SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-501-NBZ-SB-0.0-0.5 Date/Time 12-6-13/1250

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve & 1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic Inorganic SILT with moderate to high plasticity
				CH	Fat Inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brown (7.5YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

12-6-13

NA – Not Applicable

Location ID: DG-501	Subarea: NBZ	Date Started: 12-6-13	Date Completed: 12-6-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st HA = 1.5, 2nd HA = 2.4
Company Name: CDM SMITH	Drill Contractor/Driller: NA		
GPS collected? Yes or No	Drill Method: Slidehammer / HA		Depth Drilled into Bedrock: NA
Radiological Background: X = 14 α = 100	Borehole diameter: 3.25		
PID Background: ~~X~~ 0.0 ppm	Depth to GW: NA		Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Nikki Hoffman #7735		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0 0.5	0.5/0.5	0.0 0.0	14/102 14/90	SL-501 NBZ-SB 0.0-0.5	1250	SM	SILTY SAND, brown (7.5YR 4/4) fg, pg, sr to sa, quartz loose, dry, trace organics (roots); 80% SD 20% SILT
1		0.0	14/84				SILTY ~~SAND~~ GRAVEL, yel brn (10YR 5/4) mottled w/ lt yel brn (10YR 6/4), fg w/ tr to some med gvw, pg, sr to sa, quartz mod loose to sli compacted becoming more compacted w/ depth dry, gravel is mod weathered sandstone, sr to sa, SILT friable, mod well to well cemented; 60% SD 25% SILT 15% GRAVEL — 1.0
2		0.0	14/108 14/90	@2' @2.4			— 2.4

Refusal @ 2.4' bls on bedrock

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID SL-502-NBZ-SB-0.0-0.5 Date/Time 12-3-13/ 0920

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic Inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color ~~LIGHT~~ 12-3-13 (10YR 6/4) light yellowish brown

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

RPR 12-3-13

NA – Not Applicable

12-3-13

Location ID: DO SB-502	Subarea: NBZ	Date Started: 12-3-13	Date Completed: 12-3-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st DPT = 5.0' 2nd DPT = 5.0 3rd DPT = 5.0
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm		
GPS collected? (Yes) or No	Drill Method: DPT		Depth Drilled into Bedrock: NA
Radiological Background: γ = 13 α = 72	Borehole diameter: 2.25"		
PID Background: 0.0 ppm	Depth to GW: NA		Sampling Method: DPT
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Nikki Hoffman # 7735		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0-0.5	0.5/0.5	0.0 0.0	13/79 13/66	SL-502 NBZ-SB 0.0-0.5	0920	SM	SILTY SAND, lt yel brn (10YR 6/4), fg, pg, sr to sa, quart dry, some to few amt sli consolidated & laminated, mod brittle 70% SD 30% SILT, tr amt org. (roots), increase in amt of sli consolidated material w/depth — 1.0
1		0.0	13/96			SM	SILTY SAND, yel brn (10YR 5/4) mottled w/ brn yel (10YR 6/6) and v pale brn (10YR 7/3) fg, pg, sr to sa quart, dry, some to few amt sli consolidated & laminated, mod 70% SD 30% SILT
2	3.5/3.5	0.0	13/96				
3		0.0	13/90			SM	SILTY SAND, brn yel (10YR 6/6) mottled w/ v pale brn (10YR 7/4) & (10YR 8/3) fg, pg, sr to sa quart, dry, nonplastic sli consolidated to mod consolidated & laminated, sli to mod brittle, 60% SD 40% SILT, lense of material from 4.0-4.3 SILTY SAND strong brown (7.5YR 5/6) sli less consolidated than material above. — 3.0
4		0.0	13/84	SL-502 NBZ-SB 4.0-5.0	0935		
0-5.0	1.0/1.0						
5		0.0	13/84				Refusal @ 5.0' on bedrock — 5.0

CDM Smith BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Kris Larson

Sample ID SL-502-NB7-SB-4.0-5.0 Date/Time 12-3-13 / 0935

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 16oz jar & 2 encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≤ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≤ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color ~~Olive~~ yel (10YR 6/6) 12-3-13 brownish yellow

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

NR 12-3-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-503-NBZ-SB-0.0-0.5 Date/Time 12-3-13 / 10:00

Matrix (circle one): (Soil) Sediment Water

Start Depth ~~0.0~~ 0.0 (CKR 12-3-13)

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Biocides	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
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		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color ~~yellow~~ yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Mike Hoffman PG Registration # 7735

Additional Comments NA

12-3-13

NA – Not Applicable

12-3-13

Location ID: DGSL-503	Subarea: NBZ	Date Started: 12-3-13	Date Completed: 12-3-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st DPT = 3.0, 2nd DPT = 3.0, 3rd DPT = 3.0
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm		
GPS collected? Yes or No	Drill Method: DPT		Depth Drilled into Bedrock: NA
Radiological Background: β = 13 α = 97	Borehole diameter: 2.25		
PID Background: ~~β = 0.0 ppm α = 0 RR~~	Depth to GW: NA		Sampling Method: DPT
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Mike Hoffman #7735		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0-0.5	0.5/0.5	0.0	13/98	SL-503 NBZ-SB 0.0-0.5	10:00	SM	SILTY SAND, yel brn (10YR 5/4) fg, pg, sr to sa, quartz, dry, some org (roots) SAND 80% SILT 20%, sl compacted to loose — 0.4
		0.0	13/78				
1	2.5/2.5	0.0	13/60			SM	SILTY SAND, lt yel brn (10YR 6/4) fg, pg, sr to sa quartz, dry, loose, 75% SD 25% SILT
2		0.0	13/70				
2.0-3.0				SL-503 NBZ-SB 2.0-3.0	1020		
3		0.0	13/72				Refusal @ 3.0 on bedrock — 3.0

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By: Kris Larson

Sample ID: SL-503-NBZ-SB-2.0-3.0 Date/Time: 12-3-13/1020

Matrix (circle one): (Soil) Sediment Water

Start Depth: 2.0

End Depth: 3.0

Depth Units (circle one): Inches (Feet)

Check if Composite: ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID: NA

Field Geologist: David Rojas

Sampler: Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Soil Jar	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 16 oz jar & 2 encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color ~~Light Brn~~ (10YR 6/4)

Odor light yellowish brown

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12-3-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-505-NBZ-SB-0.0-0.5 Date/Time 12/13/13 1300

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS. Sleeves
1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments None

10/23/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-505	NB2	FRIDAY 12/13/13 1255	12/13/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.4' 1.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: slidehammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 17/99	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: C. Geoprobe Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	19/100	SL-505-NB2-SB-0.0-0.5	1300	SM	SILTY SAND: Brown (10YR 4/3); 70% sand, pg, f-m, mostly f; 30% silt, low plasticity; t gravel (siltstone & weathered SS formation) f-c, sa-sr, max Ø = 2.0"; t organics (leaves, twigs, roots); dry, no odor.
1		0.0	18/94				
							Refusal at 1.4', 1.4'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID SL-506-NBZ-SB-0.0-0.5 Date/Time 12-4-13/1030

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer (Hand Auger/Slide Hammer) Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 16 oz Jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic Inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NONE
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color lightyellowish brown (10YR 6/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments
- Unable to collect sample using slidehammer, so collected sample using handauger.
- Did not use DPT to advance boring due to proximity to high pressure gas line.

NA – Not Applicable

Location ID: DG-506	Subarea: NBZ	Date Started: 12-4-13	Date Completed: 12-4-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st HA = 1.0 2nd HA = 1.0
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm		
GPS collected? (Yes) or No	Drill Method: Handauger		Depth Drilled into Bedrock: NA
Radiological Background: γ = 14 α = 84	Borehole diameter: 3.25 inches		
PID Background: 00 ppm	Depth to GW: NA		Sampling Method: Handauger
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Nulle Hoffman #7735		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	14/91	SL-506	1030	SM	SILTY SAND, lt yel brn (10YR 7/4), fg, pg, sr to sa, loose quartz dry; some siltstone gravel increasing in amount w/depth; siltstone gravel F-m sized, mod well cemented, sli friable, grayish brown (2.5Y 5/2) 60% SD, 30% SILT, 10% GRAVEL
		0.0	14/72	NBZ-SB 0.0-0.5			
1	HA	0.0	14/84				1.0

Refusal @ 1.0' bls due to bedrock

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-507-NBZ-SB-0.0-0.5 Date/Time 12-4-13 / 10:00

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): ~~DPT~~ DNR 12-4-13 ~~Slide Hammer~~ DNR 12-4-13 (Hand Auger/Slide Hammer) Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 16 oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brown (10YR 5/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7235

Additional Comments
- Unable to collect sample using slidehammer, so collected sample using hand auger
- Did not use DPT to advance boring due to proximity to high pressure gas line and petroleum pipeline

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-507	NBZ	12-4-13	12-4-13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1st HA=4.5, 2nd HA=4.5
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm	
GPS collected? Yes or No	Drill Method: Handauger	Depth Drilled into Bedrock: NA
Radiological Background: γ= 15 α=67	Borehole diameter: 3.25	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Handauger
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: Mike Hoffman #7735	Geologist:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5		0.0	15/90	SL-507 NBZ-SB 0.0-0.5	1000	SM	SILTY SAND, brown (10YR 5/3), fg, pg, sr-sa, quartz, dry, loose; 65% SD 35% SILT, few amt sli consolidated but friable — 0.5
		0.0	15/90				
1		0.0	15/96			SM	SILTY SAND, yel brn (10YR 5/4) mottled w/ lt yel brn (10YR 6/4) fg, pg, sr to sa, quartz, dry, mostly loose some mod well compacted and ~~[illegible]~~ mod hard & sli friable, some siltstone gravel, hard, sli cemented, blocky, f-m sized — 2.0
	HA						
2		0.0	15/120			ML	75% SD, 15% SILT, 10% GRAVEL
3		0.0	15/108				SANDY SILT w/ GRAVEL, lt yel brn (2.5Y 6/3) mottled w/ olive brown (2.5Y 4/3), fg, pg, sr to sa, quartz, mod well consolidated to sli loose, dry, Gravel is A.A — SILT-50% SD-30% GRAVEL-20% — 3.5
4		0.0	15/108	SL-507 NBZ-SB 3.5-4.5	1015	SM	SILTY SAND, same as 0.5-2.0
		0.0	15/90				— 4.5
5							Refusal @ 4.5' bls on bedrock

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Kris Larson

Sample ID SL-SD7-NBZ-SB-3.5-4.5 Date/Time 12-4-13/1015

Matrix (circle one): (Soil) Sediment Water

Start Depth 3.5

End Depth 4.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer (Hand Auger/Slide Hammer) Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 16 oz jar + 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments • Did not use DPT to advance boring due to proximity to high pressure gas line and petroleum pipeline

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-508-NBZ-SB-0.0-0.5 Date/Time 12-4-13 / 0900

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Enores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves & 1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments NA

DRR 12-4-13

NA – Not Applicable

Location ID: DG-508	Subarea: NBZ	Date Started: 12-4-13	Date Completed: 12-4-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st DPT= 2nd DPT= 3rd DPT=
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm		
GPS collected? Yes or No	Drill Method: DPT		Depth Drilled Into Bedrock: NA
Radiological Background: γ = 15 α = 10%	Borehole diameter: 2.25		
PID Background: 0.0	Depth to GW: NA		Sampling Method: DPT
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: Nick Hoffman #7735		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
	0.5/0.5	0.0	15/105	SL-508 NBZ-SB 0.0-0.5	0900	SM	SILTY SAND, yel brn (10YR 5/4), fg, pg, sr to sa, quartz mostly loose w/ some siltstone gravel, siltstone gravel is f-m sized, tabular mod well consolidated but sli friable, dry; 70% SAND 25% silt 5% SILTSTONE
		0.0	15/166				
1		0.0	15/60				
	3.5/3.5						
2		0.0	15/72			CL	SANDY ~~SILTY~~ CLAY, brown (10YR 4/3) mottled w/ ltyel brn (10YR 6/4), low plasticity, friable, dry to sli moist, sli laminated silt & sd is dispersed in clay; 50% CLAY 30% SILT, 20% SD sd is fg, pg, sr-sa quartz, unit is becoming clayey w/depth
3		0.0	15/54				
4	1.0/1.0	0.0	15/84	SL-508 NBZ-SB 4.0-5.0	0915		
5		0.0	15/54				Ceased advancing DPT probe @ 5.0' bls

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-508-NBZ-SB-4.0-5.0 Date/Time 12-4-13/ 0915

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Energes	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

~~2 ziploc sleeves~~ DBR 12-4-13 2 16oz jar & 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12-4-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-509-NBZ-SB-0.0-0.5 Date/Time 12-3-13/13:15

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Misc.	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves & 1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color light yellowish brown (10YR 6/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Mila Hoffman **PG Registration #** 7735

Additional Comments NA

12-3-13

NA – Not Applicable

Location ID: DG-509	Subarea: NBZ	Date Started: 12-3-13	Date Completed: 12-3-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st DPT = 3.5, 2nd DPT = 3.5, 3rd DPT = 3.5
Company Name: CDM SMITH		Drill Contractor/Driller: Strongarm	
GPS collected? Yes or No		Drill Method: DPT	Depth Drilled into Bedrock: NA
Radiological Background: β=13 α=103		Borehole diameter: 2.25	
PID Background: 0.0		Depth to GW: NA	Sampling Method: DPT
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No: #7735	Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	13/97 13/90	SL-509 NBZ-SB 0.0-0.5	1315	SM	SILTY SAND, lt yel brn (10YR 6/4) mottled w/ yel brn (10YR 5/4) f grn, pg, sr to sa, quartz, loose, dry, Few to some organics (roots) tr amt sdstn gravel fine sized - 0.8
1		0.0	13/102			SP SM	mod well demented; 75% SD, 25% SILT
2	3.0/3.0	0.0	13/90				SAND w/ SILT, pale brn (10YR 6/3) mottled w/ v pale brn (10YR 7/3) f grn w/ tr to Few amt med grained pg, sr to sa, quartz, dry, loose w/ some sli cons/cleted but brittle/Friable lenses, 90% SD 10% SILT
2.5-3.5							SILT STONE lenses @ 1.5' (1.4'-1.6') bls dk grayish brown (2.5Y 4/2) med hard to hard, sli Friable, tabular
3		0.0	13/66	SL-509 NBZ-SB 2.5-3.5 MS	1330		
		0.0	13/66	SL-509 NBZ-SB 2.5-3.5	1310		
							3.5

Refusal @ 3.5' bls on bedrock

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-509-NBZ-SB-2.5-3.5MS Date/Time 12-3-13 / 1330

Matrix (circle one): (Soil) Sediment Water

Start Depth 2.5

End Depth 3.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

6 16oz jars & 6 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color pale brown (10YR 6/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

DRR 12-3-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-809-NBZ-SB-2.5-3.5 Date/Time 12-3-13 / 1340

Matrix (circle one): (Soil) Sediment Water

Start Depth 2.5

End Depth 3.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N (FD) FB RB

Parent Sample ID SL-509-NBZ-SB-2.5-3.5MS

Field Geologist David Rojas

Sampler Kris Larson

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 16 oz jars & 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color pale brown (10 YR 6/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12 DRR

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-510-NBZ-SB-0.0-0.5 Date/Time 12-3-13 / 1430

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves & 1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color light yellowish brown (10YR 6/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

DRD 12-3-13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-510	NBZ	12-3-13	12-3-13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1st DPT= 2nd DPT= 3rd DPT=
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm	
GPS collected? Yes or No	Drill Method: DPT	Depth Drilled into Bedrock: NA
Radiological Background: γ=13 α=108	Borehole diameter: 2.25	
PID Background: 0.0 ppm	Depth to GW: NA	Sampling Method: DPT
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Mike Hoffman #7735	Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0	13/91	SL-510 NBZ-SB 0.0-0.5	1430	SM	SILTY SAND, lt yel brn (10YR 6/4) mottled w/yel brn (10YR 5/4) and v pale brn (10YR 7/3), f-m, pg, sr to sa, quart, dry, mod well compacted becoming sli loose w/depth 75% SD 25% SILT
		0.0	13/72				
1		0.0	13/84			SM	0.8 SILTY SAND, dk yel brn (10YR 4/6) fg, pg, sr to sa, quart, loose, some to few siltstone gravel, mod well to well compacted, 80% SD 20% SILT, dry
	3.5/3.5						
2		0.0	13/72				
3		0.0	13/78			SM	3.0 SILTY SAND, lt olive brn (2.5Y 5/3) mottled w/pale brown (2.5Y 7/3) and lt yel brn (10YR 6/4), fg, pg, sr to sa quart, dry, loose, sli lamination from 3.5-4.0 & 4.4-4.6' bls; 65% SD 35% SILT
4		0.0	13/54				
-5.0	1.0/1.0			SL-510 NBZ-SB 4.0-5.0	1445		
5		0.0	13/102				

Ceased advancing DPT @ 5' bls

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Kara Jones

Sample ID SL-510-NBZ-SB-4.0-5.0 Date/Time 12-3-13 / 1445

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 16 oz jars & 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes No

Color light olive brown (2.5Y 5/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

12-3-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-511-NBZ-SB-0.0-0.5 Date/Time 12-4-13 / 1240

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Excavation	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves & 4 oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brown (7.5YR 4/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments NA

12-4-13 SAR

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-511	NBZ	12-4-13	12-4-13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1st HA=3.5, 2nd HA=3.5, 3rd HA=3.5
Company Name: CDM SMITH	Drill Contractor/Driller: Stringarm	
GPS collected? (Yes) or No	Drill Method: Slidehammer/HA	Depth Drilled into Bedrock:
Radiological Background: γ=14 α=87	Borehole diameter: 3.25	N/A
PID Background: 0.0 ppm	Depth to GW: NA	Sampling Method:
Radiological Equipment Used:	PG Review & No.: Mike Hoffman #7735	Slidehammer
✓ MicroR ✓ Alpha/Beta ✓ Pancake		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	14/100 14/66	SL-511 NBZ-SB 0.0-0.5	1240	SM	SILTY SAND, brown (7.5YR 4/2), fg, pg, sr to sa, quartz, loose, few to some organics (roots), dry, tr amt silt, mod compacted, friable; 70% SD 30% SILT — 0.5
1	HA	0.0	14/72			SM	SILTY SAND, brown (7.5YR 5/4), fg, pg, sr to sa, quartz, mostly loose, some sli to mod compacted, mod friable, tr to few organics (roots), dry 75% SD 25% SILT — 1.4
2		0.0	14/90				SILTY SAND, reddish brown (5YR 5/4) fg, pg, sr to sa, quartz mostly loose some sli to mod compacted, sli to mod friable tr amt organics (roots) 80% SD 20% SILT, dry — 2.6
3		0.0	14/78	SL-511 NBZ-SB 2.5-3.5	1300	SM	SILTY SAND, brownish yel (10YR 6/6) mottled w/ v pale brn (10YR 7/4) fg, pg, sr to sa, quartz, mod well compacted to well compacted, dry, tr to some sandstone gravel increasing w/ depth, Gravel is f-c sized, mod well to well cemented, many w/ iron staining yel red (5YR 4/6) and reddish brn (5YR 4/3); 75% SD 20% SILT 5% GRAVEL grading to 70% SD 20% SILT 10% GRAVEL — 3.5
4		0.0	14/90				

