500
Relinquished By: [signature]	4/4/01	1500
Received By:		
Relinquished By:		
Received By (LAB): J. [signature]	4/6/01	10:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

TS = trench sample

REV: 1

60

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ202
Date 4 / 6 / 01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	
RJ202	SRBS315Ø1	0.5	4/6/01	1300	22A		X			
RJ133	EVBS815Ø2	3.0	4/6/01	0945	78		X			
RJ141	EVBS855Ø1	0.5	4/6/01	0902	77		X			
RJ142	EVBS855Ø2	2.0	4/6/01	0915	77		X			
RJ203	SRBS285Ø1	6.0	4/6/01	1120	48		X			

Analyses

Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Mercury (Hg)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ202		X						X									HA			1
RJ133															X		HA			1
RJ141															X		HA			1
RJ142															X		HA			1
RJ203			X					X									HA			1

RJ

	Date	Time
Samplers Signature: [signature]	4/6/01	1400
Relinquished By: [signature]	4/6/01	1400
Received By:		
Relinquished By:		
Received By (LAB): J. Carl[signature]	4/7/01	10Am

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N (Y circled)
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HA - hand auger

7 day turnaround time

10

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 010297 Cooler Number: 1

Client: AMEC Number of Coolers: 1

Project: Rocketdyne Date Received: 4/7/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/7/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/7/01

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

   If YES, enter carrier name & airbill number here: FX 8270 4251 6019

3. Were custody seals on outside of cooler? .... YES NO

   How many & where: ______ seal date: __/__/__ seal name: NA

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 cpm YES NO

6. Chain of Custody #: RJ 202

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 10 °C Type of ice: block YES NO

B. LOG-IN PHASE: Date samples were logged-in: 4/7/01

   by (print): J. Cerano (sign): J. Cerano

12. Describe type of packing in cooler: bubble

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO NA

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO NA

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 4/7/01

QAT0261

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 010297

Cooler Number: 1

Client: AMEC

Number of Coolers: 1

Project: Rocketdyne

Date Received: 4/6/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 4/6/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 4/6/01

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 827042516020

3. Were custody seals on outside of cooler? .... YES NO

How many & where: NA seal date: NA / seal name:

4. Were custody seals unbroken and intact at the date and time of arrival .... ~~YES~~ NO JC 4/6/01

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: α cpm YES NO

6. Chain of Custody #: RJ186, RJ197

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 6 °C Type of ice: Blue Block YES NO

B. LOG-IN PHASE: Date samples were logged-in: 4/7/01

by (print): J. Cannon (sign): J. Cannon

12. Describe type of packing in cooler: bubble wrap

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO NA

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO ~~NA~~ JC

20. Were bubbles absent in VOA samples? If NO, list by sample#: ________ YES NO NA

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 4/7/01

QAT0261

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*: Jose L. Toledo

Date: 04/05/01 There are 2 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ186	RJ192	BTTS14S02	04/02/01	Silver	Silver, **2 wk TAT**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change *X*
Other: Containers mislabeled ______

Thank you.

NO. 5000 P. 1

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*: Jose L. Toledo

Date: 04/11/01 There are 3 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ202	RJ202	SRBS31S01	04/06/01	METALS, TPH, 7 DAY TAT	**Same Analyis , change to standard TAT**
RJ202	RJ203	SRBS28S01	04/06/01	METALS, TPH, 7 DAY TAT	**Same Analyis , change to standard TAT**
RJ204	RJ204	BATS15S04	04/06/01	SVOC, 7 DAY TAT	**Same Analyis , change to standard TAT**
RJ204	RJ206	BATS20S02	04/06/01	SVOC, 7 DAY TAT	**Same Analyis , change to standard TAT**
RJ204	RJ208	BATS21S02	04/06/01	SVOC, 7 DAY TAT	**Same Analyis , change to standard TAT**
RJ204	RJ209	BUTS14S01	04/06/01	TPH, SVOC, PCB, 7 DAY TAT	**Same Analyis , change to standard TAT**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______

Lack of sample volume ______

Ogden office personnel require this change ___X___

Other: Containers mislabeled ______

Thank you.

Corporation

"Analytic. l Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: J. Corne

Date: 4/7/01

Client(s): AMEC /Rocketdyne

Samples Affected: 010297 - 16 - 20

(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

10°C cooler temp 8270 4251 6019

Required Action:

(to be completed by the client c . ternal coordinator)

Name: ______________ Date: __________

Additional Comments:

(lab use only)

Name: ______________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, N· ragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Corrective Action Form

Name: Matthew Campbell Date: 05/10/01

Out of Control Situation: Sample extract broke in Rapidvap. Sample re-extracted out of holding time. TPH analysis

Client(s): AMEC

Samples Affected: RJ202 (010297-16)

Action Taken: Sample re-extracted, manager notified. Client to be notified.

Faxed to Lisa Tocker 5/10/01

Name: Matthew Campbell Date: 5/10/01

Proof of Return to Control:

Supervisor: ______________ QA/QC Officer: ______________

Date: ______________ Date: ______________

Corrective Action Tracking #______________

QAT0046 Page # 036

10 Dean Knauss Drive, narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
4/16/01 1635	4/17/01 1100	010276-01	RJ169	1.00gm	7.25	6.25	6.81		5.81	93.0	um	CSK 4/27/0
		-02	RJ170		5.65	4.65	5.33		4.33	93.1		
		-07	RJ175		6.20	5.20	5.40		4.40	84.6		
		-08	RJ176		6.00 ~~6.0~~ um	5.00	5.43		4.43	88.6		
		-11	RJ179		6.45	5.45	5.74		4.74	87.0		
		-12	RJ180		9.00	8.00	8.10		7.10	88.8		
		-13	RJ181		5.26	4.26	5.10		4.10	96.2		
		-14	RJ182		6.77	5.77	6.46		5.46	94.6		
		-17	RJ185		7.46	6.46	6.68		5.68	87.9		
4/20/01 1400	4/21/01 1145	010297-01	RJ186	1.00	6.15	5.15	5.88		4.88	94.8	um	
		03	RJ188		5.70	4.70	5.12		4.12	87.7		
		05	RJ190		5.26	4.26	4.76		3.76	88.3		
		07	RJ192		5.97	4.97	5.38		4.38	88.1		
		09	RJ194		5.53	4.53	5.05		4.05	89.4 ~~89.2~~ um 4/21		
		10	RJ195		5.31	4.31	4.74		3.74	86.8		
		11	RJ196		5.27	4.27	4.77		3.77	88.3		
		12	RJ197		6.03	5.03	5.48		4.48	89.1		
		13	RJ199		6.32	5.32	5.91		4.91	92.3		

All weights must be carried out to 2 decimal places Dry samples ≥12 hours at 103°C to 105°C * Use only when proving constant weight.
% solids = (net dry weight/ net wet weight)*100

QAT0042

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Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
4/20/01 1400	4/21/01 1145	010297-14	RJ200	1.00	5.49	4.49	5.00	—	4.00	89.1	UM	CBF 4/27/01
		15	RJ201		5.00	4.00	4.53		3.53	88.2		
		16	RJ202		5.57	4.57	4.98		3.98	87.1		
		20	RJ203		7.30	6.30	6.53		5.53	87.8		
		dup spk 010297-14	+ dup		7.46	6.46	6.72		5.72	88.5		
—	—	~~-spk dup~~	—		—	—	—	—	—	—	—	—
4/24/01 9:30	4/25/01 11:30	010330-15	RJ243	1.00g	8.29	7.29	7.66	—	6.66	91.3	TS	
4/30/01 1300	5/1/01 900	0100330-05	RJ218	1.00g UM	7.25	6.25	6.86	—	5.86	93.8	UM	TBF 5/2/01
		-16	RJ244		8.02	7.02	7.26		6.26	89.2		
		-17	RJ245		7.48	6.48	6.65		5.65	87.2		
		-19	RJ247		7.38	6.38	6.63		5.63	88.2		
		-20	RJ248		8.29	7.29	7.38		6.38	87.5		
		010329-05	RJ223		7.50	6.50	6.86		5.86	90.2		
		-07	RJ225		~~8.80~~ 7.45 UM 4/30/01	~~7.80~~ 6.65	7.10		6.10	91.7		
		-08	RJ226		8.80	7.80	7.83		6.83	87.6		
		-09	RJ227		7.91	6.91	7.21		6.21	89.9		
		-13	RJ231		7.47	6.47	6.64		5.64	87.2		
		-14	RJ232		7.94	6.94	6.84		5.84	84.1		

All weights must be carried out to 2 decimal places
% solids = (net dry weight/ net wet weight)*100

Dry samples ≥12 hours at 103°C to 105°C

* Use only when proving constant weight.

QAT0042

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
5/3/01 1700	5/4/01 900	010297-17	RJ 133	1.00gm	6.88	5.88	6.01		5.01	85.2	UM	KBF 5/4/01
		18	RJ 141		6.42	5.42	6.07		5.07	93.5		
		19	RJ 142		7.00	6.00	6.14		5.14	85.7		

All weights must be carried out to 2 decimal places
% solids = (net dry weight/ net wet weight)*100

Dry samples ≥12 hours at 103°C to 105°C

* Use only when proving constant weight.

QAT0042

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ADDED -16...-20; ONLY -17...-19 DUE 4/14/01

CEIMIC Corporation
Sample Log In Information

Date: 04/12/01 -11:20:21

Date Samples Received: 04/06/01

Date Due: 04/21/01

Client: AMEC

Project Name: Rocketdyne

Client Task: 2000-32R-69813

Client Contact: Dixie Hambrick

Project #: 010297
SDG: RJ186
Case: 313150

Project Amount: $1,270.00

Stored : 2

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : AMEC
5510 Morehouse Drive
San Diego, CA 92121

Attn : Jose Toledo

Invoice To: AMEC
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ186	1	SOIL	04/06/01	04/03/01	09:33:00	T Silver
-02A	RJ187	1	SOIL	04/06/01	04/02/01	09:25:00	Sample on hold
-03A	RJ188	1	SOIL	04/06/01	04/02/01	09:45:00	T Silver
-04A	RJ189	1	SOIL	04/06/01	04/02/01	14:15:00	Sample on hold
-05A	RJ190	1	SOIL	04/06/01	04/02/01	14:30:00	T Silver
-06A	RJ191	1	SOIL	04/06/01	04/02/01	08:30:00	Sample on hold
-07A	RJ192	1	SOIL	04/06/01	04/02/01	08:45:00	T Silver
-08A	RJ193	1	SOIL	04/06/01	04/02/01	08:00:00	Sample on hold
-09A	RJ194	1	SOIL	04/06/01	04/02/01	08:15:00	T Silver
-10A	RJ195	1	SOIL	04/06/01	04/02/01	10:45:00	T Silver
-11A	RJ196	1	SOIL	04/06/01	04/02/01	11:10:00	T Silver
-12A	RJ197	1	SOIL	04/06/01	04/02/01	13:50:00	T Silver

Project #: 010297

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-13A	RJ199	1	SOIL	04/06/01	04/03/01	09:07:00	T Silver
-14A	RJ200	1	SOIL	04/06/01	04/04/01	08:15:00	T Silver
-15A	RJ201	1	SOIL	04/06/01	04/03/01	11:05:00	T Silver
-16A	RJ202	1	SOIL	04/07/01	04/06/01	13:00:00	TPH(8015OG) TAL Metals(6010B) TAL Metals(6010B), TRACE
-17A	RJ133	1	SOIL	04/07/01	04/06/01	09:45:00	T Mercury
-18A	RJ141	1	SOIL	04/07/01	04/06/01	09:02:00	T Mercury
-19A	RJ142	1	SOIL	04/07/01	04/06/01	09:15:00	T Mercury
-20A	RJ203	1	SOIL	04/07/01	04/06/01	11:20:00	TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE

Comments:

Requirements:

Level IV: 28 day TAT
TPH = Ogden 4 ranges(SOP No.:8015BET) 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's and Freons for soils.

K.T.: 07/20/01

LIMS Identifier: 0104024

LIMS Project Code: AMEC_ROCKET

Approved by: [signature] 4/12/01

RJ 149

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

May 1, 2001

Mr. Jose Toledo
AMEC
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of AMEC's Rocketdyne Project, Case No. 313150, SDG No. RJ149. The samples were taken from the field March 26, 27 and 28, 2001 and received at Ceimic Corporation on March 29, 2001.

These samples are reported under the Ceimic Project Number 010272, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Director

NP/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

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Page #

PROJECT NARRATIVE

SDG Narrative

The enclosed data package is in response to AMEC's Rocketdyne Project, Project No. 313150, SDG No. RJ149. Under this SDG there are 6 VOA, 4 SIM, 4 PCB and 9 TPH analyses for 21 soil samples which were received at Ceimic Corporation on March 29, 2001.

This data package includes the analyses for the following samples from SDG No. RJ149:

(1)

Client ID	**Ceimic ID**	**Analysis**
RJ152	010272-04	VOA, TPH
RJ153	010272-05	SIM, TPH
RJ155	010272-07	TPH
RJ156	010272-08	SIM, TPH
RJ156 ms/msd	010272-08	SIM
RJ158 ms/msd	010272-10	VOA, TPH
RJ159	010272-11	VOA
RJ160	010272-12	VOA
RJ167	010272-19	PCB, TPH
RJ167 ms/msd	010272-19	PCB
RJ168	010272-20	PCB, TPH

The submitted data covers the analyses of the Volatiles (VOA), SIM, PCB and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

MS/GC Analysis

A. VOA

MS12: HP5973 GC/MS,20 m, 0.18mm ID, 1um, DB-624 capillary column
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. SIM

MS13 HP5970B GC/MS,30 m,25 mm ID, ZB-5 fused silica capillary column

GC Analysis

C. PCB

AD8: HP5890II GC/MS using 30 m x 0.53 mm ID, DB-608 megabore column, GC7.

AD9: HP5890II GC/MS using 30 m x 0.53 mm ID, DB-1701 megabore column, GC7.

D. TPH

AD23_1: HP5890II using 30m x 0.25mm ID DB-5 capillary column, GC9.

(4) Sample Information

A. Volatiles Fraction (Method 8260B)

Samples RJ159 (010272-11) and RJ160 (010272-12) were reported on a wet weight basis. These samples were VOA only. The % Moisture for samples RJ152 (010272-04) and RJ158 (010272-10) were taken from the wet chemistry containers.

No MS/MSD was performed on sample RJ158, there was insufficient sample. An LCS and LCSD were analyzed per batch.

The high %RSD's for Acetone and Methylene Chloride were caused by lab contamination in the low level standard.

B. SIM Fraction (Method 8270)

These samples were analyzed by GC/MS SIM (Selective Ion Monitoring) to report a low detection limit.

C. PCB Fraction (Method 8082)

DCB response is high in AR16600M (24.3%).

AR1016 response is low in AR16600N (-16.3%).

DCB response is high in AR16600N (21.5%).

D. TPH Fraction (Method 8015B)

A five point initial calibration was analyzed: n-alkane standards in the range from C8 to C30. Four ranges including gasoline, kerosene, diesel and lubricant oil were used to quantify and report the TPH in the samples. The surrogates were quantitated and reported from the n-alkane standards.

The recoveries of surrogates were acceptable as were the LCS recoveries.

TPH compounds detected were detected in sample RJ158. The chromatogram showed numerous peaks eluting threw out all four TPH ranges.

The diesel range in the MS had negative recoveries due to the amount of diesel range petroleum hydrocarbons in the sample relative to the spiked amount.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Director

April 30, 2001

Date

Inorganic SDG Narrative

Client Case ID: Tiyan, Guam CTO#0023, Task Order 01
Ceimic Project No.: 010277
SDG No.: AA500

The following samples were received at Ceimic Corporation on March 31, 2001:

AA500	AA501 (MS/MSD)	AA502 (MS/MSD)
AA503	AA504	AA505
AA506		

The above samples were digested and analyzed for total metals using SW846 methods 3050A/7471A/6010B and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards and the CCV for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 248) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

The initial calibration verification (ICV) and continuing calibration verification (CCV) for the element sodium are outside of QC criteria for the analysis on 4/23/01. Only low concentrations of sodium were detected in the environmental samples.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pott　　April 28, 2001

Neil Pothier
Laboratory Manager

Date

CHAIN OF CUSTODY

vol, 2

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: **COC** RJ148

Date 3/21/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Fed Ex
Comment:	

Cooler No: #405

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Mercury (Hg)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ148	SRBS24S01	0.5	3/26/01	1354	42	01	X																		X		B			1
RJ149	SRBS25S01	0.5	3/26/01	1409	43	01	X																		X		B			1
RJ150	SRBS26S01	0.5	3/26/01	1422	41	02	X																		X		B			1
RJ151	SRBS27S01	0.5	3/26/01	1439	44	03	X																		X		B			1
RJ152	SRBS23S01	5.0	3/26/01	1542	16A	04	X				X	X						X				X					B			4
RJ153	ILTS02S01	5.5	3/26/01	1645	—	05	X					X	X					X				X					T			1
RJ154	ILTS02S02	7.0	3/26/01	1655	—	06	X					X	X					X				X					T		X	1
RJ155	LFTS08S01		3/27/01	0720	—	07	X					X						X		X		X					T			1
RJ156	ILTS05S01	1.5	3/27/01	1215	—	08	X					X	X					X				X					T			1
RJ157	ILTS05S02	3.5	3/27/01	1220	—	09	X					X	X					X				X					T		X	1
RJ158	CLBS62S01	1.5	3/28/01	0935	97	10	X				X	X						X				X					B			4
RJ159	CLBS75S01	0.5	3/28/01	1017	96	11	X				X																B			4

SWMU 4 / IIAOC

SWMU 43

~~SWMU~~ 4.7

	Date	Time
Samplers Signature:	3/28/01	1600
Relinquished By:	3/28/01	1600
Received By:		
Relinquished By:		
Received By (LAB):	~~3/29/01~~ 3/29/01	~~10~~:30

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 5

B = boring
T = trench

* 7 Day TAT J.C.

REV: 1

09

00

010272
VOA, 2

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: **COC** RJ160
Date 3/28/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	FED EX
Comment:	

Cooler No. #405
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Lead (pb)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					
RJ160	CLBS75S02	2.5	3/28/01	1045	96	12	X			X															B			4
RJ161	BSTS09S01	1.5	3/28/01	0755	62	13	X																	X	T			1
RJ162	BSTS10S01	1.5	3/28/01	0855	63	14	X																	X	T			1
RJ163	BSTS11S01	1.5	3/28/01	0925	64	15	X																	X	T			1
RJ164	BSTS11S02	4.5	3/28/01	0940	64	16	X																	X	T		X	1
RJ165	BSTS12S01	1.5	3/28/01	1015	65	17	X																	X	T			1
RJ166	BSTS13S01	1.5	3/28/01	1045	66	18	X																	X	T		X	1
RJ167	CFBS24S01	0.5	3/28/01	1521	—	19	X				X						X					X			B			1
RJ168	CFBS25S01	0.5	3/28/01	1535	—	20	X				X						X					X			B			1

SWMU 4.7
SWMU AIAOC
SWMU 6.4

	Date	Time
Samplers Signature: [signature]	3/28/01	1600
Relinquished By: [signature]	3/28/01	1600
Received By:		
Relinquished By:		
Received By (LAB): J Cinna	~~3/30/01~~ 3/29/01	16:30

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5

B - Boring
T - Trench

7 Day TAT JC

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 010272 — Cooler Number: 1

Client: AMEC — Number of Coolers: 1

Project: Rocketdyne — Date Received: 3/29/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 3/29/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 3/29/01 (16:30)

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 827042515870

3. Were custody seals on outside of cooler? .... YES NO

How many & where: Top front seal date: 3/28/01 seal name: NA

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0 cpm YES NO

6. Chain of Custody #: RJ 148, RJ 160

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? .... Cooler Temperature: 5 °C Type of ice: ______ YES NO

B. LOG-IN PHASE: Date samples were logged-in: 3/30/01

by (print): J. Cannon (sign): J. Cannon

12. Describe type of packing in cooler: some bubble

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO

22. Laboratory labelling verified by: (Initials): JC (date): 3/30/01

QAT0261

amec

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*: Jose L. Toledo

Date: 04/11/01 There are 3 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ066	RJ069	EVBS51S01	03/20/01	ON HOLD	MERCURY, 7 DAY TAT
RJ160	RJ161	BSTS09S01	03/28/01	LEAD	FULL METALS (6010B/7000)
RJ160	RJ162	BSTS10S01	03/28/01	LEAD	FULL METALS (6010B/7000)
RJ160	RJ163	BSTS11S01	03/28/01	LEAD	FULL METALS (6010B/7000)
RJ160	RJ164	BSTS11S02	03/28/01	ON HOLD	FULL METALS (6010B/7000)
RJ160	RJ165	BSTS12S01	03/28/01	LEAD	FULL METALS (6010B/7000)
RJ160	RJ166	BSTS13S01	03/28/01	ON HOLD	FULL METALS (6010B/7000)

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change X
Other: Containers mislabeled ______

Thank you.

amec

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COC No.	EPA Sample ID	AMEC Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ160	RJ164	BSTS11S02	03/28/01	METALSRT	**HOLD METALS EXTRACT**
RJ160	RJ166	BSTS13S01	03/28/01	METALSRT	**HOLD METALS EXTRACT**
RJ210	RJ210	SNSW04S01	04/10/01	8260B, 8290, Metals (6010B), Mercury.	**8260B, 8290, Metals (6010B).**
RJ210	RJ211	CASW01S01	04/10/01	8082, 8260B, Metals(6010B), 8290, Mercury.	**8082, 8260B, Metals(6010B), 8290.**
RJ210	RJ212	PPSW01S01	04/10/01	8082, 8260B, Metals(6010B), Mercury.	**8082, 8260B, Metals(6010B).**
RJ210	RJ213	R1SW01S01	04/10/01	8260B, PAH(8310), Metals (6010B), Mercury.	**8260B, PAH(8310), Metals (6010B).**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form X

Thank you

RUSH

CLIENT REQUESTED METALS EXTRACT FOR RJ164 AND RJ166 BE HELD

CEIMIC Corporation
Sample Log In Information

Date: 04/23/01 -08:35:25

Date Samples Received: 03/29/01

Date Due: 04/05/01

Client: AMEC

Project Name: Rocketdyne

Client Task: 2000-32R-69813

Client Contact: Dixie Hambrick

Project #: 010272
SDG: RJ149
Case: 313150

Project Amount: $4,265.00

Stored : VOA,2

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : AMEC
5510 Morehouse Drive
San Diego, CA 92121

Attn : Jose Toledo

Invoice To: AMEC
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ149	1	SOIL	03/29/01	03/26/01	13:54:00	T Mercury
-02A	RJ150	1	SOIL	03/29/01	03/26/01	14:09:00	T Mercury
-03A	RJ151	1	SOIL	03/29/01	03/26/01	14:39:00	T Mercury
-04A	RJ152	4	SOIL	03/29/01	03/26/01	15:42:00	TPH(8015OG) Volatiles(8260B/5035) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-05A	RJ153	1	SOIL	03/29/01	03/26/01	16:45:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-06A	RJ154	1	SOIL	03/29/01	03/26/10	16:55:00	Sample on hold
-07A	RJ155	1	SOIL	03/29/01	03/27/01	07:20:00	Fluoride(300.0) TPH(8015OG) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE

Project #: 010272

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-08A	RJ156	1	SOIL	03/29/01	03/27/01	12:15:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-08B	RJ156 ms		SOIL	03/29/01	03/27/01	12:15:00	SIM(8270)
-08C	RJ156 msd		SOIL	03/29/01	03/27/01	12:15:00	SIM(8270)
-09A	RJ157	1	SOIL	03/29/01	03/27/01	12:20:00	Sample on hold
-10A	RJ158	4	SOIL	03/29/01	03/28/01	09:35:00	TPH(8015OG) Volatiles(8260B/5035) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-10B	RJ158 ms		SOIL	03/29/01	03/28/01	09:35:00	TPH(8015OG) Volatiles(8260B/5035) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-10C	RJ158 msd		SOIL	03/29/01	03/28/01	09:35:00	TPH(8015OG) Volatiles(8260B/5035) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-11A	RJ159	4	SOIL	03/29/01	03/28/01	10:17:00	Volatiles(8260B/5035)
-12A	RJ160	4	SOIL	03/29/01	03/28/01	10:45:00	Volatiles(8260B/5035)
-13A	RJ161	1	SOIL	03/29/01	03/28/01	07:55:00	TAL Metals(6010B) TAL Metals(6010B), TRACE
-14A	RJ162	1	SOIL	03/29/01	03/28/01	07:55:00	TAL Metals(6010B) TAL Metals(6010B), TRACE
-15A	RJ163	1	SOIL	03/29/01	03/28/01	09:25:00	TAL Metals(6010B) TAL Metals(6010B), TRACE
-16A	RJ164	1	SOIL	03/29/01	03/28/01	09:40:00	Sample on hold
-17A	RJ165	1	SOIL	03/29/01	03/28/01	10:05:00	TAL Metals(6010B) TAL Metals(6010B), TRACE

Project #: 010272

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-18A	RJ166	1	SOIL	03/29/01	03/28/01	10:45:00	Sample on hold
-19A	RJ167	1	SOIL	03/29/01	03/28/01	15:21:00	TPH(8015OG) PCB(8082) TAL Metals(6010B) TAL Metals(6010B), TRACE
-19B	RJ167 ms		SOIL	03/29/01	03/28/01	15:21:00	PCB(8082)
-19C	RJ167 msd		SOIL	03/29/01	03/28/01	15:21:00	PCB(8082)
-20A	RJ168	1	SOIL	03/29/01	03/28/01	15:35:00	TPH(8015OG) PCB(8082) TAL Metals(6010B) TAL Metals(6010B), TRACE
-21A	RJ148	1	SOIL	03/29/01	03/26/01	13:54:00	T Mercury

Comments:

Requirements:
Level IV; 28 day TAT
TPH = Ogden 4 ranges(SOP No.:8015BET) 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's and Freons for soils.

K.T.: 07/04/01

LIMS Identifier: 0104001

LIMS Project Code: AMEC_ROCKET

Approved by: [signature] 4/23/01

amec

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RJ210	RJ210	SNSW04S01	04/10/01	8260B, 8290, Metals (6010B), Mercury.	**8260B, 8290, Metals (6010B).**
RJ210	RJ211	CASW01S01	04/10/01	8082, 8260B, Metals(6010B), 8290, Mercury.	**8082, 8260B, Metals(6010B), 8290.**
RJ210	RJ212	PPSW01S01	04/10/01	8082, 8260B, Metals(6010B), Mercury.	**8082, 8260B, Metals(6010B).**
RJ210	RJ213	R1SW01S01	04/10/01	8260B, PAH(8310), Metals (6010B), Mercury.	**8260B, PAH(8310), Metals (6010B).**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form X

Thank you

RJ 204
149
164

amec

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RJ160	RJ165	BSTS12S01	03/28/01	LEAD	FULL METALS (6010B/7000)
RJ160	RJ166	BSTS13S01	03/28/01	ON HOLD	FULL METALS (6010B/7000)

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ______

Lack of sample volume ______

Ogden office personnel require this change X

Other: Containers mislabeled ______

Thank you.

RJ048

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

October 18, 2000

Ms. Dixie Hambrick
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ048. The 1 water and 16 soil samples were taken from the field on September 27, 28 and 29, 2000 and received at Ceimic Corporation on September 30, 2000.

These samples are reported under Ceimic Project Number 200729, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D.
Laboratory Manager

NP/djj

Enclosures

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

December 14, 2000
Fax: 303-935-6575

Ms. Elizabeth Wessling
Odgen Environmental, Inc.
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Dear Ms. Wessling:

Ceimic has been working very hard in support of your Rocketdyne project and we look forward to continuing our efforts and success in meeting your project needs.

As you know, Ceimic has received several phone requests from Ogden over the past few months to place an abundance of Ogden samples on hold, until further notice by your project management team. Before we received these requests, these samples were received, logged in, and approved by our project managers at a significant cost to Ceimic without any reimbursement. Only a small fraction of these "on hold" samples were later analyzed at Ogden's request.

Ceimic will continue to store these samples in our refrigerators until the last day of the year, December 31, 2000. After this day, all samples remaining on hold will be properly disposed of by Ceimic. If you would like to procure "on hold" sample storage at our facility after this point in time, we would be happy to discuss this with you and devise a plan that would be mutually beneficial.

I have enclosed copies of all Ceimic logins that contain Rocketdyne samples currently on hold. If you have any questions or would like to discuss this matter further, please feel free to call me. We appreciate your business and look forward to continuing our work with you on this important project.

Sincerely,

John F. McGarry, Jr.
President

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ048. Under this SDG there are 1 VOA, 4 SIMS, 1 PCB and 5 TPH analyses for 1 water and 5 soil samples which were received at Ceimic Corporation on September 30, 2000.

This data package includes the analyses for the following samples from SDG No. RJ048, all of which are billable:

(1)

Client ID	Ceimic ID	Analyses			
RJ650	200729-12		SIM,		TPH
RJ651	200729-13		SIM,		TPH
RJ652	200729-14		SIM,		TPH
RJ653	200729-15		SIM,		TPH
RJ655	200729-17	VOA			
RJ627	200729-18			PCB,	TPH

Sample Receipt

The submitted data covers the analysis of the Volatiles (VOA), SIM, PCB and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. VOA

MS5: HP5971 GC/MS using 105 m x 0.53 mm ID, 3 µm film thickness VOCOL megabore column (Hewlett-Packard).

B. SIM

MS13: HP5970B GC/MS using 30 m x 0.25 mm ID, ZB-5 fused silica capillary column (J.W. Scientific).

GC Analysis

C. PCB

AD19_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-3.

AD20_1: HP5890II using 30 m x 0.25 mm ID, DB-17 capillary column GC-3.

D. TPH

AD24_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-9.

(3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

A. VOA Fraction (Method 8260B)

This sample was analyzed with a heated purge.

The sample was processed with two calibrations, one which had Chlorotrifluorethane, 1,1,2-Trichlorotrifluoroethane, and 2-Chloroethylvinylether, and the other for the remaining compounds. These three compounds are reported in a separate section, following the other VOA data.

There are two LCS's, one for each compound list.

The continuing calibration, VSTD005EJ, had a high %D for Dichlorodifluoromethane. This compound was not detected in the sample.

The method blank has 1ppb of 1,1,2-Trichlorotrifluoroethane, due to lab contamination. This compound was not detected in the sample.

B. SIM Fraction (Method 8270)

Sample RJ650 (200729-12) had a high surrogate recovery.

C. PCB Fraction (Method 8082)

Sample and QC sample extracts underwent sulfuric acid cleanup prior to analysis.

Due to software limitations the forms VI are laboratory instrument forms that document the five level calibration. These forms include retention times and their windows, response factors, %RSD areas and amounts for each compound at each level. The continuing calibrations percent differences are documented on the chromatographic reports.

According to both analytical columns the Aroclor patterns identified in the LCS extracts agreed well.

D. TPH Fraction (Method 8015G)

Samples were extracted using methylene chloride and concentrated to a final volume of one milliliter. Extracts were analyzed by GC/FID calibrated with n-alkanes ranging from C8 to C30 as specified by modified SW846 Method 8015B.

Three surrogates were spiked into the samples prior to extraction, n-decane, n-eicosane and terphenyl. In addition to surrogates lab control samples and matrix spike samples were spiked with n-alkanes C11, C13, C15, C19, C21 and C28.

Results are reported as total petroleum hydrocarbons in the diesel range petroleum (C8-C30).

The chromatographic area response contributed by surrogates are subtracted from the area response attributable to positive results for petroleum hydrocarbons.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

October 18, 2000

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200729
SDG No.: RJ048

The following samples were received at Ceimic Corporation on September 30, 2000:

RJ048	RJ049 (MS/MSD)	RJ050
RJ051	RJ052	RJ053
RJ054	RJ055	RJ056
RJ057	RJ058	

The above samples were digested and analyzed for total mercury using SW846 method 7471A in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on September 30, 2000:

RJ650	RJ651	RJ652
RJ653	RJ627	

The above samples were digested and analyzed for total metals using SW846 methods 3050A/6010B/7471A in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV and CCV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 243) was used for the mercury LCSS sample and metals LCSS samples.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Elevated levels of iron and other spectral interferants caused analytical signal suppression for the elements cadmium and selenium. The affected samples were re-analyzed and reported from diluted runs.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier
Laboratory Manager

October 19, 2000
Date

Chain-of-Custody

RJ048

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*:________________

Date: 11/01/00 There are 3 Pages to transmit including this cover page

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RJ586	RJ587	BATS15S03	09/07/00	8270CSIM, MetalsRT, pH	8270CSIM, MetalsRT, pH, **TPH**
RJ650	RJ654	P2TS48S01	09/29/00	Hold	**MetalsRT**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ________
Lack of sample volume ________
Ogden office personnel require this change ___X___
Other: Containers mislabeled ___ ________

Thank you.

200729 (13)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJØ48
Date 9/28/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: 23
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives	8021 VOC	8015G TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C

SWMU
AIV
AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015G TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Hg	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJØ48	SRBS12SØ1	0.5	9/27/00	15:30	30	1	X																	X	HA			1
RJØ49	SRBS13SØ1	0.5	9/28/00	8:00	31	2	X																	X				
RJØ50	SRBS14SØ1	0.5	9/28/00	8:20	32	3	X																	X				
RJØ51	SRBS15SØ1	0.5	9/28/00	8:45	33	4	X																	X				
RJØ52	SRBS16SØ1	0.5	9/28/00	9:00	34	5	X																	X				
RJØ53	SRBS17SØ1	0.5	9/28/00	9:20	35	6	X																	X				
RJØ54	SRBS18SØ1	0.5	9/28/00	9:40	36	7	X																	X				
RJØ55	SRBS19SØ1	0.5	9/28/00	10:00	37	8	X																	X				
RJ Ø56	SRBS20SØ1	0.5	9/28/00	10:20	38	9	X																	X				
RJØ57	SRBS21SØ1	0.5	9/28/00	10:40	39	10	X																	X				
RJØ58	SRBS21DØ1	0.5	9/28/00	10:40	39	11	X																	X				

	Date	Time
Samplers Signature [signature]	9/27/00	15:30
Relinquished By [signature]	9/29/00	14:00
Received By: [signature]	9/29/00	1400
Relinquished By		
Received By (LAB): [signature]	9/30/00	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5

Need 14-day TAT

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

08

20729 (13)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

RJ 650

Control Number: COC
Date 9/28/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: 23
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

SWMU AIAOC 6.4

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RJ650	BTTS085Ø1	7'	9/28/00	14:20	6	12	X		
RJ651	BTTS10SØ1	8'	9/29/00	11:45	7	13	X		
RJ652	BTTS11SØ1	9.5	↓	1345	8	14	X		
RJ653	P2TS47SØ1	2'	9/29/00	11:15	75	15	X		
RJ654	P2TS48SØ1	2'	"	11:30	76	16	X		
RJ655	CFQWØ4TØ1	—	9/25/00	10/5	—	17		X	

Preservatives:

Sample ID	~~8021~~ 8260 VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4,pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ650		X	X					X				X					T			1
RJ651		X	X					X				X					T			1
RJ652		X	X					X				X					T			1
RJ653		X	X					X				X					T			1
RJ654		X	X					X				X					T		X	1
RJ655	X																			

T.B. 9/29/00

	Date	Time
Samplers Signature: Sajid [signature]	9/28/00	14:00
Relinquished By:		
Received By:		
Relinquished By:		
Received By (LAB): [signature]	9/30/00	10:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 5°C

Homogenize all samples

Hold RJ654 for all analyses

REV: 1

200729 (13)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ623
Date 9/25/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed Ex
Comment:	

Cooler No: 23
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: Methanol, Sodium Bisulfate for RJ623

SWMU 6.4
AII AOC
AIII AOC

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	
RJ623	CF TS02 S02	7'	9/25/00	1015	6	200728	X			
RJ624	BT TS01 S01	8'	9/26/00	0855	3		X			
RJ625	BT TS02 S01	7'	↓	1340	4		X			
RJ626	BT TS05 S01	6.5'		1350	5		X			
RJ627	SR TS01 S01	1'	9/27/00	1120	29	18	X			
RJ628	SR TS01 S02	3'	9/27/00	1125	29	19	X			
	CF									

Analyses

Sample ID	~~8021~~ 8260 VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4,pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ623	X																T			4
RJ624		X	X					X				X					T		X	1
RJ625		X	X					X				X					T		X	1
RJ626		X	X					X				X					T		X	1
RJ627		X						X					X				T			1
RJ628		X						X					X				T		X	1

J.B. 9/27/00

	Date	Time
Samplers Signature: Thomas J. B.	9/25/00	1000
Relinquished By: Thomas J. B.	9/29/00	1400
Received By:		
Relinquished By:		
Received By (LAB): Robert Dan	9/30/00	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5°C

2 day turnaround for RJ 627, ~~628~~ JB
Homogenize RJ624, 625, 626
Hold RJ 628, 624, 625, 626 for all analyses

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 200729
Client: ogden
Project: rocketdyne

Cooler Number: 1
Number of Coolers: 1
Date Received: 9/30/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9/30/00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9/30/00
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 347033967 0
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: ______ seal date: / / seal name: ______
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ______ YES NO
6. Chain of Custody #: RS ¢48, RJ650, RJ623
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 5 °C Type of ice: ble YES NO

B. LOG-IN PHASE: Date samples were logged-in: 9/30/00
   by (print): RD (sign): RD

12. Describe type of packing in cooler: ______
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO
21. Laboratory labelling verified by: (Initials): RD (date): 9/30/00

QAT0261

RUSH

RJ627 (-18) IS 2 DAY TAT! SAMPLES 1-11 ARE 14 DAY TAT

CEIMIC Corporation
Sample Log In Information

Date: 10/03/00 -16:52:15

Date Samples Received: 09/30/00

Date Due: 10/14/00

Client: Ogden Environmental

Project Name: Rocketdyne

Client Task: 313150002

Client Contact: Dixie Hambrick

Project #: 200729
SDG: RJ048
Case: 313150

Project Amount: $2,885.00

Stored : 13

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Attn : Dixie Hambrick

Invoice To: Ogden Environmental
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ048	1	SOIL	09/30/00	09/27/00	15:30:00	T Mercury
-02A	RJ049	1	SOIL	09/30/00	09/28/00	08:00:00	T Mercury
-02B	RJ049 ms		SOIL	09/30/00	09/28/00	08:00:00	T Mercury
-02C	RJ049 msd		SOIL	09/30/00	09/28/00	08:00:00	T Mercury
-03A	RJ050	1	SOIL	09/30/00	09/28/00	08:20:00	T Mercury
-04A	RJ051	1	SOIL	09/30/00	09/28/00	08:45:00	T Mercury
-05A	RJ052	1	SOIL	09/30/00	09/28/00	09:00:00	T Mercury
-06A	RJ053	1	SOIL	09/30/00	09/28/00	09:20:00	T Mercury
-07A	RJ054	1	SOIL	09/30/00	09/28/00	09:40:00	T Mercury
-08A	RJ055	1	SOIL	09/30/00	09/28/00	10:00:00	T Mercury
-09A	RJ056	1	SOIL	09/30/00	09/28/00	10:20:00	T Mercury

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-10A	RJ057	1	SOIL	09/30/00	09/28/00	10:40:00	T Mercury
-11A	RJ058	1	SOIL	09/30/00	09/28/00	10:40:00	T Mercury
-12A	RJ650	1	SOIL	09/30/00	09/28/00	14:20:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-13A	RJ651	1	SOIL	09/30/00	09/29/00	11:45:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-14A	RJ652	1	SOIL	09/30/00	09/29/00	13:45:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-15A	RJ653	1	SOIL	09/30/00	09/29/00	11:15:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-16A	RJ654	1	SOIL	09/30/00	09/29/00	11:30:00	Sample on hold
-17A	RJ655		WATER	09/30/00	09/25/00	10:15:00	Volatiles(8260B)
-18A	RJ627	1	SOIL	09/30/00	09/27/00	11:20:00	TPH(8015OG) PCB(8082) TAL Metals(6010B) TAL Metals(6010B), TRACE
-19A	RJ628	1	SOIL	09/30/00	09/27/00	11:25:00	Sample on hold

Project #: 200729

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD

Comments:

Homogenize samples -12...-17

Requirements:

Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's for soils

K.T.: 01/12/01

LIMS Identifier: 0010006

LIMS Project Code: OGDEN_ROCKET

Approved by: [signature] 10/03/00

RJ028

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

SEP 20

September 19, 2000

Ms. Dixie Hambrick
Ogden Environmental
5510 Moorehouse Drive
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the SIM analyses performed in support of Ogden Environmental, Rocketdyne Project, Project No. 313150, SDG No. RJ028. The 2 aqueous, 2 sediment and 16 soil samples were taken from the field on July 13, 14, 20, 21 and 24, 2000 and received at Ceimic Corporation on July 18 and 25, 2000.

These samples are reported under Ceimic Project Number 200546, which can be referenced when inquiring about this project.

If you have any questions or concern regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D
Laboratory Manager

NP/djj

Enclosures

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

September 15, 2000

RECEIVED
SEP 20

Ms. Dixie Hambrick
Ogden Environmental
5510 Moorehouse Drive
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Project No. 313150, SDG No. RJ028. The 2 aqueous, 2 sediment and 16 soil samples were taken from the field on July 13, 14, 20, 21 and 24, 2000 and received at Ceimic Corporation on July 18 and 25, 2000.

These samples are reported under Ceimic Project Number 200546, which can be referenced when inquiring about this project. Results for SIM will follow at a later date.

If you have any questions or concern regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier

Neil Pothier, Ph.D
Laboratory Manager

NP/djj

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Project Narrative

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Project No. 313150, SDG No. RJ028. Under this SDG there are 4 VOA, 10 SIMS, 4 PCB and 6 TPH analyses for 2 aqueous, 2 sediment and 12 soil samples which were received at Ceimic Corporation on July 18 and 25, 2000.

This data package includes the SIM analyses for the following samples from SDG No. RJ028:

(1)

Client ID	Ceimic ID	Analysis
RJ028	200546-01	SIM
RJ029	200546-02	SIM
RJ548	200546-08	SIM
RJ550	200546-10	SIM
RJ552	200546-12	SIM
RJ033	200546-14	SIM
RJ034	200546-15	SIM
RJ035	200546-16	SIM
RJ036	200546-17	SIM
RJ038	200546-19	SIM

The submitted data covers the analyses of the SIM fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

All samples were received intact and properly preserved.

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. SIM

MS13: HP5970B GC/MS using 30 m x 0.25 mm ID ZB-5 fused silica capillary column.

(4) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error.

A. SIM Fraction Method 8270

Sample RJ036 (200546-17) was initially analyzed at a dilution of 1:5, due to the dark color and viscosity of the extract. This sample was reanalyzed at a dilution of 1:10.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier, Laboratory Manager

September 19, 2006
Date

INDEX

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Project No. 313150, SDG No. RJ028. Under this SDG there are 4 VOA, 10 SIMS, 4 PCB and 6 TPH analyses for 2 aqueous, 2 sediment and 12 soil samples which were received at Ceimic Corporation on July 18 and 25, 2000.

This data package includes the analyses for the following samples from SDG No. RJ028:

(1)

Client ID	Ceimic ID	Analysis			
RJ028	200546-01		SIM		
RJ029	200546-02		SIM		
RJ031	200546-04				TPH
RJ547	200546-07			PCB	
RJ548	200546-08		SIM		
RJ549	200546-09			PCB	
RJ550	200546-10		SIM		
RJ551	200546-11			PCB	
RJ552	200546-12		SIM,	PCB,	TPH
RJ033	200546-14		SIM,		TPH
RJ034	200546-15	VOA,	SIM,		TPH
RJ035	200546-16		SIM,		TPH
RJ036	200546-17		SIM,		TPH
RJ037	200546-18	VOA			
RJ038	200546-19	VOA,	SIM,		TPH
RJ039	200546-20	VOA			

The submitted data covers the analyses of the Volatile (VOA), PCB and TPH fractions and their associated blanks and QA/QC. Results for SIM will follow at a later date. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

All samples were received intact and properly preserved.

