SPILL RESPONSE REMEDIAL ACTION REPORT

EUREKA LODGE
EUREKA, ALASKA

Prepared for

CROWLEY PETROLEUM DISTRIBUTION, INC.

Prepared by

MICHAEL L. FOSTER & ASSOCIATES, INC.

13135 Old Glenn Highway, Suite 200

Eagle River, Alaska 99577

November 3, 2010

MLFA Job No. CPD-CPD-009-0002

Michael L. Foster & Associates, Inc.
An Alaskan Owned and Operated Company
Architects • Engineers • Planners • Scientists
Surveyors • General Contracting

November 3, 2010

Mr. Neil Huddleston
Environmental Program Specialist
State of Alaska
Department of Environmental Conservation
Prevention & Emergency Response Program
555 Cordova Street
Anchorage, Alaska 99501

Spill Response Remedial Action Report
Crowley Petroleum Distribution
Eureka Lodge, Milepost 128 Glenn Highway
Eureka, Alaska
MLFA Job No. CPD-CPD-009-0002

Dear Mr. Huddleston:

On behalf of Crowley Petroleum Distribution, Inc. (CPD), we are pleased to submit to the Alaska Department of Environmental Conservation (ADEC) the following document: *Spill Response Remedial Action Report, Eureka Lodge, Eureka, Alaska.*

If you have any questions or need additional information, please do not hesitate to contact us at 696-6200.

Sincerely,

MICHAEL L. FOSTER & ASSOCIATES, INC.

Gregory J. Cvitash
Project Engineer

Michael L. Foster, P.E.
Project Manager

Cc: Chuck Stielstra (CPD)
Stephen Wilson (CPD)

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ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
AK	Alaska, Alaska Test Method
bgs	below ground surface
BTEX	benzene/toluene/ethylbenzene/total xylenes
BTM	bottom
CPD	Crowley Petroleum Distribution, Inc.
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
ft	feet
GRO	gasoline range organics
mg/kg	milligram per kilogram
MLFA	Michael L. Foster & Associates, Inc.
ND	not detected
PID	photoionization detector
ppm	parts per million
U.S.	United States

1.0 INTRODUCTION

Michael L. Foster & Associates, Inc. (MLFA) was retained by Crowley Petroleum Distribution, Inc. (CPD) to provide environmental oversight for spill response and remediation efforts for a gasoline release that occurred at the Eureka Lodge in Eureka, Alaska (Figure 1). An estimated 10 gallons of supreme unleaded gasoline were released on June 11, 2010 as a result of overfilling an above-ground storage tank. Initial hand excavation response activities were undertaken on June 15 and 16, 2010, and are documented in MLFA's *Spill Response Report, Crowley Petroleum Distribution, Eureka Lodge, Eureka, Alaska*, dated July 15, 2010. Based on concentrations of gasoline-range contamination remaining in the soil beneath the tank following initial response activities and on the close proximity of the release to a nearby water source, the Alaska Department of Environmental Conservation (ADEC) required additional excavation work to be performed at the site. Additional soil excavation and remediation was performed on September 28 and 29, 2010, in accordance with an ADEC-approved work plan. This Report documents the additional cleanup and restoration efforts undertaken by CPD and MLFA. The work proceeded under the direction of the Alaska Department of Environmental Conservation Spill Response Regulator, Mr. Neil Huddleston.

2.0 REMEDIAL ACTION AND SITE RESTORATION

2.1 SITE REMEDIATION

On Monday, September 27, 2010, CPD disconnected and temporarily moved the two-compartment, 6,000-gallon east tank and moved an adjacent storage shed to prepare the site for contaminated soil removal (Photos 1 through 4). The Eureka Lodge fuel storage facility consists of two above-ground storage tanks. The west tank, with an 8,000 gallon capacity, was not moved. When in operation, the east tank is situated 40 feet south of the edge of a lake. A water intake structure (well house) is located at the lake edge approximately 50 feet from the tanks (Photo 5 and Figure 2).

On September 28 and 29, 2010, MLFA oversaw remediation activities of the contaminated soil beneath the Eureka Lodge supreme unleaded fuel storage tank (east tank) in accordance with an ADEC-approved excavation work plan (see Appendix A). Field activities included visual and olfactory assessment, field screening of total volatile organics using a photoionization detector (PID), and excavation and removal of contaminated soil. No sheen was observed in the unfrozen areas at the lake edge 40 feet north of the tanks.

On September 28th, field screening and visual and olfactory assessment were carried out during excavation to delineate horizontal and vertical extents of contamination. Results of field screening are shown in Table 1 and on Figure 3. CPD excavated approximately 80 tons of contaminated soil from beneath and around the general location of the east tank (Photos 6 through 9). Excavated material was basically fill material to 6 feet deep, comprised of dry brownish gray silt and silty gravel, and contained buried debris such as a tire chain, a buried grass tussock, and a deteriorated shovel. Dark gray, moist silt was encountered below 6 feet. Groundwater was not encountered. The excavation was 3.5 feet deep over the northern third of the excavation, and 6.5 to 7.0 feet deep over the remainder of the excavation (Photos 10 through 12). The excavation averaged 12 feet wide and was 23 feet long, oriented as shown in Figure 3. Three trucks were filled with approximately 51 cubic yards of contaminated soil, loads were covered, and soil was transported to the Northstar Trucking Facility in Wasilla, Alaska for temporary overnight

storage. Excavation continued into the evening, and approximately four tons of contaminated soil were stockpiled on polyethylene sheeting and covered overnight for transport the following day.