Refusal @ 3.5' b/s on bedrock

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID SL-511-NBZ-SB-2.5-3.5 Date/Time 12-4-13 / 1300

Matrix (circle one): (Soil) Sediment Water

Start Depth 2.5

End Depth 3.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves, 1 4oz jar, 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brownish yellow (10YR 6/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12-4-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID 9L-512-NBZ-SB-0.0-0.5 Date/Time 12-6-13 / 0925

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt & gravel
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

12-6-13

NA – Not Applicable

Location ID: DG-512	Subarea: NBZ	Date Started: 12-6-13	Date Completed: 12-6-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st NA = 1.0 2nd NA = 1.2
Company Name: CDM SMITH	Drill Contractor/Driller: NA		
GPS collected? Yes or No	Drill Method: Slidehammer / NA		Depth Drilled into Bedrock: NA
Radiological Background: $\bar{x}$ = 12 σ = 86	Borehole diameter: 3.25		
PID Background: 0.0 ppm	Depth to GW: NA		Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR [✓] Alpha/Beta [✓] Pancake	PQ Review & No: Will Hoffman #7735		Geologist: David R Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
							ZAR with SILT and GRAVEL
0.0-0.5	0.5/0.5	0.0	12/85	SL-512 NBZ-SB 0.0-0.5	0925	SP-SM	SAND, vpl brn (10YR 6/4) mottled w/ brn (10YR 4/3) and pale brn (10YR 6/3) fg w/ tr to few cmt med grv, pg, sr to sa, gravel loose becoming med compacted w/ depth, dry, tr to few amount of organics (roots & grass) 75% SD, 10% SILT, 15% GRAVEL Gravel is weathered sandstone, v pale brn (10YR 7/4) and pale brn (10YR 6/3), fr-med sized, sr to sa, mod well cemented but sli to med friable.
		0.0	12/84				
1	NA	0.0	12/54			SP-SM	SILTY SAND, dk yel brn (10YR 4/4) fg, pg, sr to sa gravel fg, loose dry; 80% SD 20% SILT
							SAND w/ SILT & GRAVEL, same as 0.0-0.5
							Refusal @ 1.2 on bedrock

0.5
0.8
1.2

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-513 - NBZ-SB-0.0-0.5 Date/Time 12/09/13 1010

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sieve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~100~~ NA 11/19/13
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) SSformation Siltstone 11/19/13

Is Staining Present Yes (No)

Color Brown (7.5YR 4/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

Dry (Moist) Wet

PG Signature _____ **PG Registration #** _____

Additional Comments None

11/19/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-513	NBZ	~~12/06/13~~ 12/09/13	~~12/06/13~~ 12/09/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1.4', 1.9'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: slidehammer / handauger	Depth Drilled into Bedrock: NA
Radiological Background: 17/86		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No.: Mike Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	17/85	SL-513 NBZ-SB-0.0-0.5	1010	SM	SILTY SAND: Brown (7.54R 4/4) 65% sand, pg, f-m, mostly f; 30% silt, low plasticity; 5% gravel (SS formation and siltstone), f-c, sa-sr, max Ø=2.0", moist, no odor, t organics (twgs) ~~(fill)~~
		0.0	16/73				
1		0.0	17/107				
		0.0	16/81				
		0.0	16/97				
						SM	SILTY SAND: same as above color change to brown (7.54R 4/2) and dry, no odor ~~(fill)~~
							Refusal at SS formation at 1.4', 1.9'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By: Kris Larson

Sample ID: SL-514-NBZ-SB-0.0-0.5 Date/Time: 12-9-13 / 1200

Matrix (circle one): (Soil) Sediment Water

Start Depth: 0.0

End Depth: 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite: ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID: NA

Field Geologist: David Rojas

Sampler: Kris Larson

Analysis

	Parameters	Method	Analyze?
Metals		EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				~~SP-SM~~	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

QR 12-9-13

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color dk yel brn dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

QR 12-9-13

NA – Not Applicable

Location ID: DG-514	Subarea: NBZ	Date Started: 12-9-13	Date Completed: 12-9-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st HA = 1.2 2nd HA = 2.6
Company Name: CDM SMITH	Drill Contractor/Driller: NA		
GPS collected? Yes or No	Drill Method: Slidehammer / Handauger		Depth Drilled into Bedrock: NA
Radiological Background: γ = 17 α = 86	Borehole diameter: 3.25 inches		
PID Background: 0.0 ppm	Depth to GW: NA		Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: [illegible] #7735		Geologist: David Bjas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	17/100 17/96	SL-514 NBZ-SB 0.0-0.5	1145 1200	SM	SILTY SAND, dk yel brn (10YR 4/4) mottled w/ (10YR 3/4) and yel brn (10YR 5/4) fg, pg, sr to sa, quartz, loose, dry; 85% SD 15% SILT, little org (roots, leaves, twigs) — 0.4
1		0.0	17/78				SAND w/ SILT, yel brn (10YR 5/6) mottled w/ dk yel brn (10YR 4/4) and pale brn (10YR 7/4) fgrn w/ little med qrn & tr coarse grn, pg, sr to sa, quartz w/ tr amt biotite & dk minerals, loose, tr to few amt gravel, dry — 1.2
2		0.0	17/108				Gravel is weathered sandstone, sr to sa, f-med sized well cemented, hard; 90% SD 10% SILT Tr GRAVEL — 2.6
		0.0	17/102				
3							Refusal on Bedrock @ 2.6' bgs

CDM Smith BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-515-NBZ-SB-0.0-0.5 Date/Time 12-9-13 / 1300

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color ~~dk~~ dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

12.19.13 DDR

NA – Not Applicable

Location ID: DG-515	Subarea: NBZ	Date Started: 12-9-13	Date Completed: 12-9-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st HA = 2.3, 2nd HA = 2.3
Company Name: CDM SMITH	Drill Contractor/Driller: NA		
GPS collected? Yes or No	Drill Method: Slidehammer/Handauger		Depth Drilled Into Bedrock: NA
Radiological Background: γ = 17 α = 82	Borehole diameter: 3.25 inches		
PID Background: 0.0 ppm	Depth to GW: NA		Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: [signature] #7735		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	17/87 17/84	SL-515 NBZ-SB 0.0-0.5	1300	SM	SILTY SAND, dk yellow (10YR 4/4) mottled w/ lt yel brn (10YR 6/4) and yel brn (10YR 5/4), fg, pg, sr to sa, quartz, chrt, loose, little to few amt organics (roots, fibrous, tubers - some partially decomposed); 75% SD 25% SILT — 0.8
1	HA	0.0	17/96			SM	SILTY SAND, yel brn (10YR 5/4), fg, pg, sr to sa, quartz, chrt, loose, tr amt org (A.A.) 85% SD — 1.6
2		0.0 0.0	17/81 17/72			SP	SAND, lt olive gray (5Y 6/2) mottled w/ olive gray (5Y 5/2) fg, pg, sr to sa, quartz & tr to few amt dk minerals, loose becoming sli compacted w/ depth; 95% SD 5% SILT tr amt Sandblone gravel; chrt becoming sli moist w/ depth — 2.3

Refusal on bedrock @ 2.3' bgs

CDM Smith **BORING LOG AND SAMPLING RECORD** Page 1 of ___

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-~~514~~ 516-NBZ-SB-0.0-0.5 DR 12-9-13 Date/Time 12-9-13 / 1030

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check If Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves & 1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color dark brown (7.5YR 3/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

12-9-13

NA – Not Applicable

Location ID: DG-516	Subarea: NBZ	Date Started: 12-9-13	Date Completed: 12-9-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st HA = 5.0' 2nd HA = 5.0'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: Slidehammer/Handauger	Depth Drilled into Bedrock: NA
Radiological Background: γ = 15 α = 95		Borehole diameter: 3.25 inches	
PID Background: 0.0 ppm		Depth to GW: NA	Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No.: Willie Hoffman #773	Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	15/82 15/66	SL-516 NBZ-SB 0.0-0.5	1030	SM	SILTY SAND, dk brn (7.5YR 3/2) mottled w/ brown (10YR 4/3) & (10YR 5/4), fg, pg, sr to sa, quart, dry, loose becoming mod compacted w/ depth, Few to little organics (roots, leaves, twigs) 80% SD 20% SILT
1	HA	0.0	15/72			SM	SILTY SAND, strong brown (7.5YR 4/6) mottled w/ brown (10YR 5/4), fg, pg, sr to sa, quart, dry, mod well compacted tr amt org (roots); 70% SD 30% SILT
2		0.0	15/78				
3		0.0	15/90			SM	SILTY SAND, reddish brown (5YR 5/4), mottled w/ strong brown (7.5YR 4/6) fg, pg, sr to sa, quart, sli to mod well compacted, tr amt org (roots) 65% SD 35% SILT
4		0.0	15/84	SL-516 NBZ-SB 4.0-5.0	1100	SP-SM	SAND w/ SILT yel brn (10YR 5/6) mottled w/ v pale brown (10YR 7/4) & brownish yellow (10YR 6/8), fgrn w/ little amt med grn, pg, sr to sa quart w/ tr amt biotite & dk minerals; 90% SD & 10% SILT
4.0-5.0							
5		0.0	15/90				

Ceased advancing boring @ 5.0' bls

0.6

2.6

3.8

5.0

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID SL-516-NBZ-SB-4.0-5.0 Date/Time 12-9-13/1100

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check if Composite [ ]

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves, 1 4oz jar & 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 2735

Additional Comments NA

[signature] 12-9-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Londen

Sample ID SL-517-NB2-SB-0.0-0.5 Date/Time 12/14/13 1340

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check If Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Londen

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Mike Hoffman **PG Registration #** 7735

Additional Comments None

11/14/13

NA – Not Applicable

Location ID: DG-517	Subarea: NB2	Date Started: MONDAY 12/16/13 1330	Date Completed: 12/16/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: ~~4.0~~ 12/19/13 4.2', 3.0', 3.0'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: Slidehammer/handauger	Depth/Drilled Into Bedrock: NA
Radiological Background: 16/93		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No.: Nate Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	16/100	SL-517-NB2-SB-0.0-0.5	1340	ML	SANDY SILT: yellowish brown (10YR 5/6); 60% silt, low plasticity; 40% sand, pg, f; t gravel (SS formation & siltstone); f, sa-sr, max φ = 0.7', dry, no odor.
		0.0	15/106				
1		0.0	15/78				
		0.0	15/87				
2		0.0	15/103				
		0.0	15/104	SL-517-NB2-SB-0.0-0.5	1420	ML	
3		0.0	15/74				
		0.0	15/117				
4		0.0	15/104				Refusal at ~~4.0~~ 12/19/13 4.2', 3.0', 3.0'
5							

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine mod: moderate sr: subrounded ϕ: diameter bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-S17-NB2-SB-2.0-3.0 Date/Time 12/16/13 1420

Matrix (circle one): Soil Sediment Water

Start Depth 2.0

End Depth 3.0

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Lauder

Sample ID SL-518-NB2-SB-0.0-0.5 Date/Time 12/16/13 1125

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Lowden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeve
1 4oz jar

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

(Other) SS Formation

Is Staining Present Yes (No)

Color Yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

10/14/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-518	NB2	12/16/13 1115 (Monday)	12/16/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 2.0', 0.4', 0.9'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 16/90	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: [signature] #7755	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	16/106	SL-518-NB2-SB-0.0-0.5	1125	SM	SILTY SAND: yellowish brown (10YR5/4); 60% Sand, pg, f-m, mostly f; 40% silt, low plasticity; t gravel (igneous, weathered SS formation), f-c, MAX Ø = 1.25", sa-sr; t organic (large root) at 2.0'; dry, no odor (FILL)
		0.0	16/82				
1		0.0	15/88				
		0.0	15/100				
2		0.0	15/88				
							Refusal at 2.0', 0.4', 0.9'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Londen

Sample ID SL-519-NB2-SB-0.0-0.5 Date/Time 12/16/13 1210

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Londen

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
Sediment	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≤ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≤ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic Inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) Siltstone

Is Staining Present Yes (No)

Color Dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Nick Hoffman **PG Registration #** 7735

Additional Comments None

Location ID: DG-519	Subarea: NB2	Date Started: MOW DAY 12/16/13 1205	Date Completed: 12/16/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 0.7', 0.4', 0.4'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: Slide hammer/handauger	Depth Drilled into Bedrock: NA
Radiological Background: 17/110		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No: Mike Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	16/109 14/96	SL-519-NB2-SB-0.0-0.5	1210	SM	SILTY SAND: Dark yellowish brown (10YR 4/4); 60% sand, pg, f; 40% silt, low plasticity; t gravel (igneous, metamorphic, siltstone), f-c, sa-sr; max ø = 2.0'; dry, no odor (FILL)
							Refusal at 0.7', 0.4', 0.4'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-520-NB2-SB-0.0-0.5 Date/Time 12/16/13 1030

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

(Other) ss formation & siltstone

Is Staining Present Yes (No)

Color Dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7235

Additional Comments None

10/24/13

NA – Not Applicable

Location ID: DG-520	Subarea: NB2	Date Started: 12/16/13 Monday	Date Completed: 12/16/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 0.5'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: slidehammer/handauger	Depth Drilled into Bedrock: NA
Radiological Background: 17/98		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No.: Mike Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	15/95 15/87	SL-520-NB2-SB-0.0-0.5	1030	SP	SAND ~~Gravelly sand with silt~~ Smith: Dark yellowish brown (10YR 4/4), 85% sand, pg, f-m, mostly m; 10% gravel (igneous, metamorphic, siltstone, & SS formation), f-c, sa-sr, max Ø = 2.0"; 5% silt, nonplastic; dry, no odor (FILL) Refusal at 0.5', 0.5'

CDM Smith BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Londen

Sample ID SL-521-NBZ-SB-0.0-0.5 Date/Time 12/13/13 0935

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Londen

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves
1 4oz jar ✓

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≤ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≤ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS Formation

Is Staining Present Yes (No)

Color Brown (10YR 5/3

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-521	NB2	12/13/13 Friday 0930	12/13/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.7', 0.8'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 19/104	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Mike Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	18/106 15/104	SL-521-NB2-SB-0.0-0.5	0935	SM	SILTY SAND: Brown (10YR 5/3); 70% sand, pg, f-m; 30% silt, low plasticity; t gravel (SS Formation & igneous), f-c, sa-sr, max ϕ = 1.5", dry, no odor; t organics (roots, leaves) (Fill)
							Refusal at 0.7' & 0.8'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine mod: moderate sr: subrounded ϕ: diameter bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By: E. Louden

Sample ID: SL-522-NBZ-SB-0.0-0.5

Date/Time: 12/09/13 1105

Matrix (circle one): Soil Sediment Water

Start Depth: 0.0

End Depth: 0.5

Depth Units (circle one): Inches Feet

Check if Composite: ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID: NA

Field Geologist: C. Cox

Sampler: E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Excess	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) NA ~~100%~~ 12/9/13
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) SSformation & Siltstone 12/9/13

Is Staining Present Yes (No)

Color Darkbrown (7.5YR 3/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None 12/09/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-522	NB2	~~12/06/13~~ 12/09/13 1100	~~12/06/13~~ 12/09/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 2.5', 3.9', 3.5'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer / hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 16/85	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon, auger
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Nikki Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	17/86	SL-522			
		0.0	14/85	NB2-SB-0.0-0.5	1105	SM	SILTY SAND: Dark brown (7.5YR 3/3); 60% sand, pg, f-m, mostly f; 40% silt, low plasticity; t gravel (SS formation & siltstone) f, sa-sr, max ϕ = 0.5", dry, no odor ~~(fill)~~ 12/9/13
1		0.0	16/107				
		0.0	15/85				
2		0.0	15/105				Color change to brown (7.5YR 4/4) at 0.7'
		0.0	15/96				
3		0.0	17/93				
		0.0	15/115	SL-522-NB2-SB-~~3.0~~ 2.5-3.5	1140		
4				12/9/13			Refusal at 2.5', 3.9', 3.5' at SS Formation

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-522-NB2-SB-~~3.0~~ 2.5-3.5 (EL 12/9/13) Date/Time 12/09/13 1140 (EL 12/9/13)

Matrix (circle one): Soil Sediment Water

Start Depth ~~3.0~~ 2.5

End Depth 3.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Subcont	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

1 16 oz jar
2 encore

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) NA ~~100%~~ 12/12/13
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) ~~SS formation siltstone~~ 12/12/13

Is Staining Present Yes (No)

Color Brown (7.5YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

Deviation: Collected cores out of slide hammer sm120912 hand auger

12/12/13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-523-NB2-SB-0.0-0.5 Date/Time 12/09/13 1245

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check If Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~100~~ 0 ~~cc 12/4/13~~ NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) ~~SS Formation Brillstone~~ cc 12/12/13

Is Staining Present Yes (No)

Color Brown (7.5YR 4/3)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Vicki Hoffman **PG Registration #** 7735

Additional Comments None

cc 12/05/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-523	NBZ	12/09/13 MONDAY 1240	12/09/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 2.3', 1.8'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer	Depth Drilled Into Bedrock: NA
Radiological Background: 17/94	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & Non [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	16/90	SL-523			
		0.0	14/66	NBZ-SB-0.0-0.15	1245	SM	SILTY SAND: Brown (7.5YR 4/3); 60% Sand, pg, f-m, mostly f; 40% silt, low plasticity; t gravel (SS Formation & siltstone), f, sa-sr, max ϕ = 0.5"; dry, no odor ~~(fill)~~ cuttings
1		0.0	16/101				
		0.0	16/114				
2		0.0	16/99			SM	SILTY SAND: Yellowish brown (10YR 5/6); ~~gravelly~~ 65% sand, pg, f-m, mostly f; 30% silt, low plasticity; 5% gravel (SS Formation), f-c, sa-sr, max ϕ = 1.75", weak cementation; dry, no odor.
							Refusal at SS Formation @ 2.3', 1.8'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-524-NBZ-SB-0.0-0.5MS Date/Time 12/09/13 1340

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

3 SS sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~100%~~ 0% NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) ~~SS formation & siltstone~~ 10/12/13

Is Staining Present Yes (No)