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. VOA

MS5: HP5971 GC/MS,105 m, 0.53mm ID, 3um, VOCOL megabore column

MS15: HP5970B GC/MS,105m, 0.53mm ID, 3 um, VOCOL megabore column

GC Analysis

B. PCB

AD19_1: HP5890II using 30 m x 0.25 mm ID DB-5 megabore column, GC-3.

AD20_1: HP5890II using 30 m x 0.25 mm ID DB-17 megabore column, GC-3.

C. TPH

AD23_1: HP5890II using 30 m x 0.25 mm ID DB-5 megabore column, GC-9.

(4) **Sample Information**

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error.

A. VOA Fraction Method 8260B

The following compounds, which were included as part of the VOC's for this project, were determined using a TIC approach. That is, these compounds were not part of the calibration, instead, a library search was performed on each sample. Since these compounds respond similar to the reported compounds, they would have been detected at the CRQL of 5.0 ppb.

The pH of the water sample was:

Client ID:	Ceimic ID:	pH:
RJ039	200546-20	1

Sample RJ037 (200546-18) had insufficient sample for % moisture determination.

This sample was reported on a wet weight basis.

The method blanks had lab contamination of Methylene Chloride and Acetone.

The initial calibrations on MS5 and MS15 had high %RSD's for Methylene Chloride, due to lab contamination.

Sample RJ039 (200546-20) was associated with VSTD005EC, which had %D's greater than 20% for 2-Butanone, 1,2-Dichloroethane, and 1,2-Dibromo-3-Chloropropane. This sample was also associated with VLCSEC, which had a high recovery for Methylene Chloride.

The following samples were associated with VSTD050OF, which had %D's greater than 20% for Dichlorodifluoromethane, Acetone, and Methylene Chloride. These samples were also associated with VLCSOF, which had a low recovery for Methylene Chloride.

Client ID:	Ceimic ID:
RJ034	200546-15
RJ037	200546-18
RJ038	200546-19

B. PCB Fraction Method 8082

Sample and QC sample extracts underwent sulfuric acid cleanup prior to analysis.

Due to software limitations the forms VI are laboratory instrument forms that document the five level calibration. These forms include retention times and their windows, response factors, %RSD areas and amounts for each compound at each level. The continuing calibrations percent differences are documented on the chromatographic reports.

Surrogate and lab control recoveries were acceptable.

C. TPH Fraction Method 80150G

Three surrogates were spiked into the samples prior to extraction, n-decane, n-eicosane and terphenyl. In addition to surrogates lab control samples and matrix spike samples were spiked with C11, C13, C15, C19, C21 and C28.

Sample extracts in methylene chloride were analyzed by GC/FID calibrated from C8 to C30 as specified by the SW8015B Ogden modified method.

Results are reported in four ranges including gasoline (C8-C11), kerosene (C11-C14), diesel (C14-C20) and lubrication oil range (C20-C30).

The chromatographic area response contributed by surrogates are subtracted from the area response attributable to positive results for petroleum hydrocarbons.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

September 15, 2000

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200546
SDG No.: RJ028

The following samples were received at Ceimic Corporation on July 18, 2000:

RJ028	RJ029	RJ550
RJ552	RJ035	RJ036

The above samples were digested and analyzed for total metal using SW846 methods 3050B/3005A/6010B/7471A/7470A in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV, CCV and LCSW for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the CCV sample for the ICP metals. Environmental Resource Associates standard (lot# 243) was used for the mercury LCSS sample and metals LCSS samples. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Elevated levels of iron and other spectral interferants caused analytical signal suppression for the element selenium. The affected samples were re-analyzed and reported from diluted runs.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier
Laboratory Manager

September 14, 2000
Date

SDG: RJ028
RJ503

****
*** TX REPORT ***
****

TRANSMISSION OK

TX/RX NO	1619
CONNECTION TEL	18026551248
SUBADDRESS	
CONNECTION ID	
ST. TIME	10/18 10:24
USAGE T	01'13
PGS.	2
RESULT	OK

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

550 South Wadsworth Blvd., Suite 500
Lakewood, CO 80226
303.935.6505
fax: 303.935.6575

FACSIMILE

To: Jim Madison/ STL-VT
Fax No.: 802.655.1248

From: E. Wessling *sign:* Elizabeth A. Wess

Date: 10/18/00 There are 2 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form.
Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	New EPA Sample ID	Method (s) Originally Requested	Method (s) Now Requested*
	RJ009	R1BS17S01	RZ009		Ag (10 Day TAT)
	RJ035	R1BS18S01	RZ035	Ag (Subcon to STL)	Cancell request due to insufficient volume

The reason for these changes is:

Incorrectly marked on COC form

200546 (5)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ Ø28
Date 7/13/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: X069
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	
RJ Ø28	CDTSØ9 SØ1	0.5	7/13/00	1000	39	1	X			
RJ Ø29	CDTSØ9 DØ1	0.5	↓	1005	39	2	X			
RJ Ø3Ø	CDTSØ9 SØ2	4	↓	1025	39	3	X			
RJ Ø31	CDTSØ6 SØ4	8	↓	1530	34	4	X			

UMO
[ADC

Analyses

Sample ID	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ Ø28				X	X			X									4A			1
RJ Ø29					X												↓			1
RJ Ø3Ø					X												↓		X	1
RJ Ø31		X															↓			1

	Date	Time
Samplers Signature: Thomas J. [signature]	7/13/00	0930
Relinquished By: Thomas J. [signature]	7/14/00	1630
Received By: [signature]	~~7/14/00~~ 7/17/00	
Relinquished By:	Date	Time
Received By (LAB): Robert Dav	7/18/00	1000

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°C

*Please HOMOGENIZE All SAMPLES Except RJØ28.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: Rob Davis

Date: ________

Client(s): ogden
Samples Affected:
(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

SampleR5552, (#12), both voa vials encrusted with covered in ice.

Required Action:
(to be completed by the client or internal coordinator)

Name: ________ Date: ________

Additional Comments:
(lab use only)

Name: ________ Date: ________

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Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 200546 — Cooler Number: 1

Client: ogden — Number of Coolers: 1

Project: rocketdyne — Date Received: 7/25/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7/25/00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 7/25/00
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 3470339880
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: 2, front, back seal date: 7/24/00 seal name: Ceimic
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ____ YES NO
6. Chain of Custody #: RJ032, RJ037, RJ553
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 5 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7/25/00

by (print): RD (sign): RD

12. Describe type of packing in cooler: ____
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ____ YES NO 20
21. Laboratory labelling verified by: (Initials): RD (date): 7/25/00

QAT0251

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 200546
Cooler Number: 1

Client: ogden
Number of Coolers: 1

Project: rocketdyne
Date Received: 7 / 18 / 00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7 / 18 / 00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 7 / 18 / 00

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 3470339736

3. Were custody seals on outside of cooler? .... YES NO

How many & where: 1 front seal date: 7 / 17 / 00 seal name: ceimic

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? ....Reading: YES NO

6. Chain of Custody #: RJ 428, RJ 545, RJ 548

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? ....Cooler Temperature: 4 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7 / 18 / 00

by (print): RD (sign): RD

12. Describe type of packing in cooler:

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: YES NO

21. Laboratory labelling verified by: (Initials): RD (date): 7 / 18 / 00

QAT0261

Project #: 200546

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-10A	RJ550	1	SOIL	07/18/00	07/14/00	10:10:00	pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-11A	RJ551	1	SOIL	07/18/00	07/14/00	11:45:00	PCB(8082)
-12A	RJ552	6	AQUEOUS	07/18/00	07/14/00	16:00:00	TPH(8015OG) PCB(8082) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE

Comments:

Requirements:
Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos subcontracted
8260B to include TIC's for soils

K.T.: 11/13/00

LIMS Identifier: 0007092

LIMS Project Code: OGDEN_ROCKET

Approved by:
7/20/00

Homogenize all samples prior to prep

CEIMIC Corporation
Sample Log In Information

Date: 07/20/00 -09:37:37

Date Samples Received: 07/18/00

Date Due: 08/15/00

Client: Ogden Environmental

Project Name: Rocketdyne

Client Task: 313150002

Client Contact: Dixie Hambrick

Project #: 200546
SDG: RJ028
Case: 313150

Project Amount: $7,360.00

Stored : 5

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Attn : Dixie Hambrick

Invoice To: Ogden Environmental
5510 Morehouse Dr. Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ028	1	SOIL	07/18/00	07/13/00	10:00:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-02A	RJ029	1	SOIL	07/18/00	07/13/00	10:05:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-03A	RJ030	1	SOIL	07/18/00	07/13/00	10:25:00	Dioxins(8290)
-04A	RJ031	1	SOIL	07/18/00	07/13/00	15:30:00	TPH(8015OG)
-05A	RJ545	1	SOIL	07/18/00	07/13/00	11:30:00	Dioxins(8290)
-06A	RJ546	1	SOIL	07/18/00	07/13/00	13:00:00	Dioxins(8290)
-07A	RJ547	1	SOIL	07/18/00	07/13/00	16:00:00	PCB(8082)
-08A	RJ548	1	SOIL	07/18/00	07/14/00	08:30:00	SIM(8270)
-09A	RJ549	1	SOIL	07/18/00	07/14/00	09:15:00	PCB(8082)
-10A	RJ550	1	SOIL	07/18/00	07/14/00	10:10:00	TPH(8015OG)

Chain-of-Custody

CEIMIC CORPORATION
VOA Compliance Summary

Client : *Ogden Environmental*
Project: *200546*
Case : 313150002

Sample compliant with method/project, except where noted with an "X":

SAMPLES

Ceimic ID	Client ID	Hold Time	Method Blank	Initial CaL	Continuing CaL	LCS Recovery	MS Recovery	MS RPD	Surrogates	Internal Std
200546-15	RJ034				X	X				
200546-18	RJ037				X	X				
200546-19	RJ038				X	X				
200546-20	RJ039				X	X				

Approved by: alL

Project Narrative

200546 (5)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ545
Date 7/13/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: ~~X066~~ PX469
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

Preservatives	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ545	CDBS405S01	1.0	7/13/00	1130	40	5	X							X										HA			1
RJ546	CDBS405S02	4.0	7/13/00	1300	40	6	X							X										HA		X	1
RJ547	~~CDBS~~ CHS5035	0.0	7/13/00	1600	41	7	X															X		HA			1

ym4 / 250 I / 10C / 1.14

	Date	Time
Samplers Signature: [signature]	7/17/00	1600
Relinquished By: [signature]	7/17/00 ~~7/14/00~~	1700
Received By:		
Relinquished By:		
Received By (LAB): Robert David	7/18/00	10°°

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°C

*PLEASE HOMOGENIZE All SAMPLES.

REV: 1

200546 VOA (5)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ548

Date 7/14/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: ~~X066~~ X069

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ548	SRBS05S02	0.5	7/14/00	0830	32	8	X						X														HA			1
RJ549	BABS505S01	0.5	7/14/00	0915	73	9	X																X							
RJ550	BABS51S01	0.5	7/14/00	1010	75	10	X					X	X					X				X								
RJ551	BVBS40S01	0.5	7/14/00	1145	56	11	X																X							
RJ552	BAQW05E01	—	7/14/00	1600	—	12		X				X	X					X					X				6			6

VMY
ADL
.15
.15
.13
.15

	Date	Time
Samplers Signature	7/14/00	1600
Relinquished By:	7/14/00	1700
Received By:		
Relinquished By:		
Received By (LAB): Robert Dam	7/15/00	1000

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 4°C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

200546 VOC 5

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ032
Date 7/20/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: X066
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: 8021 VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02.1RT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8082 PCBs: 4°C; IC HYDRAZ: 4°C

JMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Sediment	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
1.14	RJ032	CNBS27 S01	1.5	7/20/00	1445	42	13	X				~~D~~		DSB		X												HA			1
.5	RJ033	SL BS33 S01	1.0	7/20/00	1600	52	14	X				~~X~~	X	X														↓			↓
.5	RJ034	SL BS33 S02	3.5	7/21/00	0745	52	15	X				X	X	X														↓			↓
1.16	RJ035	R1BS18 S01	1	↓	1200	20	16				X		X	X		X			X				X					↓			↓
1.16	RJ036	R1BS19 S01	2	↓	1425	21	17				X		X	X		X			X				X					↓			↓

DSB

	Date	Time
Samplers Signature: Thomas J. [signature]	7/21/00	1400
Relinquished By: Thomas J. [signature]	7/21/00	1730
Received By: [signature]	7/21/00	1730
Relinquished By: [signature]	7/24/00	1800
Received By (LAB): [signature]	7/25/00	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

NOTE: NO VOC ANALYSIS ON RJ033; COMPOSITE ALL SAMPLES

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

200546 voa 5

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJØ37
Date 7/24/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	:
Comment:	:

Cooler No: X Ø66
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Comment		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives												HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
JMO .5	RJØ37	SLBS33SØ1	1.0	7/24/00	0845	52	18	X				X																HA			3
.5	RJØ38	SLBS34SØ1	1.0	7/24/00	1650	51	19	X				X	X	X												*		HA			~~3~~ 4
	RJØ39	SLQWØ4TØ1	—	7/24/00	0850	—	20		X			X																—			3

J.B. 7/24/00

	Date	Time
Samplers Signature: Thomas J. [signature]	7/24/00	0830
Relinquished By: Thomas J. [signature]	7/24/00	1730
Received By: [signature]	7/24/00	1730
Relinquished By: [signature]	7/24/00	1800
Received By (LAB): [signature]	7/25/00	1000

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

* DTSC Split sample location

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

RJ001

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

August 17, 2000

Ms. Lisa Tucker
Ogden Environmental
5510 Moorehouse Drive
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Project No. 313150, SDG No. RJ001. The 1 aqueous and 20 soil samples were taken from the field on June 28, 29 and 30, 2000 and received at Ceimic Corporation on July 3, 2000.

These samples are reported under Ceimic Project Number 200456, which can be referenced when inquiring about this project.

If you have any questions or concern regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D
Laboratory Manager

NP/djj

Enclosures

CC: Elizabeth Wessling
Ogden Validation Section
550 S. Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Project No. 313150, SDG No. RJ001. Under this SDG there are 8 SIMS, 3 PCB and 8 TPH analyses for 1 aqueous and 12 soil samples which were received at Ceimic Corporation on July 3, 2000.

This data package includes the analyses for the following samples from SDG No. RJ001:

(1)

Client ID	Ceimic ID	Analysis
RJ001	200456-01	TPH
RJ002	200456-02	TPH
RJ004	200456-04	PCB
RJ005	200456-05	PCB
RJ016	200456-06	SIM
RJ017	200456-07	SIM
RJ018	200456-08	TPH
RJ019	200456-09	TPH
RJ506 MS/MSD	200456-10MS/MSD	SIM, TPH
RJ513	200456-17	SIM, TPH
RJ500	200456-18	SIM
RJ501	200456-19	SIM
RJ502	200456-20	PCB

The submitted data covers the analyses of the SIM, PCB and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

All samples were received intact and properly preserved.

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. SIM

MS9: HP5970B GC/MS using 30 m x 0.25 mm ID ZB-5 fused silica capillary column.

GC Analysis

B. PCB

AD19_1: HP5890II using 30 m x 0.25 mm ID DB-5 megabore column, GC-3.

AD20_1: HP5890II using 30 m x 0.25 mm ID DB-17 megabore column, GC-3.

C. TPH

AD23_1: HP5890II using 30 m x 0.25 mm ID DB-5 megabore column, GC-9.

(4) **Sample Information**

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error.

A. SIM Fraction Method 8270

The response for N-Nitrosodimethylamine was bias high in the continuing calibration ran 07/18/00. No positive detects were found for this compound in the samples. LCS and MS/MSD recoveries were acceptable for all target analytes.

The internal standard Perylene-d12 exhibited a matrix effect in samples RJ513 and RJ501. The samples were re-analyzed with similar results. No positive detects were observed for target analytes associated with this internal. Ceimic quantitated against the internal standard Chrysene-d12 to confirm the absence of target analytes.

B. PCB Fraction Method 8082

Sample and QC sample extracts underwent sulfuric acid cleanup prior to analysis.

Due to software limitations the forms VI are laboratory instrument forms that document the five level calibration. These forms include retention times and their windows, response factors, %RSD areas and amounts for each compound at each level. The continuing calibrations percent differences are documented on the chromatographic reports.

As per the SW846 protocol the highest concentration between the two analytical columns is reported on the form I's. Each set of analytical column results agree favorably.

Aroclor 1254 was detected in the field samples, however the concentration in samples RJ004 and RJ005 is estimated below the quantitation limit.

C. TPH Fraction Method 80150G

The recovery of n-decane from the method blank and lab control sample was low. The recovery of the other two surrogates in these two QC samples were acceptable. N-decane recovery in the samples was acceptable. LCS spike recoveries were acceptable.

The variability in the concentration of petroleum hydrocarbons in sample RJ506 was greater than the amount spiked into the RJ506 MS/MSD resulting in immeasurable recoveries.

Deviation from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

August 17, 2000

Date

CEIMIC CORPORATION
BNA Compliance Summary

Client : *Ogden Environmental*
Project: *200456*
Case : 313150002

Sample compliant with method/project, except where noted with an "X":

SAMPLES

Ceimic ID	Client ID	Hold Time	Prep Blank	Initial CaL	Continuing CaL	LCS Recovery	MS Recovery	MS RPD	Surrogates	Internal Std
200456-06	RJ016									
200456-07	RJ017									
200456-10	RJ506									
200456-10	RJ506ms									
200456-10	RJ506msd/dup									
200456-17	RJ513									
200456-18	RJ500									
200456-19	RJ501									

Approved by:______________

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200456
SDG No.: RJ001

The following samples were received at Ceimic Corporation on July 3, 2000:

RJ003	RJ018	RJ019
RJ506 (MS/MSD)	RJ511	RJ512
RJ513		

The above samples were digested and analyzed for total metals using SW846 methods 3050A/6010B in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

The following samples were received at Ceimic Corporation on July 3, 2000:

RJ507	RJ508	RJ509
RJ510		

The above samples were digested and analyzed for total mercury using SW846 methods 7471A in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV and LCSW samples for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the CCV sample for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Donald Tortorelli — 7/25/00

Donald Tortorelli
Inorganic Laboratory Manager

Date

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: L G   Date: 7/03/00

Client(s): OGDEN
Samples Affected: All, # 17 (SRBSØ95Ø1) (RJ513)
(reference both Ceimic and client IDs)
Ceimic Project # 200456
OGDEN Project # 313150002

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

The cooler arrived at a temp of 13° C which is above the range of 4° C ± 2°.
~~Sample # 11 (RJ0~~
Sample #17 (RJ513) was labeled as (RJ514) on the vials themselves.

Required Action:
(to be completed by the client or internal coordinator)

FAX to Elizabeth Wessling / Rob Schottle Ogden Denver San Diego
Trip blank rec'd & log-in as ~~200~~ 200456-21 "Trip Blank"

Name: [signature]   Date: 7/5/00

Additional Comments:
(lab use only)

Name: ____________   Date: ____________

Note: The original of this form will be included in the final data package.

QAT0296   009

Telephone Log

KAREN

Client: Ogden

Telephone:

Contact: Elizabeth Wessling

Project: ROCKETDYNE 200456/457

Date & Time: 7/5/00

Ceimic's Contact: Neil

Summary:

- Due to temp. exceedance, cancel VOA for all samples in 200456.

- Copy to project folder

010

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

.001

Sample Receiving Notification Form

Name: L.G

Date: 7/03/00

Client(s): OGDEN

Samples Affected: All, #14 (Trip Blanks)

(reference both Ceimic and client IDs)

Ceimic Project # 200457

OGDEN Project # 313150002

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

~~The~~ L.G.

Samples # 1-3,14 arrived in a cooler that was 13°C. Samples # 4-13 arrived in a cooler that was 23°C. Both of these temps are above the range of 4°C ± 2°.

The 2 trip blanks that arrived were not listed on the COC.

Required Action:

(to be completed by the client or internal coordinator)

Fax to Rolf Schottle / Elizabeth Wessling

Log-in to project 200456-21

Name: [signature]

Date: 7/5/00

Additional Comments:

(lab use only)

Cancel VOA

Name: [signature]

Date: 7/5/00

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

001

Sample Receiving Notification Form

Name: LG Date: 7/03/00

Client(s): OGDEN
Samples Affected: All, #17 (SRBSØ95Ø1) (RJ513)
(reference both Ceimic and client IDs)
Ceimic Project #200456
OGDEN Project #313150002

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

The cooler arrived at a temp of 13° C which is above the range of 4° C ± 2°.
~~Sample # 11 (RJO~~
Sample #17 (RJ513) was labeled as (RJ514) on the vials themselves.

Required Action:
(to be completed by the client or internal coordinator)

FAX to Elizabeth Wessling / Rolf Schottle Ogden Denver San Diego
Trip blank rec'd & log-in AS ~~200~~ 200456-21 "Trip Blank"

Name: [signature] Date: 7/5/00

Additional Comments:
(lab use only)

Cancel VOA they will re-collect

Name: [signature] Date: 7/5/00

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

Chain-of-Custody

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ5ØØ
Date 6/29/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment: *EXTRACT BUT DO NOT RUN DIOX/SVOC

Cooler No: XØ66
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					
4.7	RJ5ØØ	CLBSS95Ø1	0.5'	6/29/00	1110	88		X					X		X											HA			1
4.7	RJ5Ø1	CLBSGØSØ1	1.0		1115	89							X		X													*	1
6.8	RJ5Ø2	SNBS1ØSØ3	0.5'		1530	9																	X						1
6.8	RJ5Ø3	SNBS17SØ1	0.5'		1605	100																	X						1
6.8	RJ5Ø4	SNBSØ2SØ2	1.0'		1634	7																	X						1
6.8	RJ5Ø5	SNBS18SØ1	1.0'		1715	11a												X				X	X						1

6/29/00

	Date	Time
Samplers Signature	6/29/00	1715
Relinquished By:	6/30/00	1845
Received By:		
Relinquished By:		
Received By (LAB):	7/03/00	10:00

For Lab Use

Lab Number: 200456

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SLEEVES EXCEPT RJ500 + RJ501

001

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

014

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ506
Date 06/30/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No: X066

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Contained Unit	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	~~1LM02.1RT~~ METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Hg Only	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					
RJ506	SRSU01S01	8.5	6/30/00	1050	16		X			X	X	X	X					X				X				HA			~~1~~ 4
RJ507	SRSS02S01	0		1005	25		X																		X	HA			1
RJ508	SRSS03S01	0		1020	26		X																		X	HA			1
RJ509	SRSS04S01	0		1120	27		X																		X	HA			1
RJ510	SRSS05S01	0		11:40	28		X																		X	HA			1
RJ511	SRBS07S01	0.5		12:10	15		X											X				X				HA			1
RJ512	SRBS08S01	0.5		1500	14		X											X				X				HA			1
RJ513	SRBS09S01	0.5		1640	22		X				X	X	X					X				X				HA		*	4
~~RJ514~~																													

SUMU Area IV AOC

6/30/00

	Date	Time
Samplers Signature	6/30/00	1610
Relinquished By:	6/30/00	1845
Received By:		
Relinquished By:		
Received By (LAB):	7/03/00	10:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number: 200456

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

* FOR RJ513, ANALYZE SOIL ONLY; PLACE TAR ON HOLD

HOMOGENIZE ALL SAMPS. EXCEPT RJ506 + RJ513 (SLEEVES)

015

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJØ16
Date 06/30/00 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No: XØ66
QC Level: Level4
TAT: 14-day hardcopy summary / 28-day full package

SWMU 6.5

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Contained Unit	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJØ16	SLBS30SØ1	0.5	6/30/00	1450	50		X				X		X														HA			4
RJØ17	SLBS30SØ2	2		1505	50		X				X		X																	4
RJØ18	SLBS31SØ1	4		1615	54		X					X						X				X								1
RJØ19	SLBS32SØ1	3		1650	53		X					X						X				X								1

ZZ 6/30/00

	Date	Time
Samplers Signature: Thomas J. [signature]	6/30/00	1445
Relinquished By: Thomas J. [signature]	6/30/00	1845
Received By:		
Relinquished By:		
Received By (LAB): [signature]	7/03/00	10:00

For Lab Use

Lab Number: 200456
Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C

Do NOT Homogenize sleeves for 8270SIM (RJØ16 & RJØ17)
Please Homogenize sleeves for RJØ18 & RJØ19 prior to ANALYSIS.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ001
Date 06/28/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: X066
QC Level: Level4
TAT: 14-day hardcopy summary 28-day full package

SWMU 5.7 → 6.4
AREA I AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Contained Unit
RJ001	WTBS01S01	0.5	6/28/00	11:55	1		X			
RJ002	WTBS02S01	2.5	6/28/00	12:10	2		X			
RJ003	CFTS01S01	1.0	6/28/00	1615	14		X			
RJ004	CTBS09S01	0.5	6/28/00	1722	17		X			
RJ005	CTBS10S01	0.5	6/28/00	1750	18		X			

Sample ID	8021 VOC (HCL, pH<2 4°C)	8015G TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4,pH<2 4°C)	8330 ORDINANCE (4°C)	~~1.M6010/7000~~ METALSRT 6000/7000 (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4 C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4 C)	PERCHLORATES		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ001		X															HA			1
RJ002		X															HA			1
RJ003					X			X							X		TS			1 *
RJ004													X				HA			1 *
RJ005													X				HA			1

6/28/00 [initials]

	Date	Time
Samplers Signature: [signature]	6/28/00	18:10
Relinquished By: [signature]	6/30/00	1845
Received By: [signature]	7/03/00	10:00
Relinquished By:		
Received By (LAB): [signature]	7/03/00	10:56

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number: 200456

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

For: TPH, Dioxin, Metals, PCB, Homogenize Sample Prior to Analyses.

* DTSC Split

017

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 200456 | Cooler Number: 1-2
Client: OGDEN | Number of Coolers: 2
Project: 313150002 | Date Received: 7/03/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7/03/00

1. Have designated person initial here to acknowledge receipt of cooler: LG (date): 7/03/00

2. Did cooler come with a shipping slip (airbill, etc.)? ..... YES NO

   If YES, enter carrier name & airbill number here: FX 347033972 25

3. Were custody seals on outside of cooler? ..... YES NO

   How many & where: 1 seal date: 6/30/00 seal name: Ceimic

4. Were custody seals unbroken and intact at the date and time of arrival ..... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: nd YES NO

6. Chain of Custody #: RJ001, RJ016, RJ 506, RJ 5~~00~~

7. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO

9. Did you sign custody papers in the appropriate place? ..... YES NO

10. Was project identifiable from custody papers? ..... YES NO

11. If required, was enough ice used? ..... Cooler Temperature: 13 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7/03/00

   by (print): Lawson Glazer (sign): Lawson Glazer

12. Describe type of packing in cooler:

13. Were all bottles sealed in separate plastic bags? ..... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? ..... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES NO

16. Did all bottle labels agree with custody papers? ..... YES NO

17. Were correct containers used for the tests indicated? ..... YES NO

18. Were samples received at the correct pH? ..... YES NO

19. Was a sufficient amount of sample sent for tests indicated? ..... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: YES NO

21. Laboratory labelling verified by: (Initials): LG (date): 7/03/00

QAT0261

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 200457 Cooler Number: 1-2

Client: OGDEN Number of Coolers: 2

Project: 313150002 Date Received: 7/03/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7/03/00

1. Have designated person initial here to acknowledge receipt of cooler: LG (date): 7/03/00

2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

If YES, enter carrier name & airbill number here: FX 347033972 5, FX 347033971 4

3. Were custody seals on outside of cooler? .... YES NO

How many & where: 2 seal date: 6/30/00 seal name: Ceimic

4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? ....Reading: NC YES NO

6. Chain of Custody #: RJ 505, RJ 006

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO

9. Did you sign custody papers in the appropriate place? .... YES NO

10. Was project identifiable from custody papers? .... YES NO

11. If required, was enough ice used? ....Cooler Temperature: ↓ °C 13°, 22°C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7/03/00

by (print): Lorenzo Gomez (sign): Lorenzo Gomez

12. Describe type of packing in cooler: ---

13. Were all bottles sealed in separate plastic bags? .... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO

16. Did all bottle labels agree with custody papers? .... YES NO

17. Were correct containers used for the tests indicated? .... YES NO

18. Were samples received at the correct pH? .... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: .... YES NO

21. Laboratory labelling verified by: (Initials): LG (date): 7/03/00

QAT0261

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS # 200456 Cooler Number: 1-2

Client: OGDEN Number of Coolers: 2

Project: 313150002 Date Received: 7/03/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 7/03/00

1. Have designated person initial here to acknowledge receipt of cooler: LG (date): 7/03/00
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: FX 347033972S
3. Were custody seals on outside of cooler? .... YES NO
   How many & where: 1 seal date: 6/30/00 seal name: Ceimic
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: NA YES NO
6. Chain of Custody #: RJ001, RJ016, RJ 506, RJ 5~~00~~
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 13 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 7/03/00
   by (print): Lawson Gomez (sign): [signature]

12. Describe type of packing in cooler:
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: .... YES NO
21. Laboratory labelling verified by: (Initials): LG (date): 7/03/00

QAT0261

SEE COMMENTS! VOA CANCELED FOR ALL SAMPLES; TRIP BLANK CANCEL

CEIMIC Corporation
Sample Log In Information

Date: 07/05/00 - 16:25:13

Date Samples Received: 07/03/00		**Stored :**	20 VOA
Date Due: 07/31/00		**Ceimic Rep:**	HOUSE
Client: Ogden Environmental		**Coordinator:**	NEIL
Project Name: Rocketdyne		**Report To :**	Ogden Environmental 5510 Morehouse Drive San Diego, CA 92121
Client Task: 313150002			
Client Contact: Dixie Hambrick		Attn :	Dixie Hambrick
Project #: 200456 **SDG:** RJ001 Case: 313150		**Invoice To:**	Ogden Environmental 5510 Morehouse Dr, Suite 300 San Diego, CA 92121
Project Amount: $6,500.00		Attn :	Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ001	1	SOIL	07/03/00	06/28/00	11:55:00	TPH(8015OG)
-02A	RJ002	1	SOIL	07/03/00	06/28/00	12:10:00	TPH(8015OG)
-03A	RJ003	1	SOIL	07/03/00	06/28/00	16:15:00	Perchlorate Dioxins(8290) TAL Metals(6010B) TAL Metals(6010B), TRACE
-04A	RJ004	1	SOIL	07/03/00	06/28/00	17:22:00	PCB(8082)
-05A	RJ005	1	SOIL	07/03/00	06/28/00	17:50:00	PCB(8082)
-06A	RJ016	4	SOIL	07/03/00	06/30/00	14:50:00	SIM(8270)
-07A	RJ017	4	SOIL	07/03/00	06/30/00	15:05:00	SIM(8270)
-08A	RJ018	1	SOIL	07/03/00	06/30/00	16:15:00	TPH(8015OG) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-09A	RJ019	1	SOIL	07/03/00	06/30/00	16:50:00	TPH(8015OG) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE

Project #: 200456

LAB ID	CLIENT ID	NO CONT	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-10A	RJ506	4	SOIL	07/03/00	06/30/00	10:50:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-10B	RJ506ms ?		SOIL	07/03/00	06/30/00	10:50:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-10C	RJ506msd/dup		SOIL	07/03/00	06/30/00	10:50:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-11A	RJ507	1	SOIL	07/03/00	06/30/00	10:05:00	T Mercury
-12A	RJ508	1	SOIL	07/03/00	06/30/00	10:20:00	T Mercury
-13A	RJ509	1	SOIL	07/03/00	06/30/00	11:20:00	T Mercury
-14A	RJ510	1	SOIL	07/03/00	06/30/00	11:40:00	T Mercury
-15A	RJ511	1	SOIL	07/03/00	06/30/00	12:10:00	pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-16A	RJ512	1	SOIL	07/03/00	06/30/00	15:00:00	pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-17A	RJ513	4	SOIL	07/03/00	06/30/00	16:40:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-18A	RJ500	1	SOIL	07/03/00	06/29/00	11:10:00	Dioxins(8290) SIM(8270)
-19A	RJ501	1	SOIL	07/03/00	06/29/00	11:15:00	Dioxins(8290) SIM(8270)
-20A	RJ502	1	SOIL	07/03/00	06/29/00	15:30:00	PCB(8082)

Project #: 200456

LAB ID	CLIENT ID	NO CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD

Comments:

For TPH, Dioxin, Metals, PCB homogenize sample prior to analy.
Do Not homogenize sleeves for 8270SIM (-06,-07,-10,-17,-18,-19
For sample -17 analyze soil only; hold tar sample
Extract -19 only; do not analyze

Requirements:

Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos subcontracted

K.T.: 10/29/00

LIMS Identifier: 0007003

LIMS Project Code: OGDEN_ROCKET

Approved by: [signature]
7/5/00

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: L G Date: 7/03/00

Client(s): OGDEN
Samples Affected: All, # 17 (SRBS09501) (RJ513)
(reference both Ceimic and client IDs)
Ceimic Project # 200456
OGDEN Project # 313150002

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

The cooler arrived at a temp of 13° C which is above the range of 4° C ± 2°.
~~Sample # 11 (RJO~~
Sample #17 (RJ 513) was labeled as (RJ 514) on the vials themselves.

Required Action:
(to be completed by the client or internal coordinator)

FAX to Elizabeth Wessling / Rob Schottle Ogden Denver San Diego
Trip blank rec'd & log-in as ~~200~~ 200456-21

Name: [signature] Date: 7/5/00 "Trip Blank"

Additional Comments:
(lab use only)

Cancel VOA they will re-collect

Name: [signature] Date: 7/5/00

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

CEIMIC

Corporation

"Analytical Chemistry for Environmental Management"

RJ001

Sample Receiving Notification Form

Name: L.G

Date: 7/03/00

Client(s): OGDEN

Samples Affected: All , #14 (Trip Blanks)

(reference both Ceimic and client IDs)

Ceimic Project # 200457

OGDEN Project # 313150002

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

~~The~~ LG.

Samples # 1-3,14 arrived in a cooler that was 13°C. Samples # 4-13 arrived in a cooler that was 23°C. Both of these temps are above the range of 4°C ± 2°.

The 2 trip blanks that arrived were not listed on the COC.

Required Action:

(to be completed by the client or internal coordinator)

Fax to Rolf Schottle / Elizabeth Wessling

Log-in to project 200456-21

Name: [signature]

Date: 7/5/00

Additional Comments:

(lab use only)

Cancel VOA

Name: [signature]

Date: 7/5/00

Note: The original of this form will be included in the final data package.

QAT0296

AnalyticalTechnologies,Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9'4'

RECEIVED ... 1 5 1990

ATI I.D. 005265

June 12, 1990

Groundwater Resources
1735 East Fort Lowell Road, Suite 4
Tucson, Arizona 85719

Project Name: Rocketdyne SSFL

Project No.: 8640

Attention: Dinah Jasensky

On May 17, 1990, Analytical Technologies, Inc. received fourteen soil samples for analyses. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. Please see the attached sheet for the sample cross reference.

The results of these analyses and the quality control data are enclosed. The final metals' results will be sent at a later date.

Carolyn A. Sites
Carolyn A. Sites
GC/MS Supervisor

Richard M. Amano
Laboratory Manager

CAS:bc

Analytical Technologies, Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

RECEIVED JUN 15 1990

ATI I.D. 005290

June 12, 1990

Groundwater Resources
1735 East Fort Lowell Road, Suite 4
Tucson, Arizona 85719

Project Name: Rocketdyne SSFL

Project No.: 8640

Attention: Dinah Jasensky

On May 18, 1990, Analytical Technologies, Inc. received twelve soil samples for analyses. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. Please see the attached sheet for the sample cross reference.

The results of these analyses and the quality control data are enclosed. The final metals' results will be sent at a later date.

Carolyn A. Sites
Carolyn A. Sites
GC/MS Supervisor

Richard M. Amano
Laboratory Manager

CAS:bc

Analytical**Technologies,** Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

RECEIVED JUN 1 5 1990

ATI I.D. 005330

June 11, 1990

Groundwater Resources
1735 East Fort Lowell Road, Suite 4
Tucson, Arizona 85719

Project Name: Rocketdyne SSFL

Project No.: 8640

Attention: Dinah Jasensky

On May 19, 1990, Analytical Technologies, Inc. received nine soil samples for analyses. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. Please see the attached sheet for the sample cross reference.

The results of these analyses and the quality control data are enclosed.

Carolyn A. Sites
Carolyn A. Sites
GC/MS Supervisor

Richard M. Amano
Laboratory Manager

CAS:bc

Analytical**Technologies,** Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

RECEIVED JUL 0 6 1990

ATI I.D. 006333

July 5, 1990

Groundwater Resources
1735 East Fort Lowell Road, Suite 4
Tucson, Arizona 85719

Project Name: Rocketdyne SSFL

Project No.: 8640

Attention: Dinah Jasensky

On June 19, 1990, Analytical Technologies, Inc. received a request to analyze thirty-five soil samples from previously accessioned ATI I.D. No. 005265, 005290 and 005330. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. Please see the attached sheet for the sample cross reference.

The results of these analyses and the quality control data are enclosed.

Julio Paredes
Metals Supervisor

Richard M. Amano
Laboratory Manager

JP:da

CHAIN OF CUSTODY RECORD

PROJECT NAME: Rocketdyne SSFL
PROJECT NUMBER: 8640
PROJECT MANAGER: Dickens
SAMPLERS: JAD, REP

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	SAMPLE TYPE: Composite or GRAB	SAMPLE TYPE: Soil or WATER	TYPE & NUMBER OF CONTAINERS: 2"x6" brass tube						TOTAL # of CONTAINERS	ANALYSES REQUIRED: 8240	8270	Metals scan Title 22 by SW 846					BATCH #	REMARKS, PRESERVATIVES, SPECIAL HANDLING
PS-6 0-.5	5-16-90	1130	G	S	X						1	X	X	X						12
PS-6 1-1.5	"	1230	"	"	X						"	X	X	X						13
PS-6 2-2.5	"	1300	"	"	X						"	X	X	X						14

SIGNATURE		COMPANY/SHIPPING METHOD	DATE	TIME	REMARKS/CONDITION OF SAMPES
RELINQUISHED BY:	Jame A Duffield	GWRC / Fed X	5-16-90	16:00	
RECEIVED BY:	Patrice Kaido	ATI	5/17/90	0930	
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

SEND RESULTS AND INVOICE TO:
GROUNDWATER RESOURCES CONSULTANTS, INC.
1735 E. FT. LOWELL, SUITE 4
TUCSON, ARIZONA 85719

CHAIN OF CUSTODY RECORD

OJECT NAME Rocketdyne SSFL

PROJECT NUMBER 0640

OJECT MANAGER Dickens

MPLERS JAD, REP

MPLE I.D.	DATE SAMPLED	TIME SAMPLED	SAMPLE TYPE Composite or GRAB	SAMPLE TYPE Soil or WATER	TYPE & NUMBER OF CONTAINERS: 2"x6" brass tube	TOTAL # of CONTAINERS	ANALYSES REQUIRED: 8240	8270	Metals 22 by SW 846 Title	418.1	8015	BATCH #	REMARKS, PRESERVATIVES, SPECIAL HANDLING ATI # 005290
S-7 0-.5'	5/17	0930	G	S	X	1	X	X	X	X	X		01
S-7 1-1.5'	"	0945	"	"	X	"	X	X	X				02
S-7 2-2.5'	"	1000	"	"	X	"	X	X	X				03
S-7 3-3.5'	"	1015	"	"	X	"	X	X	X				04
S-8 0-.5	"	1220	"	"	X	"	X	X	X				05
S-8 1-1.5'	"	1235	"	"	X	"	X	X	X				06
S-8 2-2.5	"	1250	"	"	X	"	X	X	X				07
S-8 3-3.5'	"	1310	"	"	X	"	X	X	X				08
S-9 0-.5'	"	1330	"	"	X	"	X	X	X	PR X	PR X		09
S-9 1-1.5'	"	1340	"	"	X	"	X	X	X				10
S-9 2-2.5'	"	1350	"	"	X	"	X	X	X				11
S-9 3-3.5'	"	1400	"	"	X	"	X	X	X				12

SIGNATURE		COMPANY/SHIPPING METHOD	DATE	TIME	REMARKS/CONDITION OF SAMPES
RELINQUISHED BY:	Jim Duffield	GWRC/Fed X	5-17-90	1600	
RECEIVED BY:	J Graham	ATI	5-18-90	9:45am	good cold PS-7 0-.5' is light in w.
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					5-22-90 per James Duffield add 418.1 + mod 8015 to sample # PS-9 0-.5 PR
RECEIVED BY:					

SHIP TO: ______

SEND RESULTS AND INVOICE TO: GROUNDWATER RESOURCES CONSULTANTS, INC.
1735 E. FT. LOWELL, SUITE 4
TUCSON, ARIZONA 85719

005330

CHAIN OF CUS DY RECORD

PROJECT NAME	Rocketdyne SSFL	PROJECT NUMBER	
PROJECT MANAGER	Dickens		
SAMPLERS	JAD REP		

SAMPLE ID	DATE SAMPLED 1990	TIME SAMPLED	SAMPLE TYPE: Composite or GRAB	SAMPLE TYPE: Soil or WATER	TYPE & NUMBER OF CONTAINERS: 2"X6" brass tubes					TOTAL # of CONTAINERS	ANALYSES REQUIRED: 8240	8270	Metals Scan by Title 22 by SW846				BATCH #	REMARKS, PRESERVATIVES, SPECIAL HANDLING
PS-10 0-.5	5/18	0650	G	S						1								01
PS-10 1-1.5	..	0710	..	..						..								02
~~[illegible]~~	..		..	..						..								
~~[illegible]~~	..		..	..						..								
PS-11 0-.5'	..	0735	..	..						..								03
PS-11 1-1.5'	..	0750	..	..						..								04
PS-11 2-2.5'	..	0805	..	..						..								05
~~[illegible]~~			..	..						..								
PS-12 0-.5'	..	0815	..	..						..								06
PS-12 1-1.5'	..	0830	..	..						..								07
PS-12 2-2.5'	..	0845	..	..						..								08
PS-12 3-3.5	..	0855	..	..						..								09

SIGNATURE		COMPANY/SHIPPING METHOD	DATE	TIME	REMARKS/CONDITION OF SAMPES
RELINQUISHED BY:	Jim Duffield	GWRC / Fed X	5/18/90	14:00	
RECEIVED BY:	[illegible]	ATI	5-19-90	0935	
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

SHIP TO: ______________________

SEND RESULTS AND INVOICE TO: GROUNDWATER RESOURCES CONSULTANTS, INC.
1735 E. FT. LOWELL, SUITE 4
TUCSON, ARIZONA 85719

CAL TECH Environmental Laboratories
6814 Rosecrans Avenue, Paramount, CA 90723-3146
Telephone: (310) 272-2700 Fax: (310) 272-2789

Lab Job No. ______

Chain of Custody Record

Client: CDM E&C (PCI Division)
Contact: Scott Supernauch
Address: 2030 W. 17th Street
Long Beach, CA 90813

Phone: 562-432-7996
Fax:

Remarks: Use Ventura Co. Detection Limits

Project: Boeing North American/Rocketdyne, Simi Valley

Sampled By: Jul. Oborne
Name/Signature

Analyses Requested

Lab ID Number	Field ID	Date/Time Sampled	Bottle Type	No.	Preserv.	Matrix	8015 (gd/ext)	8260 /MTBE	7420 Total Lead	Org Lead				Comments
	P-1	12/8/98 - 10:40	3" brass	1		So	X	X	X	X				If Total Lead
	T-1	- 11:45		1			X	X	X	X				> 50 mg/kg,
	T-2	- 11:43		1			X	X	X	X				analyse for
	SP-1	- 10:50		1			X	X	X	X				STLC
	SP-2	- 10:57		1			X	X	X	X				
														Reg. turnaround

Relinquished: ______ Date / Time: 12/9/98 11:30 Recieved: ______

Dispatched By: ______ Date / Time: ______ Carrier: ______

I hereby authorize the performance of the above indicated tests.