Color Brown 10YR 4/3

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

10/09/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-524	NB2	12/09/13 MONDAY	12/09/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.1', 1.1'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer	Depth Drilled into Bedrock: NA
Radiological Background: 16/104	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split Spoon
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & Name: [signature] #7755	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	15/65	SL-524-NB2-SB-0.0-0.5MS	1340	SM	SILTY SAND: Brown (10YR4/3), 70% sand, pg, f-m, mostly f, ~~25~~ 30% silt, low plasticity; t gravel (weathered SS formation & siltstone), f, sa-sr, max Ø=0.5"; t organics (leaves, roots, twigs); dry, no odor ~~(Fill)~~ 12/9/13
		0.0	13/70				
1		0.0	14/95	SL-824-NB2-SB-0.0-0.5	1430		
2							refusal at SS Formation at 1.1', 1.1'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By _____

Sample ID SL-824-NBZ-SB-0.0-0.5 Date/Time 12/09/13 1430

Matrix (circle one): Soil (circled) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet (circled)

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer (circled) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD (circled) FB RB

Parent Sample ID SL-524-NBZ-SB-0.0-0.5 MS

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~100~~ NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) SS Formation Siltstone

Is Staining Present Yes (No)

Color Brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-525-NBZ-SB-0.0-0.5 Date/Time 12-5-13/0930

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None.
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Mike Stoffman **PG Registration #** 7735

Additional Comments Moved boring location 110' ENE from original proposed location so it would be a downgradient step out from Boring SL-021-NB7

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-525	NBZ	12-5-13	12-5-13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1st HA = 5.0 2nd HA = 5.0
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Sliddhammer / HA	Depth Drilled into Bedrock: NA
Radiological Background: γ = 14 α = 91	Borehole diameter: 3.25 inches	
PID Background: 0.0 ppm	Depth to GW: NA	Sampling Method: Sliddhammer
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Mike Hoffman #7735	Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (μR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	14/73 14/60	SL-525 NBZ-SB 0.0-0.5	0930	SM	SILTY SAND, brown (10YR 4/3) fg, pg, sr-sa, quartz, dry, loose; 80% SD 20% SILT, few to some organics (roots) tr amt sli consolidated increasing w/depth — 0.6
1	HA	0.0	14/96			SM	SILTY SAND, strong brown (7.5YR 4/6) fg w/ few med gravel, pg, sr to sa, quartz, dry, med well to well consolidated, few organics (roots); 85% SD 15% SILT; less organics w/depth (trace).
2		0.0	14/108				
3		0.0	14/78				
						SM	SILTY SAND, yel brn (10YR 5/6) mottled w/ lt yel brn (10YR 6/4), fg, pg, sr to sa, quartz, mod loose to sli compacted becoming more consolidated w/depth, dry 70% SD 30% SILT — 3.4
4		0.0	14/78	SL-525 NBZ-SB 4.0-5.0MS	1045		
5		0.0	14/102	SL-525 NBZ-SB 4.0-5.0	1100		— 5.0
							Ceased advancing boring @ 5.0' bls

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-525-NBZ-SB-4.0-5.0MS Date/Time 12-5-13 / 1045

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check if Composite [ ]

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

3 SS Sleeves & 6 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≤ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≤ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12-5-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Kris Larson

Sample ID SL-525-NBZ-4.0-5.0 Date/Time 12-5-13 / 1100

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check If Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N (FD) FB RB

Parent Sample ID SL-525-NBZ-SB-4.0-5.0 MS

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve & 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments NA

12-5-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-526-NBZ-SB-0.0-0.5 Date/Time 12-5-13 / 1130

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Waters	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)*
2. Percentage Fill (%) None*
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other * Abundant amount of leaves, twigs roots, and other natural organic material

Is Staining Present Yes (No)

Color brown (10YR 5/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12-5-13

NA – Not Applicable

Location ID: DG-526	Subarea: NBZ	Date Started: 12-5-13	Date Completed: 12-5-13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1st HA = 3.7 2nd HA = 3.5
Company Name: CDM SMITH	Drill Contractor/Driller: NA		
GPS collected? (Yes) or No	Drill Method: Slidehammer / HA		Depth Drilled Into Bedrock: NA
Radiological Background: γ = 14 α = 73	Borehole diameter: 3.25		
PID Background: 0.0 ppm	Depth to GW: NA		Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: Mike Hoffman #7755		Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	14/91 14/72	SL-526 NBZ-SB 0.0-0.5	1130	SP SM	SAND w/SILT, brown (10YR 5/3) mottled w/dk grayish brown (10YR 4/2) and yel brown (10YR 5/6) fg w/few to some med gvn, pg, sr to sa, med loose to sli compacted, common organics (roots, branches, leaves, twigs; some partly decomposed); 90% SD 10% SILT; dry
1	HA	0.0	14/102		SP RRR	SM	
2		0.0	14/108		SP	SM	SAND w/SILT & GRAVEL, AA, except only tr org (roots), 75% SD 15% GRAVEL 10% SILT; Gravel is weathered sandstone, mod well cemented, hard, sr, F-m sized
2.5-3.5		0.0	14/84	SL-526 NBZ-SB 2.5-3.5	1200	SP SM	SILTY SAND, dk yel brn (10YR 4/4) mottled w/yel brn (10YR 5/4) fg w/tr amt med gvn, pg, sr to sa, quartz, dry, med loose to sli compacted, tr org (roots) 85% SD 15% SILT
		0.0	14/102				SAND w/SILT yel brn (10YR 5/6) mottled w/dk yel brn (10YR 4/4) and lt yel brn (10YR 6/4) fg w/tr to few med grained, pg, sr to sa, quartz, dry, mod well compacted, tr org (roots) 90% SD 10% SILT

Refusal @ 3.7' bls on bedrock

0.6

1.8

2.6

3.7

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Kris Larson

Sample ID SL-526-NBZ-SB-2.5-3.5 Date/Time 12-5-13/1200

Matrix (circle one): (Soil) Sediment Water

Start Depth 2.5

End Depth 3.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeves & 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

SW-SM DPR 12-5-13

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

DPR 12-5-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-527-NBZ-SB-0.0-0.5 Date/Time 12/05/2013 1045

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS Sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

Other _____

Is Staining Present Yes (No)

Color very dark brown (10YR 2/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments Sample is 0.0'-0.4' interval representation

CG 2/05/13

Location ID:	Subarea:	Date Started:	Date Completed:
DG-527	NB2	THURSDAY 12/05/13 1045	12/05/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.5' 0.4' 0.5' 0.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slide hammer	Depth Drilled into Bedrock:
Radiological Background: 15/107	Borehole diameter: 2.25"	NA
PID Background: 0.0	Depth to GW: NA	Sampling Method:
Radiological Equipment Used:	PG Review & No:	Split spoon
✓ MicroR ✓ Alpha/Beta ✓ Pancake	Mull Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	17/115 14/75	SL-527 NB2-SB-0.0-0.5	1045	SM	SILTY SAND: very dark brown (10YR 2/2); 85% sand, pg; f-m, mostly m; 15% silt, low plasticity, t igneous clasts; loose sediment, t organics (roots & leaves), moist, no odor (FILL) Refusal at SS formation @ 0.5' 0.4'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-528 -NB2-SB-0.0-0.5 Date/Time 12/05/2013 1205

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 SS sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

(Other) Fill in lower interval (ss & siltstone gravel) indicators

Is Staining Present Yes (No)

Color Dark brown (10yr 3/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] PG Registration # 7735

Additional Comments None

12/04/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-528	NB2	Thursday 12/05/2013	12/05/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.9', 0.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slide hammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 15/86	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Nikki Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	16/84 15/70	SL-528 NB2-SB-0.0-0.5	1205	SP-SM	SAND WITH SILT: Dark brown (10YR 3/3); 90% sand, pg, f-m; 10% silt, low plasticity; t SS formation, t organics (roots, twigs, leaves); loose, dry, no odor. (FILL) CP 12/05/13 SAND WITH SILT: same as above with t gravel (siltstone and SS formation), f-c, sr, max Φ=1.0", dry, no odor (FILL) Refusal at SS Formation at 0.9', 0.4'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-529-NBZ-SB-0.0-0.5 Date/Time ~~10/12/05/13~~ 12/05/2013 1300

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Excess	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 55 sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≤ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≤ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~100~~ 0 12/12/13 NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) ~~SS, siltstone~~ CE 12/12/13

Is Staining Present Yes (No)

Color ~~very dark grayish~~ grayish brown CE 12/05/13 (10YR 3/2)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

CE 12/05/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DQ-529	NBZ	THURSDAY 12/05/13 1255	12/05/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.8', 0.8'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer	Depth Drilled Into Bedrock: NA
Radiological Background: 15/96	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Miller Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	15/98 15/71	SL-529 NBZ-SB-0.0-0.5	1300	SM	SILTY SAND: very dark grayish brown (10YR3/2); 85% sand, pg, f-m, mostly f; 15% silt, low plasticity; t gravel (SS and siltstone), sr, f-c, max Ø = 1.0"; t organics (fine roots, twigs, leaves); dry; no odor, ~~fuel~~ remnants
							Refusal at SS Formation at 0.8', 0.8'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Ø: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-530-NB2-SB-0.0-0.5 Date/Time 12/03/13 0940

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check If Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 ss sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

~~Other SS formation~~ SM1614

Is Staining Present Yes No

Color brownish yellow (10YR 6/6)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

10/02/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-530	NBZ	12/03/13 TUESDAY 0938	12/03/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.8', 1.1'
Company Name: CDM SMITH	Drill Contractor/Driller: ~~SAPS~~ NA	
GPS collected? Yes or No	Drill Method: slide hammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 16/04	Borehole diameter: 2.25"	
PID Background: 0.1	Depth to GW: NA	Sampling Method: slidehammer
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Mila Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.1 0.1 0.1	16/93 15/97 17/97	SL-530-NBZ-SB-0.0-0.5	0940	SP-SM	Sand WITH SILT: Brownish yellow (10YR 6/6); 90% sand, pg, medium; 10% silt, non-plastic; t igneous clasts, t gravel (SS Formation), sa-sr, f, max ϕ = 0.5", t burnt wood/organics; dry, no odor (FILL) Refusal at SS Formation at 0.8', 1.1'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-531-NBZ-SB-0.0-0.5 Date/Time 12/03/2013 1350

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. LOUDEN

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

(Other) Fill observed in lower soil interval

Is Staining Present Yes (No)

Color Brown (7.5YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

12/05/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-531	NBZ	12/03/2013 TUESDAY 1345	12/03/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 2.6', 2.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer	Depth Drilled into Bedrock: NA
Radiological Background: 16/108	Borehole diameter: 2.25"	
PID Background: 0.1	Depth to GW: NA	Sampling Method:
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Nelle Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.1	17/95	SL-531-NBZ-SB-0.0-0.5	1350	SM	SILTY SAND: Brown (7.5YR 4/4); 70% sand, pg, f-m, mostly f; 30% silt, low plastic; t organics (fine roots), ~~(FILL)~~, dry, no odor (FILL)
		0.1	17/73				
1		0.1	17/102			SM	Same as above with t gravel (SS formation), f, sa-sr, max ϕ = 0.6" and color change to strong brown (~~10~~ 12/3/13 7.5YR 5/6) (FILL)
		0.1	17/92				
2		0.1	16/99				
		0.2	16/81			SM	~~SAND WITH SILT~~ 12/3/13 SILTY SAND: very pale brown (10YR 7/3); 85% sand, pg, f; 15% silt, low plastic; t gravel (SS formation), f, sa-sr, max ϕ = 0.25", dry, no odor (FILL)
3							Refusal at SS Formation at 2.6', 2.4'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Erin Lowden

Sample ID SL-532-NBZ-0.0-0.5 Date/Time 12/03/13 1020

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Lowden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS formation

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

11/18/03/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-532	NBZ	12/03/13 1025 THES	12/03/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.8', 0.8'
Company Name: CDM SMITH	Drill Contractor/Driller: N/A	
GPS collected? Yes or No	Drill Method: Slide hammer / hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 17/102	Borehole diameter: 2.25"	
PID Background: 0.1	Depth to GW: NA	Sampling Method: ~~Slide~~ CC 11/03/13 Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Mike Ellefson #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.1 0.1	17/108 17/92	SL-532-NBZ-SB-0.0-0.5	1020	SP-SM	SAND WITH SILT: yellowish brown (10YR 5/6); 90% sand, pg, f-m, mostly f; 10% silt, Nonplastic; t (SS Formation) gravel, sa-sr, max ϕ=0.5", t igneous clasts, dry, no odor (fill) Refusal at SS formation @ 0.8', 0.8'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-533-NBZ-SB-0.0-0.5 Date/Time 12/03/2013 1305

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. LOUDEN

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Enbores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete (Wood) Glass

Igneous/Metamorphic Gravel N/A

(Other) ~~SS formation~~ - SM1614

Is Staining Present Yes (No) 12/03/13

Color Brown (7.5 YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

12/03/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-533	NBZ	TUESDAY 12/03/2013 1300	12/03/2013

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.6', 0.5'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 17/92	Borehole diameter: 2.25"	
PID Background: 0.1	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Michael Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.1 0.1	17/108 15/100	SL-533-NBZ-SB-0.0-0.5	1305	SP-SM	SAND WITH SILT: Brown (7.5YR 4/3); 90% sand, pg; f-m, mostly m; 10% silt, non plastic; t gravel (SS formation), f, sa-sr, max ϕ=0.75"; t igneous clast, t burnt twigs; dry, no odor (FILL) Refusal at SS formation @ 0.6', 0.5'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-S34-NB2-SB-0.0-0.5 Date/Time 12/06/13 0910

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

12/06/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-534	NB2	12/06/13 FRIDAY 0914	12/06/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.9', 0.7
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 14/95	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	14/77 14/68	SL-534-NB2-SB-0.0-0.5	0910	SM	SILTY SAND: yellowish brown (10YR 5/6), 80% sand, pg, f-m; 20% silt, low plasticity; t gravel (SS Formation), f-c, sa, max ø 1.5", dry, no odor Refusal at SS Formation at 0.9', 0.7'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ø: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-535-NB2-SB-0.0-0.5 Date/Time 12/06/13 1010

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Dark brown (7.5YR 3/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments None

12/4/13

NA – Not Applicable

Location ID: DG-535	Subarea: NB2	Date Started: FRIDAY 12/06/13 1000	Date Completed: 12/06/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1.3', 2.0'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: 2.25" 12/6/13 Slide hammer/ hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 16/90		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No.: Will Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	17/100	SL-535-NB2-SB-0.0-0.5	1010	SP-SM	SAND WITH SILT: dark brown (7.5YR 3/2); 80% Sand, f-m, mostly f; 10% silt, nonplastic; t(10%) SS formation clasts 12/6/13; dry, no odor SM 12/6/14
		0.0	15/56				
1		0.0	16/86				
2		0.0	16/85				

refusal at SS Formation at 1.3', 2.0'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-537-NB2-SB-0.0-0.5 Date/Time 12/06/13 1255

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100%
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) siltstone

Is Staining Present Yes (No)

Color Dark brown (7.5YR 3/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-537	NB2	FRIDAY 12/06/13 1250	12/06/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.8', 2.0'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: slidehammer/handauger	Depth Drilled into Bedrock: NA
Radiological Background: 15/92	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: #7235	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	15/91	SL-537-NB2-SB-0.0-0.5	1255	SM	SILTY SAND: Dark brown (7.5YR 3/2); 80% sand, pg, f-m, mostly f; 20% silt, low plasticity; t gravel (igneous), f, sr, max Ø = 0.75", t organics (twigs, leaves), t siltstone clasts, dry, no odor, loose (Fill)
		0.0	14/86				
1		0.0	14/100				
		0.0	14/97				
2		0.0	15/106				
							Refusal at SS Formation at 1.8', 2.0'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Ø: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-538-NB2-SB-0.0-0.5 Date/Time 12/06/13 1405

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Syringe	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

255 Sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH > 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH > 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS Formation

Is Staining Present Yes (No)

Color Brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

12/18/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-538	NB2	FRIDAY 12/06/13 1355	12/06/13

Client: DOE — Project Name/#: Santa Susana Field Lab/99489

Company Name: CDM SMITH	Drill Contractor/Driller: NA	Total Depth: 0.8', 0.8'
GPS collected? Yes or No	Drill Method: Slide hammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 15/96	Borehole diameter: 2.25"	Sampling Method: Split spoon
PID Background: 0.0	Depth to GW: NA	Geologist: C. Cox
Radiological Equipment Used: MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: #7735	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	16/82	SL-538-NB2-SB-0.0-0.5	1405	SP-SM	SAND WITH SILT: Brown (10YR4/3); ~~80~~ 12/06/13 ~~80%~~ 12/06/13 85% sand, pg, f-m, mostly f; ~~15~~ 12/06/13 10% silt, low Plasticity; 5% gravel (SS formation & igneous), f-c, sr, max ϕ=2.5"; t cobbles (SS formation), sr, max ϕ=3.5"; dry, no odor (FILL)
		0.0	14/72				
							Refusal at SS formation at 0.8', 0.8'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
d: dry	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-539-NBZ-SB-0.0-0.5 Date/Time 12/12/13 0930

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Scoopet	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 55 sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes No 12/12/12
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color Dark yellowish brown (10YR 3/4)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature Mike Hoffman **PG Registration #** 7735

Additional Comments Sample indicative of 0.0'-0.4'

12/12/12

NA – Not Applicable

Location ID: DG-539	Subarea: NB2	Date Started: THURS 12/12/13 0925	Date Completed: 12/12/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 0.4', 0.3' 0.4'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: Slidehammer	Depth Drilled Into Bedrock: NA
Radiological Background: 16/92		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Split Spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No.? #7755	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	16/88 15/93	SL-539-NB2-SB-0.0-0.5	0930	SP	SAND: Dark yellowish brown (10YR 4/4), 95% sand, pg, f-m; 5% silt, nonplastic; t gravel (SS Formation) f, sa-sr, max ϕ = 0.4", dry, no odor; t organics (leaves, twigs);

CDM Smith **BORING LOG AND SAMPLING RECORD** Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-540-NB2-SB-0.0-0.5MS Date/Time 12/11/13 1420

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Tributyltin	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

6 SS sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~100~~ 12/12/13 N/A
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) ~~SSFormation Siltstone~~ 12/12/13

Is Staining Present Yes (No)

Color very dark grayish brown (2.5Y 3/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 77355

Additional Comments None

12/12/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-540	NB2	WEDNESDAY 12/11/13 14	12/11/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.6', 1.0'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer	Depth Drilled into Bedrock: NA
Radiological Background: 16/108	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split Spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Julie Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0 0.0 0.0	18/112 17/88 16/80 17/95	SL-540-NB2-SB-0.0-0.5MS SL-840-NB2-SB-0.0-0.5	1420 1440	SM	SILTY SAND: very dark grayish brown (2.5Y 3/2), 75% sand, pg, f-m, mostly f; 25% silt, low plasticity; t gravel (ss formation & siltstone), f-c, sa-sr, max ϕ=1.5"; t organics (twigs, leaves, roots); moist at 1.0'; color changed to dark grayish green (10Y-5GY 4/2) at 1.0' ~~(FILL)~~ CAW 12/13 Refusal at ss formation at 1.6', 1.0'