______ Date / Time: ______ Recived by lab: ______

Custody seal(s) in tact upon receipt by lab? YES NO NONE

CTELCCR.DOC

Frontier Geosciences Inc.
Environmental Research & Specialty Analytical Laboratory
414 Pontius Ave N · Seattle WA 98109

Ms. Lisa Tucker
Montgomery Watson Harza
1230 Columbia Street, Suite 750
San Diego, CA 92101-8536

August 20, 2001

Dear Ms. Tucker

Enclosed are results for the analysis of methyl mercury in sediment samples submitted on August 2, 2001. The samples were received in good condition on August 3, 2001.

As per conversation with the client via phone call, the sample identifications have been altered for simplicity. These changes have been made to the original chain of custody.

Before analysis, the methyl mercury in an aliquot of the sample (typically 0.5-1.0 g) is extracted from acidic bromide slurry into CH_2Cl_2, and then back into pure water. The water samples are then analyzed for methyl mercury by aqueous phase ethylation with GC separation and CVAFS detection. At the time of sample preparation, the total solids determination was also performed (for reporting samples on a dry weight basis).

No analytical difficulties were encountered and all quality control criterion were within the control limits outlined in Frontier's SOP regarding the analysis of methyl mercury with the following exception

The matrix spike and matrix spike duplicate percent recoveries were below our established quality control limit (75-125%) at 79.9% and –231.9%. The spiking level was below the ambient sample concentration therefore a low percent recovery is not unusual. As corrective action, an analytical spike and spike duplicate was performed for QC. Analytical spikes add known concentrations of

206 622 6960
fax 206 622 6870
email: info@Frontier.WA.com
www.FrontierGeosciences.com

the analyte in question to aliquots of the same digests. On the other hand, matrix spikes add the known concentration to two separate digests from the same sample. Therefore, matrix spikes may reflect sample preparation errors and analytical spikes reflect only the continuity of the sample matrix.

Please feel free to contact me if you have any questions regarding these results.

Sincerely,

M. Kennard

Misty Kennard
Project Manager
Mistyk@frontier.wa.com

Frank Colich

Frank Colich
Project Coordinator
Frankc@frontier.wa.com

F A X

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4144
Fax: 619-239-3895

Date: 08/14/01

To: Ms. Karen Williamsen / Ceimic Corporation

Fax No: (401) 782-8905

From: Lisa J. Tucker
sign:_______________

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 3 (including cover)

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
0538	RJ454	SRTS10S01	08/02/01	Mercury/HOLD	**Change EPA ID to MJ001**
0538	RJ455	SRTS10S02	08/02/01	Mercury/HOLD	**Change EPA ID to MJ002**
0538	RJ456	SRTS10S03	08/02/01	Mercury	**Change EPA ID to MJ003**
0538	RJ457	SRTS11S02	08/02/01	Mercury	**Change EPA ID to MJ004**
0538	RJ458	SRTS11S01	08/02/01	Mercury/HOLD	**Change EPA ID to MJ005**
0538	RJ459	SRTS11S03	08/02/01	Mercury/HOLD	**Change EPA ID to MJ006**
0538	RJ460	SRTS12S01	08/02/01	Mercury/HOLD	**Change EPA ID to MJ007**
0538	RJ461	SRTS12S02	08/02/01	Mercury	**Change EPA ID to MJ008**
0538	RJ462	SRTS12S03	08/02/01	Mercury/HOLD	**Change EPA ID to MJ009**
0538	RJ466	SRBS43S01	08/02/01	Mercury	**Change EPA ID to MJ010**
0539	RJ467	SRBS44S01	08/02/01	Mercury	**Change EPA ID to MJ011**
0539	RJ468	SRBS51S01	08/02/01	Mercury	**Change EPA ID to MJ012**
0539	RJ469	SRBS50S01	08/02/01	Mercury	**Change EPA ID to MJ013**
0539	RJ470	SRBS52S01	08/02/01	Mercury	**Change EPA ID to MJ014**
0539	RJ471	SRBS45S01	08/02/01	Mercury	**Change EPA ID to MJ015**
0539	RJ472	SRBS48S01	08/02/01	Mercury	**Change EPA ID to MJ016**
0539	RJ473	SRBS47S01	08/02/01	Mercury	**Change EPA ID to MJ017**
0539	RJ474	SRBS46S01	08/02/01	Mercury	**Change EPA ID to MJ018**
0539	RJ475	SRQW02E01	08/02/01	Mercury	**Change EPA ID to MJ019**
0539	RJ476	SRBS49S01	08/02/01	Mercury	**Change EPA ID to MJ020**

The reason for these changes is:

MWH office personnel require this change ____*X*____

Thank you.

F A X

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4144
Fax: 619-239-3895

Date: **08/14/01**

To: Misty Kennard /Frank Colich

Frontier Geosciences

Fax No: (206) 622-6870

From: Lisa J. Tucker
sign:________________

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 2 **(including cover)**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Method (s) Originally Requested	Changes Requested*
0540	RJ463	SRBS40S01	08/02/01	Methyl Mercury	**Change EPA ID to MM001**
0540	RJ464	SRBS13S01	08/02/01	Methyl Mercury	**Change EPA ID to MM002**
0540	RJ465	SRBS38S01	08/02/01	Methyl Mercury	**Change EPA ID to MM003**
0540	RJ476	EVBS82S01	08/02/01	Methyl Mercury	**Change EPA ID to MM004**
0540	RJ477	EVBS84S01	08/02/01	Methyl Mercury	**Change EPA ID to MM005**

*Please Run for Analyses Originally Requested.

The reason for these changes is:

MWH office personnel require this change ____X____

Thank you.

Montgomery Watson Eng.

PM: LUCAS

Chain of Custody

Original Chain of Custody goes to Laboratory

0540

Page 1 of 1

Project #:

Project Name: Rocketdyne - SSFL

Cooler Temp.:

Samplers (please print): B. Stewart / L. Tucker

Cooler #:

Lab ID	Date	Time	Comp. Grab	Sample Identification	Sample Matrix	No. of Containers	Methyl Mercury	pH		pH		pH		pH		pH		pH		pH	Remarks
	8/2/01	1100		RJ463 MM001 SRBS405Ø1 D=0.5	Soil	1	X														
	8/2/01	1120		RJ464 MM002 SRBS135Ø1 D=0.5		1	X														
	8/2/01	1150		RJ465 MM003 SRBS385Ø1 D=0.5		1	X														
	8/2/01	1510		RJ476 MM004 EVBS825Ø1 D=2.0		1	X														
	8/2/01	1520		RJ477 MM005 EVBS845Ø1 D=2.0		1	X														
				RL																	
										Fed EX # 810213085041											

Celmic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	[signature]	8/2/01 1800	[signature] 8/3/01 1325	
Storage Location	Relinquished by (signature)	Date/Time	Received by (signature) CHRISTABEL FOWLER VTSR: 1030	Date/Time
	Relinquished by (signature)	Date/Time	Received by Celmic (signature) COC Seal N/A TEMP: 3.0°C	Date/Time

Remarks: Standard 20 Day TAT Frozen I

= Lab Use Only

SDG Narrative

The enclosed data package is in response to Montgomery Watson's Boeing SSFL, SDG No. MJ246. Under this SDG there are 3 PCB analyses for the samples received at Ceimic Corporation on May 23, 2003.

This data package includes the analysis for the following sample from SDG No. MJ246, which is billable:

(1)

Client ID	Ceimic ID	Analysis
MJ246	030606-01	PCB
MJ247	030606-02	PCB
MJ248	030606-03	PCB

Sample Receipt

Cooler Temperatures upon receipt were 6°C.

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. PCB

AD8: HP5890II (GC7) using 30m x 0.53mm ID, DB5 megabore column
AD9: HP5890II (GC7) using 30m x 0.53mm ID, DB1701 megabore column

(3) Sample Information

An "x" qualifier is flagged by Target Thru-put software whenever the data is manually edited. The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. Manual integrations are performed on GC/MS and GC standards and samples when computer generated integration picks up only a portion of the chromatographic peak, due to software limitations. When manual integrations are required, these integrations are performed using sound defensible professional judgment, in order to report accurate data. Each manual integration is signed and dated, and reviewed by both the lab supervisor and the GC/MS Interpretation Specialist for GC/MS or the Organic Lab Manager for Pest/PCB.

A. PCB

No non-compliances noted.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature.

Ines Bauer

Ines Bauer, Laboratory Manager

6-16-03

Date

030606
25

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MJ246
Date 5 /22 /03 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Fed-Ex
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives: None

		Sample Data							Matrix																						
Preservatives												HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
	Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
1	MJ246	NSBSØ15Ø1	–	C	5/22/03	0915	–		X												X										1
2	MJ247	NSBSØ15Ø1	–	↓	↓	0930	–		X												X										1
3	MJ248	SRBS33SØ1	AIV AOC	↓	↓	1020	–		X												X										1

See change received 5/23/03, per Riley email.

	Date	Time
Samplers Signature: [signature]	5/22/03	1600
Relinquished By: [signature]	5/22/03	1600
Received By: Elizabeth Astiny	5/23/03	10:00
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted :__/__/__
Temperature °C

Comments: Fax results to D. Hambrick @ 626.568.6515

FAX

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4124
Fax: 619-239-3895

Date: 05/23/03

To: Ms Kristen Riley / Ceimic Corporation

Ms Jessica Robinson / Ceimic Corporation

Fax No: (401) 782-8905

From: Edmund Sarao
sign: Edmund Sarao

Subject: Chain-of-Custody Form Analytical Request Change

No. of Pages: 2 (including cover)

Re:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Changes Requested
MJ246	MJ247	NSBS01S01	05/22/03 (time-0930)	**Change MWH Sample ID to "NSBS02S01"**

The reason for these changes is:

Incorrectly marked on COC form X

MWH office personnel require this change X

Other: Containers mislabeled ______

Thank you.

F A X

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-239-3888
Fax: 619-239-3895

Date: 09/15/2003

To: INTERNAL PURPOSE ONLY

Fax No:

From: Edmund Sarao
sign: Edmund Sarao

Subject: **Database-change Request**

No. of Pages: 2 (including cover)

---

per : SSFL Transformer Sampling

EPA Sample ID	Original MWH ID	Date Collected	Changes to Database being made*
MJ246	NSBS01S01	05/22/2003	Change MWH ID from NSBS01S01 to **"XFBS01S01"**
MJ247	NSBS02S01	05/22/2003	Change MWH ID from NSBS02S01 to **"XFBS02S01"**

* - see attached DAH email dated 09/10/2003 for the above changes.

The reasons for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change *X*
Other: Containers mislabeled ________

Thank you.

Dixie A Hambrick

09/10/2003 09:05 AM

To: Edmund.Sarao@mwhglobal.com, thomas.burton@mwhglobal.com, lisa.tucker@mwhglobal.com, Sumiko L Tanaka/Consultant/Americas/Montgomery Watson@MW, Joseph W Plummer/Consultant/Americas/Montgomery Watson, Benjamin.stewart@mwhglobal.com

cc:

Subject:

Ed, Lisa, Tom, Ben, Joesph -

Tom is summarizing our approach for naming conventions at transformer locations (Tom, pls review this before emailing yours....thanks).. Based on that we need to change the Odgen Ids for the following samples as shown.

All transformer samples will be flagged in the database as transformers (flag like a contained unit code or something). On the COC note the SWMU or the closest building to the transformer. The individual transformer number should be associated with each sample as well on the COC to enter in the database. They will have Og ids if at a RFI site, numbered sequentially. Outside of an RFI site they will be XF samples, again with BS numbers going sequentially. They will all be composites unless we start getting hits - so note on COC that lab has 4 (or however many) to combine before analysis.

Building 42 transformers - I do NOT know the tranformer number to give you ED, check with Tom/Ben

MJ246	XFBS01S01	5/22/2003	S				X
MJ247	XFBS02S01	5/22/2003	S				X

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

T702
SDG Packages

RECEIVED
REC'D

August 21, 2001

Ms. Lisa Tucker
Montgomery Watson
1230 Columbia Street
Suite 750
San Diego, CA 92101

Dear Ms. Tucker:

Enclosed are the results for the analyses performed in support of Montgomery Watson's Rocketdyne Project, Case No. 189050, SDG No. MJ001. The samples were taken from the field on August 2, 2001 and received at Ceimic Corporation on August 4, 2001.

These samples are reported under the Ceimic Project Number 010662, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Henry Leibovitz, Ph.D.
Organic Laboratory Supervisor

HL/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010662
SDG No.: MJ001

The following samples were received at Ceimic Corporation on August 4, 2001:

MJ003	MJ004 (MS/MSD)	MJ008
MJ010	MJ011	MJ012
MJ013	MJ014	MJ015
MJ016	MJ017	MJ018
MJ019	MJ020	

The above samples were digested and analyzed for total mercury in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Environmental Resource Associates lot 248 was used for the LCSS sample.

Observations:

Mercury analysis was performed via cold vapor atomic absorption spectroscopy (CVAA).

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Karen Frohlich 8/17/01

Karen Frohlich
Analytical Chemist

Date

FAX

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4114
Fax: 619-239-3805

Date: 08/14/01

To: Ms. Karen Williamsen / Ceimic Corporation **Fax No:** (401) 782-8905

From: Lisa J. Tucker
sign:__________________

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 3 (including cover)

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
0538	RJ454	SRTS10S01	08/02/01	Mercury/HOLD	**Change EPA ID to MJ001**
0538	RJ455	SRTS10S02	08/02/01	Mercury/HOLD	**Change EPA ID to MJ002**
0538	RJ456	SRTS10S03	08/02/01	Mercury	**Change EPA ID to MJ003**
0538	RJ457	SRTS11S02	08/02/01	Mercury	**Change EPA ID to MJ004**
0538	RJ458	SRTS11S01	08/02/01	Mercury/HOLD	**Change EPA ID to MJ005**
0538	RJ459	SRTS11S03	08/02/01	Mercury/HOLD	**Change EPA ID to MJ006**
0538	RJ460	SRTS12S01	08/02/01	Mercury/HOLD	**Change EPA ID to MJ007**
0538	RJ461	SRTS12S02	08/02/01	Mercury	**Change EPA ID to MJ008**
0538	RJ462	SRTS12S03	08/02/01	Mercury/HOLD	**Change EPA ID to MJ009**
0538	RJ466	SRBS43S01	08/02/01	Mercury	**Change EPA ID to MJ010**
0539	RJ467	SRBS44S01	08/02/01	Mercury	**Change EPA ID to MJ011**
0539	RJ468	SRBS51S01	08/02/01	Mercury	**Change EPA ID to MJ012**
0539	RJ469	SRBS50S01	08/02/01	Mercury	**Change EPA ID to MJ013**
0539	RJ470	SRBS52S01	08/02/01	Mercury	**Change EPA ID to MJ014**
0539	RJ471	SRBS45S01	08/02/01	Mercury	**Change EPA ID to MJ015**
0539	RJ472	SRBS48S01	08/02/01	Mercury	**Change EPA ID to MJ016**
0539	RJ473	SRBS47S01	08/02/01	Mercury	**Change EPA ID to MJ017**
0539	RJ474	SRBS46S01	08/02/01	Mercury	**Change EPA ID to MJ018**
0539	RJ475	SRQW02E01	08/02/01	Mercury	**Change EPA ID to MJ019**
0539	RJ476	SRBS49S01	08/02/01	Mercury	**Change EPA ID to MJ020**

The reason for these changes is:

MWH office personnel require this change ____X____

Thank you.

Chain of Custody

Original Chain of Custody goes to Laboratory

KJ454 0538

Page 1 of 2

Project # 1890505.010701

Project Name RocketDyne - SSFL

Samplers (please print) Ben Stewart / Chris Tucker

Lab ID	Date	Time	Comp. Grab	Sample Identification	Sample Matrix	No. of Containers	Mercury (Hg)	pH		pH		pH		pH		pH		pH		pH	Remarks
	8/2/01	0810		~~RJ454~~ MJ001 SRTS10S01 D=5'	Soil	1	X														Hold
		0840		~~RJ455~~ MJ002 SRTS10S02 D=1'		1	X														Hold
		0845		~~RJ456~~ MJ003 SRTS10S03 D=3'		1	X														
		0920		~~RJ457~~ MJ004 SRTS11S02 D=3'		1	X														
		0915		~~RJ458~~ MJ005 SRTS11S01 D=0.5'		1	X														Hold
		0925		~~RJ459~~ MJ006 SRTS11S03 D=6'		1	X														Hold
		0950		~~RJ460~~ MJ007 SRTS12S01 D=0.5'		1	X														Hold
		0955		~~RJ461~~ MJ008 SRTS12S02 D=3'		1	X														
		1000		~~RJ462~~ MJ009 SRTS12S03 D=6'		1	X														Hold
		1145		~~RJ466~~ ~~SRTS05~~ SRBS43 D=0.5' MJ010		1	X														

Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
[signature]	8/3/01 0900		
Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
Relinquished by (signature)	Date/Time	Received by Celmic (signature)	Date/Time

Celmic Project #

Remarks: ~~[illegible]~~ 08 8/3/01 FAX results to Dixie Hambrick (626 568 6515); Standard TAT

▪ = Lab Use Only

Celmic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900, Fax: (401) 782-8905

RJ467 0539

Chain Custody
Original Chain of Custody goes to Laboratory

Page 2 of 2

Project #	Project Name
1990505.010701	Rocketdyne/SSFL
Samplers (please print)	B. Stewart / L. Tucker

Lab I.D.	Date	Time	Comp./Grab	Sample Identification	Sample Matrix	No. of Containers	Mercury (Hg)	pH	pH	pH	pH	pH	pH	pH	Remarks
	8/2/01	1200		~~RJ467~~ MJ011 SRBS47150I D:0.5'	Soil	1	X								
	8/2/01	1310		~~RJ468~~ MJ012 SRBS51501 D:0.5'	↓	1	X								
	8/2/01	1315		~~RJ469~~ MJ013 SRBS5050Ø1 D:0.5'	↓	1	X								
	↓	1330		~~RJ470~~ MJ014 SRBS525Ø1 D:0.5'	↓	1	X								
	↓	1725		~~RJ471~~ MJ015 SRBS455Ø1 D:0.5'	↓	1	X								
	↓	1350		~~RJ472~~ MJ016 SRBS485Ø1 D:0.5'	↓	1	X								
	↓	1715		~~RJ473~~ MJ017 SRBS475Ø1 D:0.5'	↓	1	X								
	↓	1730		~~RJ474~~ MJ018 SRBS465Ø1 D:0.5'	↓	1	X								
	↓	1415		~~RJ475~~ MJ019 SRQW102EØ1	↓	1	X								HNO3 preserved
	↓	1335		~~RJ476~~ MJ020 SRBS495Ø1 D:0.5'	↓	1	X								

Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
[signature]	8/3/01 0900		
Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
Relinquished by (signature)	Date/Time	Received by Lab (signature)	Date/Time

Remarks: Standard TAT

▓ = Lab Use Only

CHAIN OF CUSTODY

Chain of Custody

Original Chain of Custody goes to Laboratory

0577

Project #	Project Name	Cooler Temp.
1890505.D10701	Rocketdyne/SSFL	
Samplers (please print)	B. Stewart / L. Tucker	**Cooler #**

Lab ID	Date	Time	Comp./Grab	Sample Identification	Sample Matrix	No. of Containers	Mercury (Hg+)	pH		pH		pH		pH		pH		pH		pH	Remarks
11	8/2/01	1200		RJ467 SRBS44SØ1 D=0.5'	Soil	1	X														
12	8/2/01	1310		RJ468 SRBS51SØ1 D=0.5'		1	X														
13	8/2/01	1315		RJ469 SRBS50SØ1 D=0.5'		1	X														
14		1330		RJ470 SRBS52SØ1 D=0.5'		1	X														
15		1725		RJ471 SRBS45SØ1 D=0.5'		1	X														
16		1350		RJ472 SRBS48SØ1 D=0.5'		1	X														
17		1715		RJ473 SRBS47SØ1 D=0.5'		1	X														
18		1730		RJ474 SRBS46SØ1 D=0.5'		1	X														
19		1415		RJ475 SRQWØ2EØ1		1	X														HNO_3 preserved
20		1335		RJ476 SRBS49SØ1 D=0.5'		1	X														

Celmic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
010662	[signature]	8/3/01 0900		
	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
Storage Location 2	Relinquished by (signature)	Date/Time	Received by Celmic (signature) [signature]	Date/Time 8/4/01 1110

Remarks: Standard TAT

■ = Lab Use Only

Celmic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 - Tel: (401) 782-8900, Fax: (401) 782-8905

Chain of Custody

Original Chain of Custody goes to Laboratory

Project #: 1890505.010701

Project Name: RocketDyne - SSFL

Cooler Temp.:

Cooler #:

Samplers (please print): Ben Stewart / Lisa Tucker

Lab ID	Date	Time	Comp. / Grab	Sample Identification	Sample Matrix	No. of Containers	Mercury (Hg)	pH	pH	pH	pH	pH	pH	pH	Remarks
01	8/2/01	0820		RJ454 SRTS10S01 D=5'	Soil	1	X								Hold
02	↓	0840		RJ455 SRTS10S02 D=1'	↓	1	X								Hold
03		0845		RJ456 SRTS10S03 D=3'		1	X								
04		0920		RJ457 SRTS11S02 D=3'		1	X								
05		0915		RJ458 SRTS11S01 D=0.5'		1	X								Hold
06		0925		RJ459 SRTS11S03 D=6'		1	X								Hold
07		0950		RJ460 SRTS12S01 D=0.5'		1	X								Hold
08		0955		RJ461 SRTS12S02 D=3'		1	X								
09		1000		RJ462 SRTS12S03 D=6'		1	X								Hold
10	↓	1145		RJ466 ~~SRTS~~ SRBS43 D=0.5'	↓	1	X								

Celmic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
010662	[signature]	8/3/01 0900		
Storage Location	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
2	Relinquished by (signature)	Date/Time	Received by Celmic (signature) [signature]	Date/Time 8/4/01 11:00

Remarks: ~~2 week~~ BB 8/3/01 FAX results to Dixie Hambrick (626.568.8515); Standard TAT

▪ = Lab Use Only

CELMIC CORPORATION
Sample Receiving Checklist

LIMS # 010662 Cooler Number: 1

Client: ~~AMEC~~ Montgomery Watson Number of Coolers: 1

Project: Rocketdyne Date Received: 8/4/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 8/4/01

1. Have designated person initial here to acknowledge receipt of cooler: JC (date): 8/4/01
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO
   If YES, enter carrier name & airbill number here: 810213085052
3. Were custody seals on outside of cooler? .... ~~YES~~ NO
   How many & where: ______ seal date: / / seal name: NA
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO NA
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: 0cpm YES NO
6. Chain of Custody #: 0538, 0539
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 25°C Type of ice: none YES NO

B. LOG-IN PHASE: Date samples were logged-in: 8/6/01

by (print): J. Cenan (sign): J Cenan

12. Describe type of packing in cooler: bubble
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ______ YES NO NA
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO NA
22. Laboratory labelling verified by: (Initials): JC (date): 8/6/01

QAT0261

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: J. Cass (Mont. Watson) Date: 8/4/01

Client(s): ~~AMEC~~ (Rocketdyne)

Samples Affected: fx 8102130E5052

(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

Cooler 1 temp was ambient (25°C) no ice

Required Action:

(to be completed by the client or internal coordinator)

Faxed to Dixie Hambrick 8/7/01 ; Lisa Tucker called 8/8/01 and said go ahead and run

Name: Karen Williamsen Date: 8/7/01

Additional Comments:

(lab use only)

Name: ______________ Date: __________

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

Columbia Analytical Services inc.

Tuesday, March 17, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800238

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/28-30/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

L Raab

Leo Raab
Project Chemist

Eydie Schwartz for

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

CAS CSR #L9800238

Table of Contents

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800238
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/28-30/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

MS/MSD analysis for 8080PCB was performed on sample RS652 from SDG L9800196.
MS/MSD analysis for 8015TPH was performed on sample RS181 from SDG L9800225.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: JKaad Date: 3/17/98

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9800238**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/29/98
SUMMARY / FINAL DUE: 2/12/98 / 2/26/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RS182	1/28/98	1/28/98	SOLID		X		X																		
2	RS183	1/28/98	1/28/98	SOLID		X		X																		
3	RS683	1/29/98	1/29/98	SOLID		X						X				X										
4	RS684	1/29/98	1/29/98	SOLID		X							X													
5	RS685	1/29/98	1/29/98	SOLID		X							X													
6	RS686	1/29/98	1/29/98	SOLID		X							X													
7	RS687	1/29/98	1/29/98	SOLID		X		X																		
8	RS688	1/29/98	1/29/98	SOLID		X							X													
9	RS689	1/29/98	1/29/98	SOLID		X							X													
10	RS690	1/29/98	1/29/98	SOLID		X							X													
11	RS691	1/29/98	1/29/98	SOLID		X							X													
12	RS692	1/29/98	1/29/98	SOLID		X							X													
13	RS693	1/29/98	1/29/98	SOLID		X							X													
14	RS694	1/29/98	1/29/98	SOLID		X							X													
15	RS186	1/29/98	1/29/98	SOLID		X		X									X									
* 16	RS695	1/29/98	1/29/98	SOLID		C																				
17	RS696	1/29/98	1/29/98	SOLID		X							X													
18	RS698	1/30/98	1/30/98	SOLID		X		X	X												X					
19	RS699	1/30/98	1/30/98	SOLID		X		X	X												X					
20	RS700	1/30/98	1/30/98	SOLID		X		X																		

* RS695 MOVED TO SDG L9800338

003

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS176
Date 1 / 28 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RS176	BABS45S01	5.5	1/28/98	1155	53		X		
RS177	BABS45S02	10		1205					
RS178	BABS39S01	5		1445	55				
RS179	BABS39S02	10		1455					
RS180	BABS39S03	15		1515					
RS181	BABS39S04	20		1540					
RS182	BABS~~40~~ 39 S05	25		1610		1			
RS183	BABS 39 S06	30		1630		2			
RS184	BAQW03E01	—		1700			TB	X	

Analyses

Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4 C	HCL, pH<2 4 C	4 C	4 C	4 C	H2SO4,pH<2 4 C	4 C	HNO3, pH<2 4 C	4 C	4 C	4 C	4 C	4 C	4 C						
RS176		X															B			
RS177		X																		
RS178		X																		
RS179		X																		
RS180		X																		
RS181		X																		
RS182		X																		
RS183		X																		
RS184		X															—			2

T.B. 1/28/98

	Date	Time
Samplers Signature: Thomas J. Burt	1/28/98	1000
Relinquished By: Thomas J. Burt	1/28/98	1842
Received By: [signature]	1/28/98	1842
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:
Do COC match samples: Y or N — Y
Broken container: Y or N — N
Received within holding time: Y or N — Y
COC seal intact: Y or N — N/A
Any other problems: Y or N — N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature C 7°

1.15

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800238

Chain of Custody

Control Number: COC RS 683
Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Preservatives	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4 C	4°C	4°C

Sample Data / Matrix

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
AIV AOC	RS 683	SRBS06S01	0.5	1/29/98	1120	7	3	X											X				X					HA			1
↓	RS 684	SRBS03S01	0.5		1145	1	4													X											
5.13	RS 685	~~8~~ BVSS03S02	0		1230	40	5													X								G			
4.16	RS 686	B1BS01S01	2		1345	2	6				X									X								G			
4.15	RS 687	BABS10S01	0.5		1400	33a	7	X					X															HA			
4.7	RS 688	CLBS19S01	0.5		1500	46	8	X												X											
5.23	RS 689	DABS04S01	0.5		1525	4	9													X											
6.8	RS 690	SNBS09S01	0.5		1540	10	10													X											
6.9	RS 691	ELBS02S01	0.5		1550	2	11													X											
A.III AOC	RS 692	STBS01S01	0.5		1600	1	12													X											
7.1	RS 693	BLBS05S01	0.5		1620	4	13													X											
4.5	RS 694	LXBS01S01	1'		1640	1	14				X									X											

		Date	Time
Samplers Signature	KMJ	1/29/98	1130
Relinquished By:	KMJ	1/29/98	1845
Received By:	[signature]	1/29/98	1845
Relinquished By:	[signature]	1/29/98	1930
Received By (LAB):	[signature]	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: ~~Y or~~ NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 7

FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

REV: 1

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: **COC** RS185
Date 1/29/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Analysis	Preservatives
8260M VOC	HCL, pH<2 4°C
8015OG TPH	HCL, pH<2 4°C
8270SIM SVOC	4°C
8270R SVOC	4°C
8290 DIOXIN	4°C
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C
8330 ORDINANCE	4°C
1LM02.1RT METALSRT	HNO3, pH<2 4°C
7196 HEX CHROME	4°C
340.2 FLUORIDE	4°C
300 ANIONS	4°C
9045/9040 pH	4°C
8081 PCBs	4°C
IC HYDRAZ	4°C

Sample Data / Matrix

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SWMU 5.13	RS185	BVBS185Ø1	0.5	1/29/98	0935	38	—	X				X											X				HA		*	
"	RS186	BVBS255Ø3	1	↓	1240	37	15.	X				X											X				HA			

T.B. 1/29/98

	Date	Time
Samplers Signature: Thomas J. Burton	1/29/98	0930
Relinquished By: Thomas J. Burton	1/29/98	1825
Received By: [signature]	1/29/98	1825
Relinquished By: [signature]	1/29/98	1920
Received By (LAB): [signature]	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 7

* Hold both analytes

Sample from middle of sleeves

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L980 0238

Chain of Custody

Control Number: COC RS695
Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

SWMU 5.2 7.4

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1312 SPLP	COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RS695	EVBS17SØ1	2	1/29/98	1700	17a	16.	X																	X	*	HA			1
RS696	DCBSØ7SØ1	1	↓	1730	4	17.	X											X								↓			↓
RS697	BAQWØ4EØ1	-	↓	1800	-	-		X			X															-			2

KJ 1/29/98

	Date	Time
Samplers Signature KMJ	1/29/98	1645
Relinquished By: KMJ	1/29/98	1845
Received By:	1/29/98	1845
Relinquished By:	1/29/98	1930
Received By (LAB):	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 17

* Sb ONLY.
FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

007

REV: 1

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 698
Date 1 / 30 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

WMU 9.1, 16.3
II

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO3, pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8081 PCBs (4°C)	IC HYDRAZ (4°C)			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS 698	ECBS20S01	0.5'	1/30/98	1445	18	18	X				X	X			X											HA		~~H~~	1
RS 699	ECBS20S02	5'	↓	1545	↓	19	↓				X	X			X											↓		~~X~~	↓
RS 700	ABBS20S01	3'	↓	1615	68	20	↓				X															↓			↓
RS 701	ABBS21S01	2.5'	↓	1630	69		↓				X															↓			↓

KJ 1/30/98

	Date	Time
Samplers Signature KMJ	1/30/98	1500
Relinquished By: KMJ	1/30/98	1705
Received By: Thomas J. Bent	1/30/98	1705
Relinquished By: Thomas J. Bent	1/30/98	1913
Received By (LAB): [illegible signature]	1/30/98	1913

For Lab Use

Lab Number:
Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N N/A
Any other problems: Y or N (N circled)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Columbia Analytical Services inc.

Tuesday, March 17, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800238

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/28-30/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

L Raab

Leo Raab
Project Chemist

Eydie Schwartz for

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800238
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/28-30/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde — Columbia Analytical Services, Kelso, WA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

MS/MSD analysis for 8080PCB was performed on sample RS652 from SDG L9800196.
MS/MSD analysis for 8015TPH was performed on sample RS181 from SDG L9800225.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: JKaal Date: 3/17/98

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: OGDEN
PROJECT MANAGER: DIXIE HAMBRICK
PROJECT NAME: ROCKETDYNE SSFL
PROJECT NUMBER: 313150002

SDG NUMBER: **L9800238**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/29/98
SUMMARY / FINAL DUE: 2/12/98 / 2/26/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RS182**	1/28/98	1/28/98	SOLID		X		X																		
2	**RS183**	1/28/98	1/28/98	SOLID		X		X																		
3	**RS683**	1/29/98	1/29/98	SOLID		X						X				X										
4	**RS684**	1/29/98	1/29/98	SOLID		X							X													
5	**RS685**	1/29/98	1/29/98	SOLID		X							X													
6	**RS686**	1/29/98	1/29/98	SOLID		X							X													
7	**RS687**	1/29/98	1/29/98	SOLID		X		X																		
8	**RS688**	1/29/98	1/29/98	SOLID		X							X													
9	**RS689**	1/29/98	1/29/98	SOLID		X							X													
10	**RS690**	1/29/98	1/29/98	SOLID		X							X													
11	**RS691**	1/29/98	1/29/98	SOLID		X							X													
12	**RS692**	1/29/98	1/29/98	SOLID		X							X													
13	**RS693**	1/29/98	1/29/98	SOLID		X							X													
14	**RS694**	1/29/98	1/29/98	SOLID		X							X													
15	**RS186**	1/29/98	1/29/98	SOLID		X		X									X									
* 16	**RS695**	1/29/98	1/29/98	SOLID		C																				
17	**RS696**	1/29/98	1/29/98	SOLID		X							X													
18	**RS698**	1/30/98	1/30/98	SOLID		X		X	X												X					
19	**RS699**	1/30/98	1/30/98	SOLID		X		X	X												X					
20	**RS700**	1/30/98	1/30/98	SOLID		X		X																		

* RS695 MOVED TO SDG L9800338

003

L980023B

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS176
Date 1 / 28 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Preservatives: HCL, pH<2 4 C; HCL, pH<2 4 C; 4 C; 4 C; 4 C; H2SO4,pH<2 4 C; 4 C; HNO3, pH<2 4 C; 4 C; 4 C; 4 C; 4 C; 4 C; 4 C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS176	BABS45SØ1	5.5	1/28/98	1155	53		X				X															B			
RS177	BABS45SØ2	10		1205							X																		
RS178	BABS39SØ1	5		1445	55						X																		
RS179	BABS39SØ2	10		1455							X																		
RS180	BABS39SØ3	15		1515							X																		
RS181	BABS39SØ4	20		1540							X																		
RS182	BABS ~~40~~ 39 SØ5	25		1610		1					X																		
RS183	BABS 39 SØ6	30		1630		2					X																		
RS184	BAQWØ3EØ1	—		1700			TB	X			X															—			2

T.B. 1/28/98

	Date	Time
Samplers Signature: Thomas J. Bart	1/28/98	1000
Relinquished By: Thomas J. Bart	1/28/98	1842
Received By: Jenet Walker	1/28/98	1842
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:
Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N N/A
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature C 7°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

WMV 1.15

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800238

Chain of Custody

Control Number: COC RS 683
Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE
AIV AOC	RS 683	SRBSØ6SØ1	0.5	1/29/98	1120	7	3	X			
↓	RS 684	SRBSØ3SØ1	0.5		1145	1	4				
5.13	RS 685	BVSSØ3SØ2	0		1230	40	5				
4.16	RS 686	B1BSØ1SØ1	2		1345	2	6				X
4.15	RS 687	BABS1ØSØ1	0.5		1400	33a	7	X			
4.7	RS 688	CLBS19SØ1	0.5		1500	46	8	X			
5.23	RS 689	DABSØ4SØ1	0.5		1525	4	9				
6.8	RS 690	SNBSØ9SØ1	0.5		1540	10	10				
6.9	RS 691	ELBSØ2SØ1	0.5		1550	2	11				
A.III AOC	RS 692	STBSØ1SØ1	0.5		1600	1	12				
7.1	RS 693	BLBSØ5SØ1	0.5		1620	4	13				
4.5	RS 694	LXBSØ1SØ1	1'		1640	1	14				X

Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4 C	4°C	4 C						
RS 683								X				X					HA			1
RS 684									X											
RS 685									X								G			
RS 686									X								G			
RS 687		X															HA			
RS 688									X											
RS 689									X											
RS 690									X											
RS 691									X											
RS 692									X											
RS 693									X											
RS 694									X											

	Signature	Date	Time
Samplers Signature	KMT	1/29/98	1130
Relinquished By:	KMT	1/29/98	1845
Received By:		1/29/98	1845
Relinquished By:		1/29/98	1930
Received By (LAB):		1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 7

FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

REV: 1

005

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L980238

Chain of Custody

Control Number: COC RS185
Date 1/29/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
SWMU 5.13	RS185	BVBS18SØ1	0.5	1/29/98	0935	38		X				X											X				HA		*	
"	RS186	BVBS25SØ3	1	↓	1240	37	15.	X				X											X				HA			

T.B 1/29/98

	Date	Time
Samplers Signature: Thomas J. Burton	1/29/98	0930
Relinquished By: Thomas J. Burton	1/29/98	1825
Received By: [signature]	1/29/98	1825
Relinquished By: [signature]	1/29/98	1930
Received By (LAB): [signature]	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 17

* Hold both analytes
Sample from middle of sleeves

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L980238

Chain of Custody

Control Number: COC RS695
Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C

SWMU
5.2
7.4

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1312 SPLP	COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS695	EVBS17SØ1	2	1/29/98	1700	17a	16	X																	X	*	HA			1
RS696	OCBSØ7SØ1	1	↓	1730	4	17	X											X								↓			↓
RS697	BAQWØ4EØ1	-	↓	1800	-	—		X			X															-			2

KJ 1/29/98

	Date	Time
Samplers Signature KMJ	1/29/98	1645
Relinquished By: KMJ	1/29/98	1845
Received By: [signature]	1/29/98	1845
Relinquished By: [signature]	1/29/98	1930
Received By (LAB) [signature]	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: ~~Y~~ or NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 17

* Sb ONLY.
FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

007

REV: 1

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 698
Date 1 / 30 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

Preservatives: HCL, pH<2 4°C (8260M VOC); HCL, pH<2 4°C (8015OG TPH); 4°C (8270SIM SVOC); 4°C (8270R SVOC); 4°C (8290 DIOXIN); H2SO4, pH<2 4°C (ASTM D19 FORMALDEHYDE); 4°C (8330 ORDINANCE); HNO3, pH<2 4°C (1LM02.IRT METALSRT); 4°C (7196 HEX CHROME); 4°C (340.2 FLUORIDE); 4°C (300 ANIONS); 4°C (9045/9040 pH); 4°C (8081 PCBs); 4°C (IC HYDRAZ)

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS 698	ECBS20S01	0.5'	1/30/98	1445	18	18	X					X	X			X										HA			1
RS 699	ECBS20S02	5'	↓	1545	↓	19	↓					X	X			X										↓		~~2~~	↓
RS700	ABBS20S01	3'	↓	1615	68	20	↓					X														↓			↓
RS 701	ABBS21S01	2.5'	↓	1630	69		↓					X														↓			↓

KJ 1/30/98

UMU
0.1,6.3
II

		Date	Time
Samplers Signature	KMJ	1/30/98	1500
Relinquished By:	KMJ	1/30/98	1705
Received By:	Thomas J. [illegible]	1/30/98	1705
Relinquished By:	Thomas J. [illegible]	1/30/98	1913
Received By (LAB):	[illegible]	1/30/98	1913

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°C

REV: 1

Columbia Analytical Services inc.

998

Thursday, March 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

TIER II

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800197

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/23-26/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

L Raab

Leo Raab
Project Chemist

Eydie Schwartz for

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800197
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/23-26/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Perchlorate	Columbia Analytical Services, San Jose, CA.
Explosives/EPA 8330	Paragon Analytical, Fort Collins, CO.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 1/28/98:
Add 8021VOC to RS155.

MS/MSD analysis for Hexavalent Chromium was performed on sample RS142 from SDG L9800196.
MS/MSD analysis for 8021VOC was performed on sample RS170 from SDG L9800225.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: JKood Date: 3/19/98

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: OGDEN
PROJECT MANAGER: DIXIE HAMBRICK
PROJECT NAME: ROCKETDYNE SSFL
PROJECT NUMBER: 313150002

SDG NUMBER: **L9800197**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/26/98
SUMMARY / FINAL DUE: 2/9/98 / 2/23/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8021 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	ARSENIC COBALT MERCURY	ARSENIC		ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RS144	1/23/98	1/23/98	SOLID		X							X					X				X				
2	RS145	1/23/98	1/23/98	SOLID		X							X					X				X				
3	RS146	1/23/98	1/23/98	SOLID		X																X				
4	RS147	1/23/98	1/23/98	SOLID		X																X				
5	RS148	1/23/98	1/23/98	SOLID		X																X				X
6	RS149	1/26/98	1/26/98	SOLID		X													X							
7	RS150	1/26/98	1/26/98	SOLID		X													X							
8	RS151	1/26/98	1/26/98	SOLID		X													X							
9	RS152	1/26/98	1/26/98	SOLID		X													X							
10	RS153	1/26/98	1/26/98	SOLID		X													X							
11	RS155	1/26/98	1/26/98	SOLID		X	X	X																		
12	RS156	1/26/98	1/26/98	SOLID		X		X																		
13	RS158	1/26/98	1/26/98	SOLID		X		X																		
14	RS159	1/26/98	1/26/98	SOLID		X		X																		
15	RS160	1/26/98	1/26/98	SOLID		X		X																		
16	RS161	1/26/98	1/26/98	SOLID		X		X																		
17	RS162	1/26/98	1/26/98	SOLID		X		X																		
18	RS654	1/26/98	1/26/98	SOLID		X	X																			
19	RS655	1/26/98	1/26/98	SOLID		X	X																			
20	RS656	1/26/98	1/26/98	SOLID		X						X				X										

L98 00197

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS144
Date 01/23/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4
TAT: 35 - Day

Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product
RS144	BSB527503	10.0	1/23/98	1240	1	X		
RS145	BSB527504	15.0		1340	2	X		
RS146	BSB527505	20.0		1355	3	X		
RS147	BSB527506	30.0		1415	4	X		
RS148	HVBS4650(1)	5.5		1615	5	X		

Sample ID	8260M VOC (HCL, pH<2 4°C)	8015OG HYDROCARBON (HCL, pH<2 4°C)	8270SIM PAH (4°C)	8290 DIOXIN (4°C)	3500 FORMALDEHYDE (H2SO4,pH<2 4°C)	8330 ORDINANCE (4°C)	6010/7000 METALSRT (HNO3, pH<2 4°C) *	7196 CrVI (4°C)	340.2 FLUORIDE (4°C)	300 NITRATE/NITRITE* (4°C)	300 CHLORIDE * (4°C)	9045/9040 pH (4°C)	* Cd, Hg, As	PERCHLORATE					Extra Volume MS/MSD	HOLD	Total # of Bottles
RS144							1	1						1							1
RS145							1	1						1							1
RS146							1							1							1
RS147														1							1
RS148						1								1							1

DB 1/23/98

	Date	Time
Samplers Signature	1/23/98	1730
Relinquished By:	01/23/98	1827
Received By:	1/23/98	1927
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N NA
Any other problems: Y or N (N circled)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 5°

NOTE: DO NOT ANALYZE RS146 FOR METALS

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

#77777 3a

005

L9800197

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC R5149
Date 01/23/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Dettley~~ TB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
Standard TAT / 5-Day

Preservatives: 8260M VOC: HCL pH<2 4°C; 8015OG HYDROCARBON: HCL pH<2 4°C; 8270SIM PAH: 4°C; 8290 DIOXIN: 4°C; 3500 FORMALDEHYDE: H2SO4 pH<2 4°C; 8330 ORDINANCE: 4°C; 6010/7000 METALSRT: HNO3 pH<2 4°C; 7196 CrVI: 4°C; 340.2 FLUORIDE: 4°C; 300 NITRATE/NITRITE*: 4°C; 300 CHLORIDE*: 4°C; 9045/9040 pH: 4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	As	Extra Volume MS/MSD	HOLD	Total # of Bottles
R5149	HYB55SS01	2.0	01/23/98	0900	6	X															1			1
R5150	HYB55SS02	6.0		0910	7	X															1			1
R5151	HYB55SS03	10.0		0920	8	X															1			1
R5152	HYB55SS04	15.0		0930	9	X															1			1
R5153	HYB55SS05	20.0		0940	10	X															1			1
R5154	HYB55SS06	25.0		0955	~~11~~	X															1		X	1
R5155	CDBS17SS01	6.0		1200	11	X				1														1
R5156	CDBS18SS01	0.5		1215	12	X				1														1
R5157	ABBS22SS01	5.0		1410		X				1													X	1
R5158	ABBS22SS02	7.5		1415	13	X				1														1
R5159	CABS24SS01	4.0		1540	14	X				1														1
R5160	CABS24SS02	10.0		1555	15	X				1														1

5# 49
10
4
66
66
24

	Date	Time
Samplers Signature	1/26/98	1730
Relinquished By:	1/26/98	1840
Received By:	1/26/98	1840
Relinquished By:	1/26/98	1928
Received By (LAB):	1/26/98	1928

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number L9800197
Do COC match samples: Y or N (Y)
Broken container: Y or N (N)
Received within holding time: Y or N (Y)
COC seal intact: Y or N N/A
Any other problems: Y or N (N)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°

REV. 1

006

L9800197

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC R5161
Date 01 / 23 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	
Cooler No.	
QC Level: Level4	TAT: 35 - Day

Bill To:	~~Mark Boltley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
[illegible] ONE CONTAINER

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C								

LSF

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	Extra Volume MS/MSD	HOLD	Total # of Bottles
24	R5161	CAB524543	15.0	1/26/98	1610	16	X				1													1
↓	R5162	CAB524544	17.5	1	1630	17	X				1													1

DB 1/26/98

	Date	Time
Samplers Signature	1/26/98	1730
Relinquished By:	1/26/98	1840
Received By: Tom Burton	1/26/98	1840
Relinquished By:	1/26/98	1928
Received By (LAB):	1/26/98	1928

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number: L9800197

Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N NA
Any other problems: Y or N (N circled)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6

REV 1

007

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800197

Chain of Custody

Control Number: COC RS654
Date 1/26/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	515150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Boffey~~ KT PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives: VOC: HCL, pH<2 4°C; 8015G: HCL, pH<2 4°C; 8270SIM: 4°C; 8290: 4°C; 3500: H2SO4, pH<2 4°C; 8330: 4°C; 6010/7000: HNO3, pH<2 4°C; 7196: 4°C; 340.2: 4°C; 300 Nitrate: 4°C; 300 Chloride: 4°C; 9045/9040: 4°C

	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	~~8260A~~ 8021 VOCs	8015G HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ [LMD KT] METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	PERCHLOR.	8270R SVOA	ULS	Extra Volume MS/MSD	HOLD	Total # of Bottles
UMU IV	RS 654	SRBS04S01	1'	1/26/98	840	18	X			X														8			1
	~~RS 655~~	~~SRBS055x~~	KT																								
	RS 655	SRBS04S02	3'		850	19	X			X						X					X			8			
	RS 656	SRBS05S01	3'		930	20	X			~~X~~						X					X			39			
4	RS 657	CFBS11S02	1'		1030		X															X		18			
14	RS 658	CABS26S01	0.5'		1130		X						X											25			
AOC	RS 659	CDBS19S01	0.5'		1200		X						X											18			
"	RS 660	CDBS19S02	5'		1215		X						X											18		X	
17	RS 661	CLBS46S01	0.5'		1600					X														41b			
	RS 662	CLBS52S01	0.5'		1610							X											~~X~~ KT	41c			
	RS 663	CLBS46S02	5'		1625																		X	41b			
	RS 664	CLBS46S03	8'		1650																		X	41b		X	

	Name	Date	Time
Samplers Signature	KMJ	1/26/98	900
Relinquished By:	KMJ	1/26/98	1930
Received By:	[signature]	1/26/98	1930
Relinquished By:			
Received By (LAB):			

For Lab Use

Lab Number: L9800197
Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 1/28/98 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS149	RS155	1/26/97	OG	OG & V

0197-11
✓ ab 1/2

[a] OG= 8015OG, TPH V = 8021, Volatiles

The reason for these changes is:
Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change X
Other: Containers mislabeled ___ ______

Thank you.

Columbia Analytical Services INC.

Thursday, March 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800197

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/23-26/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

L Raab
Leo Raab
Project Chemist

Eydee Schwartz for
Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

CAS CSR #L9800197

Table of Contents

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800197
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/23-26/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Perchlorate	Columbia Analytical Services, San Jose, CA.
Explosives/EPA 8330	Paragon Analytical, Fort Collins, CO.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 1/28/98:
Add 8021VOC to RS155.

MS/MSD analysis for Hexavalent Chromium was performed on sample RS142 from SDG L9800196.
MS/MSD analysis for 8021VOC was performed on sample RS170 from SDG L9800225.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: JKool Date: 3/19/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9800197**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/26/98
SUMMARY / FINAL DUE: 2/9/98 / 2/23/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8021 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	ARSENIC COBALT MERCURY	ARSENIC		ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RS144**	1/23/98	1/23/98	SOLID		X							X					X				X				
2	**RS145**	1/23/98	1/23/98	SOLID		X							X					X				X				
3	**RS146**	1/23/98	1/23/98	SOLID		X																X				
4	**RS147**	1/23/98	1/23/98	SOLID		X																X				
5	**RS148**	1/23/98	1/23/98	SOLID		X																X				X
6	**RS149**	1/26/98	1/26/98	SOLID		X													X							
7	**RS150**	1/26/98	1/26/98	SOLID		X													X							
8	**RS151**	1/26/98	1/26/98	SOLID		X													X							
9	**RS152**	1/26/98	1/26/98	SOLID		X													X							
10	**RS153**	1/26/98	1/26/98	SOLID		X													X							
11	**RS155**	1/26/98	1/26/98	SOLID		X	X	X																		
12	**RS156**	1/26/98	1/26/98	SOLID		X		X																		
13	**RS158**	1/26/98	1/26/98	SOLID		X		X																		
14	**RS159**	1/26/98	1/26/98	SOLID		X		X																		
15	**RS160**	1/26/98	1/26/98	SOLID		X		X																		
16	**RS161**	1/26/98	1/26/98	SOLID		X		X																		
17	**RS162**	1/26/98	1/26/98	SOLID		X		X																		
18	**RS654**	1/26/98	1/26/98	SOLID		X	X																			
19	**RS655**	1/26/98	1/26/98	SOLID		X	X																			
20	**RS656**	1/26/98	1/26/98	SOLID		X						X				X										

L98 00197

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC R5144
Date 01/23/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives: 8260M VOC – HCL, pH<2 4°C; 8015OG HYDROCARBON – HCL, pH<2 4°C; 8270SIM PAH – 4°C; 8290 DIOXIN – 4°C; 3500 FORMALDEHYDE – H2SO4,pH<2 4°C; 8330 ORDINANCE – 4°C; 6010/7000 METALSRT – HNO3, pH<2 4°C; 7196 CrVI – 4°C; 340.2 FLUORIDE – 4°C; 300 NITRATE/NITRITE* – 4°C; 300 CHLORIDE* – 4°C; 9045/9040 pH – 4°C

JLS #	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT (*)	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	(*) Cd, Hg, As	PERCHLORATE	Extra Volume MS/MSD	HOLD	Total # of Bottles
27	R5144	BSB527S03	10.0	1/23/98	1240	1	X									1	1						1			1
27	R5145	BSB527S04	15.0		1340	2	X									1	1						1			1
27	R5146	BSB527S05	20.0		1355	3	X									1							1			1
27	R5147	BSB527S06	30.0		1415	4	X																1			1
43a	R5148	HVBS46S01	5.5		1615	5	X								1								1			1

DB 1/23/98

		Date	Time
Samplers Signature	[signature]	1/23/98	1730
Relinquished By:	[signature]	01/23/98	1827
Received By:	[signature]	1/23/98	1927
Relinquished By:			
Received By (LAB):			

For Lab Use

Lab Number:

Do COC match samples: Y or N — Y
Broken container: Y or N — N
Received within holding time: Y or N — Y
COC seal intact: Y or N — NA
Any other problems: Y or N — N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 5°

NOTE: DO NOT ANALYZE R5146 FOR METALS

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9800197

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC R5149
Date 01/23/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ TB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: 8260M VOC: HCL, pH<2 4°C; 8015OG: HCL, pH<2 4°C; 8270SIM: 4°C; 8290: 4°C; 3500: H2SO4,pH<2 4°C; 8330: 4°C; 6010/7000: HNO3, pH<2 4°C; 7196: 4°C; 340.2: 4°C; 300 Nitrate/Nitrite: 4°C; 300 Chloride: 4°C; 9045/9040: 4°C

ILS #

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	As	Extra Volume MS/MSD	HOLD	Total # of Bottles
49	R5149	HYB550501	2.0	01/23/98	0900	6	X															/			1
	R5150	HYB550502	6.0		0910	7	X															/			1
	R5151	HYB550503	10.0		0920	8	X															/			1
	R5152	HYB550504	15.0		0930	9	X															/			1
	R5153	HYB550505	20.0		0940	10	X															/			1
	R5154	HYB550506	25.0		0955	11	X															/		X	1
10	R5155	CDBS17S01	6.0		1200	11	X				/														1
4	R5156	CDBS18S01	0.5		1215	12	X				/														1
66	R5157	ABBS22S01	5.0		1410		X				/													X	1
66	R5158	ABBS22S02	7.5		1415	13	X				/														1
24	R5159	CABS24S01	4.0		1540	14	X				/														1
	R5160	CABS24S02	10.0		1555	15	X				/														1

	Date	Time
Samplers Signature	1/26/98	1730
Relinquished By:	1/26/98	1840
Received By: Tom Smith	1/26/98	1840
Relinquished By:	1/26/98	1928
Received By (LAB):	1/26/98	1928

For Lab Use

Lab Number L9800197

Do COC match samples: Y or N — Y
Broken container: Y or N — N
Received within holding time: Y or N — Y
COC seal intact: Y or N N/A
Any other problems: Y or N — N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9800197

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC R5161
Date 01/23/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Boffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | H2SO4,pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

ULS# 24

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	Extra Volume MS/MSD	HOLD	Total # of Bottles
R5161	CAB524543	15.0	1/26/98	1610	16	X				1													1
R5162	CAB524504	17.5	|	1630	17	X				1													1

DB 1/26/98

	Date	Time
Samplers Signature	1/26/98	1730
Relinquished By:	1/26/98	1840
Received By: Tom Burke	1/26/98	1840
Relinquished By:	1/26/98	1928
Received By (LAB):	1/26/98	1928

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number: L9800197
Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N NA
Any other problems: Y or N (N circled)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6

REV: 1

007

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800197

Chain of Custody

Control Number: COC RS 654
Date 1 / 26/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ KJ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C								

	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	~~8260M~~ 8021 VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ LMD.1R METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	PERCHLOR.	8270R SVOA			ULS	Extra Volume MS/MSD	HOLD	Total # of Bottles
SWMU + IV	RS 654	SRBS04S01	1'	1/26/98	840	18	X			X																8			1
	~~RS 655~~	~~SRBS05S~~	KJ																										
	RS 655	SRBS04S02	3'		850	19	X			X						X					X					8			
	RS 656	SRBS05S01	3'		930	20	X			~~X~~						X					X					3a			
6.4	RS 657	CFBS11S02	1'		1030		X															X				18			
5.19	RS 658	CABS26S01	0.5'		1130		X						X													25			
+ II AOC	RS 659	CDBS19S01	0.5'		1200		X						X													18			
"	RS 660	CDBS19S02	5'		1215		X						X													18		X	
4.7	RS 661	CLBS46S01	0.5'		1600					X																41b			
	RS 662	CLBS52S01	0.5'		1610							X											X			41c			
	RS 663	CLBS46S02	5'		1625																		X			41b			
	RS 664	CLBS46S03	8'		1650																		X			41b		X	

	Date	Time
Samplers Signature KMJ	1/26/98	900
Relinquished By: KMJ	1/26/98	1930
Received By: [signature]	1/26/98	1930
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number: L9800197
Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C 6

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

NO.890 P.1/1

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign:* Lisa L Arrasmith
Date:	1/28/98 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS149	RS155	1/26/97	OG	OG & V

0197-11
✓ ws 1/2

[a] OG= 8015OG, TPH V = 8021, Volatiles

The reason for these changes is:

Incorrectly marked on COC form	______
Lack of sample volume	______
Ogden office personnel require this change	X
Other: Containers mislabeled ___	______

Thank you.

Columbia Analytical Services inc.

Tuesday, March 10, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9704318

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 12/16-17/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Le Raab

Leo Raab
Project Chemist

Eydie Schwartz for

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

CAS CSR #L9704318

Table of Contents

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9704318
Project:	Rocketdyne SSFL 313150002	**Date Received:**	12/16-17/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. . Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 12/17/97:
Add 8015TPH to sample RS563.

MS/MSD analysis for 8270SIM was performed on non-Ogden sample CHMW5A-1 from SDG L9704210.
MS/MSD analysis for 8080PCB was performed on sample RS031 from SDG L9704312.
MS/MSD analysis for 8015TPH was performed on sample RF494 from SDG L9704312.
MS/MSD analysis for 8015TPH was performed on cancelled sample RF494 (reported only for QC purposes).
MS/MSD analysis for 8021VOC was performed on sample RS057 from SDG L9704338.

The following difficulties were experienced during analysis of this batch:
MS/MSD recoveries for Phenol were slightly above range for 8270R while all other spike compounds were acceptable and LCS was within limits. One surrogate, 2-Fluorobiphenyl, out of six, was slightly above range for sample RS592DL. MS/MSD recovery for 8080PCB was above range, LCS was within limits.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: JKaal Date: 3/10/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: OGDEN
PROJECT MANAGER: DIXIE HAMBRICK
PROJECT NAME: ROCKETDYNE SSFL
PROJECT NUMBER: 313150002

SDG NUMBER: **L9704318**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 12/17/97
SUMMARY / FINAL DUE: 12/31/97 / 1/14/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471	8021VOC	Silver	ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RS573	12/16/97	12/16/97	SOLID		X		X																		
2	RS576	12/16/97	12/16/97	SOLID		X											X									
3	RS577	12/16/97	12/16/97	SOLID		X		X																		
4	RS578	12/16/97	12/16/97	SOLID		X		X																		
5	RS579	12/16/97	12/16/97	SOLID		X					X					X										
6	RS580	12/16/97	12/16/97	SOLID		X					X					X										
7	RS581	12/16/97	12/16/97	SOLID		X		X												X						
8	RS563	12/15/97	12/16/97	SOLID		C		C	C																	
9	RS584	12/17/97	12/17/97	SOLID		X					X					X										
10	RS585	12/17/97	12/17/97	SOLID		X					X					X										
11	RS586	12/17/97	12/17/97	SOLID		X			X																	
12	RS587	12/17/97	12/17/97	SOLID		X			X																	
13	RS588	12/17/97	12/17/97	SOLID		X			X		X															
14	RS589	12/17/97	12/17/97	SOLID		X					X					X										
15	RS590	12/17/97	12/17/97	SOLID		X																		X		
16	RS591	12/17/97	12/17/97	SOLID		X																		X		
17	RS592	12/17/97	12/17/97	SOLID		X				X																
18	RS593	12/17/97	12/17/97	SOLID		X																		X		
19	RS594	12/17/97	12/17/97	SOLID		X		X	X					X	X	X			X		X					
20	RS595	12/17/97	12/17/97	SOLID		X			X																	

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704318

Chain of Custody

Control Number: **COC** RS 572
Date 12/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: 8260M VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02.IRT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8081 PCBs: 4°C; IC HYDRAZ: 4°C

Sample Data / Matrix / Analyses:

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE	~~8260M~~ 8021a VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SWMU 4.15	RS 572	BABS41S01	0.5	12/16/97	0940	50	—	X					X															HA			1
↓	RS 573	BABS42S01	↓		1035	51	1	↓					X																		
4.14	RS 574	CNBS26S01	3.5		1320	16a	—						X			X														X	
↓	RS 575	CNBS26D01	3.5		1320	16a	—									X													X	X	
5.11	RS 576	AABS15S03	3.5		1410	20	2				X													X							
	RS 577	AABS31S01	3.5		1420	50	3	X					X																		
↓	RS 578	AABS31S02	5		1500	50	4	X					X															↓			
~~5.~~	~~RS 579~~	~~AABS31D01~~	~~5~~		~~1510~~	~~50~~		~~X~~					~~X~~												KJ						
5.13	RS 579	BVSS04S01	0		1545	[illegible]	5	X											X				X					G			
5.13	RS 580	BVSS03S01	0		155[illegible]	[illegible]	6	X											X				X					G			
7.4	RS 581	LLBS11S01	1.5		1630	11	7				X		X						X								*	SA			↓
4.14	RS 582	[illegible]	-	↓	1700	.	—		X							X												–		X	2 KJ

Samplers Signature	Date	Time
KMT	12/16/97	1645
Relinquished By: [signature] KJ	12/16/97	1945
Received By: [signature]	12/16/97	1905
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC seal intact: Y or N NA
Any other problems: Y or N (N circled)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 11°

* Ag ONLY FOR METALS

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

~~L970431-0~~
L970431 8

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 559
Date 12/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives												HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
SWMU 4.3; 4.4	RS559	ILBS21S02	3	12/15/97	830	F??	~~1~~	X				X	X															HA			1
4.7	RS560	CLBS35S01	0.5		900	20	1 2	X					X						X				X					HA			1
"	RS561	CLBS36S01	0.5		0915	21	2 3	X					X																		1
6.5	RS562	SLSS07S01	Ø		0955	44	3 4							X													*	G			
	RS563	SLSS06S01	Ø		1000	43	~~4~~							X														G		X	
6.4	RS564	CFBS06S02	4.5		1050	14	4 5												X									HA			
7.1	RS565	BLBS15S01	0.5		1230	11	5 6						X															HA			
4.12	RS566	LFSS10S01	Ø		1345	41	6												X									G			
	RS567	LFBS24S01	0.5		1420	40	7						X						X									HA			
5,18,5.?	RS568	CASS02S01	Ø		1505	10a	8						X															G			
4.15	RS569	BABS39S01	0.5		1545	11b	9							X					X								★	HA			
	RS570	BABS06S03	10		1630	11	10												X								★				

	Signature	Date	Time
Samplers Signature	KMJ	12/15/97	845
Relinquished By:	KMJ	12/15/97	1815
Received By:	[signature]	12/16/97	1155
Relinquished By:	[signature]	12/16/97	1245
Received By (LAB):	[signature]	12/16/97	1245

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N — Y
Broken container: Y or N — N
Received within holding time: Y or N — Y
COC seal intact: Y or N — NA
Any other problems: Y or N — N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 9°

* FAX DIXIE RESULTS ASAP
★ Pb ONLY
CANCELLED
NOTE RS566 ON HOLD PER FAX FROM L. ARRASMITH 12/16

RECEIVED BY: [signature] 12/15/97 1815 — [initials]
RELINQUISHED BY: [signature] 12/16/97 1155

REV: 1

L97 04318

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 584
Date 12/17/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: 8260M VOC: HCL, pH<2 4°C; 8015OG TPH: HCL, pH<2 4°C; 8270SIM SVOC: 4°C; 8270R SVOC: 4°C; 8290 DIOXIN: 4°C; ASTM D19 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 1LM02.IRT METALSRT: HNO3, pH<2 4°C; 7196 HEX CHROME: 4°C; 340.2 FLUORIDE: 4°C; 300 ANIONS: 4°C; 9045/9040 pH: 4°C; 8081 PCBs: 4°C; IC HYDRAZ: 4°C

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE	~~8260M~~ 8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SWMU AREA IV	RS 584	SRBS03S01	0.5	12/17/97	920	1	9	X											X				X			HA			1
	RS 585	SRBS03S02	3.5		940	1	10	X											X				X						
AREA II	RS 586	SPBS14S01	0.5		1020	25	11	X						X															
	RS 587	SPBS15S01			1030	24	12	X						X															
5.23	RS 588	DASS03S01	Ø		1115	36	13	X						X					X							G			
5.19	RS 589	CABS05S02	0.5		1145	17	14				X								X				X			G			
4.7	RS 590	CLBS45S01	0.5		1225	65	15	X								X										HA			
	RS 591	CLBS45D01	—		1225	65	16									X											X		
	RS 592	CLBS46S01	4.5		1230	41b	17								X	X												*	
	RS 593	CLBS32S03	4.5		1420	41	18	X								X													
	RS 594	CLBS34S01	3		1450	4b	19					X	X	X			X				X	X	X						
	RS 595	CLBS42S01	0.5		1545	66	20							X															

Samplers Signature	Date	Time
KMJ	12/17/97	1000
Relinquished By: [signature]	12/17/97	2037
Received By: [signature]	12/17/97	2037
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°

*HOLD DIOXIN TEST

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign:* LLA
Date:	12/17/97 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF261	RF262	11/12/97	S, F, Fl, A & pH	S, F, Fl, A, pH & OG*	3846-10
RS559	RS563	12/15/97	S +	S & OG*	4318-8
RD360	RD362	11/25/97	OG & V	OG, V, S & F	⊛

[a] S = SVOCs, 8270SIM
Fl = 340.2, Fluoride
A= Anions, 300
F = Formaldehyde, ASTM D19
OG= 8015OG, TPH
V = 8021, Volatiles

⊛ SAMPLE PREVIOUSLY RETURNED TO CLIENT - NOT AVAILABLE TO TEST.

+ ORIGINALLY ON HOLD PER COC

***Please send chromatograms and results to Elizabeth Wessling at Ogden, Denver.**

The reason for these changes is:

Incorrectly marked on COC form	____
Lack of sample volume	____
Ogden office personnel require this change	X
Other: Containers mislabeled ___	____

Thank you.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden Environmental	**Service Request No.:**	K9709343
Project:	Rocketdyne/313150002	**Date Received:**	12/17/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Laboratory Control Sample (LCS), Initial and Continuing Calibration Verification Standards (ICV/CCV), and Initial and Continuing Calibration Blanks (ICB/CCB).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch.

Approved by Abbie Spielman **Date** 1/8/98

Columbia Analytical Services inc.

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE ______ PAGE 1 OF 1

00011

PROJECT NAME Rocketdyne #313150002

PROJECT MANAGER ANNE FREED

COMPANY/ADDRESS OGDEN - SD.

PHONE ______

SAMPLERS SIGNATURE ______

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ⌐ FC ⌐ Gasoline ⌐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	FORMALDEHYDE							SDG ~~REMARKS~~
RS594	12/17	1450		SOIL	1									X							L9704368

RELINQUISHED BY:
Signature [signature]
Printed Name A. BRAGASIN
Firm CAS
Date/Time 12/18/97 1500

RECEIVED BY:
Signature [signature]
Printed Name [illegible]
Firm [illegible]
Date/Time 12/19/97 1000

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. X 5 day
___ Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date ______

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
X III. Data Validation Report (includes All Raw Data)
___ RWQCB

INVOICE INFORMATION:
P.O.# ______
Bill To ______

SAMPLE RECEIPT:
Shipping VIA ______
Shipping #. ______
Condition. ______
Lab No: L9704218

RELINQUISHED BY:
Signature ______
Printed Name ______
Firm ______
Date/Time ______

RECEIVED BY:
Signature ______
Printed Name ______
Firm ______
Date/Time ______

SPECIAL INSTRUCTIONS/COMMENTS:
Report in Dry Weight

K9709443

DISTRIBUTION WHITE - return to originator YELLOW - lab

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	December 26, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	44402A

Rev. 11/19/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 8290 dioxin/furan analysis of samples RS590, RS591, and RS593.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the sample(s).

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were extracted and analyzed along with the samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: One water sample and three soil samples were received from Columbia Analytical Services at 14.0 °C in good condition on December 19, 1997 and stored in a refrigerator at 4 °C. The client's chain-of-custody did not indicate whether or not chemical preservatives were utilized prior to shipment.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The percent recovery of OCDF in the LCS sample is slightly below the QC criteria (70-130%); however, the relative percent difference is well within the QC criteria (< 20%). TLI guidelines allow up to two analytes to have percent recoveries outside the QC criteria, so long as the relative percent differences are within the QC criteria. All other analyte percent recoveries and relative percent differences (RPDs) are within the QC limits (of 70-130% and less than 20% RPD, respectively) in the LCS/LCSD samples.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank above the target detection limit (TDL).

Method 8290 contains separate criteria for beginning and ending continuing calibrations. When the ending calibration meets criteria established for the beginning calibration, the average response factor from the initial calibration is used. When the ending calibration only meets the less stringent criteria specified for an ending calibration, the average of the response factor from the beginning and ending calibration is used for analyte and internal standard calculations. Affected samples are identified by the listing of both the beginning and ending calibration filename on the sample report.

The analytical data presented in this report are consistent with the guidelines of EPA Method 8290 Rev. 0 (9/94). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy J. Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation	Quality Control
S A Parikh 12/26/97	
Saroj A. Parikh	VIJAY S CHHABRIA
Report Preparation Chemist	Report Preparation Chemist

The total number of pages in the data package is : 624 .

TLI Project: 44402A

Client Sample: TLI LCS

Method 8290 PCDD/PCDF Analysis (b)

Analysis File: T978682

Surrogate Standards (Type B)	Conc. (ppt)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	8.8	44.2	40%-130%		26:42	Q
$^{13}C_{12}$-2,3,4,7,8-PeCDF	124	62.4	40%-130%	1.50	30:27	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	143	71.8	40%-130%	0.48	33:10	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	171	85.6	40%-130%	1.24	33:54	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	164	82.1	25%-130%	0.42	37:58	

Alternate Standards (Type B)	Conc. (ppt)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	141	70.5	40%-130%	0.48	34:36	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	137	68.9	40%-130%	0.49	33:47	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	26:30	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.25	34:19	

Data Reviewer: S. A. Price 12/26/97

X237_PSR v2.01, LARS 6.10.08e

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 19:12 12/26/97

Columbia Analytical Services[inc.] COPY 9/12/19/1/

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE ______ PAGE 1 OF 1

PROJECT NAME Rocketdyne # 313150.02

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE ______

SAMPLERS SIGNATURE ______

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	Dioxin	~~REMARKS~~ L9704318
RS590	12/17	1225		Soil	1									X	L9704318
RS591	12/17	1225		↓	1									X	↓
RS593	12/17	1420		↓	1									X	↓

RELINQUISHED BY:	RECEIVED BY:
Signature [signature]	Signature [signature]
Printed Name A. BRAGASIN	Printed Name Charles Livengood
Firm CAS	Firm TLI
Date/Time 12/18/97 1400	Date/Time 12/19/97 1100

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. X 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results

Requested Report Date ______

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)

X III. Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P.O.# ______

Bill To ______

SAMPLE RECEIPT:

Shipping VIA: ______

Shipping #: ______

Condition: ______

Lab No: ______

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Report in Dry Weight

Columbia Analytical Services[inc] COPY

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE ________ PAGE 1 OF 1

10

PROJECT NAME Rocketdyne #313150002

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE ________

SAMPLERS SIGNATURE ________

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ❐ FC ❐ Gasoline ❐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DIOXINS	SD6 ~~REMARKS~~
RS600	12/17/97	1740		H_2O	2										L9704311

RELINQUISHED BY:

Signature [signature]

Printed Name A. BRAGASIN

Firm CAS

Date/Time 12/18/97 1900

RECEIVED BY:

Signature [signature]

Printed Name Charles Livergood

Firm TLI

Date/Time 12/19/97 1100

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. X 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results

Requested Report Date ________

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)

X III. Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P.O.# ________

Bill To ________

SAMPLE RECEIPT:

Shipping VIA: ________

Shipping #: ________

Condition: ________

Lab No: -

RELINQUISHED BY:

Signature ________

Printed Name ________

Firm ________

Date/Time ________

RECEIVED BY:

Signature ________

Printed Name ________

Firm ________

Date/Time ________

SPECIAL INSTRUCTIONS/COMMENTS:

Columbia
Analytical
Services inc.

Wednesday, March 11, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Tier II

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9704114

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 12/2-4/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

CAS CSR #L9704114

Table of Contents

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9704114
Project:	Rocketdyne SSFL 313150002	**Date Received:**	12/2-4/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.
Perchlorate	Columbia Analytical Services, San Jose, CA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 12/4/97:
Put RF411 on hold.
The following changes were requested via fax from Lisa Arrasmith on 12/5/97:
Delete 8270SIM, Fluoride, Nitrate, Nitrite, Chloride from RF413.
The following changes were requested via fax from Lisa Arrasmith on 12/8/97:
Delete 8270SIM and Add 8270R for RF988.
The following changes were requested via fax from Lisa Arrasmith on 1/16/98:
Add Perchlorate to RF414.

MS/MSD analysis for Aluminum & Boron was performed on sample RF471 from SDG L9704229.

The following difficulties were experienced during analysis of this batch.
Surrogates for 8270SIM for RF986DL and RF985DLDL were not reportable due to sample matrix requiring dilution. For sample RF988DL, RF988MSDL & RF988MSDDL for 8270SIM analysis, sample matrix interfered with surrogate recoveries and some MS/MSD spike recoveries.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: Leo C Rod Date: 3/11/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: OGDEN
PROJECT MANAGER: DIXIE HAMBRICK
PROJECT NAME: ROCKETDYNE SSFL
PROJECT NUMBER: 313150002

SDG NUMBER: **L9704114**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/16/98 * See Note
SUMMARY / FINAL DUE: 1/30/98 / 2/13/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471	Al & B		ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RF977	12/2/97	12/2/97	SOLID		X			X		X					X										
2	RF978	12/2/97	12/2/97	SOLID		X			X		X					X										
3	RF979	12/2/97	12/2/97	SOLID		X			X		X					X										
4	RF980	12/2/97	12/2/97	SOLID		X			X		X					X										
5	RF397	12/2/97	12/2/97	SOLID		X			X		X					X										
6	RF398	12/2/97	12/2/97	SOLID		X					X					X										
7	RF982	12/3/97	12/3/97	SOLID		X			X		X					X										
8	RF985	12/3/97	12/3/97	SOLID		X			X		X					X								X		
9	RF986	12/3/97	12/3/97	SOLID		X			X										X		X					
10	RF988	12/3/97	12/3/97	SOLID		X				X														X		
11	RF403	12/3/97	12/3/97	SOLID		X			X												X					
12	RF405	12/3/97	12/3/97	SOLID		X					X					X										
13	RF410	12/3/97	12/3/97	SOLID		X					X					X										
14	RF991	12/4/97	12/4/97	SOLID		X												X								
15	RF992	12/4/97	12/4/97	SOLID		X					X					X								X		
16	RF993	12/4/97	12/4/97	SOLID		X					X															
17	RF994	12/4/97	12/4/97	SOLID		X					X					X								X		
18	RF995	12/4/97	12/4/97	SOLID		X					X					X										
19	RF413	12/4/97	12/4/97	SOLID		X					X					X										
20	RF414	12/4/97	12/4/97	SOLID		X					X					X						X				

*Perchlorate added to RF414 1/16/98

004

OGD_SDG.XLS 4114-S

2/26/98 3:58 PM

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: COC RF974
Date 12/2/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Analysis	Preservatives
8260M VOC	HCL, pH<2 4°C
8015OG TPH	HCL, pH<2 4°C
8270SIM SVOC	4°C
8270R SVOC	4°C
8290 DIOXIN	4 C
ASTM D19 FORMALDEHYDE	H_2SO_4,pH<2 4°C
8330 ORDINANCE	4°C
1LM02.IRT METALSRT	HNO3, pH<2 4°C
7196 HEX CHROME	4°C
340.2 FLUORIDE	4 C
300 ANIONS	4°C
9045/9040 pH	4 C
8081 PCBs	4°C
IC HYDRAZ	4°C

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
~~RF974~~	~~CABS01S02~~	~~0.5~~	~~12/2/97~~	~~1010~~	~~21~~		~~X~~							~~X~~												~~HA~~			~~1~~
RF977	SR BS01S01	0.5		1415	4	1	X					X					X				X					HA			1
RF978	SR SS01S01	0		1445	3	2	X					X					X				X					G			1
RF979	SR BS02S01	0.5		1520	2	3	X					X					X				X					HA		~~*~~	1
RF980	SR BS02S02	4.0		1620	2	4	X					X					X				X					HA		~~*~~	1

TB

T.B. 12/2/97

	Date	Time
Samplers Signature: Thomas D. Bent	12/2/97	0830
Relinquished By: [signature]	12/2/97	1805
Received By: [signature]	12/2/97	1850
Relinquished By: [signature]	12/2/97	1915
Received By (LAB): [signature]	12/2/97	1925

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5°

~~* Hold until approved~~ TS
(No holds)

005

REV: 1

900

L970 4114

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF397
Date 12/02/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:

QC Level: Level4 | TAT: 35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C							

ULS

	Sample ID	Description (for Ogden use only)	DepTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product		8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	8315 ALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	218.6/300 NITRATE *	325 CHLORIDE *	9045/9040 pH	SWMU					Extra Volume MS/MSD	HOLD	Total # of Bottles
~~20~~ 17	RF397	BSBS21S01	6.5	12/2/97	1425	5	X						1				1					1	AI AOC							1
	RF398	BSBS23S01	1.5	↓	1500	6	X										1					1	↓							1

DB 12/2/97

	Date	Time
Samplers Signature	12/2/97	1750
Relinquished By:	12/2/97	~~1750~~ 1850
Received By:	12/2/97	1852
Relinquished By:	12/2/97	1925
Received By (LAB):	12/2/97	1925

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: COC RF 982
Date 12/3/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
RF 982	ILBS22SØ1	5	12/3/97	1030	2	7	X		
RF 983	ILBS22SØ2	10	↓	1110	2		↓		
RF 984	ILBS22SØ3	15	↓	1135	2		↓		
RF 985	LFSSØ8SØ1	0	↓	1225	58	8	↓		
RF 986	BASSØ2SØ1	0	↓	1400	53	9	↓		
RF 987	CDBSØ1SØ2	5	↓	1500	6		↓		
* RF 988	CDBSØ1SØ3	7.5	↓	1530	6	10	↓		

KJ 12/3/97

Analyses

Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Al, B	SWMU	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4 C	HCL, pH<2 4 C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RF 982			X					X				X				4.3	HA			1
RF 983			X					X				X				↓	↓		X	1
RF 984			X					X				X				↓	↓		X	1
RF 985			X		X			X				X				4.12	G			1
RF 986			X			X									X	4.15	~~B~~G			1
RF 987			X		X											AII	HA		X	1
RF 988			X		X											AII	HA			1

	Date	Time
Samplers Signature: KMT	12/3/97	1040
Relinquished By: KMT	12/3/97	~~1750~~ 1815 K
Received By: [signature]	12/3/97	1815
Relinquished By: [signature]	12/3/97	1840
Received By (LAB): [signature]	12/3/9	1840

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°C

* CONTACT DIXIE ASAP WITH RESULTS

REV: 1

007

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: COC RF403
Date 12/03/97 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	~~Mark Deffley~~ Purchasing
Project Name:	Rocketdyne	Company:	Ogden Environmental
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121
Deliver results to the address above or as stated in contract			

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: 8260M VOC – HCL, pH<2 4°C; 8015OG HYDROCARBON – HCL, pH<2 4°C; 8270SIM PAH – 4°C; 8290 DIOXIN – 4°C; 3500 FORMALDEHYDE – H2SO4,pH<2 4°C; 8330 ORDINANCE – 4°C; 6010/7000 METALSRT – HNO3, pH<2 4°C; 7196 CrVI – 4°C; 340.2 FLUORIDE – 4°C; 300 NITRATE/NITRITE* – 4°C; 300 CHLORIDE* – 4°C; 9045/9040 pH – 4°C

ULS	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	Extra Volume MS/MSD	HOLD	Total # of Bottles
7	RF403	AFBS09S01	1.0	12/3/97	0950	11	X					/		/										/
~~6~~	RF405	BSBS09S02	5.0		1150	12	X									/					/			/
6	RF406	BSBS09S03	10.0		1200		X									/					/		X	/
6	RF407	BSBS09S04	15.0		1215		X									/					/		X	/
6	RF408	BSBS09S05	19.5		1230		X									/					/		X	/
6	RF409	BSBS09S06	30.0		1415		X									/					/		X	/
25	RF410	BSBS24S01	0.5		1545	13	X									/					/			/
17	RF411	BSBS23S06	29.5		1610	~~14~~	X									/					/			/

DB 12/03/97

	Date	Time
Samplers Signature	12/03/97	1745
Relinquished By:	12/03/97	~~1745~~ 1815
Received By:	12/3/97	1815
Relinquished By:	12/3/97	1840
Received By (LAB):	12/3/97	1840

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°

RF411 PUT ON HOLD PER LISA ARRASMITH 12/4 AM - LCR

REV: 1

008

L9704114

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF 991
Date 12/4/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary 28-day full package

Preservatives	HCL, pH<2 4 C	HCL, pH<2 4 C	4 C	4 C	4 C	H2SO4,pH<2 4 C	4 C	HNO3, pH<2 4 C	4 C	4 C	4 C	4 C	4 C	4 C						
Analysis	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Hg	SWMU	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 12/4	Soil	Water	Product	SLUDGE	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Hg	SWMU	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
14	RF 991	EVBS14 SØ1	0.5	12/4/97	930	11a	13	X																		X	5.2	HA			1
15	RF 992	EVBS15 SØ1	↓	↓	1020	22a	14	↓								X			X				X				↓	↓			1
16	RF 993	EVBS16 SØ1	↓		1100	2c	15												X												1
17	RF 994	EVBS17 SØ1	2		1145	17a	16				X					X			X				X								1
18	RF 995	EVBS18 SØ1	0.5	↓	1200	17b	17	X											X				X				↓	↓			1

KLJ 12/4/97

	Signature	Date	Time
Samplers Signature	KMJ	12/4/97	940
Relinquished By:	KMJ	12/4/97	~~1750~~ 1810 KJ
Received By:	[signature]	12/4/97	1810
Relinquished By:	[signature]	12/4/97	1918
Received By (LAB):	[signature]	12/4/97	1960

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6°

REV: 1

600

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: COC RF413
Date 12/04/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4
TAT: 35 - Day

	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID 1764	Soil	Water	Product		8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	8315 ALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	218.6/300 NITRATE *	325 CHLORIDE *	9045/9040 pH	SWMU	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C				
ULS 25	RF413	LFBS235Ø1	2.Ø	12/4/97	Ø815	18	X		19								/		/	/	/	/	4.12			/
19	RF414	BSBS255Ø1	2.Ø		Ø920	19	X		20								/					/	AI AOC			/
19	RF415	BSBS255Ø2	5.Ø		Ø925	20	X										/					/				/
19	RF416	BSBS255Ø3	10.Ø		Ø935		X										/					/			X	/
6	RF426	ILBS255Ø1	1.5		162Ø		X						/				/					/	4.3/4.4			/

DB 12/04/97

		Date	Time
Samplers Signature	[signature]	12/4/97	1740
Relinquished By:	[signature]	12/4/97	~~1740~~
Received By:	[signature]	12/4/97	1820
Relinquished By:	[signature]	12/4/97	1910
Received By (LAB):	[signature]	12/4/97	1910

For Lab Use

Lab Number: DB
Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6°

NOTE: RUN RF416

1 Original, 2 Lab Copy, 3 Field Copy

010

REV: 1

L9704114-10

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign*: Lisa
Date:	12/8/97 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF982	RF988	12/3/97	S & D	D & R

Correction from 12/5/97

[a] S = SVOCs, 8270SIM
R = SVOAs, 8270R
D = 8290, Dioxin/furan

The reason for these changes is:

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled ___	

Thank you.

L9704114-19

[redacted]

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign*: ________
Date:	12/5/97 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF413	R413	12/4/97	S, M, Fl, A & pH	M & pH

[a] S = SVOCs, 8270SIM
M = MetalsSRT
Fl = 340.2, Fluoride
A= Anions, 300

Please RUSH Results to Dixie Hambrick

The reason for these changes is:

Incorrectly marked on COC form	____
Lack of sample volume	____
Ogden office personnel require this change	X
Other: Containers mislabeled ___	____

Thank you.

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign*: Lisa L Arrasmith
Date:	1/16/~~97~~ 98 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF413	RF414	12/4/97	M & pH	ClO, M & pH	4114-20
RF413	RF415	12/4/97	M & pH	ClO, M & pH	4148-1
RF413	RF416	12/4/97	M & pH	ClO, M & pH	4148-2

[a] M=MetalsRT
ClO = Perchlorate

The reason for these changes is:

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled ___	

Thank you.

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign:* Lisa L Arrasmith
Date:	12/4/97 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF403	RF411	12/3/97	M & pH	HOLD

[a] M=MetalsRT

The reason for these changes is:

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled ___	

Thank you.

Columbia Analytical Services Inc.

Wednesday, March 11, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9704114

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 12/2-4/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

L Raab

Leo Raab
Project Chemist

Eyde Schwartz

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9704114
Project:	Rocketdyne SSFL 313150002	**Date Received:**	12/2-4/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.
Perchlorate	Columbia Analytical Services, San Jose, CA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 12/4/97:
Put RF411 on hold.
The following changes were requested via fax from Lisa Arrasmith on 12/5/97:
Delete 8270SIM, Fluoride, Nitrate, Nitrite, Chloride from RF413.
The following changes were requested via fax from Lisa Arrasmith on 12/8/97:
Delete 8270SIM and Add 8270R for RF988.
The following changes were requested via fax from Lisa Arrasmith on 1/16/98:
Add Perchlorate to RF414.

MS/MSD analysis for Aluminum & Boron was performed on sample RF471 from SDG L9704229.