CDM Smith BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
l: line	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-840-NB2-SB-0.0-0.5 Date/Time 12/11/13 1440

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID SL-S40-NB2-SB-0.0-0.5MS

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

2 ss sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~10~~ Oct 12/12/13 NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) SS formation & silt/stone Oct 12/12/13

Is Staining Present Yes (No)

Color very dark grayish brown (2.5Y 3/2)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Nikki Hoffman **PG Registration #** 7735

Additional Comments None

Oct 24/13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-541-NB2-SB-0.0-0.5 Date/Time 12/11/13 1325

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check If Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2 SS sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS Formation & Siltstone

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Mike Hoffman **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-541	NB2	12/11/13 WEDNESDAY 1320	12/11/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.0', 1.8'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? (Yes) or No	Drill Method: Slidehammer	Depth Drilled into Bedrock: NA
Radiological Background: 15/99	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review/& Nam: Nathan Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	17/109	SL-541-NB2-SB-0.0-0.5	1325	SP	SAND: yellowish brown (10YR 5/4); 95% sand, pg, f-m, mostly m; 5% silt, nonplastic; t gravel (SS formation, siltstone, igneous), f-c, max ϕ=10", sr-sa; t organics (leaves, twigs); dry, no odor (PLC)
		0.0	15/80				
1		0.0	18/86				
		0.0	16/103				
							Refusal at 1.0' & 1.8'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-542-NB2-SB-0.0-0.5 Date/Time 12/11/13 1235

Matrix (circle one): Soil (circled) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet (circled)

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer (circled) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N (circled) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2 SS Sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) ~~10~~ 0 12/12/13 NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

(Other) ~~SSformation Siltstone~~ 12/12/13

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

12/12/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-542	NB2	Wednesday 12/11/13 1230	12/11/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.1', 0.5'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: slide hammer	Depth Drilled into Bedrock: NA
Radiological Background: 15/89	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: Nulli Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	15/90	SL-542-NB2-SB-0.0-0.5	1235	SP	SAND ~~w/Fit silt~~: yellowish brown (10YR5/4); 95% sand, fg, f-m; ~~mostly~~ 5% silt, non plastic; t gravel, (ss formation & siltstone), sa-sr, f-c, max φ=1.0", dry, no odor ~~LFC~~
		0.0	15/72				
1'		0.0	17/98				
							Refusal at 1.1' and 0.5'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-543-NB2-SB-0.0-0.5 Date/Time 12/12/13 1340

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis: [illegible]

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH > 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH > 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Dark yellowish brown (10 yr 3/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature Mike Hoffman PG Registration # 7735

Additional Comments None

NA – Not Applicable

Location ID: DG-543	Subarea: NB2	Date Started: THURSDAY 12/12/13 1335	Date Completed: 12/12/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 0.7', 0.6'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? (Yes) or No		Drill Method: slidehammer	Depth Drilled into Bedrock: NA
Radiological Background: 14/73		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR [✓] Alpha/Beta [✓] Pancake		PG Review & No.: [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	15/84 14/75	DG-543-NB2-SB-0.0-0.5	1340	SM	SILTY SAND: Dark yellowish brown (10YR 3/4), 85% sand, pg, f-m, mostly m; 15% silt, low plasticity; t gravel (weathered SS Formation), f-c, sa-sr, max ø=1.5", dry, no odor Refusal @ SS Formation at 0.7' & 0.6'

CDM Smith **BORING LOG AND SAMPLING RECORD** Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ø: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-544-NB2-SB-0.0-0.5 MS Date/Time 12/12/13 1420

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/6)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments None

[illegible] 12/13

NA – Not Applicable

Location ID: DG-544	Subarea: NB2	Date Started: 12/12/13 THURSDAY 1415	Date Completed: 12/12/13
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 1.1', 1.2'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: Slidehammer	Depth Drilled into Bedrock: NA
Radiological Background: 15/115		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake		PG Review & No. [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	14/94	SL-544-NB2-SB-0.0-0.5MS	1420	SM	SILTY SAND: yellowish brown (10YR 5/6), 85% sand, pg, f-m, mostly m; 15% silt, low plasticity; t gravel at 0.8' (SS Formation), f-c, sa-sr, max Φ=1.5", moist at 1.1', no odor
		0.0	13/81				
1		0.0	14/108	SL-544-NB2-SB-0.0-0.5	1440		
							Refusal at SS Formation @ 1.1', 1.5'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-844-NB2-SB-0.0-0.5 Date/Time 12/12/13 1440

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID SL-544-NB2-SB-0.0-0.5 MS

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Yellowish brown (10YR5/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments None

2012/12/13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-545-NB2-SB-0.0-0.5MS Date/Time 12/04/13 1325

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Soil	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	X
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

(Concrete) Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS Formation

Is Staining Present Yes (No)

Color Reddish brown (5YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7755

Additional Comments None

10/16/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-545	NB2	12/04/13	12/04/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.8', 0.7'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: slide hammer/hand auger	Depth Drilled into Bedrock: ~~0.8' 0.7'~~ NA
Radiological Background: 16/14	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Nikki Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0	16/14 14/79	SL-545-NB2-SB-0.0-0.5MS SL-545-NB2-SB-0.0-0.5	1325 1330	SM	SILTY SAND: Reddish brown (5YR4/3); 70% sand, PS, f-m, mostly m; 25% silt, low plasticity; 5% gravel (concrete and weathered SS formation), f-c, sa-sr, max ϕ=20"; t igneous clasts, dry, no odor (Fill) Refusal at SS formation @ 0.8', 0.7'

CDM Smith BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-845-NBZ-SB-0.0-0.5 Date/Time 12/04/13 1330

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check If Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N (FD) FB RB

Parent Sample ID SL-~~845~~ 545-NBZ-SB-0.0-0.5 MS
EL 12/4/13

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	X
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Others	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

(Concrete) Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS formation

Is Staining Present Yes (No)

Color Reddish brown (5YR 4/3)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

11/12/2013

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-546-NB2-SB-0.0-0.5 Date/Time 12/04/2013 0955

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. LOUDEN

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Energy	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color light olive brown (2.5Y 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

10/12/04/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-546	NB2	WEDNESDAY 12/04/2013 0949	12/04/2013

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.6' 0.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slide hammer/hand auger	Depth Drilled Into Bedrock: NA
Radiological Background: 16/90	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: [illegible] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0 0.0	16/94 15/77	SL-546-NB2-SB-0.0-0.5	0955	SM	SILTY SAND: Light olive brown (2.5Y 5/4); 75% sand, pg, f-m, mostly m; 20% silt, low plasticity; 5% gravel (SS formation), f-c, sa-sr, max Φ=2.5"; ~~dry~~ dry 12/04/13 t organics (roots & twigs); dry, no odor.
							Refusal at SS formation at 0.6', 0.4'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-547-NBZ-SB-0.0-0.5 Date/Time 12/04/13 1045

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. LOUDEN

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Either	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete (Wood) Glass

(Igneous/Metamorphic Gravel) N/A

(Other) SS formation

Is Staining Present Yes (No)

Color olive brown (2.5Y 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments Sample is representative of 0.0'-0.3'.

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-547	NB2	WEDNESDAY 12/04/13 1040	12/04/2013

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.4, 0.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 14/100	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Nelli Hoffman #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0 0.0	15/101 15/92	SL-547-NB2-SB-0.0-0.5	1045	SM	SILTY SAND: olive brown (2.5Y 4/3); 75% sand, pg, f-m; 20% silt, low plasticity; 5% gravel (SS Formation), f-c, sbr-sr, max ϕ = 2.0"; t igneous clasts, t micaceous material; t organics (roots, twigs, leaves); dry no odor (fill)

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-548-NBZ-SB-0.0-0.5 Date/Time 12-4-13 / 1415

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): (DPT) ~~Slide Hammer~~ 12-4-13 Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 ~~2~~ SS Sleeves

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color brown (7.5YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

DRR 12-4-13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-548	NBZ	12-4-13	12-4-13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1st DPT = 1.0, 2nd DPT = 1.5, 3rd DPT = 1.5
Company Name: CDM SMITH	Drill Contractor/Driller: Strongarm	
GPS collected? (Yes) or No	Drill Method: DPT	Depth Drilled into Bedrock: NA
Radiological Background: γ = 14 α = 108	Borehole diameter: 2.25	
PID Background: 0.0 ppm	Depth to GW: NA	Sampling Method: DPT SS Sleeves
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake	PG Review & No.: Mike Hoffman #7735	Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0	14/103	SL-548	1415	SM	SILTY SAND, brown (7.5YR 4/4), fg, pg, sr to sa, quartz, dry loose, tr ant sandstone gravel, mod well cemented — 0.4
		0.0	14/60	NBZ-SB 0.0-0.5		SM	fine sized, sr to sa; 70% SD 30% SILT
1	1.0/1.0	0.0	14/96				SILTY SAND, lt yel brn (10YR 6/4) mottled w/v pale brn (10YR 7/4) fgrn w/ some med grn, pg, sr to sa, quartz, dry, loose becoming sli compacted w/depth, tr ant sandstone gravel as above; 85% SD. 15% SILT — 1.5
		0.0	14/96				
2							Refusal @ 1.5' bls on bedrock

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-549-NB2-SB-0.0-0.5 Date/Time 12/04/2013 0855

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

ok 2/04/13

NA – Not Applicable

Location ID: DG-549	Subarea: NB2	Date Started: WEDNESDAY 12/04/2013	Date Completed: 12/04/2013
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: 0.8', 1.1'
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: slide hammer	Depth Drilled into Bedrock: NA
Radiological Background: 14/81		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: [✓] MicroR [✓] Alpha/Beta [✓] Pancake		PG Review & No: [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	14/99	SL-549-NB2-SB-0.0-0.5	0855	SM	SILTY SAND: Brown (10YR4/3); 70% sand, pg, f-m, mostly m; 30% silt, low plasticity; dry, no odor.
		0.0	14/78				
1		0.0	15/104			SM	SILTY SAND: Brown (10YR4/3); 70% sand, pg, f-m, mostly m; 25% silt, low plasticity; 5% gravel (weathered SS), f-c, sa-sr, max ϕ 2.0", dry, no odor.
							Refusal at SS formation @ 0.8', 1.1'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Londen

Sample ID SL-551-NBZ-SB-0.0-0.5 Date/Time 12/17/13 1125

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Londen

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

(Other) ss formation, red brick

Is Staining Present Yes (No)

Color Dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

[signature] 11/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-551	NBZ	TUES 12/17/13	12/17/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1.7', 1.5'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? (Yes) or No	Drill Method: Slidehammer / handauger	Depth Drilled into Bedrock: NA
Radiological Background: 17/93	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	18/90	SL-551-NBZ-SB-0.0-0.5	1125	SM	SILTY SAND: Dark yellowish brown (10YR 4/4); 85% Sand, f-c, mostly f, pg; 15% silt, low plasticity; t gravel (SS formation), sa-sr, f, max Φ = 1.0"; t red brick; t organics (twigs); dry, no odor (Fill)
		0.0	15/87				
1		0.0	16/83				
		0.0	16/85				
2							Refusal at 1.7', 1.5'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-552-NBZ-SB-0.0-0.5 Date/Time 12/10/13 1415

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sponges	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

[signature] 11/19/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-552	NB2	12/10/13 TUESDAY 1410	12/10/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 3.0', 3.0'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 18/100	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split Spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No: [illegible] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	16/92	SL-552-NB2-SB-0.0-0.5	1415	SP-SM	SAND WITH SILT: Dark yellowish brown (10YR 4/4); 90% sand, pg, f-m, mostly f; 10% silt, low plasticity; t gravel (weathered SS); f-c, sa-sr, max Φ=2.0" at 2.6'-3.0'.
		0.0	15/78				
1		0.0	15/92				
		0.0	15/92				
2		0.0	15/111				
		0.0	15/101	SL-552-NB2-SB-2.0-3.0	1500		
3		0.0	15/106				

Refusal at SS Formation at 3.0', 3.0'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-552-NB2-SB-2.0-3.0 Date/Time 12/10/13 1500

Matrix (circle one): Soil Sediment Water

Start Depth 2.0

End Depth 3.0

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID N/A

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Dark yellowish brown (10yr 4/4)

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments SS Sleeve filled > 3/4 ~~full~~ Full 12/10/13

12/10/13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-553-NB2-SB-0.0-0.5 Date/Time 12/10/13 1125

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) Sstone formation, siltstone

Is Staining Present Yes (No)

Color Brown (10YR 4/3)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-553	NB2	TUESDAY 12/10/13 1120	12/10/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.7', 0.4'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? (Yes) or No	Drill Method: slide hammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 18/106	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: [signature] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	16/118	SL-553-NB2-SB-0.0-0.5	1125	SM	SILTY SAND: Brown (10YR 4/3); 75% sand, pg, f-m, mostly f; 25% silt, low plasticity; t gravel (weathered SS formation, siltstone, igneous, metamorphic), f-c, sa-sr, max Φ = 1.5"; t organics (twigs, leaves); dry, no odor (Fill)
		0.0	16/67				

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Londen

Sample ID SL-554-NB2-SB-0.0-0.5 Date/Time 12/10/13 / 1035

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Londen

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

(Other) Sfarmlin ds lt stone

Is Staining Present Yes (No)

Color yellowish brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-554	NB2	12/10/13 TUESDAY 1035	12/10/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.7', 0.7', 0.3'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: slide hammer/hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 19/91	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: NA split spoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: [illegible] #7735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0 0.0	16/97 15/75	SL-554-NB2-SB-0.0-0.5	1035	SM	SILTY SAND: yellowish brown (10YR 5/4); 80% sand, pg, f-m, mostly m; 15% silt, low plasticity; 5% gravel (SS formation, siltstone, igneous), f-g, sa-sr, max ϕ=1.5"; t organics (twigs, leaves); dry, no odor (FILL)
1							
2							

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Louden

Sample ID SL-555-NB2-SB-0.0-0.5 Date/Time 12/10/13 1005

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Louden

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Energetics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS sleeve

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present (Yes) No
2. Percentage Fill (%) 100%
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

(Igneous/Metamorphic Gravel) N/A

(Other) Siltstone

Is Staining Present Yes (No)

Color Dark yellowish brown (10YR 4/4)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments None

EC 12/14/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-555	NB2	12/10/13 1000	12/10/13

Client: DOE

Project Name/#: Santa Susana Field Lab/99489

Total Depth: 0.9' 1.0' 1.3'

Company Name: CDM SMITH

Drill Contractor/Driller: NA

GPS collected? Yes or No

Drill Method: Sidewinder / hand auger

Depth Drilled into Bedrock: NA

Radiological Background: 15/106

Borehole diameter: 2.25"

PID Background: 0.0

Depth to GW: NA

Sampling Method: Split spoon

Radiological Equipment Used:

✓ MicroR ✓ Alpha/Beta ✓ Pancake

PG Review & No.: #7735

Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.0	15/100	SL-555-NB2-SB-0.0-0.5	1005	SM	SILTY SAND: Dark yellowish brown (10YR 4/4); 65% sand, pg, f-m, mostly f; 35% silt, low plasticity; t gravel (siltstone & igneous), f, sa-sr, max Φ=0.5"; t organics (leaves, twigs); dry; no odor (NH)
		0.0	14/57				
		0.0	16/78				
2							Refusal at 0.9', 1.0', 1.3'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
d: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-556-NBZ-SB-0.0-0.5 Date/Time 12-6-13 / 1400

Matrix (circle one): (Soil) Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT (Slide Hammer) Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic Inorganic SILT with moderate to high plasticity
				CH	Fat Inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellowish brown (10YR5/4)

Odor

1. Odor Strength (circle one)

None Slight (Strong)

2. Odor Description (circle one)

Organic Petroleum (Chemical)

N/A Other pesticide-like

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

DRP 12-6-13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-556	NBZ	12-6-13	12-6-13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 1st HA = 5', 2nd HA = 5'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: Slidehammer / HA	Depth Drilled into Bedrock: NA
Radiological Background: β = 13 α = 86	Borehole diameter: 325	
PID Background: 0.0 ppm	Depth to GW: NA	Sampling Method: Slidehammer
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: [illegible] #7735	Geologist: David Rojas

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0-0.5	0.5/0.5	0.0 0.0	13/69 13/66	SL-556 NBZ-SB 0.0-0.5	1400	SM	SILTY SAND, yellowish brown (10YR 5/4) mottled w/ brn (10YR 4/3) and pale brown (10YR 6/3) fg w/tr. med grn, pg, sr to sa, quartz, dry, loose, some organics (roots, twigs, & leaves) 80% SAND, 20% SILT, pesticide odor strong
1	HA	0.0	13/60				
2		0.0	13/78			SM	SILTY SAND, v pale brn (10YR 7/4) mottled w/ brownish yellow (10YR 6/6) and yel brn (10YR 6/8) fgrn, pg, sr to sa, quartz, sli compacted becoming mod well compacted w/ depth, dry; 85% SAND 15% SILT; tr to few amt org (roots), mod strong pesticide odor — 2.0
3		0.0	13/66			SM	SILTY SAND, lt yel brn (10YR 6/4) mottled w/ yel brn (10YR 5/4) fg w/tr. amt med grn, pg, sr to sa, quartz, mod well compacted tr amt sandstone gravel, tr pesticide odor 85% SD 15% SILT — 3.0
4		0.0	13/72	SL-556 NBZ-SB 4.0-5.0	1430	SP-SM	SAND w/ SILT, yellow (10YR 7/6) mottled w/ brn yel (10YR 6/6) fg w/tr amt med grn, pg, sr to sa, quartz, mod well to well compacted, tr to few amt sandstone gravel underneath w/ depth — 4.0
5		0.0	13/72				Gravel is mod well cemented, sr to sa, sli friable 90% SD 10% SILT Unit is dry. — 5.0

Ceased advancing boring @ 5' bls

CDM Smith BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr:no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

CDM Smith

BORING LOG AND SAMPLING RECORD

Page___of ___

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [signature]

Sample ID SL-556-NB7-SB-4.0-5.0 Date/Time 12-6-12/ 1430

Matrix (circle one): (Soil) Sediment Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one): Inches (Feet)

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): (N) FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Kris Larson

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

1 SS Sleeve + 2 Encores

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) None
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color yellow (10YR 7/6)

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature [signature] **PG Registration #** 7735

Additional Comments NA

12-6-13

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By E. Londen

Sample ID SL-557-NB2-SB-0.0-0.5 Date/Time 12/13/13 1055

Matrix (circle one): Soil Sediment Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist C. Cox

Sampler E. Londen

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	
		EPA 6020	
		EPA 7471 (Soil)	
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes (No)
2. Percentage Fill (%) NA
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel (N/A)

Other _____

Is Staining Present Yes (No)

Color Darkyellowish brown (10YR 4/4

Odor

1. Odor Strength (circle one)

(None) Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

(N/A) Other _____

Moisture Condition (circle one)

(Dry) Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments None

CO 12/13/13

NA – Not Applicable

Location ID:	Subarea:	Date Started:	Date Completed:
DG-557	NB2	12/13/13 1045	12/13/13

Client: DOE	Project Name/#: Santa Susana Field Lab/99489	Total Depth: 0.8', 0.5'
Company Name: CDM SMITH	Drill Contractor/Driller: NA	
GPS collected? Yes or No	Drill Method: slidehammer, hand auger	Depth Drilled into Bedrock: NA
Radiological Background: 16/93	Borehole diameter: 2.25"	
PID Background: 0.0	Depth to GW: NA	Sampling Method: Splitspoon
Radiological Equipment Used: ✓ MicroR ✓ Alpha/Beta ✓ Pancake	PG Review & No.: Mike Hoffman #735	Geologist: C. Cox

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0 0.0 0.0	18/86 18/86 18/94	SL-557-NB2-SB-0.0-0.5	1055	SM	SILTY SAND: Dark yellowish brown (10YR 4/4); 75% sand, pg, f-m, mostly f; 25% silt, low plasticity; t organics (leaves & roots); t gravel (siltstone & SS formation) f, sa-sr, max Ø = 0.4"; dry, no odor.

Refusal at 0.8' and 0.5'

CDM Smith

BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	

f: fine	mod: moderate	sr: subrounded	ϕ: diameter	bgs:below ground surface

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steffi Myers

Sample ID EB1-120513 Date/Time 12/05/2013 1430

Matrix (circle one): Soil Sediment (Water)

Start Depth

End Depth

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): (DPT) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB (RB)

Parent Sample ID NA

Field Geologist David Rojas

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean Inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic Inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes No
2. Percentage Fill (%) _____
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color _____

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments _____

NBZ

ASTM WATER LOT #: 53038

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Shy Mupel

Sample ID EB2-120513 Date/Time 12/05/2013 1500

Matrix (circle one): Soil Sediment (Water)

Start Depth ~~SB20513~~

End Depth ~~SB20513~~

Depth Units (circle one): Inches Feet ~~SB20513~~

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer (Hand Auger/Slide Hammer) Trenching Sediment

QC Type (circle one): N FD FB (RB)

Parent Sample ID NA

Field Geologist David Rojas

Sampler Pam Hartman

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	
		EPA 7470 (Water)	X
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	X
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

SB20513

Fill Material

1. Is Fill Material Present Yes No
2. Percentage Fill (%) _____
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color _____

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments _____

NBZ

ASTM WATER LOT # 53038

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID EB3-120513

Date/Time 12/05/2013 1530

Matrix (circle one): Soil Sediment Water

Start Depth [illegible]

End Depth [illegible]

Depth Units (circle one): Inches Feet

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

Check if Composite ☐

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist Catherine Cox

Sampler Pam Hartman

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	
		EPA 7470 (Water)	X
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	X
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
SW8015	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	X
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≤ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≤ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

SM/20513

Fill Material

1. Is Fill Material Present Yes No
2. Percentage Fill (%) _____
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color _____

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments _____

NBZ

ASTM WATER LOT#53038

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [illegible]

Sample ID EBI-121113

Date/Time 12/11/2013 1400

Matrix (circle one): Soil Sediment Water

Start Depth [illegible]

End Depth [illegible]

Depth Units (circle one): Inches Feet

Check If Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Pam Hartman

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	
		EPA 7470 (Water)	X
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	X
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Sample 1/3

Fill Material

1. Is Fill Material Present Yes No

2. Percentage Fill (%) _____

3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color _____

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments _____

NBZ

ASTM WATER LOT # 53038

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID EB2-121113 Date/Time 12/11/2013 1430

Matrix (circle one): Soil Sediment (Water)

Start Depth ~~121113~~

End Depth

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer (Hand Auger/Slide Hammer) Trenching Sediment

QC Type (circle one): N FD FB (RB)

Parent Sample ID NA

Field Geologist Catherine Cox

Sampler Pam Hartman

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	
		EPA 7470 (Water)	X
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	X
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	X
	Pesticides	EPA 8081	X

	Parameters	Method	Analyze?
Excess	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	X
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

Fill Material

1. Is Fill Material Present Yes No
2. Percentage Fill (%) _____
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color _____

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments _____

ASTM WATER LOT# 53038 NBZ

NA – Not Applicable

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By C. Cox

Sample ID EB2-121613

Date/Time 12/16/2013 1530

Matrix (circle one): Soil Sediment Water

Start Depth

End Depth

Depth Units (circle one): Inches Feet

Check if Composite ☐

Collection Method (circle one): DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one): N FD FB RB

Parent Sample ID NA

Field Geologist Catherine Cox

Sampler Stefanie Mysel

Analysis

	Parameters	Method	Analyze?
	Metals	EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	
		EPA 7470 (Water)	X
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	
		EPA 9040 (Water)	X
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

	Parameters	Method	Analyze?
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Sediment	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	
	Total Nitrogen	ASTM D5373	
	TOC	ASTM D5310	
	Grain Size	ASTM 2488-09a	

NA – Not Applicable

SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

SP/SW/ML3

Fill Material

1. Is Fill Material Present Yes No
2. Percentage Fill (%) _____
3. Fill Description (circle all that apply)

Asphalt Metal Plastic

Concrete Wood Glass

Igneous/Metamorphic Gravel N/A

Other _____

Is Staining Present Yes No

Color _____

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other _____

Moisture Condition (circle one)

Dry Moist Wet

PG Signature _____ **PG Registration #** _____

Additional Comments _____

ASTM WATER LOT # 53038

NA – Not Applicable

NBZ

Appendix F
Chain of Custodies

SAMPLE DELIVERY GROUP

PH027

SSFL Phase 3 Chain of Custody

SDG-PH027

CDM Smith

DateShipped: 4/9/2013
CarrierName: FedEx
AirbillNo: 799485562831

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

COC No: 20130409-01
Cooler #: 1, 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-539-SA7-SB-0.0-0.5	4/8/13 12:45	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-539-SA7-SB-0.0-0.5	4/8/13 12:45	SO	None	1 - 4 oz glass	0													X																			
SL-542-SA7-SB-0.0-0.5	4/9/13 08:40	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-542-SA7-SB-0.0-0.5	4/9/13 08:40	SO	None	1 - 4 oz glass	0													X																			
SL-540-SA7-SB-0.0-0.5MS	4/9/13 10:10	SO	None	6 - SS-Sleeve	0	X	X					X		X	X																		X				MS/MSD
SL-540-SA7-SB-0.0-0.5MS	4/9/13 10:10	SO	None	2 - 16 oz glass	0															X						X											MS/MSD
SL-840-SA7-SB-0.0-0.5	4/9/13 10:15	SO	None	2 - SS-Sleeve	0	X	X					X		X	X																		X				
SL-840-SA7-SB-0.0-0.5	4/9/13 10:15	SO	None	2 - 4 oz glass	0															X						X											
SL-544-SA7-SB-0.0-0.5	4/9/13 13:05	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-544-SA7-SB-0.0-0.5	4/9/13 13:05	SO	None	1 - 4 oz glass	0													X																			
SL-546-SA7-SB-0.0-0.5	4/9/13 14:15	SO	None	1 - SS-Sleeve	0									X																							

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SAMPLE DELIVERY GROUP

PH028

SSFL Phase 3 Chain of Custody

SDG - PL+028

CDM Smith

DateShipped: 4/10/2013
CarrierName: FedEx
AirbillNo: 7994 9700 1597

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

COC No: 20130410-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-547-SA7-SB-0.0-0.5	4/9/13 15:10	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-547-SA7-SB-0.0-0.5	4/9/13 15:10	SO	None	1 - 4 oz glass	0													X																			
SL-552-SA7-SB-0.0-0.5	4/10/13 09:05	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-552-SA7-SB-0.0-0.5	4/10/13 09:05	SO	None	1 - 4 oz glass	0													X																			
SL-551-SA7-SB-0.0-0.5	4/10/13 09:55	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-551-SA7-SB-0.0-0.5	4/10/13 09:55	SO	None	1 - 4 oz glass	0													X																			
SL-551-SA7-SB-2.0-3.0	4/10/13 11:00	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-551-SA7-SB-2.0-3.0	4/10/13 11:00	SO	None	1 - 4 oz glass	0													X																			
SL-551-SA7-SB-2.0-3.0	4/10/13 11:00	SO	None	3 - Encore	0																				X												
TB-041013	4/10/13 08:00	WQ	HCl	3 - 40 mL Vial	0																				X												
SL-548-SA7-SB-0.0-0.5	4/10/13 13:50	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-548-SA7-SB-0.0-0.5	4/10/13 13:50	SO	None	1 - 4 oz glass	0													X																			
SL-549-SA7-SB-0.0-0.5	4/10/13 14:40	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-549-SA7-SB-0.0-0.5	4/10/13 14:40	SO	None	1 - 4 oz glass	0													X																			

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SAMPLE DELIVERY GROUP

PH029

SSFL Phase 3 Chain of Custody

SDG- PH029

CDM Smith

DateShipped: 4/11/2013
CarrierName: FedEx
AirbillNo: 7995 0780 9940

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

COC No: 20130411-01
Cooler #: 2, 3
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
FB-041113	4/11/13 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	0	X		X																													
FB-041113	4/11/13 15:00	WQ	None	1 -	0				X																												Container is 1 L Poly
FB-041113	4/11/13 15:00	WQ	None	1 - 250 mL Amber	0					X																											
FB-041113	4/11/13 15:00	WQ	None	1 - 250 mL Amber	0							X																									
FB-041113	4/11/13 15:00	WQ	None	1 - 1 L Amber	0									X																							
FB-041113	4/11/13 15:00	WQ	None	1 - 250 mL Amber	0										X																						
FB-041113	4/11/13 15:00	WQ	None	1 - 40 mL Vial	0												X																				
FB-041113	4/11/13 15:00	WQ	None	1 - 250 mL Poly	0														X																		
FB-041113	4/11/13 15:00	WQ	None	1 - 250 mL Poly	0															X																	
FB-041113	4/11/13 15:00	WQ	None	1 - 1 L Amber	0																X																
FB-041113	4/11/13 15:00	WQ	None	1 - 250 mL Amber	0																	X															
FB-041113	4/11/13 15:00	WQ	HCl	3 - 40 mL Vial	0																		X														
FB-041113	4/11/13 15:00	WQ	HCl	3 - 40 mL Vial	0																			X													
FB-041113	4/11/13 15:00	WQ	HCl	3 - 40 mL Vial	0																				X												
FB-041113	4/11/13 15:00	WQ	HCl	2 - 1 L Amber	0																					X											
FB-041113	4/11/13 15:00	WQ	None	2 - 40 mL Vial	0																						X										
FB-041113	4/11/13 15:00	WQ	HCl	2 - 40 mL Vial	0																							X									
FB-041113	4/11/13 15:00	WQ	HCl	1 - 1 L Amber	0																								X								
FB-041113	4/11/13 15:00	WQ	None	6 - 40 mL Vial	0																									X							Anions EPA 300.0 |
FB-041113	4/11/13 15:00	WQ	None	2 - 1 L Amber	0																										X						
FB-041113	4/11/13 15:00	WQ	NaOH	1 - 250 mL Poly	0																											X					
FB-041113	4/11/13 15:00	WQ	None	1 - 8 oz glass	0																												X				
FB-041113	4/11/13 15:00	WQ	H2SO4 pH<2	1 - 16 oz glass	0																																Ammonia EPA 350.3 |

SSFL Phase 3 Chain of Custody

SDG - PH029

CDM Smith

DateShipped: 4/11/2013
CarrierName: FedEx
AirbillNo: 7995 0780 9940

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

COC No: 20130411-01
Cooler #: 2, 3
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

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

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SSFL Phase 3 Chain of Custody

SDG- P14029

CDM Smith

DateShipped: 4/11/2013

CarrierName: FedEx

AirbillNo: 7995 0780 9940

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130411-02

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-553-SA7-SB-0.0-0.5	4/11/13 08:10	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-553-SA7-SB-0.0-0.5	4/11/13 08:10	SO	None	1 - 4 oz glass	0													X																			
SL-554-SA7-SB-0.0-0.5	4/11/13 09:00	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-554-SA7-SB-0.0-0.5	4/11/13 09:00	SO	None	1 - 4 oz glass	0													X																			
SL-555-SA7-SB-0.0-0.5	4/11/13 10:15	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-555-SA7-SB-0.0-0.5	4/11/13 10:15	SO	None	1 - 4 oz glass	0													X																			
SL-536-SA7-SB-0.0-0.5	4/11/13 12:55	SO	None	2 - SS-Sleeve	0	X	X					X		X	X											X											
SL-536-SA7-SB-0.0-0.5	4/11/13 12:55	SO	None	1 - 4 oz glass	0													X																			

Sampler:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SSFL Phase 3 Chain of Custody

SDG-PH029

CDM Smith

DateShipped: 4/11/2013
CarrierName: FedEx
AirbillNo: 7995 0780 9940

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

COC No: 20130411-03
Cooler #: 4
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
EB-041113	4/11/13 15:15	WQ	HNO3 pH<2	1 - 250 mL Poly	0	X		X																													
EB-041113	4/11/13 15:15	WQ	None	1 - 250 mL Amber	0							X																									
EB-041113	4/11/13 15:15	WQ	None	1 - 1 L Amber	0									X																							
EB-041113	4/11/13 15:15	WQ	None	1 - 250 mL Amber	0										X																						
EB-041113	4/11/13 15:15	WQ	None	1 - 250 mL Poly	0														X																		
EB-041113	4/11/13 15:15	WQ	None	1 - 250 mL Poly	0															X																	
EB-041113	4/11/13 15:15	WQ	HCl	3 - 40 mL Vial	0																			X													
EB-041113	4/11/13 15:15	WQ	HCl	2 - 1 L Amber	0																				X												

Sampler:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SAMPLE DELIVERY GROUP

PH030

SDG: PH030

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped:	4/12/2013	Contact Name:	Pam Hartman	COC No:	20130412-01
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1, 2
AirbillNo:	7995 1854 7712			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
TB-041213	4/12/13 08:00	WQ	HCl	3 - 40 mL Vial	10																				X												
EB-041213	4/12/13 08:05	WQ	None	1 - 250 mL Amber	10																												X				
SL-536-SA7-SB-3.0-4.0MS	4/12/13 08:50	SO	None	6 - SS-Sleeve	10	X	X					X		X	X											X											MS/MSD
SL-536-SA7-SB-3.0-4.0MS	4/12/13 08:50	SO	None	1 - 8 oz glass	10													X																			MS/MSD
SL-536-SA7-SB-3.0-4.0MS	4/12/13 08:50	SO	None	9 - Encore	10																				X												MS/MSD
SL-836-SA7-SB-3.0-4.0	4/12/13 09:00	SO	None	2 - SS-Sleeve	10	X	X					X		X	X											X											
SL-836-SA7-SB-3.0-4.0	4/12/13 09:00	SO	None	1 - 4 oz glass	10													X																			
SL-836-SA7-SB-3.0-4.0	4/12/13 09:00	SO	None	3 - Encore	10																				X												
SL-535-SA7-SB-0.0-0.5	4/12/13 10:30	SO	None	2 - SS-Sleeve	10	X	X					X		X	X											X											
SL-535-SA7-SB-0.0-0.5	4/12/13 10:30	SO	None	1 - 4 oz glass	10													X																			
SL-535-SA7-SB-4.0-5.0	4/12/13 10:57	SO	None	2 - SS-Sleeve	10	X	X					X		X	X											X											
SL-535-SA7-SB-4.0-5.0	4/12/13 10:57	SO	None	1 - 4 oz glass	10													X																			
SL-535-SA7-SB-4.0-5.0	4/12/13 10:57	SO	None	3 - Encore	10																				X												
SL-535-SA7-SB-9.0-10.0	4/12/13 11:30	SO	None	2 - 16 oz glass	10	X	X					X		X	X											X											
SL-535-SA7-SB-9.0-10.0	4/12/13 11:30	SO	None	1 - 4 oz glass	10													X																			
SL-535-SA7-SB-9.0-10.0	4/12/13 11:30	SO	None	3 - Encore	10																				X												
SL-534-SA7-SB-0.0-0.5	4/12/13 14:30	SO	None	2 - SS-Sleeve	10	X	X					X		X	X											X											
SL-534-SA7-SB-0.0-0.5	4/12/13 14:30	SO	None	1 - 4 oz glass	10													X																			

SDG -PH030

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/12/2013
CarrierName: FedEx
AirbillNo: 7995 1854 7712

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

COC No: 20130412-01
Cooler #: 1, 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EPH 8015	Glycols 8015	Alcohols 8015	Tetraethylene 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes

Sampler: Steven Mercer

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Cotz	4/12/13										

SAMPLE DELIVERY GROUP

PH031

SDG: PH031

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/15/2013
CarrierName: FedEx
AirbillNo: 7995 3119 4130

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

COC No: 20130415-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9040 (Water)	pH 9045 (Soil)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
TB-041513	4/15/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X												
SL-534-SA7-SB-5.5-6.5	4/15/13 08:45	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-534-SA7-SB-5.5-6.5	4/15/13 08:45	SO	None	1 - 4 oz glass	10 day													X																			
SL-534-SA7-SB-5.5-6.5	4/15/13 08:45	SO	None	3 - Encore	10 day																				X												
SL-537-SA7-SB-0.0-0.5	4/15/13 09:50	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-537-SA7-SB-0.0-0.5	4/15/13 09:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-538-SA7-SB-0.0-0.5	4/15/13 10:50	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-538-SA7-SB-0.0-0.5	4/15/13 10:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-522-SA7-SB-0.0-0.5	4/15/13 13:30	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X							X				X											
SL-522-SA7-SB-0.0-0.5	4/15/13 13:30	SO	None	1 - 4 oz glass	10 day													X																			
SL-521-SA7-SB-0.0-0.5	4/15/13 14:15	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X							X				X											
SL-521-SA7-SB-0.0-0.5	4/15/13 14:15	SO	None	1 - 4 oz glass	10 day													X																			

Special Instructions:

Sampler: Steven Mercer

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Gitz	4/15/13										

SAMPLE DELIVERY GROUP

PH032

PH032

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/16/2013
CarrierName: FedEx
AirbillNo: 7995 4183 7052