The following difficulties were experienced during analysis of this batch.
Surrogates for 8270SIM for RF986DL and RF985DLDL were not reportable due to sample matrix requiring dilution. For sample RF988DL, RF988MSDL & RF988MSDDL for 8270SIM analysis, sample matrix interfered with surrogate recoveries and some MS/MSD spike recoveries.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: Leo C Rod Date: 3/11/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9704114**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/16/98 * See Note
SUMMARY / FINAL DUE: 1/30/98 / 2/13/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471	Al & B		ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RF977**	12/2/97	12/2/97	SOLID		X			X		X					X										
2	**RF978**	12/2/97	12/2/97	SOLID		X			X		X					X										
3	**RF979**	12/2/97	12/2/97	SOLID		X			X		X					X										
4	**RF980**	12/2/97	12/2/97	SOLID		X			X		X					X										
5	**RF397**	12/2/97	12/2/97	SOLID		X			X		X					X										
6	**RF398**	12/2/97	12/2/97	SOLID		X					X					X										
7	**RF982**	12/3/97	12/3/97	SOLID		X			X		X					X										
8	**RF985**	12/3/97	12/3/97	SOLID		X			X		X					X								X		
9	**RF986**	12/3/97	12/3/97	SOLID		X			X										X		X					
10	**RF988**	12/3/97	12/3/97	SOLID		X				X														X		
11	**RF403**	12/3/97	12/3/97	SOLID		X			X												X					
12	**RF405**	12/3/97	12/3/97	SOLID		X					X					X										
13	**RF410**	12/3/97	12/3/97	SOLID		X					X					X										
14	**RF991**	12/4/97	12/4/97	SOLID		X												X								
15	**RF992**	12/4/97	12/4/97	SOLID		X					X					X								X		
16	**RF993**	12/4/97	12/4/97	SOLID		X					X															
17	**RF994**	12/4/97	12/4/97	SOLID		X					X					X								X		
18	**RF995**	12/4/97	12/4/97	SOLID		X					X					X										
19	**RF413**	12/4/97	12/4/97	SOLID		X					X					X										
20	**RF414**	12/4/97	12/4/97	SOLID		X					X					X						X				

Perchlorate added to RF414 1/16/98

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

6970 4114

Chain of Custody

Control Number: COC RF974
Date 12/2/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
~~RF974~~	~~CABS01S02~~	~~0.5~~	~~12/2/97~~	~~1040~~	~~21~~		~~X~~		
RF977	SR BS01S01	0.5		1415	4	1	X		
RF978	SR SS01S01	0		1445	3	2	X		
RF979	SR BS02S01	0.5		1520	2	3	X		
RF980	SR BS02S02	4.0		1620	2	4	X		

T.B 12/2/97

Sample ID	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4 C	4 C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4 C	4 C	4 C	4°C	4 C				
~~RF974~~					~~X~~										~~HA~~			~~1~~
RF977			X					X				X			HA			1
RF978			X					X				X			G			1
RF979			X					X				X			HA		*	1
RF980			X					X				X			HA		*	1

	Date	Time
Samplers Signature: Thomas D. Burt	12/2/97	0830
Relinquished By: [signature]	12/2/97	1800
Received By: [signature]	12/2/97	1850
Relinquished By: [signature]	12/2/97	1915
Received By (LAB): [signature]	12/2/97	1925

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5°

~~* Hold until approved~~ TB
(No holds)

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: **COC** RF397
Date 12/02/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

ULS
2D
17

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	8315 ALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	218.6/300 NITRATE *	325 CHLORIDE *	9045/9040 pH	SWMU	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF397	BSBS215Ø1	6.5	12/2/97	1425	5	X					1				1					1	AI AOC			1
RF398	BSBS235Ø1	1.5	↓	15ØØ	6	X									1					1	↓			1

DB 12/2/97

	Date	Time
Samplers Signature	12/2/97	1750
Relinquished By:	12/2/97	~~1750~~ 1850
Received By:	12/2/97	1850
Relinquished By:	12/2/97	1925
Received By (LAB):	12/2/97	1925

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C 5°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: COC RF 982
Date 12/3/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives

Analysis	Preservative
8260M VOC	HCL, pH<2 4°C
8015OG TPH	HCL, pH<2 4°C
8270SIM SVOC	4°C
8270R SVOC	4°C
8290 DIOXIN	4°C
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C
8330 ORDINANCE	4°C
1LM02.IRT METALSRT	HNO3, pH<2 4°C
7196 HEX CHROME	4°C
340.2 FLUORIDE	4°C
300 ANIONS	4°C
9045/9040 pH	4°C
8081 PCBs	4°C
IC HYDRAZ	4°C

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	AI, B	SUMMA	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF982	1LBS22SØ1	5	12/3/97	1030	2	7	X					X					X				X				4.3	HA			1
RF983	1LBS22SØ2	10		1110	2							X					X				X							X	1
RF984	1LBS22SØ3	15		1136	2							X					X				X							X	1
RF985	LFSSØ8SØ1	0		1225	38	8						X		X			X				X				4.12	G			1
RF986	BASSØ2SØ1	0		1400	53	9						X			X									X	4.15	AG			1
RF987	CDBSØ1SØ2	5		1500	6							X		X											AII	HA		X	1
RF988	CDBSØ1SØ3	7.5		1530	6	10						X		X											AII	HA			1

KJ 12/3/97

	Date	Time
Samplers Signature: KMT	12/3/97	1040
Relinquished By: KMT	12/3/97	1815 ~~1750~~
Received By: [signature]	12/3/97	1815
Relinquished By: [signature]	12/3/97	1840
Received By (LAB): [signature]	12/3/9	1840

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

* CONTACT DIXIE ASAP WITH RESULTS

Do COC match samples: Y or N — Y
Broken container: Y or N — N
Received within holding time: Y or N — Y
COC seal intact: Y or N — NA
Any other problems: Y or N — N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°C

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704114

Chain of Custody

Control Number: **COC** RF403
Date 12/03/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: 8260M VOC: HCL, pH<2 4°C; 8015OG HYDROCARBON: HCL, pH<2 4°C; 8270SIM PAH: 4°C; 8290 DIOXIN: 4°C; 3500 FORMALDEHYDE: H2SO4,pH<2 4°C; 8330 ORDINANCE: 4°C; 6010/7000 METALSRT: HNO3, pH<2 4°C; 7196 CrVI: 4°C; 340.2 FLUORIDE: 4°C; 300 NITRATE/NITRITE*: 4°C; 300 CHLORIDE*: 4°C; 9045/9040 pH: 4°C

ULS	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE*	9045/9040 pH	Extra Volume MS/MSD	HOLD	Total # of Bottles
1	RF403	AFBS09S01	1.0	12/3/97	0950	11	X					/		/										/
16	RF405	BSBS09S02	5.0		1150	12	X									/					/			/
16	RF406	BSBS09S03	10.0		1200		X									/					/		X	/
16	RF407	BSBS09S04	15.0		1215		X									/					/		X	/
16	RF408	BSBS09S05	19.5		1230		X									/					/		X	/
16	RF409	BSBS09S06	30.0		1415		X									/					/		X	/
25	RF410	BSBS24S01	0.5		1545	13	X									/					/			/
17	RF411	BSBS23S06	29.5		1610	~~14~~	X									/					/			/

DB 12/03/97

	Date	Time
Samplers Signature	12/03/97	1745
Relinquished By:	12/03/97	1815 ~~1745~~
Received By:	12/3/97	1815
Relinquished By:	12/3/97	1840
Received By (LAB):	12/3/97	1840

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 4°

RF411 PUT ON HOLD PER LISA ARRASMITH 12/4 AM - LCR

REV: 1

L9704114

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF 991
Date 12/4/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Analysis	Preservatives
8260M VOC	HCL, pH<2 4°C
8015OG TPH	HCL, pH<2 4°C
8270SIM SVOC	4°C
8270R SVOC	4 C
8290 DIOXIN	4°C
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C
8330 ORDINANCE	4°C
1LM02.IRT METALSRT	HNO3, pH<2 4°C
7196 HEX CHROME	4°C
340.2 FLUORIDE	4°C
300 ANIONS	4°C
9045/9040 pH	4°C
8081 PCBs	4°C
IC HYDRAZ	4°C

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID 12/4 as	Soil	Water	Product	SLUDGE	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Hg	SWMU	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
14	RF 991	EVBS14 SØ1	0.5	12/4/97	930	11a	13	X																		X	5.2	HA			1
15	RF 992	EVBS15 SØ1	↓	↓	1020	23a	14	↓								X			X				X				↓	↓			1
16	RF 993	EVBS 16 SØ1	↓	↓	1100	26	15	↓											X								↓	↓			1
17	RF 994	EVBS 17 SØ1	2	↓	1145	17a	16				X					X			X				X				↓	↓			1
18	RF 995	EVBS 18 SØ1	0.5	↓	1200	17b	17	X											X				X				↓	↓			1

KLJ 12/4/97

		Date	Time
Samplers Signature	KMJ	12/4/97	940
Relinquished By:	KMJ	12/4/97	~~1750~~ 1810
Received By:	[signature]	12/4/97	1810
Relinquished By:	[signature]	12/4/97	1910
Received By (LAB):	[signature]	12/4/97	1960

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N — Y
Broken container: Y or N — N
Received within holding time: Y or N — Y
COC seal intact: Y or N — NA
Any other problems: Y or N — N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6°

REV: 1

L9704114

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: **COC** RF413
Date 12/04/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C (8260M VOC); HCL, pH<2 4°C (8015OG HYDROCARBON); 4°C (8270SIM PAH); 4°C (8290 DIOXIN); 4°C (8315 ALDEHYDE); 4°C (8330 ORDINANCE); HNO3, pH<2 4°C (6010/7000 METALSRT); 4°C (7196 CrVI); 4°C (340.2 FLUORIDE); 4°C (218.6/300 NITRATE *); 4°C (325 CHLORIDE *); 4°C (9045/9040 pH)

Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	8315 ALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	218.6/300 NITRATE *	325 CHLORIDE *	9045/9040 pH	SWMU	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF413	LFBS235Ø1	2.Ø	12/4/97	Ø815	Ø18	X		19							/		/	/	/	/	4.12			1
RF414	BSBS255Ø1	2.Ø		Ø920	19	X		20							/					/	AIAOC			1
RF415	BSBS255Ø2	5.Ø		Ø925	20	X									/					/				1
RF416	BSBS255Ø3	10.Ø		Ø935		X									/					/			X	1
RF426	ILBS255Ø1	1.5		162Ø		X					/				/					/	4.3/4.4			1

DB 12/04/97

ULS
25
19
19
19
6

	Date	Time
Samplers Signature	12/4/97	174Ø
Relinquished By:	12/4/97	~~174Ø~~
Received By:	12/4/97	1820
Relinquished By:	12/4/97	1910
Received By (LAB):	12/4/97	1910

For Lab Use

Lab Number: DB 800

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°

NOTE: RUN RF416

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9704114-10

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign*: Lisa

Date: 12/8/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF982	RF988	12/3/97	S & D	D & R

Correction from 12/5/97

[a] S = SVOCs, 8270SIM
R = SVOAs, 8270R
D = 8290, Dioxin/furan

The reason for these changes is:

Incorrectly marked on COC form ______

Lack of sample volume ______

Ogden office personnel require this change X

Other: Containers mislabeled ___ ______

Thank you.

L9704114-19

[redacted]

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Mr. Leo Raab/Columbia Analytical Services Fax No.: (818) 587-5555
From:	Lisa L. Arrasmith *sign*: ______
Date:	12/5/97 There is 1 Page to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF413	R413	12/4/97	S, M, Fl, A & pH	M & pH

[a] S = SVOCs, 8270SIM
M = MetalsSRT
Fl = 340.2, Fluoride
A= Anions, 300

Please RUSH Results to Dixie Hambrick

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change ___X___
Other: Containers mislabeled __ ______

Thank you.

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 1/16/~~97~~ 98 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF413	RF414	12/4/97	M & pH	ClO, M & pH	4114-20
RF413	RF415	12/4/97	M & pH	ClO, M & pH	4148-1
RF413	RF416	12/4/97	M & pH	ClO, M & pH	4148-2

[a] M=MetalsRT
ClO = Perchlorate

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change X
Other: Containers mislabeled ______

Thank you.

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 12/4/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF403	RF411	12/3/97	M & pH	HOLD

[a] M=MetalsRT

The reason for these changes is:

Incorrectly marked on COC form ______
Lack of sample volume ______
Ogden office personnel require this change X
Other: Containers mislabeled ___ ______

Thank you.

Columbia Analytical Services inc.

March 7, 1998

Anne Freed
OGDEN
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne / Project #313150001

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on December 1-5, 1997. For your reference, these analyses have been assigned our service request number L9704088.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services Mobile Laboratory is certified for environmental analyses by the California Department of Health Services (certificate number: 1993, expiration May 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Thomas X. Robinson

Thomas X. Robinson
Project Chemist

TR/iz

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

CAS CSR #L9704088

Table of Contents

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9704088
Project:	Rocketdyne/313150001	**Date Received:**	12/01-05/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Sample results that have elevated PQL's with no target compounds detected were diluted due to matrix interferences from hydrocarbons, these samples are appropriately footnoted.

Approved by: Thomas D. [illegible] Date: 2/10/98

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD373
Date 12/01/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS	EPA Sample ID	Description (for Ogden use only)	Depth (ft.)	Date Collected	Time Collected	Lab ID L9704088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
3	RD 373	AFBS03501	1.5 ~~12/01~~ DB	12/01/97	0945	-001	B	4.9	X				X	X				Relinquished By: [signature]	12/01/97 1345
																		Received By: [signature]	12/1/97 1345
3	RD 374	AFBS03502	5.0		0950	-002			X				X	X				Relinquished By: [signature]	12/01/97 1345
																		Received By: [signature]	12/1/97 1345
3	RD 375	AFBS03503	9.5		1000	-003			X				X	X				Relinquished By: [signature]	12/01/97 1345
																		Received By: [signature]	12/1/97 1345
					DB 12/01/97													Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:
TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	12/01/97	1345

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 959
Date 12 / 1 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9I04088 Lab ID	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
10	RD 959	AFBSØ5SØ1	Ø.5	12/1/97	930	-004	HA	4.9 & AOC	X				X	X			1	Relinquished By: / Received By:	12/1/97 1345 / 12/1/97 1345
6	RD 960	AFBSØ6SØ1			1000	-005								X			1	Relinquished By: / Received By:	12/1/97 1345 / 12/1/97 1345
5	RD 961	AFBSØ8SØ1			1030	-006								X			1	Relinquished By: / Received By:	12/1/97 1345 / 12/1/97 1345
7	RD 962	AFBSØ7SØ1	8		1015	-007							X				1	Relinquished By: / Received By:	12/1/97 1345 / 12/1/97 1345
9	RD 963	AFBSØ9SØ1	Ø.5		1120	-008							X	X			1	Relinquished By: / Received By:	12/1/97 1345 / 12/1/97 1345

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP 9728 | TAT: 14 - day

Sampler's Signature	Date	Time
KMJ	12/1/97	950

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 964
Date 12/1/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	Lab ID L97040088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers
9	RD 964	AFBS09S02	5.0	12/1/97	1130	-009	HA	4.9 & AOC	X				X	X			1
9	RD 965	AFBS09S03	10	12/1/97	1145	-010	HA	4.9 & AOC	X				X	X			1

KJ 12/1/97

Sample Transfer	Date/Time
Relinquished By: [signature]	12/1/97 1345
Received By: [signature]	12/1/97 1345
Relinquished By: [signature]	12/1/97 1345
Received By: [signature]	12/1/97 1345
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP9728 | TAT: 14 - day

Sampler's Signature	Date	Time
KMJ	12/1/97	1140

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD972
Date 12 / 1 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #
47

EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9124088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers
RD 972	1LBS18SØ1	Ø.5'	12/1/97	1700	-011	HA	4.3 4.4	X					X			1

KJ 12/1/97

Sample Transfer	Date/Time
Relinquished By: KJ	12/1/97 1820
Received By: [signature]	12/1/97 1820
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP9728 | TAT: 14 - day

Sampler's Signature KMJ | Date 12/1/97 | Time 1715

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD973
Date 12/2/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9704088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
13	RD 973	CNBS20S02	3.0'	12/2/97	0930	-012	HA	4.14	X					X		*	1	Relinquished By: [signature] / Received By: [signature]	12/2/97 1815 / 12/2/97 1815
2	RD 975	BTBS01S01	0.5'	12/2/97	1115	-013	HA	B515 Area II AOC	X				X				1	Relinquished By: [signature] / Received By: [signature]	12/2/97 1815 / 12/2/97 1815
5	RD 976	ELBS03S01	0.5'	12/2/97	1220	-014	HA	EEL 6.9	X					X			1	Relinquished By: [signature] / Received By: [signature]	12/2/97 1815 / 12/2/97 1815
4	RD 977	SRBS01S01	0.5'	12/2	1415	-015	HA	SRE Area IV AOC	X				X	X			1	Relinquished By: [signature] / Received By: [signature]	12/2/97 1815 / 12/2/97 1815
3	RD 978	SRSS01S01	0	↓	1445	-016	~~TB~~ ~~HA~~ G	SRE ↓	X					X			1	Relinquished By: [signature] / Received By: [signature]	12/2/97 1815 / 12/2/97 1815

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP9728 TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	12/2/97	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

~~* Hold until approved~~ OTB

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD979
Date 12/2/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

VLS

EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19704088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
2 RD 979	SR BS02S01	0.5	12/2/97	1520	-017	HA	Area IV AOC (SRE)	X				X	X			1	Relinquished By: Tom B.	12/2/97 1815
																	Received By:	12/2/97 1815
2 RD 980	SR BS02S02	4.0	↓	1620	-018	"	"	X				X	X		✱ B	1	Relinquished By: Tom B.	12/2/97 1815
																	Received By:	12/2/97 1815
					T.B.	12/2/97											Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP9728 TAT: 14 - day

Sampler's Signature: Tom B. Date 12/2/97 Time 1600

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

✱ ~~Hold until approved~~ TB

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD389
Date 12/02/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS	EPA Sample ID	Description (for Ogden use only)	Depth (ft.)	Date Collected	Time Collected	Lab ID (L9712088)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
37	RD 389	ILBS19501	1.5	12/02/97	0915 ~~0815~~ DB	-019	B	4.3 & 4.4	X				X	X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97
37	RD 390	ILBS19502	5.0	↓	0920	-020	↓	↓	X				X	X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97
37	RD 391	ILBS19503	9.5	↓	0930	-021	↓	↓	X				X	X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850
37	RD 392	ILBS19504	16.5	↓	0950	-022	↓	↓	X				X	X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97
37	RD 393	ILBS19505	20.0	↓	1015	-023	↓	↓	X				X	X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: | TAT: 14 - day

Sampler's Signature	Date	Time
	12/2/97	1750

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD394
Date 12/02/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9I04088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
37	RD 394	ILBS19506	30.0	12/2/97	1045	-024	B	4.3a 4.4	X				X	X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850
26	RD 395	ILBS20501	3.0	↓	1110	-025	↓	↓	X				X					Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850
59a	RD 396	ILBS21501	0.5	↓	1125	-026	↓	↓	X					X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850
17	RD 398	BSBS23501	1.5	↓	1500	-027	↓	AI AOC	X					X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850
17	RD 399	BSBS23502	5.0	↓	1505	-028	↓	↓	X					X				Relinquished By: / Received By:	12/2/97 1750 / 12/2/97 1850

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: | TAT: 14 - day

Sampler's Signature	Date	Time
	12/2/97	1750

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD400
Date 12/02/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

	Sample Data						Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	9104088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
17	RD 400	BSB523503	10.0	12/2/97	1510	-029	B	AI AOC	X					X		X		Relinquished By:	12/2/97 1750
																		Received By:	12/2/97 1850
17	RD 401	BSB523504	15.5		1525	-030			X					X		X		Relinquished By:	12/2/97 1750
																		Received By:	12/2/97 1850
17	RD 402	BSB523505	20.0		1540	-031			X					X		X		Relinquished By:	12/2/97 1750
																		Received By:	12/2/97 1850
								DB 12/2/97										Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
	12/2/97	1750

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 981
Date 12/3/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9804088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
	RD 981	FEBSØ1SØ1	Ø.5	12/3	940	-032	HA	AREA I	X					X			1	Relinquished By: KJ Received By: [signature]	12/3/97 1235 12/3/97 1235
2	RD 982	ILBS22SØ1	5	↓	1030	-033	↓	4.3, 4.4	↓				X	X			1	Relinquished By: KJ Received By: [signature]	12/3/97 1235 12/3/97 1235
2	RD 983	ILBS22SØ2	1Ø	↓	1110	-034	↓	↓	↓				X	X		X	1	Relinquished By: KJ Received By: [signature]	12/3/97 1235 12/3/97 1235
2	RD 984	ILBS22SØ3	15	↓	1135	-035	↓	↓	↓				X	X		X	1	Relinquished By: KJ Received By: [signature]	12/3/97 1235 12/3/97 1235
30	RD 985	LF ~~[illegible]~~ KJ SSØ8SØ1	Ø	↓	1225	-036	G	4.12	↓					X			1	Relinquished By: KJ Received By: [signature]	12/3/97 1235 12/3/97 1235

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: | TAT: 14 - day

Sampler's Signature	Date	Time
KMT	12/3/97	950

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD987
Date 12/3/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9704088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs (4-4)	EPA 8015M	All	HOLD	Total # Containers
6	RD 987	CDBSØ1SØ2	5	12/3/97 KJ	1500	-037	HA	AREA II	X				X	X		*	1
6	RD 988	CDBSØ1SØ3	7.5	↓	1530	-038	↓	↓	X				X	X		*	1

KJ 12/3/97

Sample Transfer	Date/ Time
Relinquished By: KJ	12/3/97 KJ 1815
Received By: [signature]	12/3/97 1815
Relinquished By: KJ	12/3/97 KJ 1815
Received By: [signature]	12/3/97 1815
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
KMJ	12/3/97	1200

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

* HOLD VOC TEST; CONTACT DIXIE WITH RESULTS A.S.A.P.

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD4Φ3
Date 12/03/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

U/S	Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9704088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
1	RD 403	AFBSΦ95Φ1	1.Φ	12/03/97	Φ95Φ	-039	B	4.9	X				X	X				Relinquished By:	12/03/97 175Φ
																		Received By:	12/3/97 1815
16	RD 404	AFBS1ΦSΦ1	1.Φ		1Φ25	-040			X					X				Relinquished By:	12/03/97 175Φ
																		Received By:	12/3/97 1815
16 ~~#3 DB~~	RD 405	BSBSΦ95Φ2	5.Φ		115Φ	-041		AI AOC	X					X				Relinquished By:	12/03/97 175Φ
																		Received By:	12/3/97 1815
16 ~~#3 DB~~	RD 406	BSBSΦ95Φ3	1Φ.Φ		12ΦΦ	-042			X					X		X		Relinquished By:	12/03/97 175Φ
																		Received By:	12/3/97 1815
16 ~~#3 DB~~	RD 407	BSBSΦ95Φ4	15.Φ		1215	-043			X					X		X		Relinquished By:	12/03/97 175Φ
																		Received By:	12/3/97 1815

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:

TAT: 14 - day

Sampler's Signature	Date	Time
	12/03/97	1745

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD4Ø8
Date 12/03/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9704088	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
DLS ~~26~~ ~~13~~ 16	RD 4Ø8	BSBSØ95Ø5	19.5	12/3/97	123Ø	-044	B	AI AOC	X					X		X	1	Relinquished By:	12/03/97 175Ø
																		Received By:	12/3/97 1815
~~26~~ ~~13~~ 16	RD 409	BSBSØ95Ø6	30.0	↓	1415	-045	↓	↓	X					X		X	1	Relinquished By:	12/03/97 175Ø
																		Received By:	12/3/97 1815
25	RD 41Ø	BSBS245Ø1	Ø.5	↓	1545	-046	↓	↓	X					X			1	Relinquished By:	12/03/97 175Ø
																		Received By:	12/3/97 1815
17	RD 411	BSBS235Ø6	29.5	↓	161Ø	-047	↓	↓	X					X			1	Relinquished By:	12/03/97 175Ø
																		Received By:	12/3/97 1815
									DB 12/03/97									Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:

TAT: 14 - day

Sampler's Signature	Date	Time
	12/03/97	1745

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 989
Date 12/ 4 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

	Sample Data						Field Data		Matrix										
ULS	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9704088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
06	RD 989	EVBS12 SØ1	Ø.5	12/4/97	825	-048	HA	5.2	X					X			1	Relinquished By: KJ	12/4/97 1420
																		Received By:	12/4/97 1420
28	RD 990	EVBS13 SØ1			900	-049							X	X			1	Relinquished By: KJ	12/4/97 1420
																		Received By:	12/4/97 1420
27a	RD 992	EVBS1~~4~~5 KJ SØ1			1020	-050							X	X			1	Relinquished By: KJ	12/4/97 1420
																		Received By:	12/4/97 1420
26	RD 993	EVBS1~~5~~6 KJ SØ1			1100	-051							X	X			1	Relinquished By: KJ	12/4/97 1420
																		Received By:	12/4/97 1420
17a	RD 994	EVBS1~~6~~7 KJ SØ1	2		1145	-052						X	X	X			1	Relinquished By: KJ	12/4/97 1420
																		Received By:	12/4/97 1420

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CAS - CP TAT: 14 - day

Sampler's Signature	Date	Time
KMJ	12/4/97	835

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

ULS
#
17b

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD995
Date 12/4/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix									
EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9104088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M			HOLD	Total # Containers
RD995	EVBS18S01	0.5	12/4/97	1200	-053	HA	5.2	X				X	X				1
					KJ 12/4/97												

Sample Transfer	Date/Time
Relinquished By: KJ	12/4/97 1420
Received By: [signature]	12/4/97 1420
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CAS-CP | TAT: 14 - day

Sampler's Signature: KMJ | Date: 12/4/97 | Time: 1230

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 996
Date 12/4/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT Depth	Date Collected	Time Collected	L9904088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers
55a	RD 996	ABBS18SØ1	Ø.5	12/4/97	1450	-54	HA	AREA II				X		X			1
62	RD 997	ABBS15SØ2	5	↓	1520	-55	↓	↓	X				X	X			1
59	RD 998	ABBSØ9SØ2	5	↓	1620	-56	↓	↓	X				X	X			1
-	RD 999	AB[illegible]QWØEØ1 VJ	-	↓	1710	-57	-	↓		X			X	X			4

KJ 12/4/97

Sample Transfer	Date/Time
Relinquished By: [signature]	12/4/97 1810
Received By: [signature]	12/4/97 1810
Relinquished By: [signature]	12/4/97 1810
Received By: [signature]	12/4/97 1810
Relinquished By: [signature]	12/4/97 1810
Received By: [signature]	12/4/97 1810
Relinquished By: [signature]	12/4/97 1810
Received By: [signature]	12/4/97 1810
Relinquished By:	
Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CAS - CP TAT: 14 - day

Sampler's Signature	Date	Time
KMT	12/4/97	1500

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD413
Date 12/04/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Demey~~ DB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9104088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
ULS 25	RD 413	~~BSI~~ LFBS235Φ1	2.Φ	12/04/97	Φ815	-058	B	4.12	X					X				Relinquished By: / Received By:	12/4/97 174Φ / 12/4/97 1820
	~~RF 414~~	~~BSBS2~~				DB												Relinquished By: / Received By:	
36a	RD 417	ILBS225Φ1	1Φ.Φ	12/04/97	11Φ5	-059	B	4.3 & 4.4	X				X					Relinquished By: / Received By:	12/4/97 174Φ / 12/4/97 1820
74	RD 418	ILBS235Φ1	2.Φ	↓	1225	-060	↓	↓	X				X	X				Relinquished By: / Received By:	12/4/97 174Φ / 12/4/97 1820
74	RD 419	ILBS235Φ2	5.Φ	↓	1235	-061	↓	↓	X				X	X				Relinquished By: / Received By:	12/4/97 174Φ / 12/4/97 1820

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
	12/4/97	174Φ

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD42Φ
Date 12/Φ4/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Denley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	9712040 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
74	RD 42Φ	ILBS235Φ3	1Φ.Φ	12/4/97	1245	-062	X	4.34 4.4	X				X	X				Relinquished By:	12/4/97 174Φ
																		Received By:	12/4/97 1820
74	RD 421	ILBS235Φ4	15.Φ	↓	125Φ	-063	X	↓	X				X	X				Relinquished By:	12/4/97 174Φ
																		Received By:	12/4/97 1820
74	RD 422	ILBS235Φ5	2Φ.Φ	↓	133Φ	-064	X	↓	X				X	X				Relinquished By:	12/4/97 174Φ
																		Received By:	12/4/97 1820
74	RD 423	ILBS235Φ6	25.Φ	↓	135Φ	-065	X	↓	X				X	X	X			Relinquished By:	12/4/97 174Φ
																		Received By:	12/4/97 1820
34	RD 424	ILBS245Φ1	2.Φ'	↓	152Φ	-066	X	↓	X				X					Relinquished By:	12/4/97 174Φ
																		Received By:	12/4/97 1820

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:

TAT: 14 - day

Sampler's Signature	Date	Time
	12/4/97	174Φ

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

NOTE: RUN ~~RD23~~ RD423 FOR 8Φ15, 8Φ21

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD425
Date 12/4/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

VLS

	Sample Data						Field Data		Matrix								
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	9710408 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers
34	RD 425	ILBS24502	24.0	12/4/97	1545	-067	B	4.3 4.4	X				X				
~~35~~ 36 ~~28~~	RD 426	ILBS25501	1.5		1620	-068			X					X			
					DB 12/4/97												

Sample Transfer	Date/Time
Relinquished By:	12/4/97 1740
Received By:	12/4/97 1820
Relinquished By:	12/4/97 1740
Received By:	12/4/97 1820
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:

TAT: 14 - day

Sampler's Signature	Date	Time
	12/4/97	1740

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RM5ØØ

Date 12 / 5 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT Depth	Date Collected	Time Collected	L9704088 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
39	RM 500	HVBS29SØ1	1.Ø	12/5/97	845	-069	HA	AREA I	X					X			1	Relinquished By: [illegible]	12/5/97 1340
																		Received By: [illegible]	12/5/97 1340
20	RM 503	ILBS29SØ1	Ø.5	↓	1015	-070	↓	4.3, 4.4	X				X				1	Relinquished By: [illegible]	12/5/97 1340
																		Received By: [illegible]	12/5/97 1340
1	RM 506	B3BSØ1SØ1	3	↓	1220	-071	↓	AREA IV	X				X	X			1	Relinquished By: [illegible]	12/5/97 1340
																		Received By: [illegible]	12/5/97 1340
			T.B.		12/5/97													Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
KMJ	12/5/97	900

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ______

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

023

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD427
Date 12/05/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

VLS

	Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9904688 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
42	RD 427	ILB527501	15.0	12/5/97	0854	-012	B	4.3a 4.4	X				X					Relinquished By:	12/05/97 1320
																		Received By:	12/5/97 1520
32	RD 428	ILB528501	20		1120	-013			X				X					Relinquished By:	12/05/97 1320
																		Received By:	12/5/97 1320
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
	12/05/97	1320

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C ________

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
18-DEC-97 21:21

Service Req. No. L9704088
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 72 - Canisters/Decore
1 - VOA Vial Set (4)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Dixie Hambrick
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By JWICKER
ISR Num
COC Received Y
Samples Submitted 01-DEC-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	TPH-FC-CA
L9704088-001	RD373	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-002	RD374	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-003	RD375	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-004	RD959	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-005	RD960	SOIL	01-DEC-97	12-DEC-97		III
L9704088-006	RD961	SOIL	01-DEC-97	12-DEC-97		III
L9704088-007	RD962	SOIL	01-DEC-97	12-DEC-97	III	
L9704088-008	RD963	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-009	RD964	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-010	RD965	SOIL	01-DEC-97	12-DEC-97	III	III
L9704088-011	RD972	SOIL	01-DEC-97	12-DEC-97		III
L9704088-012	RD973	SOIL	02-DEC-97	12-DEC-97		III
L9704088-013	RD975	SOIL	02-DEC-97	12-DEC-97	III	
L9704088-014	RD976	SOIL	02-DEC-97	12-DEC-97		III
L9704088-015	RD977	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-016	RD978	SOIL	02-DEC-97	12-DEC-97		III
L9704088-017	RD979	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-018	RD980	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-019	RD389	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-020	RD390	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-021	RD391	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-022	RD392	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-023	RD393	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-024	RD394	SOIL	02-DEC-97	12-DEC-97	III	III
L9704088-025	RD395	SOIL	02-DEC-97	12-DEC-97	III	
L9704088-026	RD396	SOIL	02-DEC-97	12-DEC-97		III
L9704088-027	RD398	SOIL	02-DEC-97	12-DEC-97		III
L9704088-028	RD399	SOIL	02-DEC-97	12-DEC-97		III
L9704088-029	RD400	SOIL	02-DEC-97	12-DEC-97		HOLD
L9704088-030	RD401	SOIL	02-DEC-97	12-DEC-97		HOLD
L9704088-031	RD402	SOIL	02-DEC-97	12-DEC-97		HOLD
L9704088-032	RD981	SOIL	03-DEC-97	12-DEC-97		III
L9704088-033	RD982	SOIL	03-DEC-97	12-DEC-97	III	III
L9704088-034	RD983	SOIL	03-DEC-97	12-DEC-97	HOLD	HOLD
L9704088-035	RD984	SOIL	03-DEC-97	12-DEC-97	HOLD	HOLD
L9704088-036	RD985	SOIL	03-DEC-97	12-DEC-97		III

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:__________________

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
18-DEC-97 21:21

Service Req. No.	L9704088	Project No.	313150001	Bottles: 72 - Canisters/Decore
Client No.	095000	Project Name	Rocketdyne	1 - VOA Vial Set (4)
Client Name	InterPhase Environmental			
Bill To:	InterPhase Environmental Attn: Accounts Payable 6200 Peachtree Street Los Angeles, CA 90040	Report To:	Ogden Environmental Dixie Hambrick 5510 Morehouse Dr. San Diego, CA 92121	
P.O. No.		Site ID		
Logged In By	JWICKER	Project Chemist	Tom Robinson	
ISR Num				
COC Received	Y			
Samples Submitted	01-DEC-97			Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	TPH-FC-CA
L9704088-037	RD987	SOIL	03-DEC-97	12-DEC-97		HOLD
L9704088-038	RD988	SOIL	03-DEC-97	12-DEC-97	III	III
L9704088-039	RD403	SOIL	03-DEC-97	12-DEC-97	III	III
L9704088-040	RD404	SOIL	03-DEC-97	12-DEC-97		III
L9704088-041	RD405	SOIL	03-DEC-97	12-DEC-97		III
L9704088-042	RD406	SOIL	03-DEC-97	12-DEC-97		HOLD
L9704088-043	RD407	SOIL	03-DEC-97	12-DEC-97		HOLD
L9704088-044	RD408	SOIL	03-DEC-97	12-DEC-97		HOLD
L9704088-045	RD409	SOIL	03-DEC-97	12-DEC-97		HOLD
L9704088-046	RD410	SOIL	03-DEC-97	12-DEC-97		III
L9704088-047	RD411	SOIL	03-DEC-97	12-DEC-97		III
L9704088-048	RD989	SOIL	04-DEC-97	12-DEC-97		III
L9704088-049	RD990	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-050	RD992	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-051	RD993	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-052	RD994	SLUDGE	04-DEC-97	12-DEC-97	III	III
L9704088-053	RD995	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-054	RD996	SLUDGE	04-DEC-97	12-DEC-97		III
L9704088-055	RD997	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-056	RD998	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-057	RD999	H2O	04-DEC-97	12-DEC-97	III	III
L9704088-058	RD413	SOIL	04-DEC-97	12-DEC-97		III
L9704088-059	RD417	SOIL	04-DEC-97	12-DEC-97	III	
L9704088-060	RD418	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-061	RD419	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-062	RD420	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-063	RD421	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-064	RD422	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-065	RD423	SOIL	04-DEC-97	12-DEC-97	III	III
L9704088-066	RD424	SOIL	04-DEC-97	12-DEC-97	III	
L9704088-067	RD425	SOIL	04-DEC-97	12-DEC-97	III	
L9704088-068	RD426	SOIL	04-DEC-97	12-DEC-97		III
L9704088-069	RM500	SOIL	05-DEC-97	12-DEC-97		III
L9704088-070	RM503	SOIL	05-DEC-97	12-DEC-97	III	
L9704088-071	RM506	SOIL	05-DEC-97	12-DEC-97	III	III
L9704088-072	RD427	SOIL	05-DEC-97	12-DEC-97	III	

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:________________

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
18-DEC-97 21:21

Service Req. No. L9704088
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 72 - Canisters/Decore
1 - VOA Vial Set (4)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Dixie Hambrick
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By JWICKER
ISR Num
COC Received Y
Samples Submitted 01-DEC-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	TPH-FC-CA
L9704088-073	RD428	SOIL	05-DEC-97	12-DEC-97	III	

Comments:

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:________________

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 05/05/06
Received: 05/05/06
Revised: 05/25/06 07:25

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 4°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	No analyses were subcontracted to an outside laboratory.
ADDITIONAL INFORMATION:	The report was revised to include results down to the MDL.

LABORATORY ID	CLIENT ID	MATRIX
IPE0642-01	MJ816	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	05/05/06
San Diego, CA 92123	Report Number: IPE0642	Received:	05/05/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: Report Number:	SSFL Group 6 Data Gap IPE0642	Sampled: 05/05/06 Received: 05/05/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 7471A	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Groundwater Data Gap
Control Number: COC MJ816
Date 5/5/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: 2 Week

Preservatives: None

Preservative	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Mercury (Hg)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ816	SRBS90SP1	AOCSE	0.5	5/5/06	1244	—		X																		X	G			1

NAM
5-8-06 0845

	Date	Time
Samplers Signature: Eric VanderVelde	5/5/06	1248
Relinquished By: Eric VanderVelde	5/5/06	1412
Received By: [signature] MAI	5/5/06	1412
Relinquished By: [signature] MAI	5/5/06	1900
Received By (LAB): [signature]	5/5/06	1900

White Copy:Original Yellow:Lab Copy Pink:Field Copy

4°C

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C

Comments:

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 04/12/06
Received: 04/12/06
Revised: 04/27/06 16:56

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 5 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: The report was revised to include EPA 1613B Dioxin's to samples IPD1302-01 and IPD1302-02.

LABORATORY ID	CLIENT ID	MATRIX
IPD1302-01	MJ776	Soil
IPD1302-02	MJ777	Soil
IPD1302-06	MJ781	Soil
IPD1302-07	MJ782	Soil
IPD1302-08	MJ783	Soil
IPD1302-09	MJ784	Soil
IPD1302-11	MJ786	Soil
IPD1302-12	MJ787	Soil
IPD1302-13	MJ788	Soil
IPD1302-14	MJ789	Soil

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPD1302	Sampled: 04/12/06 Received: 04/12/06

LABORATORY ID	CLIENT ID	MATRIX
IPD1302-15	MJ790	Soil
IPD1302-16	MJ791	Soil
IPD1302-19	MJ794	Soil
IPD1302-20	MJ795	Soil
IPD1302-21	MJ796	Soil
IPD1302-23	MJ798	Soil
IPD1302-24	MJ799	Soil
IPD1302-25	MJ800	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	04/12/06
San Diego, CA 92123	Report Number: IPD1302	Received:	04/12/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

A-01 Sample result might be biased high due to coelution of Aroclors 1248 and 1254.

A-01a Sample result might be biased high due to coelution of Aroclors 1248 and 1260.

A-01b Sample result might be biased high due to coelution of Aroclors 1248, 1254 and 1260.

B Analyte was detected in the associated Method Blank.

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

M2 The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

M-HA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

R-10 The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.

RL-1 Reporting limit raised due to sample matrix effects.

Z3 The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPD1302	Sampled: 04/12/06 Received: 04/12/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8270C	Soil	X	X
Level 3	Soil		

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Calscience-SUB *California Cert #1230*

7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)

Samples: IPD1302-12, IPD1302-13, IPD1302-14, IPD1302-15, IPD1302-16, IPD1302-19, IPD1302-20, IPD1302-21, IPD1302-23, IPD1302-24, IPD1302-25

Analysis Performed: Level 3 Data Package

Samples: IPD1302-12

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

IPD 1504

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Del Mar #1

Chain of Custody

Project: Group 6
Control Number: COC MJ776
Date 4/12/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ776	SRBS85S01		0.5'	4/12/06	0904			X												X							G		X	2
MJ777	SRBS86S01		0.5'		0920			X												X							G		X	1
MJ778	SRBS87S01		0.5'		0929			X												X							G		X	1
MJ779	SRBS88S01		0.5'		0933			X												X							G		X	1
MJ780	SRBS89S01		0.5'		0941			X												X							G		X	1
MJ781	~~SRBS~~ OLBS76S01		0.5'		1025			X												X							HA			1
MJ782	OLBS77S01		0.5'		1030			X												X							HA			1
MJ783	OLBS78S01		0.5'		1045			X												X							HA			1
MJ784	OLBS79S01		0.5'		1049			X										X		X							HA			2
MJ785	OCSS05S01		0'		1100			X										X		X							HA		X	2
MJ786	OCBS80S01		0.5'		1105			X												X							HA			1
MJ787	OLBS81S01		0.5'		1110			X				X						X		X						X	HA			3

	Date	Time
Samplers Signature:	4/12/06	1230
Relinquished By:	4/12/06	1700
Received By:	4/12/06	1700
Relinquished By:	4/12/06	1955
Received By (LAB):	4-12-06	1955

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 3°C

Comments: All 8oz Jars

IB 4/13 1736

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Group 6
Control Number: COC MJ788
Date 4/12/06 **Page** 2 **of** 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None

Preservative	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ788	OCBS82S01		0.5'	4/12/06	1115			X				X						X		X						X	HA			3
MJ789	OCBS83S01		0.5'	4/12/06	1120			X				X						X		X						X	HA			3
MJ790	OCBS84S01		0.5'	4/12/06	1125			X				X						X		X						X	HA			3
MJ791	OCBS85S01		0.5'	4/12/06	1130			X				X						X		X						X	HA			3
MJ792	OCBS86S01		0.5'	4/12/06	1135			X				X						X		X						X	HA		X	3
MJ793	OCBS87S01		0.5'	4/12/06	1140			X				X						X		X						X	HA		X	3
~~MJ794~~	~~OCBS88S01~~		~~0.5'~~	~~4/12/06~~	~~1145~~			~~X~~												~~X~~							~~HA~~			
MJ794	OCBS88S01		0.5'	4/12/06	1215			X				X						X		X						X	G			2
MJ795	OCBS89S01		0.5		1315			X				X						X		X						X	HA			3
MJ796	OCBS90S01		0.5		1325			X				X						X		X						X				3
MJ797	OCBS91S01		0.5		1335			X				X						X		X						X			X	2
MJ798	OCBS92S01		0.5		1315			X				X						X		X						X				3

	Date	Time
Samplers Signature: [signature]	4/12/06	1430
Relinquished By: [signature]	4/12/06	1700
Received By: BD [signature]	4/12/06	1700
Relinquished By: BD [signature]	4/12/06	1955
Received By (LAB): [signature]	4-12-06	1955

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 3°c

Comments:

DI MW

SSFL

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue. Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Group 6

Control Number: COC MJ 199

Date 4 / 12 / 06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ799	0CBS93S01	7.4		4/12/06	1333			X		
MJ800	0CBS94S01			↓	1345			X		

Sample ID	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ799		X						X		X						X	HA			3
MJ800		X						X		X						X	↓			3

BS

	Date	Time
Samplers Signature: [signature]	4/12/06	1430
Relinquished By: [signature]	4/12/06	1700
Received By: BD [signature]	4/12/06	1700
Relinquished By: BD [signature]	4/12/06	1955
Received By (LAB): [signature]	4-12-06	1955

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N (N circled)
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 3°C

Comments:

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 04/14/06

To: Michele Chamberlin / Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ776	MJ776	SRBS85S01	4/12/06	Hold PCB's analysis.	Turn on PCB's analysis (method 8082) Standard TAT.
MJ776	MJ777	SRBS86S01	4/12/06	Hold PCB's analysis.	Turn on PCB's analysis (method 8082). Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change X
Other: Containers mislabeled ________

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Group 6
Control Number: COC MJ776
Date 4/12/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Courier Info:
QC Level:
TAT: Normal

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ776	SRBS85S01		0.5'	4/12/06	0904			X												X							G		X	2
MJ777	SRBS86S01		0.5'		0920			X												X							G	AB 04/14/06	X	1
MJ778	SRBS87S01		0.5'		0929			X												X							G		X	1
MJ779	SRBS88S01		0.5'		0933			X												X							G		X	1
MJ780	SRBS89S01		0.5'		0941			X												X							G		X	1
MJ781	~~SRBS~~ OCBS76S01		0.5'		1025			X												X							HA			1
MJ782	OCBS77S01		0.5'		1030			X												X							HA			1
MJ783	OCBS78S01		0.5'		1045			X												X							HA			1
MJ784	OCBS79S01		0.5'		1049			X										X		X							HA			2
MJ785	OCSS05S01		0'		1100			X										X		X							HA		X	2
MJ786	OCBS80S01		0.5'		1105			X												X							HA			1
MJ787	OCBS81S01		0.5'		1110			X				X						X		X						X	HA			3

	Date	Time
Samplers Signature:	4/12/06	1430
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C

Comments:

ALTA

May 09, 2006

Alta Project I.D.: 27648

Ms. Michele Chamberlin
Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the two soil samples received at Alta Analytical Laboratory on May 03, 2006 under your Project Name "IPD1302". These samples were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha Maier

Martha M. Maier
Director of HRMS Services

ACCREDITED IN ACCORDANCE WITH nelac

Alta Analytical Laboratory Inc.
1104 Windfield Way
El Dorado Hills, CA 95762
FAX (916) 673-0106
(916) 933-1640

Section I: Sample Inventory Report

Date Received: **5/3/2006**

Alta Lab. ID	Client Sample ID
27648-001	IPD1302-01
27648-002	IPD1302-02

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine	Alta Analytical - SUB 27648
17461 Derian Avenue. Suite 100	1104 Windfield Way
Irvine, CA 92614	El Dorado Hills, CA 95762 0.1°C
Phone: (949) 261-1022	Phone :(916) 933-1640
Fax: (949) 261-1228	Fax: (916) 673-0106
Project Manager: Michele Chamberlin	

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ **Initials:**______

Analysis	Expiration	Comments
* **Sample ID: IPD1302-01 Soil**	**Sampled: 04/12/06 09:04**	~~Taken off hold 4/14/06 by MWH~~
1613-Dioxin-HR-Alta	04/19/06 09:04	Sub to Alta, 17 congeners, rpt in dry wt if soil
Level 4 + EDD-OUT	05/10/06 09:04	Sub to Alta, EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-01B)		
* **Sample ID: IPD1302-02 Soil**	**Sampled: 04/12/06 09:20**	~~Taken off hold 4/14/06 by MWH~~
1613-Dioxin-HR-Alta	04/19/06 09:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
8 oz Jar (IPD1302-02A)		

* Hold until further notice

MC 5/2/06

SAMPLE INTEGRITY:

All containers intact:	☐ Yes ☐ No	Sample labels/COC agree:	☐ Yes ☐ No	Samples Received On Ice::	☐ Yes ☐ No
Custody Seals Present:	☐ Yes ☐ No	Samples Preserved Properly:	☐ Yes ☐ No	Samples Received at (temp):	______

Released By	Date	Time	Received By	Date	Time
V. Banh	5/02/06		Bettina J. Benedict	5/3/06	0920
Released By	Date	Time	Received By	Date	Time

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone :(916) 933-1640 Fax: (916) 673-0106 27648 0.1°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date: 2 week, due 5/17/06 **Initials:** MC

Analysis	Expiration	Comments
Sample ID: IPD1302-01 Soil	**Sampled: 04/12/06 09:04**	~~Taken off hold 4/14/06 by MWH~~
1613-Dioxin-HR-Alta	04/19/06 09:04	Sub to Alta, 17 congeners, rpt in dry wt if soil
Level 4 + EDD-OUT	05/10/06 09:04	Sub to Alta, EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-01B)		
Sample ID: IPD1302-02 Soil	**Sampled: 04/12/06 09:20**	~~Taken off hold 4/14/06 by MWH~~
1613-Dioxin-HR-Alta	04/19/06 09:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
8 oz Jar (IPD1302-02A)		

~~* Hold until further notice~~

~~MC 5/2/06~~

Please run these two samples.

MC
5/2/06

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No	Sample labels/COC agree: ☐ Yes ☐ No	Samples Received On Ice: ☐ Yes ☐ No	
Custody Seals Present: ☐ Yes ☐ No	Samples Preserved Properly: ☐ Yes ☐ No	Samples Received at (temp):	______

Released By	Date	Time	Received By	Date	Time
[signature]	5/2/06				
Released By	Date	Time	Received By	Date	Time

SAMPLE LOG-IN CHECKLIST

Alta Project #: 27648

Samples Arrival:	Date/Time 5/3/06 0920	Initials: BJB	Location: WR-2 Shelf/Rack:
Logged In:	Date/Time 5/3/06 0947	Initials: BJB	Location: WR-2 Shelf/Rack: D-2

Delivered By:	FedEx	UPS	Cal	DHL	Hand Delivered	Other

Preservation:	Ice	Blue Ice	Dry Ice	None

Temp °C 0.1	Time: 0925	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill Trk # 7927 3047 5413	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

$Na_2S_2O_3$ Preservation Documented?		COC	Sample Container	None
Shipping Container	Alta	Client	Retain	Return	Dispose

Comments:

samples received in clear glass jars

Martha Maier 27648

From: Michele Chamberlin [michele@dmalabs.com]
Sent: Tuesday, May 02, 2006 5:06 PM
To: Martha Maier
Cc: Rose Harrelson
Subject: More rushes.....

Hi Martha,

The client just chose two more rush samples and you will receive them tomorrow. They need a 2 week TAT, results directly to Elizabeth Wessling (same address) with a CD to me. I will send you a revised COC, since the one with the samples is not accurate. The sample ID's are IPD1302-01 & IPD1302-02.

Please let me know if you have any questions.

Michele

P.S. I will also send you a revised COC for the sample you asked about this morning.

Michele Chamberlin
Project Manager
Del Mar Analytical - Irvine, CA
949-261-1022 x215

Calscience Environmental Laboratories, Inc.

April 26, 2006

Michele Chamberlin
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Subject: **Calscience Work Order No.: 06-04-0814**
Client Reference: IPD1302

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/14/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Virendra R Patel for

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0814

Sample Condition on Receipt

Eleven soil samples were received as part of this Work Order on April 14, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (2.8°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX:(714) 894-7501

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0814

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060418S02	Acenaphthene

Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

ACCREDITED IN ACCORDANCE WITH nelac

Work Order Number: 06-04-0814

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-04-0814** **QAPP:** **0000**

#	Client Sample ID	Matrix	Date Collected	NoC	Comment
1	IPD1302-12	S	04/12/2006	1	
2	IPD1302-13	S	04/12/2006	1	
3	IPD1302-14	S	04/12/2006	1	
4	IPD1302-15	S	04/12/2006	1	
5	IPD1302-16	S	04/12/2006	1	
6	IPD1302-19	S	04/12/2006	1	
7	IPD1302-20	S	04/12/2006	1	
8	IPD1302-21	S	04/12/2006	1	
9	IPD1302-23	S	04/12/2006	1	
10	IPD1302-24	S	04/12/2006	1	
11	IPD1302-25	S	04/12/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 0 4 - 0 8 1 4

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Del Mar

DATE: 04/14/2006

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_______ Chilled, cooler with temperature blank provided.
_______ Chilled, cooler without temperature blank.
_______ Chilled and placed in cooler with wet ice.
_______ Ambient and placed in cooler with wet ice.
_______ Ambient temperature.

_______ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_______ °C Temperature blank.
2.8 °C IR thermometer.
_______ Ambient temperature.

Initial: NC

CUSTODY SEAL INTACT:

Sample(s): _______ Cooler: _______ No (Not Intact) : _______ Not Applicable (N/A): ✓

Initial: NC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace			✓
Tedlar bag(s) free of condensation			✓

Initial: NC

COMMENTS:

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

0814 1/3

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine	Calscience-SUB
17461 Derian Avenue. Suite 100	7440 Lincoln Way
Irvine, CA 92614	Garden Grove, CA 92841
Phone: (949) 261-1022	Phone :714-895-5494
Fax: (949) 261-1228	Fax: 714-894-7501
Project Manager: Michele Chamberlin	

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ **Initials:**______

Analysis	Expiration	Comments
Sample ID: IPD1302-12 Soil	**Sampled: 04/12/06 11:10**	
1 8270C (SIM)-OUT	04/26/06 11:10	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Level 3 Data Package - Out	05/10/06 11:10	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-12C)		
Sample ID: IPD1302-13 Soil	**Sampled: 04/12/06 11:15**	
8270C (SIM)-OUT	04/26/06 11:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
2 Level 3 Data Package - Out	05/10/06 11:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-13C)		
Sample ID: IPD1302-14 Soil	**Sampled: 04/12/06 11:20**	
8270C (SIM)-OUT	04/26/06 11:20	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
3 Level 3 Data Package - Out	05/10/06 11:20	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-14C)		
Sample ID: IPD1302-15 Soil	**Sampled: 04/12/06 11:25**	
8270C (SIM)-OUT	04/26/06 11:25	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
4 Level 3 Data Package - Out	05/10/06 11:25	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-15C)		
Sample ID: IPD1302-16 Soil	**Sampled: 04/12/06 11:30**	
8270C (SIM)-OUT	04/26/06 11:30	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
5 Level 3 Data Package - Out	05/10/06 11:30	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-16C)		

Released By	Date	Time	Received By	Date	Time
[signature]			[signature]	4/14/06	720
[signature]	4/14/06	800	[signature]	4-14-06	0800

Del Mar Analytical

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SUBCONTRACT ORDER - PROJECT # IPD1302

0814 2/3

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine	Calscience-SUB
17461 Derian Avenue. Suite 100	7440 Lincoln Way
Irvine, CA 92614	Garden Grove, CA 92841
Phone: (949) 261-1022	Phone :714-895-5494
Fax: (949) 261-1228	Fax: 714-894-7501
Project Manager: Michele Chamberlin	

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ Initials:________

Analysis	Expiration	Comments
Sample ID: IPD1302-19 Soil	**Sampled: 04/12/06 12:15**	
8270C (SIM)-OUT	04/26/06 12:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
6 Level 3 Data Package - Out	05/10/06 12:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
2 oz jar (IPD1302-19C)		
Sample ID: IPD1302-20 Soil	**Sampled: 04/12/06 13:15**	
8270C (SIM)-OUT	04/26/06 13:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
7 Level 3 Data Package - Out	05/10/06 13:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-20C)		
Sample ID: IPD1302-21 Soil	**Sampled: 04/12/06 13:25**	
8270C (SIM)-OUT	04/26/06 13:25	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
8 Level 3 Data Package - Out	05/10/06 13:25	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-21C)		
Sample ID: IPD1302-23 Soil	**Sampled: 04/12/06 13:15**	
8270C (SIM)-OUT	04/26/06 13:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
9 Level 3 Data Package - Out	05/10/06 13:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-23C)		
Sample ID: IPD1302-24 Soil	**Sampled: 04/12/06 13:33**	
8270C (SIM)-OUT	04/26/06 13:33	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
10 Level 3 Data Package - Out	05/10/06 13:33	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-24C)		

Released By	Date	Time	Received By	Date	Time
Vir Bamb			[signature]	4-14-06	720
[signature]	4-14-06	800	[signature]	4-14-06	0800

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2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

0814 3/3

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ Initials:________

Analysis	Expiration	Comments
Sample ID: IPD1302-25 Soil	**Sampled: 04/12/06 13:45**	
8270C (SIM)-OUT	04/26/06 13:45	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Level 3 Data Package - Out	05/10/06 13:45	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7

Containers Supplied:

✓ 8 oz Jar (IPD1302-25C)

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No	Sample labels/COC agree: ☐ Yes ☐ No	Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No	Samples Preserved Properly: ☐ Yes ☐ No	Samples Received at (temp): ________

Released By	Date	Time	Received By	Date	Time
[signature]			[signature]	4/14/06	720
[signature]	4/14/06	800	[signature]	4-14-06	0800

Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 04/11/06
Received: 04/11/06
Issued: 04/27/06 16:41

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPD1108-01	MJ739	Soil
IPD1108-02	MJ740	Soil
IPD1108-03	MJ741	Soil
IPD1108-04	MJ742	Soil
IPD1108-05	MJ743	Soil
IPD1108-06	MJ744	Soil
IPD1108-07	MJ745	Soil
IPD1108-27	MJ765	Soil
IPD1108-29	MJ767	Soil
IPD1108-30	MJ768	Soil
IPD1108-31	MJ769	Soil
IPD1108-32	MJ770	Soil
IPD1108-33	MJ771	Soil
IPD1108-34	MJ772	Soil
IPD1108-35	MJ773	Soil
IPD1108-36	MJ774	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	04/11/06
San Diego, CA 92123	Report Number: IPD1108	Received:	04/11/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

M2 The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

M-HA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

R-10 The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.

R-3 The RPD exceeded the method control limit due to sample matrix effects.

RL-1 Reporting limit raised due to sample matrix effects.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical #228 SSFL Group 6 Data Gap Stepouts

MWH

~~OGDEN~~

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

IPD1108

Control Number: COC MJ 739

Date 4/11/06 Page 1 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	Courier
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

All 8oz

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H_2SO_4, pH<2 4°C)	8330 ORDINANCE (4°C)	~~6010/7000~~ 6010/7000 Total METALSRT (HNO_3 pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	Silver		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ739	OCBS65 S01	2	04/11/06	0750			X				X						X					X				HA			~~2~~ 3
MJ740	NCBS26 S01	0.5		0755			X																	X					1
MJ741	NCBS27 S01	0.5		0800			X																	X				~~X~~	1
MJ742	NCBS28 S01	0.5		0805			X																	X				~~X~~	1
MJ743	NCBS29 S01	0.5		0810			X																	X					1
MJ744	OCBS66 S01	0.5		0930			X										X					X							2
MJ745	OCBS68 S01	0.5		0930			X										X					X							2
MJ746	OCBS66 S02	3		0935			X										X					X						X	2
MJ747	OCBS68 S02	3		0940			X										X					X						X	2
MJ748	OCBS67 S01	0.5		0945			X										X					X						X	2
MJ749	OCBS66 S03	6		0950			X										X					X						X	2
MJ750	OCBS69 S01	0.5		0955			X										X					X						X	2

	Date	Time
Samplers Signature: [signature]	4/11/06	0750
Relinquished By: [signature]	4/11/06	1722
Received By: [signature]	4/11/06	1722
Relinquished By: [signature]	4/11/06	1945
Received By (LAB): [signature]	4-11-06	1945

For Lab Use

Lab Number:

Do COC match samples: Y or N (Y circled)

Broken container: Y or N (N circled)

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N (N circled)

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 3°C

Run MJ741 + 742

NAM 4-14 @ 0930

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

MWH Del Mar SSFL Group 6 Data Gap Step Out

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

MJ751

Control Number: **COC**

Date 4/11/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Courier
Comment:	

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

Analysis	Preservative
8021 VOC	HCL, pH<2 4°C
8015OG TPH	HCL, pH<2 4°C
8270SIM SVOC	4°C
8270R SVOC	4°C
8290 DIOXIN	4°C
ASTM D19 FORMALDEHYDE	H2SO4,pH<2 4°C
8330 ORDINANCE	4°C
6010/7000 METALSRT	HNO3, pH<2 4°C
7196 HEX CHROME	4°C
340.2 FLUORIDE	4°C
300 ANIONS	4°C
9045/9040 pH	4°C
8082 PCBs	4°C
IC HYDRAZ	4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ751	OCBS68 S03	6	4/11/06	1020			X										X					X				X	2
MJ752	OCBS70 S01	0.5		1030																		X				X	1
MJ753	OCBS70 S02	3		1030																		X				X	1
MJ754	OCBS71 S01	0.5		1040																		X				X	1
MJ755	OCBS71 S02	3		1040																		X				X	1
MJ756	OCBS72 S01	0.5		1050																		X				X	1
MJ757	OCBS72 S02	3		1050																		X				X	1
MJ758	OCBS38 S01	0.5		1045																		X				X	1
MJ759	OCBS73 S01	4.5		1135																		X				X	1
MJ760	OCBS73 S02	7.5		1140																		X				X	1
MJ761	OCBS74 S01	4.5		1150																		X				X	1
MJ762	OCBS74 S02	8		1210																		X				X	1

	Date	Time
Samplers Signature: [signature]	4/11/06	1015
Relinquished By: [signature]	4/11/06	1722
Received By: [signature]	4/11/06	1722
Relinquished By: [signature]	4/11/06	1945
Received By (LAB): [signature]	4-11-06	1945

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N — Y

Broken container: Y or N — N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N — N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 3°C

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

MWH Del Mar Analytical

SSFL Group 6 Data Gap Stepouts

MJ 763

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: **COC**

Date 4/11/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Mercury		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3 pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8082 PCBs	Mercury	HOLD	Total # of Bottles
MJ763	OCBS75S01	4.5	4/11/06	1145			X			X		X	1
MJ764	OCBS75S02	7.5		1205			X			X		X	1
MJ765	~~OC~~ SR BS74S01	0.5		1335			X			X			1
MJ766	SRBS75S01			1340			X			X		X	1
MJ767	SRBS76S01			1345			X			X			1
MJ768	SRBS77S01			1355			X			X			1
MJ769	SRBS78S01			1400			X			X			1
MJ770	SRBS81S01			1415			X				X		1
MJ771	SRBS82S01			1420			X				X		1
MJ772	SRBS83S01			1425			X				X		1
MJ773	SRBS84S01			1430			X				X		1
MJ774	SRBS83D01			1430			X				X		1

	Date	Time
Samplers Signature	4/11/06	1140
Relinquished By:	4/11/06	1722
Received By:	4/11/06	1722
Relinquished By:	4/11/06	1945
Received By (LAB):	4-11-06	1945

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

MJ 767 and 769 are contained unit samples.

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 3°C

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 02/14/06-02/17/06
Received: 03/13/06
Issued: 04/20/06 12:52

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 9 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 5°C, on ice and with chain of custody documentation.
HOLDING TIMES:	Not all holding times were met. Results were qualified where the sample analysis did not occur within method specified holding time requirements.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC1562-01	MJ623	Soil
IPC1562-02	MJ624	Soil
IPC1562-03	MJ625	Soil
IPC1562-04	MJ626	Soil
IPC1562-05	MJ627	Soil
IPC1562-06	MJ669	Soil
IPC1562-07	MJ670	Soil
IPC1562-08	MJ671	Soil
IPC1562-09	MJ672	Soil
IPC1562-10	MJ688	Soil
IPC1562-11	MJ689	Soil

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPC1562	Sampled: 02/14/06-02/17/06 Received: 03/13/06

LABORATORY ID	CLIENT ID	MATRIX
IPC1562-12	MJ690	Soil
IPC1562-13	MJ709	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	02/14/06-02/17/06
San Diego, CA 92123	Report Number: IPC1562	Received:	03/13/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1248 and 1260.
A-01a	Sample result might be biased high due to coelution of Aroclors 1254 and 1260.
H-1	Sample analysis performed past the method-specified holding time per client's approval.
H4	Sample was extracted past holding time, but analyzed within analysis holding time.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M-NR	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
R-10	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.
RL-1	Reporting limit raised due to sample matrix effects.
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
Z5	Due to sample matrix effects, the surrogate recovery was outside acceptance limits. Secondary surrogate recovery was within the acceptance limits.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPC1562	Sampled: 02/14/06-02/17/06 Received: 03/13/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

IPC1562

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 3/13/06 Del Mar Analytical Project Manager: NC

Request via: ____ telephone ____ chain of custody form ____ fax transmission X E-mail X other change orders

Client: MWH - San Diego Contact: Lisa Tucker

Project: SSFL Group 6 / Data Gap

Date Sampled: see below Date Received: see below

Status: ____ in progress ____ completed ____ received today ____ received yesterday X on hold ____ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
IPB1429-14	MJ623	% solids, PCB's	okay to analyze past hold time
IPB1429-14	MJ624		
IPB1429-14	MJ625		
IPB1429-14	MJ626		
IPB1429-15	MJ627		
IPB1719-08	MJ669		
IPB1119-08	MJ670		
IPB1719-08	MJ671		
IPB1719-09	MJ672		
IPB1791-01	MJ688		
IPB1791-01	MJ689		
IPB1791-01	MJ690		
IPB1791-17	MJ709		

~~[illegible]~~

add in, new workorder

VB

TURNAROUND STATUS: ______ Same Day ______ 24hr ______ 48hr ______ 3days

______ 5days X Standard ______ No Rush Charge

g:\dmai\misc\forms\add-req.doc

F A X

MWH

9444 Farnham St., Suite 300
San Diego. California 92123

Date: 03/13/06

Tel: 858-751-1200
Fax: 858-751-1201

To: Michele C ıamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ620	MJ623	SRBS54S01	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ624	SRBS54S02	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ625	SRBS54S03	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ626	SRBS54S04	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ627	SRBS54S05	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change X
Other: Containers mislabeled ________

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL [illegible]
Control Number: COC MJ6[illegible]
Date 2/14/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: [illegible]
Comment:

Cooler No.
QC Level:
TAT: [illegible]

Preservatives: W[illegible] HNO[illegible]

Preservative row: 8260B VOC: HCL, pH<2 4°C; 8015BM TPH: HCL, pH<2 4°C; 8270CSIM SVOC: 4°C; 8270C SVOC: 4°C; 8290 DIOXINS: 4°C; 8315A FORMALDEHYDE: H2SO4, pH<2 4°C; 8330 ORDNANCE: 4°C; 6000/7000 METALS: HNO3, pH<2 4°C; 7196A HEX CHROMIUM: 4°C; 8082 PCBs: 4°C; 9040B/9045C pH: 4°C; 340.2 FLUORIDE: 4°C; 300M ANIONS: 4°C; 300M HYDRAZINE: 4°C; 314.0 PERCHLORATE: 4°C

Sample Data (Description annotated: 54, -P 3/23/06)

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ6[illegible]	NCSS06SS1	7.10	0.5	2-14-06	938			X					X		X			X									G			2
MJ621	NCSS08SS1	↓	0.5		1003			X					X		X			X									G			2
MJ622	SRBS51S70	[illegible]	0.5		—			X												X										[illegible]
MJ623	SRBS54S01		0.5		1049			X												X							G	AB 03/13/06	X	1
MJ624	SRBS54S02		0.5		1050			X												X							G		X	1
MJ625	SRBS54S03		0.5		1100			X												X							G		X	1
MJ626	SRBS54S04		0.5		1109			X												X							G		X	1
MJ627	SRBS54S05		2.5		1102			X												X							G		X	1
MJ628	SRBS55S01		0.5		1130			X												X							G			1
MJ62[illegible]	SRBS56S01		0.5		1145			X												X							G			1
[illegible]	[illegible]58S01		0.5		[illegible]			X				X						X		X							G			
MJ6[illegible]	SRBS59S01		0.5		1335			X				X						X		X							G			2

	Date	Time
Samplers Signature: Br[illegible] [illegible]	2-14-06	954
Relinquished By: [signature]	2-14-06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

Copy: Original Yellow: Lab Copy Pink: Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature

Comments:
MJ622 is a composite of MJ623-626. [illegible]
[illegible]
[illegible]
[illegible]
O[illegible] hol[illegible] MJ628 - run for PCBs.

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Date: 03/13/06

Tel: 858-751-1200
Fax: 858-751-1201

To: Michele C ıamberlın/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign: ____________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ661	MJ669	OCBS34S01	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ661	MJ670	OCBS34S02	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ661	MJ671	OCBS34S03	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ661	MJ672	OCBS34S80	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ____________
Lack of sample volume ____________
MWH office personnel require this change ____X____
Other: Containers mislabeled ____________

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6500

Chain of Custody

Project: SSFL Group (xtra Gap
Control Number: COC MJ661
Date 2 / 16 / 06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Maffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Sample ID	Description (for MWH use only) SRBS 70 S01	AOC SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ661	~~OCBS34 T5~~	~~7.4~~	1	2/16/06	0910			X		
MJ662	SRBS71 S01		1		0924			X		
MJ663	SRBS72 S01		1		0929			X		
MJ664	SRBS73 S01		0.5		0949			X		
MJ665	OCBS32 S01	7.4	0.5		1028			X		
MJ666	OCBS33 S01		0.5		1040			X		
MJ667	OCBS33 D01		0.5		1045			X		
MJ668	OCBS34 S70		0.5		—			X		
MJ669	OCBS34 S01		0.5		1121			X		
MJ670	OCBS34 S02		0.5		1127			X		
MJ671	OCBS34 S03		0.5		1130			X		
MJ672	OCBS34 S80		0.5		—			X		

Sample ID	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8316A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ661		X															HA			1
MJ662		X																		1
MJ663		X																		1
MJ664		X						X		X							G			2
MJ665					X			X												2
MJ666					X			X										2/16/06		2
MJ667					X															1
MJ668										X								AB 02/16/06		0
MJ669										X							G		X	1
MJ670										X									X	1
MJ671										X									X	1
MJ672										X									X	0

	Date	Time
Samplers Signature: Bryan Burton	2-16-06	1430
Relinquished By: Bryan Burton	2-16-06	1430
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
Create composite MJ668 from MJ669, 670, and 671. Run MJ668 + hold other 3 pending analysis.
Hold MJ672 pending analysis of MJ668
(Create MJ672 from MJ673-675)
- Run Thallium only on MJ665-~~667~~ to 666
- Hold dioxins on MJ666 and 667

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date 03/13/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:________________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ687	MJ688	OCBS40S01	2/17/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ687	MJ689	OCBS40S02	2/17/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ687	MJ690	OCBS40S03	2/17/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change ___X___
Other: Containers mislabeled ________

Thank you

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: **COC** MJ687
Date 2/17/06 Page 1 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	Courier
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No:	
QC Level:	TAT: Normal

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC PAH	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02JRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Aluminum		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
C — MJ687	OCBS40 S70		2-17-06				.															X							Ø
MJ688	OCBS40 S01	4.5	2-17-06	826			X															X				HA		X	1
MJ689	OCBS40 S02	4.5		831			X															X				HA	AB 02/13/06	X	1
MJ690	OCBS40 S03	4.5		843			X															X				HA		X	1
C MJ691	OCBS40 S80																					X							Ø
MJ692	OCBS40 S04	7.5		828			X															X				HA		X	1
MJ693	OCBS40 S05	7.5		835			X															X				HA		X	1
MJ694	OCBS40 S06	7.5		846			X															X				HA		X	1
MJ695	OCBS41 S01	7		918			X						X				X									HA			1
MJ696	OCBS42 S01	6.5		926			X																	X		HA			1
MJ697	OCBS43 S01	7		944			X															~~X~~		X		HA			1
MJ698	OCBS44 S01	7		1000			X																	X		HA			1

	Date	Time
Samplers Signature: Bryan Burton	2-17-06	1400
Relinquished By: [signature]	2/17/06	1800
Received By: [signature]	2/17/06	1800
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

Please homogenize MJ688, 689, 690 individually, then take a composite of them as AB ~~MJ687~~ MJ687. Hold MJ688-690 pending result of MJ687. Homogenize MJ692, 693, 694 individually, then take a composite of them as MJ691. Hold MJ692-694 pending result of MJ691.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date. 03/13/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign: ____________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ699	MJ709	OCBS54S01	2/17/06	PCB, TPH, PAH and Metals on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ______

Lack of sample volume ______

MWH office personnel require this change ___X___

Other: Containers mislabeled ______

Thank you

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC MJ699
Date 2 / 17 / 06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Courier
Comment:	

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

Sample Data: Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Matrix: Soil	Water	Product
MJ699	OCBS 45 S01	3	2-17-06	1013			X		
MJ700	OCBS 46 S01	0.5		1024			X		
MJ701	OCBS 47 S01	0.5		1026			X		
MJ702	OCBS 48 S01	0.5		1036			X		
MJ703	OCBS 49 S01	0.5		1039			X		
MJ704	OCBS 50 S01	0.5		1111			X		
MJ705	OCBS 51 S01	0.5		1117			X		
MJ706	OCBS 51 S02	3		1120			X		
MJ707	OCBS 52 S01	0.5		1128			X		
MJ708	OCBS 53 S01	0.5		1137			X		
MJ709	OCBS 54 S01	0.5		1139			X		
MJ710	OCBS 55 S01	0.5		1148			X		

Sample ID	8021 VOC	8015OG TPH	8270SIM SVOC (PAH)	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	[illegible]		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
MJ699															X		HA			1
MJ700			X					X									G			1
MJ701			X					X									G			1
MJ702			X					X									G			1
MJ703			X					X									G			1
MJ704		X	X					X					X				G			2
MJ705		X	X					X					X				G			2
MJ706		X	X					X					X				HA	AB 03/13/06	X	2
MJ707		X	X					X					X				G			2
MJ708		X	X					X					X				G			2
MJ709		X	X					X					X				G		*	2
MJ710		X	X					X					X				G			2

	Date	Time
Samplers Signature: Bryan Barton	2-17-06	1401
Relinquished By: [signature]	2/17/06	1800
Received By: [signature]	2/17/06	1800
Relinquished By:		
Received By (LAB):		

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 02/16/06
Received: 02/16/06
Issued: 03/09/06 15:45

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 5 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
IPB1719-01	MJ661	Soil
IPB1719-02	MJ662	Soil
IPB1719-03	MJ663	Soil
IPB1719-04	MJ664	Soil
IPB1719-05	MJ665	Soil
IPB1719-06	MJ666	Soil
IPB1719-08	MJ668	Soil
IPB1719-10	MJ676	Soil
IPB1719-11	MJ677	Soil
IPB1719-12	MJ678	Soil
IPB1719-13	MJ679	Soil
IPB1719-14	MJ680	Soil
IPB1719-15	MJ681	Soil
IPB1719-16	MJ682	Soil
IPB1719-17	MJ683	Soil
IPB1719-18	MJ684	Soil
IPB1719-19	MJ685	Soil
IPB1719-20	MJ686	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego	Project ID:	SSFL Group 6	
9444 Farnham Street, Suite 300		Data Gap	Sampled: 02/16/06
San Diego, CA 92123	Report Number:	IPB1719	Received: 02/16/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

A-01 Sample result might be biased high due to coelution of Aroclors 1254 and 1260 .

A-01a Sample result might be biased high due to coelution of Aroclors 1254 and 1260. Only two peaks available for quantitation due to co-elution.

B Analyte was detected in the associated Method Blank.

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

M2 The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

M-HA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

M-NR No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.

RL-1 Reporting limit raised due to sample matrix effects.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1719		Sampled: 02/16/06 Received: 02/16/06

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Soil		
Dry Weight	Soil	N/A	N/A
EDD + Level 4	Soil		
EPA 160.3 MOD	Soil	N/A	N/A
EPA 1625C-CI Mod	Soil		
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8270C	Soil	X	X
Level 3	Soil		

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Alta Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*
1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IPB1719-05, IPB1719-11, IPB1719-12, IPB1719-13, IPB1719-14

Analysis Performed: Level 4 + EDD
Samples: IPB1719-05

Calscience-SUB *California Cert #1230*
7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)
Samples: IPB1719-15, IPB1719-16, IPB1719-17, IPB1719-18

Analysis Performed: Dry Wt
Samples: IPB1719-15, IPB1719-16, IPB1719-17, IPB1719-18

Analysis Performed: Level 3 Data Package
Samples: IPB1719-15

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

185

LPB1719

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap

Control Number: COC MJ661

Date 2 / 16 / 06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: Standard

Sample ID	Description (for MWH use only) SRBS 70 S01	~~AI~~ AOC SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ661	~~OCBS34~~ TB	~~7.4~~	1	2/16/06	0910			X		
MJ662	SRBS71 S01	↓	1	↓	0924			X		
MJ663	SRBS72 S01	↓	1	↓	0929			X		
MJ664	SRBS73 S01	↓	0.5	↓	0949			X		
MJ665	OCBS32 S01	7.4	0.5	↓	1028			X		
MJ666	OCBS33 S01	↓	0.5	↓	1040			X		
MJ667	OCBS33 D01	↓	0.5	↓	1045			X		
MJ668	OCBS34 S70	↓	0.5	↓	—			X		
MJ669	OCBS34 S01	↓	0.5	↓	1121			X		
MJ670	OCBS34 S02	↓	0.5	↓	1127			X		
MJ671	OCBS34 S03	↓	0.5	↓	1130			X		
MJ~~67~~672	OCBS34 S80	↓	0.5	↓	—			X		

Sample ID	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ661		X															HA			1
MJ662		X															↓			1
MJ663		X															↓			1
MJ664		X						X		X							G			2
MJ665					X			X									↓			2
MJ666					X			X									↓			2
MJ667					X												↓			1
MJ668										X										0
MJ669										X							G		X	1
MJ670										X							↓		X	1
MJ671										X							↓		X	1
MJ672										X									X	0

	Date	Time
Samplers Signature: Bryan Brinton	2-16-06	1430
Relinquished By: Bryan Brinton	2-16-06	1430
Received By: [signature]	2/16/06	1430
Relinquished By: [signature]	2/16/06	1910
Received By (LAB): [signature]	2/16/06	1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 3

Comments:
Create composite MJ668 from MJ669, 670, and 671. Run MJ668 + hold other 3 pending analysis.
Hold MJ672 pending analysis of MJ668
(Create MJ672 from MJ673-675)
- Run Thallium only on MJ665-~~667~~ 666
- Hold dioxins on MJ666 and 667

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ673
Date 2 / 16 / 06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.:
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ673	OCBS34S04	7.4	3	2/16/06	1133			X		
MJ674	OCBS34S05		3		1139			X		
MJ675	OCBS34S06		3		1145			X		
MJ676	OCBS29S01		0.5		1158			X		
MJ677	OCBS35S01		0.5		1159			X		
MJ678	OCBS36S01		0.5		1210			X		
MJ679	OCBS37S01		0.5		1215			X		
MJ680	OCBS38S01		0.5		1219			X		
MJ681	OCBS39S01		1		1349			X		
MJ682	OCSS03S01		0		1351			X		

Sample ID	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservative	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ673										X							HA G			1
MJ674										X							G			1
MJ675										X							G			1
MJ676										~~X~~						*	G			1
MJ677					X			X		~~X~~						~~X~~				1
MJ678					X			X												1
MJ679					X			X												1
MJ680					X			X												1
MJ681			X		~~X~~			~~X~~									HA			1
MJ682			X														G			2

	Date	Time
Samplers Signature: Bryan Burton	2-16-06	1430
Relinquished By: Bryan Burton	2-16-06	1431
Received By: [signature]	2/16/06	1431
Relinquished By: [signature]	2/16/06	1910
Received By (LAB): [signature]	2/16/06	1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC Seal intact: Y or N (Y circled)
Any other problems: Y or N (N circled)
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 3

Comments:
* Analyze for silver + thallium

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data vf
Control Number: COC MJ 683
Date 2 / 16 / 06 **Page** 3 **of** 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Sample Data / Matrix

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ683	OCBS1CS01	7.4	0.5	2-16-06	1358			X		
MJ684	OCBS1CD01	↓	0.5	↓	1402			X		
MJ685	OCBS24S01	↓	0.5	↓	1409			X		
MJ686	OCBS32S02	↓	3	↓	1047			X		

J.B. 2/16/06

Analyses

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
Sample ID	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ683		X	X					~~X~~ SB		X							G			2
MJ684		X	X					X		X							G			2
MJ685								X									G			1
MJ686								*									HA			2

	Date	Time
Samplers Signature: Bryan Burton	2-16-06	1433
Relinquished By: Bryan Burton	2-16-06	1433
Received By: [signature]	2/16/06	1433
Relinquished By: [signature]	2/16/06	1910
Received By (LAB): [signature]	2/16/06	19:10

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 3

Comments:
* Analyze for thallium only

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Date: 02/21/06

Tel: 858-751-1200
Fax: 858-751-1201

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ673	OCBS34S04	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ674	OCBS34S05	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ675	OCBS34S06	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.

The reason for these changes:

Incorrectly marked on COC form X
Lack of sample volume ____
MWH office personnel require this change X
Other. Containers mislabeled ____

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No.
QC Level:
TAT:

Preservatives: None

Analysis	Preservation
8260B VOC	HCL, pH<2 4°C
8015BM TPH	HCL, pH<2 4°C
8270CSIM SVOC (PAH)	4°C
8270C SVOC	4°C
8290 DIOXINS	4°C
8315A FORMALDEHYDE	H2SO4, pH<2 4°C
8330 ORDNANCE	4°C
6000/7000 METALS	HNO3, pH<2 4°C
7196A HEX CHROMIUM	4°C
8082 PCBs	4°C
9040B/9045C pH	4°C
340.2 FLUORIDE	4°C
300M ANIONS	4°C
300M HYDRAZINE	4°C
314.0 PERCHLORATE	4°C
Ag, Tl	

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8270CSIM SVOC (PAH)	8290 DIOXINS	6000/7000 METALS	8082 PCBs	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34 S04	7.4	3	2/16/06	1133			X						X		HA G		X	1
MJ674	OCBS34 S05		3		1139			X						X		G		X	1
MJ675	OCBS34 S06		3		1145			X						X		G		X	1
MJ676	OCBS29 S01		0.5		1158			X						~~X~~	*	G	AB 02/21/06		1
MJ677	OCBS35 S01		0.5		1159			X				X	X	~~X~~					1
MJ678	OCBS36 S01		0.5		1210			X				X	X						1
MJ679	OCBS37 S01		0.5		1815			X				X	X						1
MJ680	OCBS38 S01		0.5		1219			X				X	X						1
MJ681	OCBS39 S01		1		1349			X			X	~~X~~	~~X~~			HA			1
MJ682	OC SS03 S01		0		1351			X			X					G			2

	Date	Time
Samplers Signature: Bryan Burton	2-16-06	1430
Relinquished By: Bryan Burton	2-16-06	1431
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
* Analyze for silver + thallium

Calscience Environmental Laboratories, Inc.

March 02, 2006

Michele Chamberlin
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Subject: **Calscience Work Order No.: 06-02-1328**
Client Reference: IPB1719

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/24/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-02-1328

Sample Condition on Receipt

Four soil samples were received as part of this Work Order on February 24, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.3°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

Calscience
Environmental
Laboratories, Inc.

Case Narrative for 06-02-1328

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060223S09	Pyrene

<u>Laboratory Control Samples</u>

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

<u>Surrogates</u>

Surrogate recoveries for all samples were within acceptable control limits.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-02-1328** **QAPP:** **0000**

#	*Client Sample ID*	*Matrix*	*Date Collected*	*NoC*	*Comment*
1	IPB1719-15	S	02/16/2006	1	
2	IPB1719-16	S	02/16/2006	1	
3	IPB1719-17	S	02/16/2006	1	
4	IPB1719-18	S	02/16/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 0 2 - 1 3 2 8

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: Del Mar Analytical **DATE:** 2/24/06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_______ Chilled, cooler with temperature blank provided.
_______ Chilled, cooler without temperature blank.
_______ Chilled and placed in cooler with wet ice.
_______ Ambient and placed in cooler with wet ice.
_______ Ambient temperature.
_______ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_______ °C Temperature blank.
3.5 °C IR thermometer.
_______ Ambient temperature.

Initial: TL

CUSTODY SEAL INTACT:

Sample(s): _______ Cooler: ✓ No (Not Intact) : _______ Not Applicable (N/A): X TV

Initial: TL.

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: TL

COMMENTS:

Del Mar Analytical

1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

1328

SUBCONTRACT ORDER - PROJECT # IPB1719

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501 27312 0.2°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date: ________ **Initials:** ________

Analysis	Expiration	Comments
1 **Sample ID: IPB1719-15 Soil**	**Sampled: 02/16/06 13:49**	
8270C (SIM)-OUT	03/02/06 13:49	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/16/06 13:49	% solids, sub to Calscience, $10/sample
Containers Supplied:		
4 oz Jar (IPB1719-15B)		
2 **Sample ID: IPB1719-16 Soil**	**Sampled: 02/16/06 13:51**	
8270C (SIM)-OUT	03/02/06 13:51	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/16/06 13:51	% solids, sub to Calscience, $10/sample
Containers Supplied:		
Brass Sleeve (IPB1719-16B)		
3 **Sample ID: IPB1719-17 Soil**	**Sampled: 02/16/06 13:58**	
8270C (SIM)-OUT	03/02/06 13:58	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/16/06 13:58	% solids, sub to Calscience, $10/sample
Containers Supplied:		
Brass Sleeve (IPB1719-17B)		
4 **Sample ID: IPB1719-18 Soil**	**Sampled: 02/16/06 14:02**	
8270C (SIM)-OUT	03/02/06 14:02	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/16/06 14:02	% solids, sub to Calscience, $10/sample
Containers Supplied:		
Brass Sleeve (IPB1719-18B)		

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No	Sample labels/COC agree: ☐ Yes ☐ No	Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No	Samples Preserved Properly: ☐ Yes ☐ No	Samples Received at (temp): ________

Released By	Date	Time	Received By	Date	Time
Colin Ch	2-20-06	1700	Bettina A. Benedict	2/21/06	0910
Bettina A. Benedict	2/23/06	1600	[illegible] CEL	2/24/06	1030

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-02-1328

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 02/16/06
Received: 02/16/06
Issued: 04/20/06 19:13

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 10 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 3°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	There were no subcontracted analyses in this report.
ADDITIONAL INFORMATION:	Enclosed are results for additional analyses only.

LABORATORY ID	CLIENT ID	MATRIX
IPB1719-16	MJ682	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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Del Mar Analytical

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	02/16/06
San Diego, CA 92123	Report Number: IPB1719	Received:	02/16/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1254 and 1260
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
H	Sample analysis performed past method-specified holding time.
H-1	Sample analysis performed past the method-specified holding time per client's approval.
H4	Sample was extracted past holding time, but analyzed within analysis holding time.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1719	Sampled: 02/16/06 Received: 02/16/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

185 LPB1719

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ661
Date 2/16/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives: HCL, pH<2 4°C (8260B VOC); HCL, pH<2 4°C (8015BM TPH); 4°C (8270CSIM SVOC); 4°C (8270C SVOC); 4°C (8290 DIOXINS); H2SO4, pH<2 4°C (8315A FORMALDEHYDE); 4°C (8330 ORDNANCE); HNO3, pH<2 4°C (6000/7000 METALS); 4°C (7196A HEX CHROMIUM); 4°C (8082 PCBs); 4°C (9040B/9045C pH); 4°C (340.2 FLUORIDE); 4°C (300M ANIONS); 4°C (300M HYDRAZINE); 4°C (314.0 PERCHLORATE)

Sample Data

Sample ID	Description (for MWH use only) SRBS 70 S01	~~AI~~ AOC SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ661	~~OCBS34~~ TS	~~7.4~~	1	2/16/06	0910			X				X															HA			1
MJ662	SRBS71 S01	↓	1	↓	0924			X				X															↓			1
MJ663	SRBS72 S01	↓	1	↓	0929			X				X															↓			1
MJ664	SRBS73 S01	↓	0.5	↓	0949			X				X						X		X							G			2
MJ665	OCBS32 S01	7.4	0.5	↓	1028			X							X			X									↓			2
MJ666	OCBS33 S01	↓	0.5	↓	1040			X							X			X									↓			2
MJ667	OCBS33 D01	↓	0.5	↓	1045			X							X												↓			1
MJ668	OCBS34 S70	↓	0.5	↓	—			X												X										0
MJ669	OCBS34 S01	↓	0.5	↓	1121			X												X							G		X	1
MJ670	OCBS34 S02	↓	0.5	↓	1127			X												X							↓		X	1
MJ671	OCBS34 S03	↓	0.5	↓	1130			X												X							↓		X	1
MJ672	OCBS34 S80	↓	0.5	↓	—			X												X									X	0

	Date	Time
Samplers Signature: Bryan Brinton	2-16-06	1430
Relinquished By: Bryan Brinton	2-16-06	1430
Received By: [signature]	2/16/06	1430
Relinquished By: [signature]	2/16/06	1910
Received By (LAB): [signature]	2/16/06	1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC Seal intact: Y or N (Y circled)
Any other problems: Y or N (N circled)
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 3

Comments:
Create composite MJ668 from MJ669, 670, and 671. Run MJ668 & hold other 3 pending analysis.
Hold MJ672 pending analysis of MJ668
(Create MJ672 from MJ673-675)
- Run Thallium only on MJ665-~~667~~ 666
- Hold dioxins on MJ666 and 667

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.:
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34 S04	7.4	3	2/16/06	1133			X												X							~~HA~~ G			1
MJ674	OCBS34 S05		3		1139			X												X							G			1
MJ675	OCBS34 S06		3		1145			X												X							G			1
MJ676	OCBS29 S01		0.5		1158			X												~~X~~						*	G			1
MJ677	OCBS35 S01		0.5		1159			X							X			X		~~X~~						~~TBK~~				1
MJ678	OCBS36 S01		0.5		1210			X							X			X												1
MJ679	OCBS37 S01		0.5		1215			X							X			X												1
MJ680	OCBS38 S01		0.5		1219			X							X			X												1
MJ681	OCBS39 S01		1		1349			X					X		~~X~~			~~X~~									HA			1
MJ682	OC SS03 S01		0		1351			X					X														G			2

	Date	Time
Samplers Signature: Bryan Burton	2-16-06	1430
Relinquished By: Bryan / Burton	2-16-06	1431
Received By: BD Koeel	2/16/06	1431
Relinquished By: BD Koeel	2/16/06	1910
Received By (LAB): [illegible signature]	2/16/06	1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 3

Comments:
* Analyze for silver + thallium

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ 683
Date 2 / 16 / 06 **Page** 3 **of** 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Sample Data / Matrix

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ683	OCBS1CS01	7.4	0.5	2-16-06	1358			X		
MJ684	OCBS1CD01	↓	0.5	↓	1402			X		
MJ685	OCBS24S01	↓	0.5	↓	1409			X		
MJ686	OCBS32S02	↓	3	↓	1047			X		

J.B. 2/16/06

Analyses (Preservatives)

Sample ID	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)
MJ683		X	X					~~X~~ SB		X
MJ684		X	X					X		X
MJ685								X		
MJ686								*		

Sample ID	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ683							G			2
MJ684							G			2
MJ685							G			1
MJ686							HA			2

		Date	Time
Samplers Signature:	Bryan Burton	2-16-06	1433
Relinquished By:	Bryan Burton	2-16-06	1433
Received By:	[signature]	2/16/06	1433
Relinquished By:	[signature]	2/16/06	1910
Received By (LAB):	[signature]	2/16/06	19:10

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 3

Comments:
* Analyze for thallium only

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 3/22 Del Mar Analytical Project Manager: MC

Request via: ___ telephone ___ chain of custody form ___ fax transmission X E-mail X other change form

Client: MWH-San Diego Contact: Lisa Tucker

Project: SSFL Group 6

Date Sampled: 2/16/06 Date Received: 2/16/06

Status: ___ in progress X completed ___ received today ___ received yesterday ___ on hold ___ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
IPB1719-16	MJ1682	8082-dryweight, 8015-dryweight,	
↓	↓	metals (CAM-6020 + Al + B)	

- Add-in to original workorder
- Due 4/4/06
- okay to analyze past holdtime

TURNAROUND STATUS: ___ Same Day ___ 24hr ___ 48hr ___ 3days

___ 5days ___ Standard ___ No Rush Charge

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: **03/21/06**

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:______________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ682	OCSS03S01	2/16/06	PAH by 8270CSIM. Standard TAT.	Turn on PCB's analysis by Method 8082. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________

Lack of sample volume ________

MWH office personnel require this change ___*X*___

Other: Containers mislabeled ________

Note: PCB's analysis added per T.B. 03/17/06.