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

COC No: 20130416-01
Cooler #: 2, 3
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9040 (Water)	pH 9045 (Soil)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
FB-041613	4/16/13 15:15	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																													
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Poly	10 day				X																												
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Amber	10 day					X																											
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Amber	10 day						X																										
FB-041613	4/16/13 15:15	WQ	None	1 - 1 L Amber	10 day									X																							
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Amber	10 day										X																						
FB-041613	4/16/13 15:15	WQ	None	1 - 40 mL Vial	10 day											X																					
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Poly	10 day													X																			
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Poly	10 day														X																		
FB-041613	4/16/13 15:15	WQ	None	1 - 1 L Amber	10 day															X																	
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Amber	10 day																X																
FB-041613	4/16/13 15:15	WQ	HCl	3 - 40 mL Vial	10 day																	X															
FB-041613	4/16/13 15:15	WQ	HCl	3 - 40 mL Vial	10 day																		X														
FB-041613	4/16/13 15:15	WQ	HCl	3 - 40 mL Vial	10 day																			X													
FB-041613	4/16/13 15:15	WQ	HCl	2 - 1 L Amber	10 day																				X												
FB-041613	4/16/13 15:15	WQ	None	2 - 40 mL Vial	10 day																					X											
FB-041613	4/16/13 15:15	WQ	HCl	2 - 40 mL Vial	10 day																						X										
FB-041613	4/16/13 15:15	WQ	HCl	1 - 1 L Amber	10 day																							X									
FB-041613	4/16/13 15:15	WQ	None	6 - 40 mL Vial	10 day																								X								Analyze for Nitrite, Bromide, Chloride, Phos PHATE, SULFATE
FB-041613	4/16/13 15:15	WQ	None	2 - 1 L Amber	10 day																									X							
FB-041613	4/16/13 15:15	WQ	NaOH	1 - 250 mL Poly	10 day																										X						
FB-041613	4/16/13 15:15	WQ	None	1 - 250 mL Amber	10 day																											X					
FB-041613	4/16/13 15:15	WQ	H2SO4 pH<2	1 - 8 oz glass	10 day																																Analyze for Ammonia by EPA 350.3 |

SDG-PH032

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/16/2013
CarrierName: FedEx
AirbillNo: 7995 4183 7052

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

COC No: 20130416-01
Cooler #: 2, 3
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

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

Special Instructions:

Sampler: Steven Mercer

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Gb	4/16/13										

SDG-PH032

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/16/2013
CarrierName: FedEx
AirbillNo: 7995 4183 7052

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

COC No: 20130416-02
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9040 (Water)	pH 9045 (Soil)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terpenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-559-SA7-SB-0.0-0.5	4/16/13 08:45	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-559-SA7-SB-0.0-0.5	4/16/13 08:45	SO	None	1 - 4 oz glass	10 day														X																		
SL-559-SA7-SB-2.0-3.0	4/16/13 09:25	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-559-SA7-SB-2.0-3.0	4/16/13 09:25	SO	None	1 - 4 oz glass	10 day														X																		
SL-559-SA7-SB-2.0-3.0	4/16/13 09:25	SO	None	1 - Encore	10 day																			X													
SL-560-SA7-SB-0.0-0.5	4/16/13 10:20	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-560-SA7-SB-0.0-0.5	4/16/13 10:20	SO	None	1 - 4 oz glass	10 day														X																		
SL-560-SA7-SB-3.0-4.0	4/16/13 11:05	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-560-SA7-SB-3.0-4.0	4/16/13 11:05	SO	None	1 - 4 oz glass	10 day														X																		
SL-560-SA7-SB-3.0-4.0	4/16/13 11:05	SO	None	1 - Encore	10 day																			X													
SL-561-SA7-SB-0.0-0.5	4/16/13 13:30	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-561-SA7-SB-0.0-0.5	4/16/13 13:30	SO	None	1 - 4 oz glass	10 day														X																		
TB-041613	4/16/13 08:00	WQ	None	3 - 40 mL Vial	10 day																			X													
SL-558-SA7-SB-0.0-0.5	4/16/13 14:35	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-558-SA7-SB-0.0-0.5	4/16/13 14:35	SO	None	1 - 4 oz glass	10 day														X																		

Sampler: Steven Marcus

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Gt	4/16/13										

COC Rev 2

SAMPLE DELIVERY GROUP

PH033

SDG#PH033

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/17/2013

CarrierName: FedEx

AirbillNo: 7995 5263 5625

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130417-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
TB-041713	4/17/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X												
SL-558-SA7-SB-3.0-4.0	4/17/13 09:00	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-558-SA7-SB-3.0-4.0	4/17/13 09:00	SO	None	1 - 4 oz glass	10 day													X																			
SL-558-SA7-SB-3.0-4.0	4/17/13 09:00	SO	None	1 - Encore	10 day																				X												
SL-557-SA7-SB-0.0-0.5	4/17/13 09:40	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-557-SA7-SB-0.0-0.5	4/17/13 09:40	SO	None	1 - 4 oz glass	10 day													X																			
SL-505-SA7-SB-0.0-0.5	4/17/13 11:10	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-505-SA7-SB-0.0-0.5	4/17/13 11:10	SO	None	1 - 4 oz glass	10 day													X																			
SL-502-SA7-SB-0.0-0.5	4/17/13 13:25	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-502-SA7-SB-0.0-0.5	4/17/13 13:25	SO	None	1 - 4 oz glass	10 day													X																			
SL-501-SA7-SB-0.0-0.5	4/17/13 14:00	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-501-SA7-SB-0.0-0.5	4/17/13 14:00	SO	None	1 - 4 oz glass	10 day													X																			
SL-500-SA7-SB-0.0-0.5	4/17/13 14:45	SO	None	2 - SS-Sleeve	10 day	X		X				X		X	X											X											
SL-500-SA7-SB-0.0-0.5	4/17/13 14:45	SO	None	1 - 4 oz glass	10 day													X																			

Special Instructions:

Sampler: Steven Mercer

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V.Gh	4/17/13										

SAMPLE DELIVERY GROUP

PH034

SDG-PH034

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/18/2013
CarrierName: FedEx
AirbillNo: 7995 6315 9383

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

COC No: 20130418-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Oxamotin	Methyl Mercury 1630	Other Analysis/Notes
SL-531-SA7-SB-0.0-0.5	4/18/13 08:55	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-531-SA7-SB-0.0-0.5	4/18/13 08:55	SO	None	1 - 4 oz glass	10 day													X																			
SL-532-SA7-SB-0.0-0.5	4/18/13 09:45	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-532-SA7-SB-0.0-0.5	4/18/13 09:45	SO	None	1 - 4 oz glass	10 day													X																			
SL-533-SA7-SB-0.0-0.5	4/18/13 11:25	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-533-SA7-SB-0.0-0.5	4/18/13 11:25	SO	None	1 - 4 oz glass	10 day													X																			
SL-530-SA7-SB-0.0-0.5	4/18/13 14:10	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-530-SA7-SB-0.0-0.5	4/18/13 14:10	SO	None	1 - 4 oz glass	10 day													X																			

Special Instructions:

Sampler: Steven Moran

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V.Gh	4/18/13										

SDG: PH034

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/18/2013
CarrierName: FedEx
AirbillNo: 7995 6315 9383

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

COC No: 20130418-02
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water) / Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9040 (Water) / pH 9045 (Soil)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EPH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
EB-041813	4/18/13 15:00	WQ	HNO3 pH<2	1 - 250 mL Amber	10 day	X	X																												
EB-041813	4/18/13 15:00	WQ	None	1 - 250 mL Amber	10 day						X																								
EB-041813	4/18/13 15:00	WQ	None	1 - 1 L Amber	10 day								X																						
EB-041813	4/18/13 15:00	WQ	None	1 - 250 mL Amber	10 day									X																					
EB-041813	4/18/13 15:00	WQ	None	1 - 250 mL Poly	10 day												X																		
EB-041813	4/18/13 15:00	WQ	None	1 - 250 mL Amber	10 day															X															
EB-041813	4/18/13 15:00	WQ	HCl	3 - 40 mL Vial	10 day																		X												
EB-041813	4/18/13 15:00	WQ	HCl	2 - 1 L Amber	10 day																			X											

Special Instructions:

Sampler: Steven Mercer

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Gh	4/18/13										

SAMPLE DELIVERY GROUP

PH035

SSFL Phase 3 Chain of Custody

SDG- P1H035

CDM Smith

DateShipped:	4/19/2013	Contact Name:	Pam Hartman	COC No:	20130419-01
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1
AirbillNo:	7995 7103 4032			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Oxamotin	Methyl Mercury 1630	Other Analysis/Notes
SL-518-SA7-SB-0.0-0.5	4/19/13 08:50	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X										X												
SL-518-SA7-SB-0.0-0.5	4/19/13 08:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-520-SA7-SB-0.0-0.5	4/19/13 09:50	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X										X												
SL-520-SA7-SB-0.0-0.5	4/19/13 09:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-511-SA7-SB-0.0-0.5	4/19/13 11:05	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X							X			X												
SL-511-SA7-SB-0.0-0.5	4/19/13 11:05	SO	None	1 - 4 oz glass	10 day													X																			
EB-041913	4/19/13 13:00	WQ	None	1 - 250 mL Amber	10 day																	X															

Sampler: Steven Mercer

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Catz	4/19/13										

SAMPLE DELIVERY GROUP

PH036

SDG: PH036

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/22/2013

CarrierName: FedEx

AirbillNo: 7995 8528 1095

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130422-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-510-SA7-SB-0.0-0.5MS	4/22/13 08:45	SO	None	6 - SS-Sleeve	10 day	X	X					X		X	X								X			X											
SL-510-SA7-SB-0.0-0.5MS	4/22/13 08:45	SO	None	1 - 8 oz glass	10 day													X																			
SL-810-SA7-SB-0.0-0.5	4/22/13 08:50	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X								X			X											
SL-810-SA7-SB-0.0-0.5	4/22/13 08:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-503-SA7-SB-0.0-0.5	4/22/13 10:45	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X								X			X											
SL-503-SA7-SB-0.0-0.5	4/22/13 10:45	SO	None	1 - 4 oz glass	10 day													X																			
SL-504-SA7-SB-0.0-0.5	4/22/13 12:50	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X								X			X											
SL-504-SA7-SB-0.0-0.5	4/22/13 12:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-504-SA7-SB-4.0-5.0	4/22/13 13:55	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X								X			X											
SL-504-SA7-SB-4.0-5.0	4/22/13 13:55	SO	None	1 - 4 oz glass	10 day													X																			
SL-504-SA7-SB-4.0-5.0	4/22/13 13:55	SO	None	1 - Encore	10 day																				X												
TB-042213	4/22/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X												
SL-517-SA7-SB-0.0-0.5	4/22/13 14:50	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-517-SA7-SB-0.0-0.5	4/22/13 14:50	SO	None	1 - 4 oz glass	10 day													X																			

Special Instructions:

Sampler: Steve Mercer

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Gh	4/22/13										

SAMPLE DELIVERY GROUP

PH037

SDG-PH037

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/23/2013
CarrierName: FedEx
AirbillNo: 7995 9629 9381

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

COC No: 20130423-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water) Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTS 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
TB-042313	4/23/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																			X												
SL-526-SA7-SB-0.0-0.5	4/23/13 09:25	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-526-SA7-SB-0.0-0.5	4/23/13 09:25	SO	None	1 - 4 oz glass	10 day												X																			
SL-526-SA7-SB-3.5-4.5	4/23/13 10:55	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-526-SA7-SB-3.5-4.5	4/23/13 10:55	SO	None	1 - 4 oz glass	10 day												X																			
SL-526-SA7-SB-3.5-4.5	4/23/13 10:55	SO	None	1 - Encore	10 day																			X												
SL-512-SA7-SB-0.0-0.5	4/23/13 11:35	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-512-SA7-SB-0.0-0.5	4/23/13 11:35	SO	None	1 - 4 oz glass	10 day												X																			
SL-525-SA7-SB-0.0-0.5	4/23/13 14:20	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-525-SA7-SB-0.0-0.5	4/23/13 14:20	SO	None	1 - 4 oz glass	10 day												X																			

Sampler: Steven Mercer

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Cotter	4/23/13										

COC Rev 2

SAMPLE DELIVERY GROUP

PH038

SDG: PH038

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/24/2013
CarrierName: FedEx
AirbillNo: 7996 0718 1815

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

COC No: 20130424-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil) Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
TB-042413	4/24/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																			X												
SL-525-SA7-SB-6.5-7.5	4/24/13 09:10	SO	None	1 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-525-SA7-SB-6.5-7.5	4/24/13 09:10	SO	None	1 - 8 oz glass	10 day	X	X				X		X	X											X											
SL-525-SA7-SB-6.5-7.5	4/24/13 09:10	SO	None	1 - 4 oz glass	10 day												X																			
SL-525-SA7-SB-6.5-7.5	4/24/13 09:10	SO	None	1 - Encore	10 day																			X												
SL-529-SA7-SB-0.0-0.5	4/24/13 10:00	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-529-SA7-SB-0.0-0.5	4/24/13 10:00	SO	None	1 - 4 oz glass	10 day												X																			
SL-528-SA7-SB-0.0-0.5	4/24/13 10:55	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-528-SA7-SB-0.0-0.5	4/24/13 10:55	SO	None	1 - 4 oz glass	10 day												X																			
SL-527-SA7-SB-0.0-0.5	4/24/13 13:15	SO	None	2 - SS-Sleeve	10 day	X	X				X		X	X											X											
SL-527-SA7-SB-0.0-0.5	4/24/13 13:15	SO	None	1 - 4 oz glass	10 day												X																			
SL-527-SA7-SB-2.5-3.5	4/24/13 14:40	SO	None	2 - 16 oz glass	10 day	X	X				X		X	X											X											
SL-527-SA7-SB-2.5-3.5	4/24/13 14:40	SO	None	1 - 4 oz glass	10 day												X																			
SL-527-SA7-SB-2.5-3.5	4/24/13 14:40	SO	None	1 - Encore	10 day																			X												

Sampler: Steven Mercer

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Gt	4/24/13										

SDG- PH038

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped:	4/24/2013	Contact Name:	Pam Hartman	COC No:	20130424-02
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	2
AirbillNo:	7996 0718 1815			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
EB-042413	4/24/13 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																													
EB-042413	4/24/13 15:00	WQ	None	1 - 250 mL Amber	10 day							X																									
EB-042413	4/24/13 15:00	WQ	None	1 - 1 L Amber	10 day									X																							
EB-042413	4/24/13 15:00	WQ	None	1 - 250 mL Amber	10 day										X																						
EB-042413	4/24/13 15:00	WQ	None	1 - 250 mL Poly	10 day														X																		
EB-042413	4/24/13 15:00	WQ	None	1 - 250 mL Amber	10 day																X																
EB-042413	4/24/13 15:00	WQ	HCl	3 - 40 mL Vial	10 day																			X													
EB-042413	4/24/13 15:00	WQ	HCl	2 - 1 L Amber	10 day																				X												
EB-042413	4/24/13 15:00	WQ	None	1 - 250 mL Amber	10 day																															extra bottle	

Special Instructions:

Sampler: V. Cortez

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Cortez	4/24/13										

SAMPLE DELIVERY GROUP

PH039

SSFL Phase 3 Chain of Custody

SDG - P1+039

CDM Smith

DateShipped:	4/25/2013	Contact Name:	Pam Hartman	COC No:	20130425-01
CarrierName:	FedEx	Contact Phone:	(818)466-8007	Cooler #:	1
AirbillNo:	7996 1755 0303			Lab:	Lancaster
				Lab Phone:	717-556-7259
				Lab Address	2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-507-SA7-SB-0.0-0.5	4/24/13 15:05	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-507-SA7-SB-0.0-0.5	4/24/13 15:05	SO	None	1 - 4 oz glass	10 day													X																			
TB-042413	4/24/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																			X													
SL-519-SA7-SB-0.0-0.5MS	4/25/13 08:45	SO	None	6 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-519-SA7-SB-0.0-0.5MS	4/25/13 08:45	SO	None	1 - 8 oz glass	10 day													X																			
SL-819-SA7-SB-0.0-0.5	4/25/13 08:50	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-819-SA7-SB-0.0-0.5	4/25/13 08:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-519-SA7-SB-2.0-3.0	4/25/13 09:50	SO	None	1 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-519-SA7-SB-2.0-3.0	4/25/13 09:50	SO	None	1 - 16 oz glass	10 day	X	X					X		X	X											X											
SL-519-SA7-SB-2.0-3.0	4/25/13 09:50	SO	None	1 - 4 oz glass	10 day													X																			
SL-519-SA7-SB-2.0-3.0	4/25/13 09:50	SO	None	1 - Encore	10 day																			X													
SL-509-SA7-SB-0.0-0.5	4/25/13 10:40	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-509-SA7-SB-0.0-0.5	4/25/13 10:40	SO	None	1 - 4 oz glass	10 day													X																			
SL-506-SA7-SB-0.0-0.5	4/25/13 11:10	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-506-SA7-SB-0.0-0.5	4/25/13 11:10	SO	None	1 - 4 oz glass	10 day													X																			
SL-508-SA7-SB-0.0-0.5	4/25/13 13:20	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-508-SA7-SB-0.0-0.5	4/25/13 13:20	SO	None	1 - 4 oz glass	10 day													X																			

SDG: PH039

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/25/2013
CarrierName: FedEx
AirbillNo: 7996 1755 0303

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

COC No: 20130425-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike
Lancaster, PA 17601

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

Special Instructions:

Sampler: Steve Mercer

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Cotz	4/25/13										

SAMPLE DELIVERY GROUP

PH040

SDG: PH040

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 4/26/2013
CarrierName: FedEx
AirbillNo: 7996 2149 4004

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

COC No: 20130426-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil) Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270 TIC 8270	PAHs 8270 SIM 1,4 Dioxane 8270 SIM	Dioxins 1613 PCBs/PCTs 8082	Perchlorate 314.0/331 Perchlorate Confirm 6850/6860	pH 9045 (Soil) pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151 Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM TPH-GRO 8015	TPH-EFH 8015 Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056 Energetics 8330	Cyanide 9012	Formaldehyde 8315 NDMA 1625	Organotin Methyl Mercury 1630	Other Analysis/Notes
SL-543A-SA7-SB-0.0-0.5	4/25/13 14:25	SO	None	1 - SS-Sleeve	10 day						X														
SL-543B-SA7-SB-0.0-0.5	4/25/13 14:40	SO	None	1 - SS-Sleeve	10 day						X														
SL-543C-SA7-SB-0.0-0.5	4/25/13 14:50	SO	None	1 - SS-Sleeve	10 day						X														
SL-543D-SA7-SB-0.0-0.5	4/25/13 15:00	SO	None	1 - SS-Sleeve	10 day						X														
TB-042613	4/26/13 08:00	WQ	HCl	4 - 40 mL Vial	10 day												X								
SL-562-SA7-SB-0.0-0.5	4/26/13 08:25	SO	None	2 - SS-Sleeve	10 day	X	X			X	X X							X							
SL-562-SA7-SB-0.0-0.5	4/26/13 08:25	SO	None	1 - 4 oz glass	10 day								X												
SL-562-SA7-SB-2.0-3.0	4/26/13 09:20	SO	None	2 - SS-Sleeve	10 day	X	X			X	X X							X							
SL-562-SA7-SB-2.0-3.0	4/26/13 09:20	SO	None	1 - 4 oz glass	10 day								X												
SL-562-SA7-SB-2.0-3.0	4/26/13 09:20	SO	None	1 - Encore	10 day												X								