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group : Data Gap

Control Number: COC MJ673

Date 2 / 16 / 06 Page 2 of 3

Project Manager	Obie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No.
QC Level:
TAT:

Preservatives: None

Preservatives by column: 8260B VOC: HCL, pH<2, 4°C; 8015BM TPH: HCL, pH<2, 4°C; 8270CSIM SVOC: 4°C; 8270C SVOC: 4°C; 8290 DIOXINS: 4°C; 8315A FORMALDEHYDE: H2SO4, pH<2, 4°C; 8330 ORDNANCE: 4°C; 6000/7000 METALS: HNO3, pH<2, 4°C; 7196A HEX CHROMIUM: 4°C; 8082 PCBs: 4°C; 9040B/9045C pH: 4°C; 340.2 FLUORIDE: 4°C; 300M ANIONS: 4°C; 300M HYDRAZINE: 4°C; 314.0 PERCHLORATE: 4°C

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume	MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34 S04	7.4	3	2/16/06	1133			X												X							HA/G			X	1
MJ674	OCBS34 S05		3		1139			X												X							G			X	1
MJ675	OCBS34 S06		3		1145			X												X							G			X	1
MJ676	OCBS29 S01		0.5		1158			X											*	~~X~~						*	G	AB 02/21/06			1
MJ677	OCBS35 S01		0.5		1159			X							X			X	*	~~X~~					~~TBK~~						1
MJ678	OCBS36 S01		0.5		1210			X							X			X													1
MJ679	OCBS37 S01		0.5		1215			X							X			X													1
MJ680	OCBS38 S01		0.5		1219			X							X			X													1
MJ681	OCBS39 S01		1		1349			X					X		~~X~~			~~X~~									HA				1
MJ682	OCSS03 S01		0		1351			X					X							X AB 03/21/06							G				2

Samplers Signature: Bryan Burton	Date 2-16-06	Time 1430
Relinquished By: Bryan Burton	Date 2-16-06	Time 1431
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
* Analyze for silver + thallium

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 03/22/06

To:	Michele C'hamberlin/ Del Mar Analytical	**Fax No:**	949-261-1228
From:	Anca Brasoveanu sign:_______		
Subject:	**Chain-of-Custody Form Analytical Request Change**	**No. of Pages: 2 (including cover)**	

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ682	OCSS03S01	2/16/06	PAH by 8270CSIM and PCB's by Method 8082. Standard TAT.	New MWH_ID = OCSS04S01 Turn on TPH, by 8015/BM and Metals by 6010B/7000 analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change ___*X*___
Other: Containers mislabeled ________

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Obie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level: TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC (4°C) PAH	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C) Ag, Tl	Sampling Method	Extra Volume	MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34 S04	7.4	3	2/16/06	1133			X												X						HA G			X	1
MJ674	OCBS34 S05		3		1139			X												X						G			X	1
MJ675	OCBS34 S06		3		1145			X												X						G			X	1
MJ676	OCBS29 S01		0.5		1158			X												~~*X~~					*	G	AB 02/21/06			1
MJ677	OCBS35 S01		0.5		1159			X							X			X		~~*X~~					~~*~~					1
MJ678	OCBS36 S01		0.5		1210			X							X			X												1
MJ679	OCBS37 S01		0.5		1815			X							X			X												1
MJ680	OCBS38 S01		0.5		1219			X							X			X												1
MJ681	OCBS39 S01		1		1349			X					~~X~~		~~X~~ AB 03/21/06			~~X~~								HA				1
MJ682	~~OC SS03 S01~~ OC SS04 S01		0		1351			X				X AB 03/22/06	X					X		X AB 03/21/06						G				2

AB 03/22/06

Samplers Signature: Bryan Burton	Date 2-16-06	Time 1430
Relinquished By: Bryan Burton	Date 2-16-06	Time 1431
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
* Analyze for silver + thallium

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 02/21/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ673	OCBS34S04	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ674	OCBS34S05	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ675	OCBS34S06	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.

The reason for these changes:

Incorrectly marked on COC form X
Lack of sample volume ______
MWH office personnel require this change X
Other. Containers mislabeled ______

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group · Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Obie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No.
QC Level:
TAT:

Preservatives: None

Preservatives by column: 8260B VOC – HCL, pH<2 4°C; 8015BM TPH – HCL, pH<2 4°C; 8270CSIM SVOC – 4°C; 8270C SVOC – 4°C; 8290 DIOXINS – 4°C; 8315A FORMALDEHYDE – H2SO4, pH<2 4°C; 8330 ORDNANCE – 4°C; 6000/7000 METALS – HNO3, pH<2 4°C; 7196A HEX CHROMIUM – 4°C; 8082 PCBs – 4°C; 9040B/9045C pH – 4°C; 340.2 FLUORIDE – 4°C; 300M ANIONS – 4°C; 300M HYDRAZINE – 4°C; 314.0 PERCHLORATE – 4°C

Sample Data / Matrix

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ673	OCBS34 S04	7.4	3	2/16/06	1133			X		
MJ674	OCBS34 S05		3		1139			X		
MJ675	OCBS34 S06		3		1145			X		
MJ676	OCBS29 S01		0.5		1158			X		
MJ677	OCBS35 S01		0.5		1159			X		
MJ678	OCBS36 S01		0.5		1210			X		
MJ679	OCBS37 S01		0.5		1815			X		
MJ680	OCBS38 S01		0.5		1219			X		
MJ681	OCBS39 S01		1		1349			X		
MJ682	OCSS03 S01		0		1351			X		

Sample ID	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ673										X							HA G		X	1
MJ674										X							G		X	1
MJ675										X							G		X	1
MJ676									*	~~X~~						*	G	AB 02/21/06		1
MJ677					X			X		~~X~~						~~*~~				1
MJ678					X			X												1
MJ679					X			X												1
MJ680					X			X												1
MJ681			X		~~X~~			~~X~~									HA			1
MJ682			X														G			2

	Date	Time
Samplers Signature: Bryan Burton	2-16-06	1430
Relinquished By: Bryan Burton	2-16-06	1431
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
* Analyze for silver + thallium

White Copy:Original Yellow:Lab Copy Pink:Field Copy

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 02/15/06
Received: 02/15/06
Issued: 03/08/06 20:18

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
IPB1641-01	MJ637	Soil
IPB1641-02	MJ638	Soil
IPB1641-03	MJ639	Soil
IPB1641-04	MJ640	Soil
IPB1641-05	MJ641	Soil
IPB1641-06	MJ642	Soil
IPB1641-07	MJ643	Soil
IPB1641-08	MJ644	Soil
IPB1641-09	MJ645	Soil
IPB1641-10	MJ646	Water
IPB1641-11	MJ647	Water
IPB1641-12	MJ648	Soil
IPB1641-13	MJ652	Soil
IPB1641-14	MJ653	Soil
IPB1641-15	MJ654	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	02/15/06
San Diego, CA 92123	Report Number: IPB1641	Received:	02/15/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

B	Analyte was detected in the associated Method Blank.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M1	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
M-NR	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
P	The sample, as received, was not preserved in accordance to the referenced analytical method.
pH	pH = <2
R	The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
R-3	The RPD exceeded the method control limit due to sample matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD.
The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

For TICs:

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	02/15/06
San Diego, CA 92123	Report Number: IPB1641	Received:	02/15/06
Attention: Lisa J. Tucker			

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Soil		
EDD + Level 4	Soil		
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7196A	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8260B	Soil	X	X
EPA 8260B	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Alta Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*
1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IPB1641-01, IPB1641-09

Analysis Performed: Level 4 + EDD
Samples: IPB1641-01

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

c.13

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

IIB1641

Chain of Custody

Project: SSFL Group 6 Data Gap

Control Number: COC MJ 637

Date 2 / 15 / 06 **Page** 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.

QC Level:

TAT: Standard

Preservatives: HCl for waters

Sample Data / Matrix

Sample ID	Description (for MWH use only)	SWMU	Depth (feet)	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ637	SRBS61 S01	AIIAOC	4	2/15/06	0932			X		
MJ638	SRBS62 S01		0.5		0956			X		
MJ639	SRBS62S02		3		1001			X		
MJ640	SRBS63S01		0.5		1044			X		
MJ641	SRBS63 D01		0.5		1048			X		
MJ642	SRBS63S02		3		1058			X		
MJ643	SRBS63 D02		3		1058			X		
MJ644	SRBS64 S01		0.5		1131			X		
MJ645	SRBS65 S01		0.5		1158			X		
MJ646	SRQW07T01		–		1213				X	
MJ647	SRQW07E01		–		1219				X	
MJ648	SRBS66S70		0.5		–			X		

Analyses

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	~~8290~~ 1613 mc 2 hr/DL DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	Ag, Se, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ637					X												HA			1
MJ638								X	X								G			1
MJ639	X							X	X					Encores & BS			HA			4
MJ640								X	X								G			1
MJ641								X	X								G			1
MJ642	X							X	X					Encores & BS			HA			4
MJ643	X													Encores			HA			3
MJ644																X	G			1
MJ645					X												G			1
MJ646	X													VOAs			–			3
MJ647	X													VOAs			–			3
MJ648										X							G			0

	Date	Time
Samplers Signature: Bryan Burton	2-15-06	1639
Relinquished By: Thomas [signature]	2/15/06	1640
Received By: BS Agee [signature]	2/15/06	1640
Relinquished By: BS Agee [signature]	2/15/06	1905
Received By (LAB): [signature]	2/15/06	19:05

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N (Y circled)

Broken container: Y or N (N circled)

Received within holding time: Y or N (Y circled)

COC Seal intact: Y or N (Y circled)

Any other problems: Y or N (N circled)

If any YES, MWH contacted: Y or N

Date Contacted : __/__/__

Temperature °C 5

Comments: Please homogenize MJ649, 650, 651 individually, Then take a composite of them as MJ648. Hold MJ649-651 pending result of MJ648.

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Exp

Control Number: COC MJ 649

Date / / Page 2 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ649	SRBS66 SO1	AIIIADC	0.5	2/15/06	1405			X												X							G		X	1
MJ650	SRBS66 SO2				1410			X												X							G		X	1
MJ651	SRBS66 SO3				1415			X												X							G		X	1
MJ652	SRBS67 SO1				1435			X												X							G			1
MJ653	SRBS68 SO1				1441			X												X							G			1
MJ654	SRBS69 S70		0.5		—			X												X							—			0
MJ655	SRBS69 SO1				1510			X												X							G		X	1
MJ656	SRBS69 SO2				1514			X												X							G		X	1
MJ657	SRBS69 SO3				1525			X												X							G		X	1
MJ658	SRBS69 S80		3		—			X												X							—		X	0
MJ659	SRBS69 SO4		3		1528			X												X							HA		X	1
MJ660	SRBS69 SO5		3		1533			X												X							HA		X	1

	Date	Time
Samplers Signature: Bunyan Burton	2-15-06	1640
Relinquished By: [signature]	2/15/06	1640
Received By: [signature]	2/15/06	1640
Relinquished By: [signature]	2/15/06	1905
Received By (LAB): [signature]	2/15/06	19:05

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC Seal intact: (Y) or N
Any other problems: Y or (N)
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 5

Comments:
Please homogenize MJ 655-657 individually + create MJ654 from them. Analyze MJ654 and hold MJ655-657 pending analysis. Hold MJ658-660 pending analysis of MJ654.

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Del Mar Analytical

LABORATORY REPORT

Prepared For:	MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project:	SSFL Group 6 Data Gap
		Sampled:	02/15/06
		Received:	02/15/06
		Issued:	04/20/06 17:59

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 5°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis. Results were qualified where the sample container did not meet the method preservation requirements.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	There were no subcontracted analyses for this report.
ADDITIONAL INFORMATION:	Enclosed are results for additional analyses only.

LABORATORY ID	CLIENT ID	MATRIX
IPB1641-08	MJ644	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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Del Mar Analytical

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	02/15/06
San Diego, CA 92123	Report Number: IPB1641	Received:	02/15/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

C Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

H4 Sample was extracted past holding time, but analyzed within analysis holding time.

RL-1 Reporting limit raised due to sample matrix effects.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1641	Sampled: 02/15/06 Received: 02/15/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8082	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

C.10

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

IPB1641

Chain of Custody

Project: SSFL Group 6 Data Gap

Control Number: COC MJ 637

Date 2 / 15 / 06 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.

QC Level:

TAT: standard

Preservatives: HCl for waters

Sample ID	Description (for MWH use only)	SWMU	Depth (feet)	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	~~8290~~ 1613 mc 2/14/06 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	Ag, Se, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ637	SRBS61 S01	AI AOC	4	2/15/06	0932			X							X												HA			1
MJ638	SRBS62 S01	↓	0.5	↓	0956			X										X	X								G			1
MJ639	SRBS62S02		3		1001			X			X							X	X				excludes & BS				HA			4
MJ640	SRBS63S01		0.5		1044			X										X	X								G			1
MJ641	SRBS63 D01		0.5		1048			X										X	X								G			1
MJ642	SRBS63S02		3		1058			X			X							X	X				excludes & BS				HA			4
MJ643	SR BS63 D02		3		1058			X			X												excludes				HA			3
MJ644	SRBS64 S01		0.5		1131			X																		X	G			1
MJ645	SRBS65 S01		0.5		1158			X							X												G			1
MJ646	SRQW07T01		–		1213				X		X													VOAS			–			3
MJ647	SRQW07E01		–		1219				X		X													VOAS			–			3
MJ648	SRBS66S70	↓	0.5	↓	–			X												X							G			0

	Date	Time
Samplers Signature: Bryan Burton	2-15-06	1639
Relinquished By: Thomas [signature]	2/15/06	1640
Received By: [signature]	2/15/06	1640
Relinquished By: [signature]	2/15/06	1905
Received By (LAB): [signature]	2/15/06	19:05

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N (Y circled)

Broken container: Y or N (N circled)

Received within holding time: Y or N (Y circled)

COC Seal intact: Y or N (Y circled)

Any other problems: Y or N (N circled)

If any YES, MWH contacted: Y or N

Date Contacted : __/__/__

Temperature °C 5

Comments: Please homogenize MJ649, 650, 651 individually, Then take a composite of them as MJ648. Hold MJ649-651 pending result of MJ648.

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap

Control Number: COC MJ 649

Date / / Page 2 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.

QC Level:

TAT: Standard

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ649	SRBS66 S01	AIIAOC	0.5	2/15/06	1405			X		
MJ650	SRBS66 S02	↓	↓	↓	1410			X		
MJ651	SRBS66 S03	↓	↓	↓	1415			X		
MJ652	SRBS67 S01	↓	↓	↓	1435			X		
MJ653	SRBS68 S01	↓	↓	↓	1441			X		
MJ654	SRBS69 S70	↓	0.5	↓	—			X		
MJ655	SRBS69 S01	↓	↓	↓	1510			X		
MJ656	SRBS69 S02	↓	↓	↓	1514			X		
MJ657	SRBS69 S03	↓	↓	↓	1525			X		
MJ658	SRBS69 S80	↓	3	↓	—			X		
MJ659	SRBS69 S04	↓	3	↓	1528			X		
MJ660	SRBS69 S05	↓	3	↓	1533			X		

Sample ID	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ649										X							G		X	1
MJ650										X							G		X	1
MJ651										X							G		X	1
MJ652										X							G			1
MJ653										X							G			1
MJ654										X							—			0
MJ655										X							G		X	1
MJ656										X							C		X	1
MJ657										X							G		X	1
MJ658										X							—		X	0
MJ659										X							HA		X	1
MJ660										X							HA		X	1

	Date	Time
Samplers Signature: Bunyan Burton	2-15-06	1640
Relinquished By: [signature]	2/15/06	1640
Received By: [signature]	2/15/06	1640
Relinquished By: [signature]	2/15/06	1905
Received By (LAB): [signature]	2/15/06	19:05

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N (Y circled)

Broken container: Y or N (N circled)

Received within holding time: Y or N (Y circled)

COC Seal intact: Y or N (Y circled)

Any other problems: Y or N (N circled)

If any YES, MWH contacted: Y or N

Date Contacted : __/__/__

Temperature °C 5

Comments: Please homogenize MJ 655-657 individually + create MJ654 from them. Analyze MJ654 and hold MJ655-657 pending analysis. Hold MJ658-660 pending analysis of MJ654.

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date. 03/28/06

To: Michele Chamberlin/ Del Mar Analytical | **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign: ________

Subject: **Chain-of Custody Form Analytical Request Change**

No. of Pages: 2 (including cover)

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ637	MJ644	SRBS64S01	2/15/06	Silver, Selenium and Thallium. Standard TAT.	Turn on PCB's analysis (Method 8082). Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change ___X___
Other: Containers mislabeled ________

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Gn, 6
Control Number: COC MJ 637
Date 2 / 15 / 06 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200, Pasadena, CA 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: standard

Preservatives: HCl for waters

Sample ID	Description (for MWH use only)	SWMU	Depth (feet)	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	As, Se, Tl	Sampling Method	Extra Volume	MS/MSD	HOLD
MJ637	SRBS61 S01	AIIAOC	4	2/15/06	0932			X							X												HA			
MJ638	SRBS62 S01		0.5		0956			X										X	X								G			
MJ639	SRBS62S02		3		1001			X			X							X	X								HA			
MJ640	SRBS63S01		0.5		1044			X										X	X								G			
MJ641	SRBS63 D01		0.5		1048			X										X	X								G			
MJ642	SRBS63 S02		3		1058			X			X							X	X								HA			
MJ643	SRBS63 D02		3		1058			X			X																HA			
MJ644	SRBS64 S01		0.5		1131			X												X						X	G			
MJ645	SRBS65 S01		0.5		1158			X							X					AR 03/21/06							G			
MJ646	SRQW07T01		—		1213				X		X																—			
MJ647	SRQW07E01		—		1219				X		X																—			
MJ648	SRBS66S70		0.5		—			X												X							G			

	Date	Time
Samplers Signature: Bryan Burton	2-15-06	1639
Relinquished By: Thomas [signature]	2/15/06	1640
Received By: [signature]	2/15/06	1640
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments: Please homogenize MJ649, 650, 651 individually, then take a composite of them as MJ648. Hold MJ649-651 pending result of MJ648.

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Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 02/13/06-02/14/06
Received: 02/14/06
Revised: 03/08/06 15:26

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 7 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: The report was revised to add a data qualifier to the QC for the NDMA water analysis.

LABORATORY ID	CLIENT ID	MATRIX
IPB1429-01	MJ608	Soil
IPB1429-03	MJ610	Soil
IPB1429-04	MJ611	Soil
IPB1429-05	MJ612	Soil
IPB1429-06	MJ614	Soil
IPB1429-07	MJ615	Water
IPB1429-08	MJ616	Soil
IPB1429-09	MJ617	Soil
IPB1429-10	MJ618	Soil
IPB1429-11	MJ619	Soil

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1429

Sampled: 02/13/06-02/14/06
Received: 02/14/06

LABORATORY ID	CLIENT ID	MATRIX
IPB1429-12	MJ620	Soil
IPB1429-13	MJ621	Soil
IPB1429-14	MJ622	Soil
IPB1429-16	MJ628	Soil
IPB1429-17	MJ629	Soil
IPB1429-18	MJ630	Soil
IPB1429-19	MJ631	Soil
IPB1429-20	MJ632	Water
IPB1429-21	MJ633	Soil
IPB1429-22	MJ634	Soil
IPB1429-23	MJ635	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1429	Sampled: 02/13/06-02/14/06 Received: 02/14/06

CORRECTIVE ACTION REPORT

Department: Extractions — Date: 03/03/2006

Method: EPA 1625C-CI Mod — Matrix: Water

QC Batch: 6B20118

Identification and Definition of Problem:

The percent recoveries for NDMA in the LCS/LCSD and low-level LCS were above method acceptance limits and the reagent blank, BLK1, was contaminated at a level above the reporting limit.

Determination of the Cause of the Problem:

NDMA is known to be a contaminant in reagent water at low level.

Corrective Action Taken:

Insufficient sample volume was available for re-analysis. All results reported from this batch are potentially biased high and can be considered estimates only. The laboratory is currently investigating a means of eliminating the contamination.

Quality Assurance Approval: Dave Dawes — Date: 03/06/2006 06:13 PM

Dave Dawes

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego	Project ID: SSFL Group 6		
9444 Farnham Street, Suite 300	Data Gap	Sampled:	02/13/06-02/14/06
San Diego, CA 92123	Report Number: IPB1429	Received:	02/14/06
Attention: Lisa J. Tucker			

DATA QUALIFIERS AND DEFINITIONS

B Analyte was detected in the associated Method Blank.

C Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

L1 Laboratory Control Sample recovery was above method control limits.

M2 The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

M-HA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

M-NR No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.

M-NR1 There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.

RL-1 Reporting limit raised due to sample matrix effects.

RL-4 Reporting limit raised due to insufficient sample volume.

Z3 The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

MWH-San Diego	Project ID:	SSFL Group 6	
9444 Farnham Street, Suite 300		Data Gap	Sampled: 02/13/06-02/14/06
San Diego, CA 92123	Report Number:	IPB1429	Received: 02/14/06
Attention: Lisa J. Tucker			

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Soil		
1613A/1613B	Water		
Dry Weight	Soil	N/A	N/A
EDD + Level 4	Soil		
EDD	Soil		
EPA 160.3 MOD	Soil	N/A	N/A
EPA 1625C-CI Mod	Soil		
EPA 1625C-CI Mod	Water		
EPA 3510/8082	Water	X	X
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6010B	Water	X	X
EPA 6020	Soil	X	X
EPA 6020	Water	X	X
EPA 7470A	Water	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8015 MOD.	Water	X	X
EPA 8270C	Soil	X	X
EPA 8270C	Water	X	X
Level 3	Soil		

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Alta Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*
1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IPB1429-03, IPB1429-07, IPB1429-09, IPB1429-10, IPB1429-11, IPB1429-12, IPB1429-13

Analysis Performed: Level 4 + EDD
Samples: IPB1429-03

Calscience-SUB *California Cert #1230*
7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)
Samples: IPB1429-01, IPB1429-03, IPB1429-07, IPB1429-11, IPB1429-12, IPB1429-13

Analysis Performed: Dry Wt
Samples: IPB1429-01, IPB1429-03, IPB1429-11, IPB1429-12, IPB1429-13

Analysis Performed: Level 3 Data Package
Samples: IPB1429-01

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1429	Sampled: 02/13/06-02/14/06 Received: 02/14/06

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

C4D

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ608
Date 2/13/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	-Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives
Water sample: HNO_3, None

Sample ID	Description (for MWH use only)	SWMU	Depth (feet)	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Ash	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC NDMA MC 2/15/06 (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ608	NCBS07 S02	7.10	0.5	2/13/06	1345			X			X			X														HA			1
MJ609	NCBS07 S03		3					X						X		X														X	1
MJ610	NCBS07 S01		5					X						X		X															1
MJ611	NCBS14 S01		0.5		1513			X											X							8 oz jar		G			1
MJ612	NCBS15 S01		0.5		1526			X											X							8 oz jar		G			1
~~MJ613~~	~~NCBS07 S01~~		~~10~~		~~1532~~			~~X~~						~~X~~		~~X~~												~~HA~~		~~X~~	~~1~~
MJ614	NCBS16 S01		0.5		1548			X											X							8 oz jar		G			1
MJ615	NCQW06E01		–		1620				X					X		X			X									–	~~X~~		4
MJ616	NCBS17 S01		0.5	2-14-06	844			X											X										MC		1
MJ617	NCBS12 S01		0.5		851			X								X													2/15/06		2
MJ618	NCBS10 S01		0.5		910			X								X															2
MJ619	NCBSS07 S01 BLB		0.5		932			X						X		X			X												2

	Date	Time
Samplers Signature: Thomas [signature]	2/13/06	1330
Relinquished By: Thomas [signature]	2/14/06	1610
Received By: [signature]	2/14/06	1610
Relinquished By: [signature]	2/14/06	1930
Received By (LAB): [signature]	2/14/06	19:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use
MB

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 5

Comments:

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Group
Control Number: COC MJ620
Date 2 / 14 / 06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives: Water Sample; HNO_3, None

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ620	NCSS06S01	7.10	0.5	2-14-06	938			X		
MJ621	NCSS08S01	↓	0.5		1003			X		
MJ622	SRBS51S70	AOC	0.5		—			X		
MJ623	SRBS54S01		0.5		1049			X		
MJ624	SRBS54S02		0.5		1050			X		
MJ625	SRBS54S03		0.5		1100			X		
MJ626	SRBS54S04		0.5		1109			X		
MJ627	SRBS54S05		2.5		1102			X		
MJ628	SRBS55S01		0.5		1130			X		
MJ629	SRBS56S01		0.5		1145			X		
MJ630	SRBS58S01		0.5		1323			X		
MJ631	SRBS59S01		0.5		1335			X		

Analyses

Sample ID	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC PAH+ (4°C)	8270C SVOC NDMA MC 2/15/06 (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ620			X		X			X									G			2
MJ621			X		X			X									G			2
MJ622										X										0
MJ623										X							G		X	1
MJ624										X							G		X	1
MJ625										X							G		X	1
MJ626										X							G		X	1
MJ627										X							G		X	1
MJ628										X							G			1
MJ629										X							G			1
MJ630		X						X		X							G			2
MJ631		X						X		X							G			2

	Date	Time
Samplers Signature: Bryan Burton	2-14-06	954
Relinquished By: [signature]	2-14-06	1610
Received By: [signature]	2-14-06	1610
Relinquished By: [signature]	2-14-06	1930
Received By (LAB): [signature]	2/14/06	19:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 5

Comments:
MJ622 is a composite of MJ623-626.
Please homogenize MJ623-626 individually, then create the composite.
Hold individual samples pending result of composite.
Do not hold MJ628. - run for PCBs.

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Group
Control Number: COC MJ632
Date 2 / 14 / 06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives
Water Sample: HNO3, None

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ632	SRQW03 E01	~~AIAK~~	–	2-14-06	1357				X	
MJ633	SRBS07 S01	↓	0.5		1405			x		
MJ634	SRBS07 S02	↓	3		1428			X		
MJ635	SRBS 60 S01	↓	0.5		1508			X		
MJ636	SRBS 61 S02	↓	~~0~~2' BB		1510			X		

Analyses

Sample ID	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservative	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ632		X								X										~~6~~ 5 BB
MJ633								*							BS		G			1
MJ634								*							BS		G			1
MJ635								*						8 oz jar			G			1
MJ636								*						8 oz jar			G		X	1

	Date	Time
Samplers Signature: Bryan Burton	2-14-06	1400
Relinquished By: [signature]	2/14/06	1610
Received By: [signature]	2/14/06	1600
Relinquished By: [signature]	2/14/06	1930
Received By (LAB): [signature]	2/14/06	1930

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC Seal intact: (Y) or N
Any other problems: Y or (N)
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 5

Comments: * search for Ag, Se and Tl in MJ635 and MJ636.
Analyze MJ633 and MJ634 for Silver only

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Date. 02/24/06

Tel: 858-751-1200
Fax: 858-751-1201

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ620	MJ622	SRBS51S70	2/14/06	PCB by Method 8082. Standard TAT.	Change MWH_ID to SRBS54S70. Same analysis.

The reason for these changes:

Incorrectly marked on COC form	
Lack of sample volume	
MWH office personnel require this change	X
Other: Containers mislabeled	

Thank you

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL [illegible]
Control Number: COC MJ6[illegible]
Date 2/14/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200, Pasadena, CA 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: [illegible]
Comment:

Cooler No.
QC Level:
TAT: [illegible]

Preservatives
W[illegible]
HN[illegible]

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ6[illegible]	NCSS06S01	7.10	0.5	2 14 06	938			X					X		X			X									G			2
MJ621	NCSS08S01	↓	0.5		1003			X					X		X			X									G			2
MJ622	SRBS(51)S70	[illegible]	0.5		—			X												X										2
MJ623	SRBS54S01		0.5		1049			X												X							G		X	1
MJ624	SRBS54S02		0.5		1050			X												X							G		X	1
MJ625	SRBS54S03		0.5		1100			X												X							G		X	1
MJ626	SRBS54S04		0.5		1109			X												X							G		X	1
MJ627	SRBS54S05		2.5		1102			X												X							G		X	1
MJ628	SRBS55S01		0.5		1130			X												X							G		X	1
MJ621	SRBS56S01		0.5		1145			X												X							G			1
[illegible]	[illegible]58S01		0.5		[illegible]			X				X						X		X							G			1
MJ6[illegible]	SRBS5[illegible]S01		0.5		1335			X				X						X		X							G			2

Samplers Signature:	Date	Time
Brian Lunter	2 14 06	954
Relinquished By: [signature]	2/14/06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
MJ622 is a composite of MJ623-626. [illegible]
[illegible]
D[illegible] MJ628 - run for PCBs.

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 02/24/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign: ____________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ632	MJ636	SRBS61S02	2/14/06	Silver, Selenium, Thallium analysis. Standard TAT.	Change MWH_ID to SRBS60S02. Same analysis.

The reason for these changes:

Incorrectly marked on COC form ______

Lack of sample volume ______

MWH office personnel require this change ___X___

Other: Containers mislabeled ______

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Grnd Water
Control Number: COC MJ 6 2
Date 2 / 14 / 06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives: Water samples HNO3, No

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ632	SRQW03 EC1	AOAY	—	2.14.06	1357				X	
MJ633	SRBS07 S01	↓	0.5		1405			X		
MJ634	SRBS07 S02	↓	3		1428			X		
MJ635	SRBS 60 S01	↓	0.5		1509			X		
MJ636	SRBS (61) S02 60	↓	~~2~~ 3.5		1510			X		

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (4°C)	8330 ORDNANCE (H2SO4, pH<2, 4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ632		X								X										~~6~~ 5
MJ633								*									G			1
MJ634								*									G			1
MJ635								*									G			1
MJ636								*									G		X	1

	Date	Time
Samplers Signature: Bryan Bonte	2.14.06	1400
Relinquished By:	2/14/06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments: * Screen for Ag, Se and Tl in MJ635 and MJ636.
A... MJ633 and MJ634 ...

ALTA

March 03, 2006

Alta Project I.D.: 27302

Ms. Michele Chamberlin
Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous and six soil samples received at Alta Analytical Laboratory on February 17, 2006 under your Project Name "IPB1429". These samples were homogenized as instructed on the chain-of-custody, and extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier

Martha M. Maier
Director of HRMS Services

Alta Analytical Laboratory Inc.
1104 Windfield Way
El Dorado Hills, CA 95762
FAX (916) 673-0106
(916) 933-1640

Section I: Sample Inventory Report

Date Received: **2/17/2006**

Alta Lab. ID	Client Sample ID
27302-001	IPB1429-03
27302-002	IPB1429-07
27302-003	IPB1429-09
27302-004	IPB1429-10
27302-005	IPB1429-11
27302-006	IPB1429-12
27302-007	IPB1429-13

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

Del Mar Analytical

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2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPB1429

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone :(916) 933-1640 Fax: (916) 673-0106 27302 0.3°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ Initials:______

Analysis	Expiration	Comments
Sample ID: IPB1429-03 Soil	**Sampled: 02/13/06 13:45**	
1613-Dioxin-HR-Alta	02/20/06 13:45	Sub to Alta, 17 congeners, rpt in dry wt if soil
Level 4 + EDD-OUT	03/13/06 13:45	Sub to Alta, EDD=Access 7
Containers Supplied:		
4 oz Jar (IPB1429-03C)		
Sample ID: IPB1429-07 Water	**Sampled: 02/13/06 16:20**	
1613-Dioxin-HR-Alta	02/20/06 16:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
1 L Amber (IPB1429-07C)		
Sample ID: IPB1429-09 Soil	**Sampled: 02/14/06 08:51**	**Homogenize ea container & comp both for analysis**
1613-Dioxin-HR-Alta	02/21/06 08:51	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
2 oz jar (IPB1429-09C)		
2 oz jar (IPB1429-09D)		
Sample ID: IPB1429-10 Soil	**Sampled: 02/14/06 09:10**	**Homogenize ea container & comp both for analysis**
1613-Dioxin-HR-Alta	02/21/06 09:10	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
2 oz jar (IPB1429-10C)		
2 oz jar (IPB1429-10D)		
Sample ID: IPB1429-11 Soil	**Sampled: 02/14/06 09:32**	**Homogenize ea container & comp both for analysis**
1613-Dioxin-HR-Alta	02/21/06 09:32	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
2 oz jar (IPB1429-11C)		
2 oz jar (IPB1429-11D)		

Released By	Date	Time	Received By	Date	Time
Vu Banh	2-16-06	1700	Bettina L. Benedict	2/17/06	0915

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SUBCONTRACT ORDER - PROJECT # IPB1429

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone :(916) 933-1640 Fax: (916) 673-0106 27302 0.3°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:__________ **Initials:**______

Analysis	Expiration	Comments
Sample ID: IPB1429-12 Soil	**Sampled: 02/14/06 09:38**	**Homogenize ea container & comp both for analysis**
1613-Dioxin-HR-Alta	02/21/06 09:38	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 2 oz jar (IPB1429-12C) 2 oz jar (IPB1429-12D)		
Sample ID: IPB1429-13 Soil	**Sampled: 02/14/06 10:03**	**Homogenize ea container & comp both for analysis**
1613-Dioxin-HR-Alta	02/21/06 10:03	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 2 oz jar (IPB1429-13C) 2 oz jar (IPB1429-13D)		

SAMPLE INTEGRITY:

All containers intact:	☐ Yes ☐ No	Sample labels/COC agree:	☐ Yes ☐ No	Samples Received On Ice::	☐ Yes ☐ No
Custody Seals Present:	☐ Yes ☐ No	Samples Preserved Properly:	☐ Yes ☐ No	Samples Received at (temp):	______

Released By	Date	Time	Received By	Date	Time
V. Bauly	2-16-06	1700	Bettina J. Benedict	2/17/06	0915

SAMPLE LOG-IN CHECKLIST

Alta Project #: 27302

Samples Arrival:	**Date/Time** 2/17/06 0915	**Initials:** BSB	**Location:** WR-2
Logged In:	**Date/Time** 2/17/06 1544	**Initials:** BSB	**Location:** WR-2

Delivered By:	FedEx	UPS	Cal	DHL	Hand Delivered	Other

Preservation:	Ice	Blue Ice	Dry Ice	None

Temp °C 0.3°C	**Time:** 0925	**Thermometer ID:** DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		~~✓~~ BSB 2/17/06
Shipping Documentation Present?	✓		
Airbill — Trk # 7926 6266 3830	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

$Na_2S_2O_3$ Preservation Documented?		COC	Sample Container	None
Shipping Container	Alta	Client	Retain	Return	Dispose

Comments:

Calscience Environmental Laboratories, Inc.

February 28, 2006

Michele Chamberlin
Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Subject: **Calscience Work Order No.: 06-02-0940**
Client Reference: IPB1429

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/17/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Vireendra R Patel for

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Case Narrative for 06-02-0940

Sample Condition on Receipt

One aqueous sample and five soil samples were received as part of this Work Order on February 17, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.1°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times
All holding time requirements were met.

Calibration
Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks
The method blank data showed non-detectable levels for all constituents.

Matrix Spikes
Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits.

Laboratory Control Samples
The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates
Surrogate recoveries for all samples were within acceptable control limits.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-02-0940** **QAPP:** **0000**

#	Client Sample ID	Matrix	Date Collected	NoC	Comment
1	IPB1429-01	S	02/13/2006	1	
2	IPB1429-03	S	02/13/2006	1	
3	IPB1429-07	W	02/13/2006	1	
4	IPB1429-11(IPB1429-11E)	S	02/14/2006	1	
5	IPB1429-11(IPB1429-11F)	S	02/14/2006	1	
6	IPB1429-12(IPB1429-12E)	S	02/14/2006	1	
7	IPB1429-12(IPB1429-12F)	S	02/14/2006	1	
8	IPB1429-13(IPB1429-13E)	S	02/14/2006	1	
9	IPB1429-13(IPB1429-13F)	S	02/14/2006	1	
10	IPB1429-11	S	02/14/2006	1	COMPOSITE SAMPLES -4 AND -5. HOMOGENIZE EACH BEFORE COMPOSITE.
11	IPB1429-12	S	02/14/2006	1	COMPOSITE SAMPLES -6 AND -7. HOMOGENIZE EACH BEFORE COMPOSITE.
12	IPB1429-13	S	02/14/2006	1	COMPOSITE SAMPLES -8 AND -9. HOMOGENIZE EACH BEFORE COMPOSITE.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: **06 - 0 2 - 0 9 4 0**

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: Delmar **DATE:** 2/17/06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

____ Chilled, cooler with temperature blank provided.
____ Chilled, cooler without temperature blank.
____ Chilled and placed in cooler with wet ice.
____ Ambient and placed in cooler with wet ice.
____ Ambient temperature.
____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

____ °C Temperature blank.
4.1 °C IR thermometer.
____ Ambient temperature.

Initial: JJ

CUSTODY SEAL INTACT:

Sample(s): ____ Cooler: ____ No (Not Intact) : ____ Not Applicable (N/A): ✓

Initial: JJ

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: JJ

COMMENTS:

Del Mar Analytical

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SUBCONTRACT ORDER - PROJECT # IPB1429

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501 0940

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ Initials:______

Analysis	Expiration	Comments
Sample ID: IPB1429-01 Soil	**Sampled: 02/13/06 13:45**	
8270C (SIM)-OUT	02/27/06 13:45	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/13/06 13:45	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	03/13/06 13:45	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
4 oz Jar (IPB1429-01B)		
Sample ID: IPB1429-03 Soil	**Sampled: 02/13/06 13:45**	
8270C (SIM)-OUT	02/27/06 13:45	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/13/06 13:45	% solids, sub to Calscience, $10/sample
Containers Supplied:		
4 oz Jar (IPB1429-03B)		
Sample ID: IPB1429-07 Water	**Sampled: 02/13/06 16:20**	
8270C (SIM)-OUT	02/20/06 16:20	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Containers Supplied:		
1 L Amber (IPB1429-07B)		
Sample ID: IPB1429-11 Soil	**Sampled: 02/14/06 09:32**	**Homogenize ea container & comp both for analysis**
8270C (SIM)-OUT	02/28/06 09:32	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/14/06 09:32	% solids, sub to Calscience, $10/sample
Containers Supplied:		
2 oz jar (IPB1429-11E)		
2 oz jar (IPB1429-11F)		
Sample ID: IPB1429-12 Soil	**Sampled: 02/14/06 09:38**	**Homogenize ea container & comp both for analysis**
8270C (SIM)-OUT	02/28/06 09:38	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/14/06 09:38	% solids, sub to Calscience, $10/sample
Containers Supplied:		
2 oz jar (IPB1429-12E)		
2 oz jar (IPB1429-12F)		

Released By	Date	Time	Received By	Date	Time
[signature]	2-16-06	1700	[signature]	2/17/06	7:00
[signature]	2-17-06	737	[signature] CEL	2/17/06	0737

Del Mar Analytical

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SUBCONTRACT ORDER - PROJECT # IPB1429

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501 0940

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:________ **Initials:**______

Analysis	Expiration	Comments
Sample ID: IPB1429-13 Soil	**Sampled: 02/14/06 10:03**	**Homogenize ea container & comp both for analysis**
8270C (SIM)-OUT	02/28/06 10:03	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/14/06 10:03	% solids, sub to Calscience, $10/sample

Containers Supplied:
2 oz jar (IPB1429-13E)
2 oz jar (IPB1429-13F)

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No Sample labels/COC agree: ☐ Yes ☐ No Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No Samples Preserved Properly: ☐ Yes ☐ No Samples Received at (temp): ______

Released By	Date	Time	Received By	Date	Time
V. Banks	2-16-06	1700	[illegible]	2-17-06	1200
[illegible]	2-17-06	737	[illegible] CEL	2/17/06	0737

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-02-0940

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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Del Mar Analytical

LABORATORY REPORT

Prepared For: MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 6
Data Gap

Sampled: 02/14/06
Received: 02/14/06
Issued: 04/20/06 17:50

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 7 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: There were no subcontract analyses associated with this report.

ADDITIONAL INFORMATION: Enclosed are results for additional analyses only.

LABORATORY ID	CLIENT ID	MATRIX
IPB1429-11	MJ619	Soil
IPB1429-23	MJ635	Soil
IPB1429-24	MJ636	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1429	Sampled: 02/14/06 Received: 02/14/06

DATA QUALIFIERS AND DEFINITIONS

A-01 Sample result might be biased high due to coelution of Aroclors 1254 and 1260.

C Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

H-1 Sample analysis performed past the method-specified holding time per client's approval.

H4 Sample was extracted past holding time, but analyzed within analysis holding time.