Sampler:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
V. Cata	4/26/13										

SAMPLE DELIVERY GROUP

PH045

SDG-PH045

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/3/2013

CarrierName: FedEx

AirbillNo: 799910081427

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130603-03

Cooler #: 3

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-526-SA7-SB-9.0-10.0	6/3/13 11:35	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-526-SA7-SB-9.0-10.0	6/3/13 11:35	SO	None	1 - 4 oz glass	10 day													X																			
SL-532-SA7-SB-3.0-4.0	6/3/13 10:00	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-532-SA7-SB-3.0-4.0	6/3/13 10:00	SO	None	1 - 4 oz glass	10 day													X																			
SL-533-SA7-SB-2.5-3.5	6/3/13 09:10	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-533-SA7-SB-2.5-3.5	6/3/13 09:10	SO	None	1 - 4 oz glass	10 day													X																			
SL-526-SA7-SB-9.0-10.0	6/3/13 11:35	SO	None	2 - Encore	10 day																				X												
SL-532-SA7-SB-3.0-4.0	6/3/13 10:00	SO	None	2 - Encore	10 day																				X												
SL-533-SA7-SB-2.5-3.5	6/3/13 09:10	SO	None	2 - Encore	10 day																				X												
TB-060313	6/3/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X												
SL-525-SA7-SB-4.0-5.0	6/3/13 13:30	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-525-SA7-SB-4.0-5.0	6/3/13 13:30	SO	None	1 - 4 oz glass	10 day													X																			
SL-525-SA7-SB-9.5-10.5	6/3/13 14:00	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-525-SA7-SB-9.5-10.5	6/3/13 14:00	SO	None	1 - 4 oz glass	10 day													X																			
SL-525-SA7-SB-4.0-5.0	6/3/13 13:30	SO	None	2 - Encore	10 day																				X												
SL-525-SA7-SB-9.5-10.5	6/3/13 14:00	SO	None	2 - Encore	10 day																				X												

Sampler:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SDG - PH045

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/3/2013
CarrierName: FedEx
AirbillNo: 799910081427

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

COC No: 20130603-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
EB1-060313	6/3/13 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																													
EB1-060313	6/3/13 15:00	WQ	None	3 - 250 mL Amber	10 day							X			X							X															
EB1-060313	6/3/13 15:00	WQ	None	2 - 1 L Amber	10 day									X																							
EB1-060313	6/3/13 15:00	WQ	None	1 - 250 mL Poly	10 day														X																		
EB1-060313	6/3/13 15:00	WQ	HCl	2 - 1 L Amber	10 day																				X												
EB1-060313	6/3/13 15:00	WQ	HCl	3 - 40 mL Vial	10 day																			X													

Sampler:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SDG-PH045

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/3/2013

CarrierName: FedEx

AirbillNo: 799910081427

Contact Name: Ram Hartman

Contact Phone: (818)466-8007

COC No: 20130603-02

Cooler #: 2

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate Confirm 6850/6860	Perchlorate 314.0/331	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
EB2-060313	6/3/13 15:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																													
EB2-060313	6/3/13 15:30	WQ	None	3 - 250 mL Amber	10 day							X			X							X															
EB2-060313	6/3/13 15:30	WQ	None	2 - 1 L Amber	10 day									X																							
EB2-060313	6/3/13 15:30	WQ	None	1 - 250 mL Poly	10 day															X																	
EB2-060313	6/3/13 15:30	WQ	HCl	2 - 1 L Amber	10 day																					X											
EB2-060313	6/3/13 15:30	WQ	HCl	3 - 40 mL Vial	10 day																				X												

Sampler:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

COC Rev 2

SAMPLE DELIVERY GROUP

PH046

SSFL Phase 3 Chain of Custody

SDG-PH0416

CDM Smith

DateShipped: 6/4/2013
CarrierName: FedEx
AirbillNo: 799920832400

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

COC No: 20130604-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-545A-SA7-SB-0.0-0.5	6/3/13 14:50	SO	None	1 - SS-Sleeve	10 day										X																						
SL-545B-SA7-SB-0.0-0.5	6/3/13 15:00	SO	None	1 - SS-Sleeve	10 day										X																						
SL-545C-SA7-SB-0.0-0.5	6/3/13 15:10	SO	None	1 - SS-Sleeve	10 day										X																						
SL-513-SA7-SB-0.0-0.5MS	6/4/13 08:30	SO	None	6 - SS-Sleeve	10 day	X	X					X		X	X							X			X												MS/MSD
SL-513-SA7-SB-0.0-0.5MS	6/4/13 08:30	SO	None	1 - 8 oz glass	10 day														X																		MS/MSD
SL-913-SA7-SB-0.0-0.5	6/4/13 08:45	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X							X			X												
SL-913-SA7-SB-0.0-0.5	6/4/13 08:45	SO	None	1 - 4 oz glass	10 day														X																		
SL-516-SA7-SB-0.0-0.5	6/4/13 09:55	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X										X												
SL-516-SA7-SB-0.0-0.5	6/4/13 09:55	SO	None	1 - 4 oz glass	10 day														X																		
SL-524-SA7-SB-1.0-2.0MS	6/4/13 13:20	SO	None	6 - 16 oz glass	10 day	X	X					X		X	X										X												MS/MSD
SL-524-SA7-SB-1.0-2.0MS	6/4/13 13:20	SO	None	1 - 8 oz glass	10 day														X																		MS/MSD
SL-524-SA7-SB-1.0-2.0MS	6/4/13 13:20	SO	None	6 - Encore	10 day																			X													MS/MSD
SL-524-SA7-SB-0.0-0.5	6/4/13 13:10	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X										X												
SL-524-SA7-SB-0.0-0.5	6/4/13 13:10	SO	None	1 - 4 oz glass	10 day														X																		
SL-924-SA7-SB-1.0-2.0	6/4/13 13:30	SO	None	2 - 16 oz glass	10 day	X	X					X		X	X										X												
SL-924-SA7-SB-1.0-2.0	6/4/13 13:30	SO	None	1 - 4 oz glass	10 day														X																		
SL-924-SA7-SB-1.0-2.0	6/4/13 13:30	SO	None	2 - Encore	10 day																			X													
TB-060413	6/4/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																			X													

SSFL Phase 3 Chain of Custody

SDG-PH046

CDM Smith

DateShipped: 6/4/2013
CarrierName: FedEx
AirbillNo: 799920832400

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

COC No: 20130604-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

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

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SAMPLE DELIVERY GROUP

PH049

acct# 13013 Cup# 1395500 sample# 7085553-54

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 6/6/2013
CarrierName: FedEx
AirbillNo: 799943102615

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

COC No: 20130606-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-514-SA7-SB-0.0-0.5	6/6/13 08:55	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-514-SA7-SB-0.0-0.5	6/6/13 08:55	SO	None	1 - 4 oz glass	10 day													X																			
SL-515-SA7-SB-0.0-0.5	6/6/13 09:15	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X							X				X											
SL-515-SA7-SB-0.0-0.5	6/6/13 09:15	SO	None	1 - 4 oz glass	10 day													X																			

Special Instructions:

Sampler: V. Cook

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	06/06/13	1600									
									[illegible]	6/7/13	0920

Subarea 7

SAMPLE DELIVERY GROUP

PH121

SSFL Phase 3 Chain of Custody

SDG PH121

CDM Smith

DateShipped: 10/2/2013
CarrierName: FedEx
AirbillNo: 796825280883

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

COC No: 20131002-02
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
EB2-100213	10/2/13 14:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																													
EB2-100213	10/2/13 14:30	WQ	None	2 - 250 mL Amber	10 day								X			X																					
EB2-100213	10/2/13 14:30	WQ	None	2 - 1 L Amber	10 day									X																							
EB2-100213	10/2/13 14:30	WQ	None	1 - 250 mL Poly	10 day														X																		
EB2-100213	10/2/13 14:30	WQ	HCl	3 - 40 mL Vial	10 day																				X												
EB2-100213	10/2/13 14:30	WQ	HCl	2 - 1 L Amber	10 day																					X											

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SDG-PH121

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 10/2/2013
CarrierName: FedEx
AirbillNo: 796825280883

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

COC No: 20131002-03
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes
SL-541-SA7-SB-0.0-0.5	10/2/13 08:45	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X											
SL-541-SA7-SB-0.0-0.5	10/2/13 08:45	SO	None	1 - 4 oz glass	10 day													X																			
SL-541-SA7-SB-2.0-3.0	10/2/13 08:50	SO	None	2 - 16 oz glass	10 day	X	X					X		X	X			X								X											
SL-541-SA7-SB-2.0-3.0	10/2/13 08:50	SO	None	2 - Encore	10 day																				X												
TB2-100213	10/2/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X												

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time

SAMPLE DELIVERY GROUP

PH138

SSFL Phase 3 Chain of Custody

13013 1438204 7300094-115

CDM Smith

DateShipped: 12/3/2013
CarrierName: FedEx
AirbillNo: 7973 0122 0162

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

COC No: 20131203-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D6310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-502-NBZ-SB-0.0-0.5	12/3/13 09:20	SO	None	1 - SS-Sleeve	10 day																	X				X														
SL-502-NBZ-SB-4.0-5.0	12/3/13 09:35	SO	None	1 - 16 oz glass	10 day																	X				X														
SL-502-NBZ-SB-4.0-5.0	12/3/13 09:35	SO	None	2 - Encore	10 day																				X															
SL-503-NBZ-SB-0.0-0.5	12/3/13 10:00	SO	None	1 - SS-Sleeve	10 day																	X				X														
SL-503-NBZ-SB-2.0-3.0	12/3/13 10:20	SO	None	1 - 16 oz glass	10 day																	X				X														
SL-503-NBZ-SB-2.0-3.0	12/3/13 10:20	SO	None	2 - Encore	10 day																																			
SL-504-NBZ-SB-0.0-0.5MS	12/3/13 10:45	SO	None	2 - SS-Sleeve	10 day																	X				X														
SL-804-NBZ-SB-0.0-0.5	12/3/13 10:55	SO	None	1 - SS-Sleeve	10 day																	X				X														
SL-530-NBZ-SB-0.0-0.5	12/3/13 09:40	SO	None	1 - SS-Sleeve	10 day																	X				X														
SL-531-NBZ-SB-0.0-0.5	12/3/13 13:50	SO	None	1 - SS-Sleeve	10 day																	X				X														
SL-532-NBZ-SB-0.0-0.5	12/3/13 10:20	SO	None	1 - SS-Sleeve	10 day																	X				X														
SL-533-NBZ-SB-0.0-0.5	12/3/13 13:05	SO	None	1 - SS-Sleeve	10 day																X					X														
SL-509-NBZ-SB-2.5-3.5MS	12/3/13 13:30	SO	None	6 - Encore	10 day																				X															
SL-809-NBZ-SB-2.5-3.5	12/3/13 13:40	SO	None	2 - Encore	10 day																				X															
SL-510-NBZ-SB-4.0-5.0	12/3/13 14:45	SO	None	2 - Encore	10 day																				X															
TB-120313	12/3/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X															

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
	12/3/13	1600									
									Brandy Barry	12.4.13	935

COC Rev 3

SSFL Phase 3 Chain of Custody

13013 1438204 7300094-115

CDM Smith

DateShipped: 12/3/2013
CarrierName: FedEx
AirbillNo: 7973 0122 0162

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

COC No: 20131203-03
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-509-NBZ-SB-0.0-0.5	12/3/13 13:15	SO	None	2 - SS-Sleeve	10 day							X		X	X							X				X														
SL-509-NBZ-SB-0.0-0.5	12/3/13 13:15	SO	None	1 - 4 oz glass	10 day													X																						
SL-509-NBZ-SB-2.5-3.5MS	12/3/13 13:30	SO	None	6 - 16 oz glass	10 day							X		X	X			X				X				X														
SL-809-NBZ-SB-2.5-3.5	12/3/13 13:40	SO	None	2 - 16 oz glass	10 day							X		X	X			X				X				X														
SL-510-NBZ-SB-0.0-0.5	12/3/13 14:30	SO	None	1 - 4 oz glass	10 day													X																						
SL-510-NBZ-SB-0.0-0.5	12/3/13 14:30	SO	None	2 - SS-Sleeve	10 day							X		X	X							X				X														
SL-510-NBZ-SB-4.0-5.0	12/3/13 14:45	SO	None	2 - 16 oz glass	10 day							X		X	X			X				X				X														

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/3/13	1601									
									[signature]	12.4.13	935

COC Rev 3

COC: 20131203-03, Page 1 of 1

SSFL Phase 3 Chain of Custody

13013 1438204 7300094-115

CDM Smith

DateShipped: 12/3/2013
CarrierName: FedEx
AirbillNo: 7973 0122 0162

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

COC No: 20131203-02
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB-120313	12/3/13 15:00	WQ	None	1 - 250 mL Amber	10 day							X																												

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/3/13	1600									
									[signature]	12.4.13	935

COC Rev 3

COC: 20131203-02, Page 1 of 1

SAMPLE DELIVERY GROUP

PH139

13013 1438596 7301917-33

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/4/2013
CarrierName: FedEx
AirbillNo: 797314998950

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

COC No: 20131204-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-506-NBZ-SB-0.0-0.5	12/4/13 10:30	SO	None	1 - 16 oz glass	10 day																	X				X														
SL-507-NBZ-SB-0.0-0.5	12/4/13 10:00	SO	None	1 - 16 oz glass	10 day																	X				X														
SL-507-NBZ-SB-3.5-4.5	12/4/13 10:15	SO	None	1 - 16 oz glass	10 day																	X				X														
SL-507-NBZ-SB-3.5-4.5	12/4/13 10:15	SO	None	2 - Encore	10 day																				X															
SL-508-NBZ-SB-0.0-0.5	12/4/13 09:00	SO	None	2 - SS-Sleeve	10 day							X		X	X							X				X														
SL-508-NBZ-SB-0.0-0.5	12/4/13 09:00	SO	None	1 - 4 oz glass	10 day													X																						
SL-508-NBZ-SB-4.0-5.0	12/4/13 09:15	SO	None	2 - 16 oz glass	10 day							X		X	X			X				X				X														
SL-508-NBZ-SB-4.0-5.0	12/4/13 09:15	SO	None	2 - Encore	10 day																				X															
SL-546-NBZ-SB-0.0-0.5	12/4/13 09:55	SO	None	1 - SS-Sleeve	10 day																					X														
SL-547-NBZ-SB-0.0-0.5	12/4/13 10:45	SO	None	1 - SS-Sleeve	10 day																					X														
SL-549-NBZ-SB-0.0-0.5	12/4/13 08:55	SO	None	1 - SS-Sleeve	10 day																					X														
TB-120413	12/4/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X															
SL-545-NBZ-SB-0.0-0.5MS	12/4/13 13:25	SO	None	6 - SS-Sleeve	10 day	X	X					X		X	X											X						X								MS/MSD
SL-545-NBZ-SB-0.0-0.5MS	12/4/13 13:25	SO	None	1 - 8 oz glass	10 day													X																						MS/MSD
SL-845-NBZ-SB-0.0-0.5	12/4/13 13:30	SO	None	2 - SS-Sleeve	10 day	X	X					X		X	X											X						X								
SL-845-NBZ-SB-0.0-0.5	12/4/13 13:30	SO	None	1 - 4 oz glass	10 day													X																						
SL-511-NBZ-SB-0.0-0.5	12/4/13 12:40	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-511-NBZ-SB-0.0-0.5	12/4/13 12:40	SO	None	1 - 4 oz glass	10 day													X																						
SL-511-NBZ-SB-2.5-3.5	12/4/13 13:00	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-511-NBZ-SB-2.5-3.5	12/4/13 13:00	SO	None	1 - 4 oz glass	10 day													X																						
SL-511-NBZ-SB-2.5-3.5	12/4/13 13:00	SO	None	2 - Encore	10 day																				X															
SL-548-NBZ-SB-0.0-0.5	12/4/13 14:15	SO	None	1 - SS-Sleeve	10 day									X	X											X														

COC Rev 3

COC: 20131204-01, Page 1 of 2

1 of 2

13013 1438596 7301917-33

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/4/2013
CarrierName: FedEx
AirbillNo: 797314998950

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

COC No: 20131204-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
	12/04/2013	1600									
										12/5/13	0850

SAMPLE DELIVERY GROUP

PH140

SSFL Phase 3 Chain of Custody

13013 1439434 7306298-310

CDM Smith

DateShipped: 12/5/2013
CarrierName: FedEx
AirbillNo: 797324756363

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

COC No: 20131205-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EPH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB1-120513	12/5/13 14:30	WQ	None	2 - 1 L Amber	10 day									X																										
EB1-120513	12/5/13 14:30	WQ	HCl	2 - 1 L Amber	10 day																					X														
EB2-120513	12/5/13 15:00	WQ	None	2 - 1 L Amber	10 day									X																										
EB2-120513	12/5/13 15:00	WQ	HCl	2 - 1 L Amber	10 day																					X														

Special Instructions:

Sampler: Pam Hartman

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/05/2013	1600									
									[illegible]	12/9/13	0910

COC Rev 3

COC 20131205-01, Page 1 of 1

13013 1439434 7306298-310

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/5/2013
CarrierName: FedEx
AirbillNo: 797324756363

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

COC No: 20131205-02
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB2-120513	12/5/13 15:00	WQ	None	2 - 1 L Amber	10 day																X																			
EB3-120513	12/5/13 15:30	WQ	None	4 - 1 L Amber	10 day									X							X																			
EB3-120513	12/5/13 15:30	WQ	HCl	2 - 1 L Amber	10 day																					X														

Special Instructions:

Sampler: Pam Hartman

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/05/2013	1600									
									[illegible]	12/9/13	0910

COC Rev 3

COC 20131205-02, Page 1 of 1

13013 1439434 7306298-310

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/5/2013
CarrierName: FedEx
AirbillNo: 797324756363

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

COC No: 20131205-03
Cooler #: 3
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB1-120513	12/5/13 14:30	WQ	None	3 - 250 mL Amber	10 day							X			X							X																		
EB1-120513	12/5/13 14:30	WQ	HCl	3 - 40 mL Vial	10 day																			X																
EB1-120513	12/5/13 14:30	WQ	None	1 - 250 mL Poly	10 day														X																					
EB2-120513	12/5/13 15:00	WQ	None	2 - 250 mL Amber	10 day							X										X																		
EB2-120513	12/5/13 15:00	WQ	HCl	3 - 40 mL Vial	10 day																			X																
EB2-120513	12/5/13 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																
EB2-120513	12/5/13 15:00	WQ	None	1 - 250 mL Poly	10 day														X																					
EB3-120513	12/5/13 15:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																
EB3-120513	12/5/13 15:30	WQ	None	3 - 250 mL Amber	10 day							X			X							X																		
EB3-120513	12/5/13 15:30	WQ	None	1 - 250 mL Poly	10 day														X																					
EB3-120513	12/5/13 15:30	WQ	NaOH	1 - 250 mL Poly	10 day																										X									
EB3-120513	12/5/13 15:30	WQ	None	2 - 40 mL Vial	10 day																								X											
EB3-120513	12/5/13 15:30	WQ	HCl	3 - 40 mL Vial	10 day																			X																

Special Instructions:

Sampler: Pa Hartman

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/05/2013	1600									
									[illegible]	12/9/13	0960

COC Rev 3

COC 20131205-03, Page 1 of 1

SSFL Phase 3 Chain of Custody

13013 1439434 7306298-310

CDM Smith

DateShipped: 12/5/2013
CarrierName: FedEx
AirbillNo: 797324756363

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

COC No: 20131205-04
Cooler #: 4
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
TB-120513	12/5/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X															
SL-525-NBZ-SB-0.0-0.5	12/5/13 09:30	SO	None	1 - SS-Sleeve	10 day																X					X														
SL-525-NBZ-SB-4.0-5.0MS	12/5/13 10:45	SO	None	3 - SS-Sleeve	10 day																X					X														MS/MSD
SL-525-NBZ-SB-4.0-5.0MS	12/5/13 10:45	SO	None	6 - Encore	10 day																				X															MS/MSD
SL-825-NBZ-SB-4.0-5.0	12/5/13 11:00	SO	None	1 - SS-Sleeve	10 day																X					X														
SL-825-NBZ-SB-4.0-5.0	12/5/13 11:00	SO	None	2 - Encore	10 day																				X															
SL-526-NBZ-SB-0.0-0.5	12/5/13 11:30	SO	None	1 - SS-Sleeve	10 day																X	X				X														
SL-526-NBZ-SB-2.5-3.5	12/5/13 12:00	SO	None	1 - SS-Sleeve	10 day																X	X				X														
SL-526-NBZ-SB-2.5-3.5	12/5/13 12:00	SO	None	2 - Encore	10 day																				X															
SL-527-NBZ-SB-0.0-0.5	12/5/13 10:45	SO	None	2 - SS-Sleeve	10 day							X		X	X							X																		
SL-528-NBZ-SB-0.0-0.5	12/5/13 12:05	SO	None	2 - SS-Sleeve	10 day							X		X	X							X																		
SL-529-NBZ-SB-0.0-0.5	12/5/13 13:00	SO	None	2 - SS-Sleeve	10 day							X		X	X							X																		

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/05/2013	1600									
									[signature]	12/9/13	0910

COC Rev 3

COC 20131205-04, Page 1 of 1

SAMPLE DELIVERY GROUP

PH141

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/6/2013 A-13013
CarrierName: FedEx G-1439273
AirbillNo: 797337756282 S-7305591-99

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

COC No: 20131206-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-512-NBZ-SB-0.0-0.5	12/6/13 09:25	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-534-NBZ-SB-0.0-0.5	12/6/13 09:10	SO	None	1 - SS-Sleeve	10 day																					X														
SL-535-NBZ-SB-0.0-0.5	12/6/13 10:10	SO	None	1 - SS-Sleeve	10 day																					X														
SL-501-NBZ-SB-0.0-0.5	12/6/13 12:50	SO	None	1 - SS-Sleeve	10 day	X	X																																	
SL-501-NBZ-SB-0.0-0.5	12/6/13 12:50	SO	None	1 - 4 oz glass	10 day													X																						
SL-537-NBZ-SB-0.0-0.5	12/6/13 12:55	SO	None	1 - SS-Sleeve	10 day									X								X				X														
SL-538-NBZ-SB-0.0-0.5	12/6/13 14:05	SO	None	2 - SS-Sleeve	10 day							X		X								X				X														
SL-556-NBZ-SB-0.0-0.5	12/6/13 14:00	SO	None	1 - SS-Sleeve	10 day																X	X				X														
SL-556-NBZ-SB-4.0-5.0	12/6/13 14:30	SO	None	1 - SS-Sleeve	10 day																X	X				X														
SL-556-NBZ-SB-4.0-5.0	12/6/13 14:30	SO	None	2 - Encore	10 day																				X															
TB-120613	12/6/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X															

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/06/	2013	1600								
									[illegible]	12/7/13	1050

COC Rev 3

COC 20131206-01, Page 1 of 1

SAMPLE DELIVERY GROUP

PH142

SSFL Phase 3 Chain of Custody

CDM Smith

A-13013

DateShipped: 12/9/2013 G-1439666

CarrierName: FedEx S-7307341-54

AirbillNo: 797351083442

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20131209-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
TB-120913	12/9/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X															
SL-514-NBZ-SB-0.0-0.5	12/9/13 12:00	SO	None	1 - SS-Sleeve	10 day																	X																		
SL-515-NBZ-SB-0.0-0.5	12/9/13 13:00	SO	None	1 - SS-Sleeve	10 day																	X																		
SL-516-NBZ-SB-0.0-0.5	12/9/13 10:30	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-516-NBZ-SB-0.0-0.5	12/9/13 10:30	SO	None	1 - 4 oz glass	10 day													X																						
SL-516-NBZ-SB-4.0-5.0	12/9/13 11:00	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-516-NBZ-SB-4.0-5.0	12/9/13 11:00	SO	None	1 - 4 oz glass	10 day													X																						
SL-516-NBZ-SB-4.0-5.0	12/9/13 11:00	SO	None	2 - Encore	10 day																				X															
SL-513-NBZ-SB-0.0-0.5	12/9/13 10:10	SO	None	1 - SS-Sleeve	10 day																					X														
SL-522-NBZ-SB-0.0-0.5	12/9/13 11:05	SO	None	1 - SS-Sleeve	10 day							X														X				X										
SL-523-NBZ-SB-0.0-0.5	12/9/13 12:45	SO	None	1 - SS-Sleeve	10 day							X														X				X										
SL-524-NBZ-SB-0.0-0.5MS	12/9/13 13:40	SO	None	3 - SS-Sleeve	10 day							X														X				X										MS/MSD
SL-824-NBZ-SB-0.0-0.5	12/9/13 14:30	SO	None	1 - SS-Sleeve	10 day							X														X				X										
SL-522-NBZ-SB-2.5-3.5	12/9/13 11:40	SO	None	1 - 16 oz glass	10 day							X														X				X										
SL-522-NBZ-SB-2.5-3.5	12/9/13 11:40	SO	None	2 - Encore	10 day																				X															

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/09/2013	1600									
									[signature]	12/10/13	1135

COC Rev 3

COC: 20131209-01, Page 1 of 1

SAMPLE DELIVERY GROUP

PH143

13013 1439898 7308297-99

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/10/2013
CarrierName: FedEx
AirbillNo: 797362493901

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

COC No: 20131210-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-553-NBZ-SB-0.0-0.5	12/10/13 11:25	SO	None	1 - SS-Sleeve	10 day										X																									
SL-554-NBZ-SB-0.0-0.5	12/10/13 10:35	SO	None	1 - SS-Sleeve	10 day										X																									
SL-555-NBZ-SB-0.0-0.5	12/10/13 10:05	SO	None	1 - SS-Sleeve	10 day										X																									

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/10/2013	1600									
									[signature]	12/11/13	0850

COC Rev 3

COC 20131210-01, Page 1 of 1

1 of 1

SAMPLE DELIVERY GROUP

PH146

SSFL Phase 3 Chain of Custody

13013 1440439 7310856-59

CDM Smith

DateShipped: 12/11/2013
CarrierName: FedEx
AirbillNo: 797376645051

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

COC No: 20131211-08
Cooler #: 3
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-552-NBZ-SB-0.0-0.5	12/10/13 14:15	SO	None	1 - SS-Sleeve	10 day								X																											
SL-552-NBZ-SB-2.0-3.0	12/10/13 15:00	SO	None	1 - SS-Sleeve	10 day								X																											

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/11/2013	1600									
									[illegible]	12/12/13	945

COC Rev 3

COC: 20131211-08, Page 1 of 1

13013 1440439 7310856-59

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/11/2013
CarrierName: FedEx
AirbillNo: 797376645051

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

COC No: 20131211-02
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB1-121113	12/11/13 14:00	WQ	None	2 - 250 mL Amber	10 day							X										X																		
EB1-121113	12/11/13 14:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																
EB1-121113	12/11/13 14:00	WQ	None	1 - 250 mL Poly	10 day														X																					
EB1-121113	12/11/13 14:00	WQ	HCl	3 - 40 mL Vial	10 day																			X																
EB2-121113	12/11/13 14:30	WQ	None	3 - 250 mL Amber	10 day							X			X							X																		
EB2-121113	12/11/13 14:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																
EB2-121113	12/11/13 14:30	WQ	None	1 - 250 mL Poly	10 day														X																					
EB2-121113	12/11/13 14:30	WQ	HCl	3 - 40 mL Vial	10 day																			X																
EB2-121113	12/11/13 14:30	WQ	None	2 - 1 L Amber	10 day																X																			
EB2-121113	12/11/13 14:30	WQ	None	2 - 40 mL Vial	10 day																								X											

NBZ

Special Instructions:

Sampler: Pa Hart

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/11/2013	1600									
									Duane Bailey	12/12/13	945

COC Rev 3

COC 20131211-02, Page 1 of 1

13013 1440439 7310856-59

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/11/2013
CarrierName: FedEx
AirbillNo: 797376645051

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

COC No: 20131211-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7470 (Water)	Mercury 7471 (Soil)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB1-121113	12/11/13 14:00	WQ	None	2 - 1 L Amber	10 day									X																										
EB1-121113	12/11/13 14:00	WQ	HCl	2 - 1 L Amber	10 day																					X														
EB2-121113	12/11/13 14:30	WQ	None	2 - 1 L Amber	10 day									X																										
EB2-121113	12/11/13 14:30	WQ	HCl	2 - 1 L Amber	10 day																					X														

NBZ

Special Instructions:

Sampler: Pa Hartman

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
Stey Myers	12/11/2013	1600									
									Bruce Bry		

121213 945

COC Rev 3

COC: 20131211-01, Page 1 of 1

SAMPLE DELIVERY GROUP

PH148

13013 1440744 7312454-66

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/12/2013

CarrierName: FedEx

AirbillNo:

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20131212-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Total Nitrogen ASTM D5373	TOC ASTM D5310	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-540-NBZ-SB-0.0-0.5MS	12/11/13 14:20	SO	None	6 - SS-Sleeve	10 day							X		X							X	X																		MS/MSD
SL-840-NBZ-SB-0.0-0.5	12/11/13 14:40	SO	None	2 - SS-Sleeve	10 day							X		X							X	X																		
SL-541-NBZ-SB-0.0-0.5	12/11/13 13:25	SO	None	2 - SS-Sleeve	10 day							X		X							X	X																		
SL-542-NBZ-SB-0.0-0.5	12/11/13 12:35	SO	None	2 - SS-Sleeve	10 day							X		X							X	X																		
SL-539-NBZ-SB-0.0-0.5	12/12/13 09:30	SO	None	2 - SS-Sleeve	10 day							X		X								X				X														
SL-543-NBZ-SB-0.0-0.5	12/12/13 13:40	SO	None	1 - SS-Sleeve	10 day							X														X														
SL-544-NBZ-SB-0.0-0.5MS	12/12/13 14:20	SO	None	6 - SS-Sleeve	10 day	X	X					X		X								X				X														MS/MSD
SL-544-NBZ-SB-0.0-0.5MS	12/12/13 14:20	SO	None	1 - 16 oz glass	10 day													X																						MS/MSD
SL-844-NBZ-SB-0.0-0.5	12/12/13 14:40	SO	None	2 - SS-Sleeve	10 day	X	X					X		X								X				X														
SL-844-NBZ-SB-0.0-0.5	12/12/13 14:40	SO	None	1 - 4 oz glass	10 day													X																						

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/12/2013	16:00									
									[signature]	12/13/13	10:30

COC Rev 3

COC: 20131212-01, Page 1 of 1

SAMPLE DELIVERY GROUP

PH151

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/13/2013 A-13013 G-1440980

CarrierName: FedEx

AirbillNo: 797401915901 S-7313727-29

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20131213-02

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Calc Nitrate_Nitrite_TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-505-NBZ-SB-0.0-0.5	12/13/13 13:00	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-505-NBZ-SB-0.0-0.5	12/13/13 13:00	SO	None	1 - 4 oz glass	10 day													X																						
SL-521-NBZ-SB-0.0-0.5	12/13/13 09:35	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-521-NBZ-SB-0.0-0.5	12/13/13 09:35	SO	None	1 - 4 oz glass	10 day													X																						
SL-557-NBZ-SB-0.0-0.5	12/13/13 10:55	SO	None	1 - SS-Sleeve	10 day										X																									

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/13	2013 1600									
											1050

[signature] 12/14/13

COC Rev 3

COC: 20131213-02, Page 1 of 1

SAMPLE DELIVERY GROUP

PH155

SSFL Phase 3 Chain of Custody

A-13013
G-144/366
S-7315437-43

CDM Smith

DateShipped: 12/16/2013
CarrierName: FedEx
AirbillNo: 797420630910

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

COC No: 20131216-06
Cooler #: 2
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-517-NBZ-SB-0.0-0.5	12/16/13 13:40	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-517-NBZ-SB-0.0-0.5	12/16/13 13:40	SO	None	1 - 4 oz glass	10 day													X																						
SL-517-NBZ-SB-2.0-3.0	12/16/13 14:20	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-517-NBZ-SB-2.0-3.0	12/16/13 14:20	SO	None	1 - 16 oz glass	10 day													X																						
SL-517-NBZ-SB-2.0-3.0	12/16/13 14:20	SO	None	2 - Encore	10 day																				X															
SL-518-NBZ-SB-0.0-0.5	12/16/13 11:25	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-518-NBZ-SB-0.0-0.5	12/16/13 11:25	SO	None	1 - 4 oz glass	10 day													X																						
SL-519-NBZ-SB-0.0-0.5	12/16/13 12:10	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-519-NBZ-SB-0.0-0.5	12/16/13 12:10	SO	None	1 - 4 oz glass	10 day													X																						
SL-520-NBZ-SB-0.0-0.5	12/16/13 10:30	SO	None	2 - SS-Sleeve	10 day	X	X					X		X												X														
SL-520-NBZ-SB-0.0-0.5	12/16/13 10:30	SO	None	1 - 4 oz glass	10 day													X																						
TB2-121613	12/16/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day																				X															

Special Instructions:

Sampler:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/16/2013	1000									
									[illegible]	121713	1010

SSFL Phase 3 Chain of Custody

CDM Smith

DateShipped: 12/16/2013 A-13013 G-1441366

CarrierName: FedEx S-7315437-43

AirbillNo: 797420630910

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20131216-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate Confirm 6850/6860	Perchlorate 314.0/331	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other Analysis/Notes
EB2-121613	12/16/13 15:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	X		X																																EB2-121613 is NBZ
EB2-121613	12/16/13 15:30	WQ	None	1 - 250 mL Amber	10 day							X																												
EB2-121613	12/16/13 15:30	WQ	None	2 - 1 L Amber	10 day									X																										
EB2-121613	12/16/13 15:30	WQ	None	1 - 250 mL Poly	10 day														X																					
EB2-121613	12/16/13 15:30	WQ	HCl	2 - 1 L Amber	10 day																					X														
EB2-121613	12/16/13 15:30	WQ	HCl	3 - 40 mL Vial	10 day																				X															

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/16/	2013	1600								
									[signature]	12/17/13	1010

SAMPLE DELIVERY GROUP

PH157

SSFL Phase 3 Chain of Custody

A-13013
amc 3 12/18/13
G4-1441693
S4-7316781

CDM Smith

DateShipped: 12/17/2013
CarrierName: FedEx
AirbillNo: 797427634817

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

COC No: 20131217-01
Cooler #: 1
Lab: Lancaster
Lab Phone: 717-556-7259
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate 314.0/331	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Calc Nitrate, Nitrite, TKN	TOC SM 5310B	Grain Size ASTM 2488-09a	Other Analysis/Notes
SL-551-NBZ-SB-0.0-0.5	12/17/13 11:25	SO	None	1 - SS-Sleeve	10 day							X																												

Special Instructions:

Sampler: [signature]

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/17/2013	1600									
									[signature]	12/18/13	1045

COC Rev 3

COC: 20131217-01, Page 1 of 1

Master Chemical Database Table for Phase 3 - Northern Buffer Zone

Sample Name	Samle Date	Sample Type Code	Start Depth	End Depth	Depth Unit	Matrix Code	Task Code	Parent Sample Code	Lab Sample ID	Lab Name	Analytical Method	Analysis Date	Lab SDG	Percent Moisture	Dilution Factor	Cas RN	Chemical Name	Report Result Value	Final Qualifiers	Method Detection Limit	Reporting Detection Limit	Report Result Unit	Lab Qualifiers	DQM Qualifiers	DQM Remarks	X Coordinate	Y Coordinate	Longitude	Latitude
SL-840-NBZ-SB-0.0-0.5	######	FD	0	0.5	ft	SO	NBZ_DG	SL-540-NBZ-SB-0.0-0.5	7312457	LL	8270D SIM	12/31/2013	PH148	15.3	1	86-73-7	FLUORENE	5.5	J	0.78	1.9	ug/kg		J	FD	1786657.311	270658.372	-118.706817	34.241683
SL-840-NBZ-SB-0.0-0.5	######	FD	0	0.5	ft	SO	NBZ_DG	SL-540-NBZ-SB-0.0-0.5	7312457	LL	8270D SIM	12/31/2013	PH148	15.3	1	90-12-0	1-METHYLNAPHTHALENE	1.9	UJ	0.78	1.9	ug/kg	U	UJ	FD	1786657.311	270658.372	-118.706817	34.241683
SL-840-NBZ-SB-0.0-0.5	######	FD	0	0.5	ft	SO	NBZ_DG	SL-540-NBZ-SB-0.0-0.5	7312457	LL	8270D SIM	12/31/2013	PH148	15.3	1	91-20-3	NAPHTHALENE	3.8		0.78	1.9	ug/kg				1786657.311	270658.372	-118.706817	34.241683
SL-840-NBZ-SB-0.0-0.5	######	FD	0	0.5	ft	SO	NBZ_DG	SL-540-NBZ-SB-0.0-0.5	7312457	LL	8270D SIM	12/31/2013	PH148	15.3	1	91-57-6	2-METHYLNAPHTHALENE	1.5	J	0.78	1.9	ug/kg	J	J	FD, Z	1786657.311	270658.372	-118.706817	34.241683
SL-844-NBZ-SB-0.0-0.5	######	FD	0	0.5	ft	SO	NBZ_DG	SL-544-NBZ-SB-0.0-0.5	7312466	LL	160.3M	12/18/2013	PH148	2.2	1	MOIST	MOISTURE	2.2		0.10	0.10	%				1787147.609	268982.757	-118.705156	34.237088