R-2 The RPD exceeded the method control limit.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

MWH-San Diego 9444 Farnham Street, Suite 300 San Diego, CA 92123 Attention: Lisa J. Tucker	Project ID: SSFL Group 6 Data Gap Report Number: IPB1429		Sampled: 02/14/06 Received: 02/14/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

(C4)

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ608
Date 2/13/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	-Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives
Water sample: HNO_3, None

Sample ID	Description (for MWH use only)	SWMU	Depth (feet)	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Ash	8260B VOC	8015BM TPH	8270CSIM SVOC PAH	8270C SVOC NDMA MC 2/15/06	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives												HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C					
MJ608	NCBS07 S02	7.10	0.5	2/13/06	1345			X			X			X														HA			1
MJ609	NCBS07 S03	↓	3	↓				X						X		X												↓		X	1
MJ610	NCBS07 S01	↓	5	↓				X						X		X												↓			1
MJ611	NCBS14 S01	↓	0.5	↓	1513			X											X							8 oz jar		G			1
MJ612	NCBS15 S01	↓	0.5	↓	1526			X											X							8 oz jar		G			1
~~MJ613~~	~~NCBS07 S01~~	↓	~~10~~	↓	~~1532~~			~~X~~						~~X~~		~~X~~												~~HA~~		~~X~~	~~1~~
MJ614	NCBS16 S01	↓	0.5	↓	1548			X											X							8 oz jar		G			1
MJ615	NCQW06 E01	↓	–	↓	1620				X					X		X			X									–	~~X~~ MC 2/15/06		4
MJ616	NCBS17 S01		0.5	2-14-06	844			X											X												1
MJ617	NCBS12 S01		0.5		851			X								X															2
MJ618	NCBS10 S01		0.5		910			X								X															2
MJ619	NCBSS07 S01 BLB		0.5		932			X						X		X			X												2

	Date	Time
Samplers Signature: [signature]	2/13/06	1330
Relinquished By: [signature]	2/14/06	1610
Received By: [signature]	2/14/06	1610
Relinquished By: [signature]	2/14/06	1930
Received By (LAB): [signature]	2/14/06	19:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use MB

Lab Number:
Does COC match samples: Y or N (Y circled)
Broken container: Y or N (N circled)
Received within holding time: Y or N (Y circled)
COC Seal intact: Y or N (Y circled)
Any other problems: Y or N (N circled)
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 5

Comments:

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Group
Control Number: COC MJ620
Date 2 / 14 / 06 **Page** 2 **of** 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives: Water Sample; HNO_3, None

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ620	NCSS06 S01	7.10	0.5	2-14-06	938			X		
MJ621	NCSS08 S01	↓	0.5		1003			X		
MJ622	SRBS51 S70	A.I.AOC	0.5		—			X		
MJ623	SRBS54S01		0.5		1049			X		
MJ624	SRBS54S02		0.5		1050			X		
MJ625	SRBS54S03		0.5		1100			X		
MJ626	SRBS54S04		0.5		1109			X		
MJ627	SRBS54S05		2.5		1102			X		
MJ628	SRBS55S01		0.5		1130			X		
MJ629	SRBS56S01		0.5		1145			X		
MJ630	SRBS58 S01		0.5		1323			X		
MJ631	SRBS59 S01		0.5		1335			X		

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH+ (4°C)	8270C SVOC NDMA MC 2/15/06 (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ620			X		X			X									G			2
MJ621			X		X			X									G			2
MJ622										X										0
MJ623										X							G		X	1
MJ624										X							G		X	1
MJ625										X							G		X	1
MJ626										X							G		X	1
MJ627										X							G		X	1
MJ628										X							G			1
MJ629										X							G			1
MJ630		X						X		X							G			2
MJ631		X						X		X							G			2

	Date	Time
Samplers Signature: Bryan Burton	2-14-06	954
Relinquished By: [signature]	2-14-06	1610
Received By: [signature]	2/14/06	1610
Relinquished By: [signature]	2/14/06	1930
Received By (LAB): [signature]	2/14/06	19:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : / /
Temperature °C 5

Comments:
MJ622 is a composite of MJ623-626.
Please homogenize MJ623-626 individually, then create the composite.
Hold individual samples pending result of composite.
Do not hold MJ628. - run for PCBs.

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Group
Control Number: COC MJ632
Date 2 / 14 / 06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives
Water Sample: HNO3, None

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ632	SRQW03 E01	~~AIAK~~	–	2-14-06	1357				X	
MJ633	SRBS07 S01	↓	0.5		1405			x		
MJ634	SRBS07 S02	↓	3		1428			X		
MJ635	SRBS 60 S01	↓	0.5		1508			X		
MJ636	SRBS 61 S02	↓	~~0~~2' BB		1510			X		

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ632		X								X										~~8~~ 5 BB
MJ633								*							BS		G			1
MJ634								*							BS		G			1
MJ635								*							8 oz Jar		G			1
MJ636								*							8oz Jar		G		X	1

	Signature	Date	Time
Samplers Signature:	Bryan Burton	2-14-06	1400
Relinquished By:	[signature]	2/14/06	1610
Received By:	[signature]	2/14/06	1600
Relinquished By:	[signature]	2/14/06	1930
Received By (LAB):	[signature]	2/14/06	19:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC Seal intact: (Y) or N
Any other problems: Y or (N)
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 5

Comments: * Search for Ag, Se and Tl in MJ635 and MJ636.
Analyze MJ633 and MJ634 for Silver only

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Date 03/31/06

Tel. 858-751-1200
Fax: 858-751-1201

To: Michele C iamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Bras oveanu

sign:__________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the chang s listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ608	MJ610	NCSS07S01	2/13/06	Metals, Dioxins and PAH's. Standard TAT	Turn on PCB's analysis. Same analyses. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change X
Other: Containers mislabeled ________

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena CA 91101
(626) 568 6600

Chain of Custody

Project: SSFL Grw Data Gap
Control Number: COC MJ608
Date 2 / 13 / 06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives
Water sample: HNO_3, None

Sample ID	Description (for MWH use only)	SWMU	Depth (feet)	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Ash	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ608	NCBS07 S02	7.10	0.5	2/13/06	1345			X			X			X													HA			1
MJ609	NCBS07 S03	↓	3	↓				X						X		X											↓		X	1
MJ610	NCBS07 S01		5					X						X		X											↓			1
MJ611	NCBS14 S01		0.5		1513			X											X							8 oz jar	G			1
MJ612	NCBS15 S01		0.5		1526			X											X							8 oz jar	G			1
~~MJ613~~	~~NCBS07 S04~~		~~10~~		~~1532~~			~~X~~						~~X~~		~~X~~											~~HA~~		~~X~~	~~1~~
MJ614	NCBS16 S01		0.5		1548			X											X							8 oz jar	G			1
MJ615	NCQW06E01	↓	—	↓	1620				X					X		X			X								—	X		4
MJ616	NCBS17 S01		0.5	2-14-06	844			X											X											1
MJ617	NCBS12 S01		0.5		851			X								X														2
MJ618	NCBS10 S01		0.5		910			X								X														2
MJ619	NCBSS07 S01 BLB		0.5		932			X						X		X			X		X AB 03/31/06									2

Samplers Signature:	Date 2/13/06	Time 1330
Relinquished By:	Date 2/14/06	Time 1610
Received By:	Date 2/14/06	Time 1610
Relinquished By:	Date 2/14/06	Time 1930
Received By (LAB):	Date 2/14/06	Time 19:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : __/__/__
Temperature °C 5

Comments:

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Date: 03/31/06

Tel: 858-751-1200
Fax: 858-751-1201

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Bra oveanu

sign: ____________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ632	MJ635	SRBS60S01	2/14/06	Silver, Selenium and Thallium. Standard TAT.	Turn on PCB's analysis (Method 8082). Standard TAT.
MJ632	MJ636	SRBS60S02	2/14/06	Silver, Selenium and Thallium. Standard TAT.	Turn on PCB's analysis (Method 8082). Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ____________

Lack of sample volume ____________

MWH office personnel require this change ____X____

Other: Containers mislabeled ____________

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568 6600

Chain of Custody

Project: SSFL Group [illegible]

Control Number: COC MJ 6.2

Date 2/14/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.

QC Level:

TAT: St [illegible]

Preservatives: Water samples HNO3, N.[illegible]

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ632	SRQW03 E01	~~AP~~ AY	–	2-14-06	1357				X	
MJ633	SRBS07 S01	↓	0.5		1405			x		
MJ634	SRBS07 S02	↓	3		1428			X		
MJ635	SRBS60 S01	↓	0.5		1508			X		
MJ636	SRBS ~~61~~ 60 S02	↓	~~2~~ 3.0		1510			X		

Analyses

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ632		X								X										~~6~~ 5
MJ633								*									G			1
MJ634								*									G			1
MJ635								*		X							G			1
MJ636								*		X AB 03/31/06							G		X	1

Samplers Signature:	Date	Time
Bryan [illegible]	2-14-06	[illegible]
Relinquished By: [illegible]	2/14/06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC Seal Intact: Y or N

Any other problems: Y or N

If any YES, MWH contacted: Y or N

Date Contacted: __/__/__

Temperature °C

Comments: * Sb, [illegible] Ag, Se and Tl in MJ635 and MJ636. A[illegible] MJ633 and MJ634 [illegible]

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Date. 02/24/06

Tel: 858-751-1200
Fax: 858-751-1201

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ620	MJ622	SRBS51S70	2/14/06	PCB by Method 8082. Standard TAT.	Change MWH_ID to SRBS54S70. Same analysis.

The reason for these changes:

Incorrectly marked on COC form ______

Lack of sample volume ______

MWH office personnel require this change X

Other: Containers mislabeled ______

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL [illegible]

Control Number: COC MJ6[illegible]

Date 2/14/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To: Lowel Moffit
Company: MWH
Address: 300 N. Lake Avenue, Suite 1200, Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: [illegible]
Comment:

Cooler No.
QC Level:
TAT: [illegible]

Preservatives: [illegible]
HNO[illegible]

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ6[illegible]	NCSS06S01	7.10	0.5	2/14/06	938			X					X		X			X									G			2
MJ621	NCSS08S01	↓	0.5		1003			X					X		X			X									G			2
MJ622	SRBS51S76	[illegible]	0.5		—			X												X										
MJ623	SRBS54S01		0.5		1049			X												X							G		X	1
MJ624	SRBS54S02		0.5		1050			X												X							G		X	1
MJ625	SRBS54S03		0.5		1100			X												X							G		X	1
MJ626	SRBS54S04		0.5		1109			X												X							G		X	1
MJ627	SRBS54S05		2.5		1102			X												X							G		X	1
MJ628	SRBS55S01		0.5		1130			X												X							G		X	1
MJ621	SRBS56S01		0.5		1145			X												X							G		\	1
[illegible]	[illegible]58S01		0.5		[illegible]			X		X								X		X							G			1
MJ[illegible]	SRBS[illegible]S01		0.5		1335			X		X								X		X							G			2

TB 3/23/06
54
28

Samplers Signature:	Date	Time
[signature]	2/14/06	954
Relinquished By: [signature]	2/14/06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
MJ622 is a composite of MJ623-626.
[illegible]
[illegible]
[illegible]
[illegible] MJ628 - [illegible] for PCBs.

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 02/24/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign: ____________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ632	MJ636	SRBS61S02	2/14/06	Silver, Selenium, Thallium analysis. Standard TAT.	Change MWH_ID to SRBS60S02. Same analysis.

The reason for these changes:

Incorrectly marked on COC form ____
Lack of sample volume ____
MWH office personnel require this change __X__
Other: Containers mislabeled ____

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Gr w t r
Control Number: COC MJ 6 2
Date 2 / 14 / 06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives: Water samples HNO3, N2

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ632	SRQW03 EC1	AOAY	—	2.14.06	1357				X	
MJ633	SRBS07 S01	↓	0.5		1405			X		
MJ634	SRBS07 S02	↓	3		1428			X		
MJ635	SRBS 60 S01	↓	0.5		1508			X		
MJ636	SRBS (61) S02 60	↓	2 3.5		1510			X		

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (4°C)	8330 ORDNANCE (H2SO4, pH<2, 4°C)	6000/7000 METALS (4°C)	7196A HEX CHROMIUM (HNO3, pH<2, 4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ632		X								X										~~6~~ 5
MJ633								*									G			1
MJ634								*									G			1
MJ635								*									G			1
MJ636								*									G		X	1

	Date	Time
Samplers Signature: Bryan Bronte	2.14.06	1410
Relinquished By: [signature]	2/14/06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments: * Sr... Ag, Se and Tl in MJ635 and MJ636. A... MJ633 and MJ634 ...

FAX

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 05/01/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:_________

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ632	MJ636	SRBS60S02	2/14/06	Silver, Selenium, Thallium and PCB's. Standard TAT.	Turn on Dioxin analysis (Method 1613B). 14 day rush TAT. Same analyses.

The reason for these changes:

Incorrectly marked on COC form ________
Lack of sample volume ________
MWH office personnel require this change X
Other: Containers mislabeled ________

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL [illegible]

Control Number: COC MJ6[illegible]

Date 2/14/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200, Pasadena, CA, 91101

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: [illegible]
Comment:

Cooler No.
QC Level:
TAT: Standard

Preservatives
Water sample: HNO3, Nitric

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ632	SRGW03 E01	AA	—	2.14.06	1357				X	
MJ633	SRBS07 S01		0.5		1405			x		
MJ634	SRBS07 S02		3		1428			X		
MJ635	SRBS60 S01		0.5		1508			X		
MJ636	SRBS ~~61~~ 60 S02		2		1510			X		

Sample ID	8260B VOC (HCL, pH<2, 4°C)	8015BM TPH (HCL, pH<2, 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2, 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2, 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ632		X								X										~~6~~ 5
MJ633								*									G			1
MJ634								*									G			1
MJ635								*		X							G			1
MJ636					X AB 03/31/06			*		X AB 03/31/06							G		~~X~~	1

Samplers Signature:	Date	Time
[illegible signature]	2-14-06	[illegible]
Relinquished By: [illegible signature]	2/14/06	1610
Received By:		
Relinquished By:		
Received By (LAB):		

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments: * [illegible] Ag, Se and Tl in MJ635 and MJ636.
A[illegible] MJ633 and MJ634 [illegible]

ALTA

May 10, 2006

Alta Project I.D.: 27639

Ms. Michele Chamberlin
Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the five soil samples received at Alta Analytical Laboratory on April 29, 2006 under your Project Name "IPD2761". These samples were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha Maier

Martha M. Maier
Director of HRMS Services

ACCREDITED IN ACCORDANCE WITH nelac

Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA

Alta Analytical Laboratory Inc.
1104 Windfield Way
El Dorado Hills, CA 95762
FAX (916) 673-0106
(916) 933-1640

Section I: Sample Inventory Report

Date Received: **4/29/2006**

Alta Lab. ID	Client Sample ID
27639-001	IPD2761-01
27639-002	IPD2761-02
27639-003	IPD2761-03
27639-004	IPD2761-05
27639-005	IPB1429-24

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPB1429

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone :(916) 933-1640 Fax: (916) 673-0106 ~~27640~~ 27639 0.7C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:__________ Initials:__________

Analysis	Expiration	Comments
~~**Sample ID: IPB1429-23 Soil**~~	~~**Sampled: 02/14/06 15:08**~~	~~**3/27/06 Add in 8080 by MC. 4/28 sub=Alta on hold**~~
~~HOLD~~	~~02/14/07 15:08~~	
~~**Containers Supplied:**~~		
~~8 oz Jar (IPB1429-23A)~~		
Sample ID: IPB1429-24 Soil	**Sampled: 02/14/06 15:10**	**Taken off Hold 3/29/06. 4/28 sub to Alta on hold.**
HOLD	02/14/07 15:10	
Containers Supplied:		
8 oz Jar (IPB1429-24A)		

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No	Sample labels/COC agree: ☐ Yes ☐ No	Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No	Samples Preserved Properly: ☐ Yes ☐ No	Samples Received at (temp): ______

Released By	Date	Time	Received By	Date	Time
V. Banh	4/28/06		Michol Sallent	04/29/06	0900
Released By	Date	Time	Received By	Date	Time

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPB1429

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone :(916) 933-1640 Fax: (916) 673-0106

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date: 2weeks, 5/15/06 **Initials:** MC

Analysis	Expiration	Comments
Sample ID: IPB1429-23 Soil	**Sampled: 02/14/06 15:08**	**3/27/06 Add-in 8082 by MC. 4/28 sub to Alta on hold**
HOLD	02/14/07 15:08	
Containers Supplied: 8 oz Jar (IPB1429-23A)		
Sample ID: IPB1429-24 Soil	**Sampled: 02/14/06 15:10**	**Taken off Hold 3/29/06. 4/28 sub to Alta on hold.**
1613-Dioxin-HR-Alta	02/21/06 15:10	Sub to Alta, 17 congeners, rpt in dry wt if soil
Level 4 + EDD-OUT	03/14/06 15:10	Sub to Alta, EDD=Access 7
Containers Supplied: 8 oz Jar (IPB1429-24A)		

MC 5/2/06

Revised 5/2/06 MC

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No	Sample labels/COC agree: ☐ Yes ☐ No	Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No	Samples Preserved Properly: ☐ Yes ☐ No	Samples Received at (temp): ______

Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time

subbed out to:
STL - VT

Chain of Custody

Original Chain of Custody goes to Laboratory

Page ______ of ______

Project #	Project Name	Cooler Temp.
	Rocketdyne	

Samplers (please print)	Cooler #

Lab ID	Date	Time	Comp. Grab	Sample Identification	Sample Matrix	No. of Containers	Ag	pH	pH	pH	pH	pH	pH	pH	Remarks
				RJ561	S	1	X								
				RJ563			X								
				RJ553			X								
				~~RJ535~~ KW 10/17/00			X								
				RJ539			X								
				RJ523			X								
				RJ528			X								
				RJ570			X								
				RJ587			X								
				RJ516			X								

Ceimic Project #	Relinquished by (signature) Karen Williamson	Date/Time 10/17/00 5:00	Received by (signature) [signature]	Date/Time 10-18-00 0945
	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
Storage Location	Relinquished by (signature)	Date/Time	Received by Ceimic (signature)	Date/Time

Remarks: * 10 day TAT for all samples

▒ = Lab Use Only

Ceimic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 - Tel: (401) 782-8900, Fax: (401) 782-8905

Chain of Custody

Original Chain of Custody goes to Laboratory

Project #	Project Name	Cooler Temp.
	ogden/rocketdyne	
Samplers (please print)		**Cooler #**

Lab ID	Date	Time	Comp. / Grab	Sample Identification	Sample Matrix	No. of Containers	Analyses: Total Ag	pH		pH		pH		pH		pH		pH		pH	Remarks
				200457-07A (RJ009)	S	1	X														

0004

Ceimic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	Robert Dao	10/18/00 3:00		
Storage Location	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
			Scott	10/19/00 0930
	Relinquished by (signature)	Date/Time	**Received by Ceimic (signature)**	**Date/Time**

Remarks: * 10 Day TAT *

= Lab Use Only

Ceimic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 - Tel: (401) 782-8900, Fax: (401) 782-8905

American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax (818) 845-8840 • AETLAB@AOL.COM

Ordered By

BOEING
P.O. Box 7922 M/S:SS21
Canoga Park, CA 91309-7922

Telephone: (818)586-5582
Attention: Bob Hardy

Number of Pages	**7**
Date Received	**03/28/2001**
Date Reported	**04/06/2001**

Job Number	Order Date	Client
18348	03/28/2001	BOEING

Enclosed please find results of analyses of 3 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sullivan

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

~~Del Mar Analytical~~

CHAIN OF CUSTODY FORM

TAS: ______

Client Name/Address:

BOEING
P.O. Box 7922 M/S: SS21
Canoga Park, CA 91309-7922

P.O. #: 98034802

Project:

Project Manager/Phone Number:
Bob Hardy X5562

(Boeing Info: CHARGE NUMBER IS:)

Sampler: Juli Oborne

ANALYSIS REQUIRED

Sample Description	Sample Matrix	Container Type	# of Containers	Sampling Date/Time	Preservation	8015 diesel/5035	8260B/5035						Sampler's ID#
T-1	So	40 ml VOA	[illegible]	3/28/01 205pm	NaHSO4	X	X						AF93342
T-1	So	40 ml VOA	2	3/28/01 205pm	MEOH	X	X						↓
T-1	So	40 ml VOA	2	3/28/01 205pm		X	X						
T-2	So	40 ml VOA	2	3/28/01 220pm	NaHSO4	X	X						AF93343
T-2	So	40 ml VOA	1	3/28/01 220pm	MEOH	X	X						↓
T-2	So	40 ml VOA	1	3/28/01 220pm		X	X						
SP-1	So	40 ml VOA	2	3/28/01 115pm	NaHSO4	X	X						AF93344
SP-1	So	40 ml VOA	1	3/28/01 115pm	MEOH	X	X						↓
SP-1	So	40 ml VOA	1	3/28/01 115pm		X	X						

Relinquished By	Date/Time	Received By	Date/Time
Juli Oborne	3/28/01 3:09pm	S. N. [illegible]	3/28/01 3:00pm
Nancy Harzard	3/28/01 1525	Juli Oborne	3/28/01 3:25p
Juli Oborne	3/28/01 4:30	[illegible]	3/28/01 4:30

Turnaround Time: (check)
Same Day ______ 72 Hours ______
24 Hours ______ 5 days ______
48 hours X Normal ______

Sample Integrity: (Check)
Intact ______ On Ice: ______

T5CCDF.6

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client:	Ogden 5510 Morehouse Drive San Diego, CA 92121	Date Sampled: Date Received: Job Number:	11/02-07/00 11/09/00 17392
Project:	Rocketdyne		

CASE NARRATIVE

The following information applies to samples which were received on 11/09/00 :

The samples were received at the laboratory chilled. One VOA vial was received broken, the remaining sample containers were received intact.

An insufficient amount of sample was provided for samples RZ799, RZ801, and RZ803 so the Moisture Content analysis for these samples was cancelled.

The Dioxin analysis was subcontracted to ELAP Lab #1640. The original report is attached to, but is not part of, this report.

The Perchlorate analysis was subcontracted to ELAP Lab #1132. The original report is attached to, but is not part of, this report.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 2419

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

290 TENNESSEE STREET • REDLANDS, CA 92373 • (909) 798-9336 • FAX (909) 793-1559 • (800) 798-9336

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com

(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page 1 of 1

Project No:	Project Name:	
Project Manager:	Phone:	Fax:
Client Name: (Report and Billing)	Address: (Report and Billing)	

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)		GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: ________

1) Relinquished by: (Sampler's Signature)	Date:	Time:	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by: [illegible]	Date: [illegible]	Time: [illegible]

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com

(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page _____ of _____

Project No:	Project Name:	
Project Manager:	Phone:	Fax:
Client Name: (Report and Billing)	Address: (Report and Billing)	

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)		GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: ________

	Date:	Time:		Date:	Time:
1) Relinquished by: (Sampler's Signature)			3) Relinquished by:		
2) Received by:			4) Received by:		
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			5) Relinquished by:		
			6) Received for Laboratory by:		

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☒ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com

(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page _____ of ______

Project No: | Project Name:

Project Manager: | Phone: | Fax:

Client Name: (Report and Billing) | Address: (Report and Billing)

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)		GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: ________

1) Relinquished by: (Sampler's Signature) [illegible]	Date: [illegible]	Time: [illegible]	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by: [illegible]	Date:	Time:

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☒ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☒ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com

(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page 1 of 1

Project No: 17392

Project Name: ROCKETDYNE

Project Manager: MARILU ESCHER

Phone:

Fax:

Client Name: (Report and Billing) CENTRUM

Address: (Report and Billing)

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)	8290 Dioxin	GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions
	RZ781	11/1		SOIL	17392-8	1 OZ					X											
	RZ776	↓		↓	-9	↓					X											

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: ________

	Date:	Time:		Date:	Time:
1) Relinquished by: (Sampler's Signature)			3) Relinquished by:		
2) Received by:			4) Received by:		
			5) Relinquished by:		
			6) Received for Laboratory by: K. FLATT	11-15-02	1000

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes:

Sample Locator No.

A008107-001

WECK

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com

(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Project No: 17392
Project Name: ROCKETDYNE
Project Manager: MARILU ESCHER
Phone:
Fax:
Client Name: (Report and Billing) CENTRUM
Address: (Report and Billing)

Please Circle ALL Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)	PERCLORATE	GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions
	RZ784	11/2	7:00a	SOIL	17392-1	1					X											

Turn-Around Time
☐ 24 Hr. RUSH*
☐ 48 Hr. RUSH*
☒ Normal TAT
*Requires PRIOR approval, additional charges apply
Requested due date: ______

	Date:	Time:		Date:	Time:
1) Relinquished by: (Sampler's Signature) 97_Barner	11/15	1200	3) Relinquished by:		
2) Received by:			4) Received by:		
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			5) Relinquished by:		
			6) Received for Laboratory by: [signature]		

To be completed by Laboratory personnel: 8°C
Samples chilled? ☒ Yes ☐ No ☐ From Field
Custody seals? ☐ Yes ☐ No
All sample containers intact? ☒ Yes ☐ No
☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal
☐ Client will pick up
☐ Return to client
☐ Lab disposal

Laboratory Notes:

Sample Locator No.

RZ 784

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC
Date 11/2/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: FED-EX
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL pH<2 4°C (8260M VOC); HCL pH<2 4°C (8015OG TPH); 4°C (8270SIM SVOC); 4°C (8270R SVOC); 4°C (8280 DIOXIN); H2SO4,pH<2 4°C (ASTM D19 FORMALDEHYDE); 4°C (8330 ORDNANCE); HNO3, pH<2 4°C (1LM02.1RT METALSRT); 4°C (7196 HEX CHROME); 4°C (340.2 FLUORIDE); 4°C (300 ANIONS); 4°C (9045/9040 pH); 4°C (8081 PCBs); 4°C (IC HYDRAZ)

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8280 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDNANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	PERCHLORATE	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RZ794	HVTS08S01	5	11/2	0700	106		X					~~X~~	~~X~~	~~X~~	~~X~~		X				X			X	HA			1
RZ788	4' SRTS02S01	4		1510	41						X	X					X				X				HA			1
RZ791	SRTS02S02	4		1540	41																				~~HA~~	LD		1
RZ799	CSBS29S03	10	11/6	1550	96					X															SP			3
RZ801	CSBS29S05	18.5		1615	96					X																		3
RZ803	CSBS30S02	5.0		1645	37	2	D			X	X	D																3
~~RZ812~~	~~BUBS~~																											3
RZ812	BUBS42S01	5.0	11/7	1425	53		X				X																	1
RZ781	OCTS24S02	6.5	11/1								X	X		X			X				X	X			HA		X	1
RZ776	OCTS23S02	6.5	11/1								X	X		X			X				X	X			HA		X	1

LAB ENTRY

SOUHA
AIAOC
AWSRE
S19-S19
S12-S15
#7.4

	Date	Time
Samplers Signature: [signature]	11/7	1700
Relinquished By: [signature]	11/8	1200
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES
RZ781 + RZ776 OFF HOLD per DAH (11/10/00).
Change all samples with Ogden ID's that begin with "CSBS.." to "CABS" per CD.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

RJ836

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

December 7, 2000

Mr. Jose Toledo
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ836. The 13 soil samples were taken from the field on November 17 and 21, 2000 and received at Ceimic Corporation on November 20 and 22, 2000.

These samples are reported under Ceimic Project Number 200827, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Manager

NP/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

INDEX

Project Narrative

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ836. Under this SDG there are 2 VOA and 14 TPH analyses for 13 soil samples, which were received at Ceimic Corporation on November 17 and 21, 2000.

This data package includes the analyses for the following samples from SDG No. RJ836, all of which are billable:

(1)

Client ID	Ceimic ID	Analyses
RJ836	200827-01	TPH
RJ837	200827-02	TPH
RJ838	200827-03	TPH
RJ839	200827-04	TPH
RJ840	200827-05	TPH
RJ841 ms/msd	200827-06 ms/msd	TPH
RJ842	200827-07	TPH, VOA
RJ843	200827-08	TPH, VOA
RJ848	200827-09	TPH
RJ851	200827-10	TPH
RJ844	200827-11	TPH
RJ845	200827-12	TPH

Sample Receipt

The submitted data covers the analysis of the VOA and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. VOA

MS16: HP5972 GC/MS using 30 m x 0.32 mm ID, 1.8 um film thickness DB-624 capillary column (Hewlett-Packard).

GC Analysis

B. TPH

AD24_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-9.

(3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

A. VOA Fraction (Method 8260B/5035)

There was a problem with the addition of internal standards for the initial 5035 analyses for these samples. Both samples were reanalyzed. Sample RJ843 (200827-08) had low surrogate recovery, but there was no sample volume remaining for reanalysis to be done.

The % RSD for 2-Chloroethylvinyl ether in the special list initial calibration was high, and the RF's were low.

The % D for 2-Chloroethylvinyl ether in the special list continuing calibration was greater than 20%.

The 8260 continuing calibration had % D's greater than 20 % for Dichlorodifluoromethane, Trichlorofluoromethane and Acetone.

The LCS had high recoveries for Bromomethane and trichlorofluoromethane.

B. TPH Fraction (Method 8015OG)

Responses are high for the following ranges and CCVS:

	%D		
	Gasoline Range	Kerosene Range	Diesel Range
TPHAOC	17.0	18.7	18.7
TPHAOE	19.0	20.7	20.7
TPHAOF	18.0	20.7	21.3

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Neil Pothier

Neil Pothier, Laboratory Manager

December 7, 2000

Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200827
SDG No.: RJ836

The following samples were received at Ceimic Corporation on November 22, 2000:

RJ848	RJ851	RJ844
RJ845		

The above samples were digested and analyzed for total metals using SW846 methods 3050A/7471A/6010B in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV and CCV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 243) was used for the metals LCSS sample.

Observations:

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Elevated levels of iron and other spectral interferants caused analytical signal suppression for the elements cadmium and selenium. The affected samples were re-analyzed and reported from diluted runs.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier | December 7, 2000
Neil Pothier
Laboratory Manager

Date

Chain-of-Custody

~~200834~~ RD 11/22/00 200827 (3)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ842
Date 11/17/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: A44
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Perchlorate		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ842	SRBS225Ø2	8'	11/17/00	1445	40a	7	X			X																			3
RJ843	SRBS225Ø3	13'	11/17/00	1450	40a	8	X			X																			3
RJ848	LFBS435Ø1	1.0	11/21/00	1125	65a	9					X						X				X			X					1
~~RJ849~~	~~LFBS435Ø2~~																												
RJ849	LFB543DØ1	1.0	11/21/00	1130	65a	10	X				X						X				X			X					1
RJ844	LFBS435Ø2	5.0	↓	1155	↓	11	X				X						X				X			X					1
RJ845	LFBS435Ø3	10.0	↓	1215	↓	12	X				X						X				X			X					1
RJ846	AFBS175Ø1	2.0	↓	1610	35a	13	X							X															1

RD 11/22/00

VMU
I ADC
1.12
1.9

	Date	Time
Samplers Signature	11/17/00	1700
Relinquished By:	11/17/00	1700
Received By:		
Relinquished By:		
Received By (LAB): Robert Davis	11/22/00	10:00

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___ /___
Temperature °C 6

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN
5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ842
Date 11/17/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: A44
QC Level: Level4
TAT: 14-day hardcopy summary; 28-day full package

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015QG TPH	8270SIM SVOC	8270 SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRY METALSRT	7199 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Perchlorate		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Preservatives										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ842	SRBS22S02	3'	11/17/00	1445	4D		X			X	(X)																		3
RJ843	SRBS22S03	3	11/17/00	1450	4D		X			X	(X)																		3
RJ848	LFBS43S01	1.0	11/21/00	1125	6S						X						X				X			X					1
~~RJ849~~	~~LFBS43S02~~																												
RJ849	LFBS43D01	1.0	11/21/00	1130	6S		X				X						X				X			X					1
RJ844	LFBS43S02	5.0	↓	1155			X				X						X				X			X					1
RJ845	LFBS43S03	10.0	↓	1215	↓		X				X						X				X			X					1
RJ846	AFBS17S01	2.0	↓	1610	5S		X							X															1

SVMU
IR AOC
4.12
RG851
4.9
RJ858

DAB 9/4
I'll have Jose make this correction

	Date	Time
Sampler Signature: [signature]	11/17/00	1700
Relinquished By: [signature]	11/17/00	1700
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

⊗ Add TPH - RJ 842, 843
1 wk TAT on RJ 842 + RJ843 per DAH (11/30/00).
Add TPH to RJ842 + RJ843. per DAH (11/30/00).

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

200827

1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ828
Date 11/17/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:	11	
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	perchlorate		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	perchlorate		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ828	BABS525Ø1	11'	11/17/00	0805	53a		X					X					X				X								1
RJ829	BABS525Ø2	16'		0820			X					X					X				X								1
RJ830	BABS525Ø3	18'		0825			X				X	X					X				X								1
RJ831	BABS535Ø1	5'		0900	536		X					X					X				X								1
RJ832	BABS535Ø2	10'		0905			X					X					X				X								1
RJ833	BABS535Ø3	17'		0915			X				X	X					X				X								1
RJ834	HYBS725Ø1	0.5'		1015	7		X									X	X				X			X					1
RJ835	HYBS725Ø2	5.5'		1025	7		X									X	X				X			X					1
RJ836	HYBS735Ø1	2.0'		1100	1873	1	X				X																		1
RJ837	HYBS735Ø2	7.5'		1110	73	2	X				X																		1
RJ838	HYBS735Ø3	8.5'		1115	73	3	X				X																		1
RJ839	HYBS735Ø4	14'		1125	73	4	X				X																		1

IMU 15

10C

	Date	Time
Samplers Signature	11/17/00	1200
Relinquished By:	11/17/00	1800
Received By:		
Relinquished By:		
Received By (LAB): Robert Davis	11/20/00	1000

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Composite/Mix each Sample

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

REV 1

200827 ①

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ840
Date 11/17/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No: 11
QC Level: Level4
TAT: 14-day hardcopy summary, 28-day full package

Preservatives: HCL, pH<2 4°C (8260M VOC); HCL, pH<2 4°C (8015OG TPH); 4°C (8270SIM SVOC); 4°C (8270R SVOC); 4°C (8290 DIOXIN); H2SO4,pH<2 4°C (ASTM D19 FORMALDEHYDE); 4°C (8330 ORDINANCE); HNO3, pH<2 4°C (1LM02.IRT METALSRT); 4°C (7196 HEX CHROME); 4°C (340.2 FLUORIDE); 4°C (300 ANIONS); 4°C (9045/9040 pH); 4°C (8081 PCBs); 4°C (IC HYDRAZ)

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
4.15	RJ840	CLB57335Ø1	3.0	11/17/00	1220		5	X				X																		1
4.15	RJ841	CLB57745Ø1	4.0	↓	1240		6	X				X																		1

DEB

	Date	Time
Samplers Signature:	11/17/00	1700
Relinquished By:	11/17/00	1800
Received By:		
Relinquished By:		
Received By (LAB): Robert Daw		

For Lab Use

Lab Number:

Composite/Mix each Sample

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Meeks, Patti, A.

From: Toledo, Jose, L.
Sent: Friday, January 26, 2001 2:47 PM
To: Meeks, Patti, A.
Subject: RE: RJ846

Patti- RJ852 is the correct EPA ID for this sample. I must have hit a time warp with the change form on 7/13/00 and in all the confusion I assigned an incorrect EPA ID to that sample.

From: Meeks, Patti, A.
Sent: Friday, January 26, 2001 12:38 PM
To: Toledo, Jose, L.
Subject: RJ846

Jose -

I'm working on SDG RJ836. In the package are to change request for sample AFBS17S01. The EPA ID was originally RJ846. In a change request dated 07/13/00 the ID is changed to RJ850. Then, in a reuqest dated 11/30/00 RJ846 (also AFBS17S01) is changed to RJ852. Which is correct?

Thanks,

Patti

SDG. RJ836

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign*:________________

Date: 11/30/00 There are 2 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ842	RJ849	LFBS43D01	11/21/00	TPH, METALSRT, pH, Perchlorate.	**Change EPA No. to RJ851. No analysis change.**
RJ842	RJ846	AFBS17S01	11/21/00	8290	**Change EPA No. to RJ852. No analysis change.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ____X____
Lack of sample volume __________
Ogden office personnel require this change __________
Other: Containers mislabeled ___ __________

Thank you.

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 200827 | Cooler Number: 1
Client: ogden | Number of Coolers: 1
Project: rocketdyne | Date Received: 11 / 20 / 00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 11 / 20 / 00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 11 / 20 / 00
2. Did cooler come with a shipping slip (airbill, etc.)? YES NO
   If YES, enter carrier name & airbill number here: Fx 823992950225
3. Were custody seals on outside of cooler? YES NO
   How many & where: 1, front seal date: 11 / 17 / 00 seal name: Analytical Technologies
4. Were custody seals unbroken and intact at the date and time of arrival YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? Reading: YES NO
6. Chain of Custody #: #
7. Were custody papers sealed in a plastic bag & taped inside to the lid? YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? YES NO
9. Did you sign custody papers in the appropriate place? YES NO
10. Was project identifiable from custody papers? YES NO
11. If required, was enough ice used? Cooler Temperature: 6 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 11 / 20 / 00
   by (print): RD (sign): RD

12. Describe type of packing in cooler:
13. Were all bottles sealed in separate plastic bags? YES NO
14. Did all bottles arrive unbroken and were labels in good condition? YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? YES NO
16. Did all bottle labels agree with custody papers? YES NO
17. Were correct containers used for the tests indicated? YES NO
18. Were samples received at the correct pH? YES NO
19. Was a sufficient amount of sample sent for tests indicated? YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: YES NO
21. Laboratory labelling verified by: (Initials): RD (date): 11 / 20 / 00

QAT0261

SAMPLE RECEIVING CHECKLIST

LIMS # 20027 — Cooler Number: 1

Client: Ogden — Number of Coolers: 1

Project: Rocketdyne — Date Received: 11/22/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 11 / 22 / 00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 11 / 22 / 00
2. Did cooler come with a shipping slip (airbill, etc.)? .... YES NO

   If YES, enter carrier name & airbill number here: FX 823942950203
3. Were custody seals on outside of cooler? .... YES NO

   How many & where: 1, Front seal date: 11 / 21 / 00 seal name: Analytical Technologies
4. Were custody seals unbroken and intact at the date and time of arrival .... YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? .... Reading: ____ YES NO
6. Chain of Custody #: RJ842
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .... YES NO
8. Were custody papers filled out properly (ink, signed, etc.)? .... YES NO
9. Did you sign custody papers in the appropriate place? .... YES NO
10. Was project identifiable from custody papers? .... YES NO
11. If required, was enough ice used? .... Cooler Temperature: 6 °C Type of ice: blue YES NO

B. LOG-IN PHASE: Date samples were logged-in: 11 / 22 / 00

by (print): RD (sign): RD

12. Describe type of packing in cooler: ____
13. Were all bottles sealed in separate plastic bags? .... YES NO
14. Did all bottles arrive unbroken and were labels in good condition? .... YES NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .... YES NO
16. Did all bottle labels agree with custody papers? .... YES NO
17. Were correct containers used for the tests indicated? .... YES NO
18. Were samples received at the correct pH? .... YES NO
19. Was a sufficient amount of sample sent for tests indicated? .... YES NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: ____ YES NO
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? .... YES NO
22. Laboratory labelling verified by: (initials): RD (date): 11 / 22 / 00

NO. 512 P. 1/2

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To:	Ms. Karen Williamson/Ceimic Corporation Fax No.: (401) 782-8905
From.	Jose L. Toledo *sign*
Date:	07/13/00 There are 2 Pages to transmit including this cover page
Subject:	**Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ842	RJ842	SRBS22S02	11/17/00	8260B	**8260B & TPH (1 wk TAT)**
RJ842	RJ843	SRBS22S03	11/17/00	8260B	**8260B & TPH (1 wk TAT)**
RJ842	RJ846	AFBS17S01	11/21/00	8290	8290, **Change EPA ID to RJ850.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled	

Thank you.

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Celmic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo sign: Jose L Toledo

Date: 11/30/00 There are 2 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ842	RJ849	LFBS43D01	11/21/00	TPH, METALSRT, pH, Perchlorate.	**Change EPA No. to RJ851. No analysis change.**
RJ842	RJ846	AFBS17S01	11/21/00	8290	**Change EPA No. to RJ852. No analysis change.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form ___X___
Lack of sample volume ______
Ogden office personnel require this change ______
Other: Containers mislabeled ______

Thank you.

Ceimic Corporation
Classical Chemistry Laboratory
% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2 g	Dry Weight Net g	% Solids	Analyst	Review By
11/27/00	~~11/29/00~~ 11/28/00	200826-20	RJ535	0.98	4.99	4.01	4.79	—	3.81	95.0	ES	
		200827-09	RJ 548		5.98	5.00	5.35	—	4.37	87.4		
		10	849		6.98	6.00	6.29	—	5.31	88.5		
		11	844		5.69	5.01	5.12	—	4.14	82.6		
		12	845		5.82	4.84	5.26	—	4.28	88.4		
11/27/00		200832-01	DO3624	0.99	8.39	7.4	7.95	—	6.96	94.10	ES	
		-02	DO3625	0.99	7.10	6.11	6.67	—	5.68	93		
		-03	DO3626	0.99	7.47	6.48	~~6~~ 7.03	—	6.04	93.2		
		-04	DO3627	0.99	~~6.90~~ 6.90	5.91	6.54	—	~~6~~ 5.55	93.9		
		-05	DO3628	0.99	7.11	6.12	6.76	—	5.77	94.3		
		-06	DO3629	0.99	7.038	6.05	6.73	—	5.74	94.9		
		-07	DO3630	0.99	7.216	6.23	6.68	—	5.69	91.3		
		-08	DO3631	0.99	7.528	6.54	6.99	—	~~7~~ 6.00	91.7		
		-10	DO3632	0.99	6.11	5.12	5.51	—	4.52	88.3		
		-11	~~DO3633~~ DO3634	0.99	6.52	~~6~~ 5.53	6.45	—	5.46	98.7		
		-12	DO3635	0.99	7.11	6.12	5.67	—	4.68	76.5		
		-26	DO3679	0.99	2.99	2.00	2.976	—	1.99	99.5		

All weights must be carried out to 2 decimal places. Dry samples ≥12 hours at 103°C to [illegible]

% solids = (net dry weight / net wet weight)*100

140

QAT0042

Page #

TPH added

CHANGED CLIENT ID FOR -10,-13; -07 AND -08 DUE 12/6/00!

CEIMIC Corporation
Sample Log In Information

Date: 12/01/00 -09:49:16

Date Samples Received: 11/20/00

Date Due: 12/06/00

Client: Ogden Environmental

Project Name: Rocketdyne

Client Task: 313150002

Client Contact: Dixie Hambrick

Project #: 200827
SDG: RJ836
Case: 313150

Project Amount: $3,840.00

Stored:

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To: Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Attn: Dixie Hambrick

Invoice To: Ogden Environmental
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn: Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ836	1	SOIL	11/20/00	11/17/00	11:00:00	TPH(8015OG)
-02A	RJ837	1	SOIL	11/20/00	11/17/00	11:10:00	TPH(8015OG)
-03A	RJ838	1	SOIL	11/20/00	11/17/00	11:15:00	TPH(8015OG)
-04A	RK839	1	SOIL	11/20/00	11/17/00	11:25:00	TPH(8015OG)
-05A	RJ840	1	SOIL	11/20/00	11/17/00	12:20:00	TPH(8015OG)
-06A	RJ841	1	SOIL	11/20/00	11/17/00	12:40:00	TPH(8015OG)
-06B	RJ841ms		SOIL	11/20/00	11/17/00	12:40:00	TPH(8015OG)
-06C	RJ841msd		SOIL	11/20/00	11/17/00	12:40:00	TPH(8015OG)
-07A	RJ842	3	SOIL	11/22/00	11/17/00	14:45:00	TPH(8015OG) Volatiles(8260B/5035)
-08A	RJ843	3	SOIL	11/22/00	11/17/00	14:50:00	TPH(8015OG) Volatiles(8260B/5035)
-09A	RJ848	1	SOIL	11/22/00	11/21/00	11:25:00	Perchlorate TPH(8015OG)

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-09A	RJ848	1	SOIL	11/22/00	11/21/00	11:25:00	pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-10A	RJ851	1	SOIL	11/22/00	11/21/00	11:30:00	Perchlorate TPH(8015OG) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-11A	RJ844	1	SOIL	11/22/00	11/21/00	11:55:00	Perchlorate TPH(8015OG) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-12A	RJ845	1	SOIL	11/22/00	11/21/00	12:15:00	Perchlorate TPH(8015OG) pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-13A	RJ852	1	SOIL	11/22/00	11/21/00	16:10:00	Dioxins(8290)

Comments:

composite/mix each sample

1 week TAT for -07 and -08 ; TPH added

Requirements:

Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's and Freons for soils.

K.T.: 03/06/01

LIMS Identifier: 0011053

LIMS Project Code: OGDEN_ROCKET

Approved by: ______________

Project #: 200827

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD

Comments:
composite/mix each sample

Requirements:
Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's for soils

K.T.: 03/04/01

LIMS Identifier: 0011053

LIMS Project Code: OGDEN_ROCKET

Approved by: [signature] 11/21/00