TABLE 1

FIELD SCREENING RESULTS

Sample Location	Date Sampled	Depth (ft bgs)	Field Screening Result (ppm) (1)
PID-1	9/28/10	4.5	140 to 170
PID-2	9/28/10	4.5	95 to 115
PID-3	9/28/10	4.0	3,100
PID-4	9/28/10	3.5	950 to 1,100
PID-5	9/28/10	4.0	95 to 120
PID-6	9/28/10	4.0	45 to 55
PID-7	9/28/10	5.0	85 to 115
PID-8	9/28/10	6.5	350; 570 peak
PID-9	9/28/10	5.3	3,100
PID-10	9/28/10	6.3	90 to 105
PID-11	9/28/10	3.5	25
PID-12	9/28/10	7.0	350; 530 peak
PID-13	9/28/10	5.0	3
PID-14	9/29/10	5.5	430
PID-15	9/29/10	4.0	8
PID-16	9/29/10	4.0	1

Notes: (1) = Measured as isobutylene equivalent.
bgs = below ground surface
ft = feet
PID-x = field screening sample
ppm = parts per million

On September 29th, based on field screening and visual and olfactory assessment, the excavation was made one-half foot deeper and was continued on the west wall until a point at which additional excavation might affect the stability of the adjacent tank.

Groundwater was not encountered. A fourth truck arrived at the site and was filled with the stockpiled contaminated soil.

Six confirmation samples and one field duplicate were collected for laboratory analyses. Two samples were collected from the base of the excavation beneath the tank footprint, and one sample was collected from each wall of the excavation, as shown in Figure 3. Laboratory confirmation samples collected at the site were packaged in coolers with ice and sent to an ADEC-certified laboratory for gasoline range organics, benzene/toluene/ethylbenzene/total xylenes, and diesel range organics analyses.

On September 29 and 30, 2010, with ADEC approval, four truckloads containing 86.23 tons of contaminated material were transported to Alaska Soil Recycling in Anchorage, Alaska for thermal remediation (see Appendix B).

2.2 SITE RESTORATION

Based on the field screening results and olfactory assessment of the excavation walls and floor, the excavation was backfilled with clean material transported to the site, and the east tank was replaced and returned to service on September 30th. Polyethylene sheeting was installed along the excavation walls prior to backfilling to delineate clean backfill extents (Photos 13 and 14).

3.0 ENVIRONMENTAL SOIL SAMPLING ANALYSES

Confirmation samples were collected from six locations on September 29, 2010. One field duplicate was also collected. Sample locations are shown in Figure 3.

3.1 TEST METHODS

Soil samples were analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101, benzene/toluene/ethylbenzene/total xylenes (BTEX) by U.S. Environmental Protection Agency Method (EPA) 8021B, and diesel range organics (DRO) by AK 102.

3.2 RESULTS

Analytical results for the confirmation samples collected from the completed excavation are summarized in Table 2. ADEC soil cleanup levels from 18 AAC 75.341 – *Soil Cleanup Levels* are included for comparison. Laboratory analytical results are included in Appendix C.

Results of analyses indicate the following.

- GRO contamination is below ADEC cleanup levels beneath and around the tank, except the west at the west excavation wall.
- GRO is present somewhat above cleanup levels at the west excavation wall.
- Benzene is present above cleanup levels at the sides and floor of the excavation.
- Ethylbenzene is present at levels slightly above cleanup levels at the west wall. However, ethylbenzene is not detected (ND) or below cleanup levels in the remainder of the excavation.
- Toluene and total xylenes concentrations are ND or below cleanup levels beneath and around the tank, except total xylenes are present somewhat above cleanup levels at the west wall.
- DRO is present above cleanup levels at the west wall of the excavation.
- DRO is present somewhat above cleanup levels at the south excavation wall.

- DRO contamination is below cleanup levels beneath the tank and at the north and east sides of the excavation.
- Chromatographic patterns for samples from the south, west and north walls and from the bottom of the excavation are consistent with a weathered middle distillate.

TABLE 2

ANALYTICAL SOIL SAMPLE RESULTS

Sample Location	Date Sampled	Depth (ft bgs)	GRO (AK101) (mg/kg)	BTEX (EPA 8021B)				DRO (AK102) (mg/kg)
				Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Total Xylenes (mg/kg)	
Cleanup Levels (1)			300	0.025	6.5	6.9	63	250
Eureka-East (East Wall)	9/29/10	3.0	1.73J	**0.0397**	0.0309J	ND	0.0715J	ND
Eureka-X1 (East Wall - Field Duplicate)	9/29/10	3.0	1.89J	**0.0468**	0.0441J	ND	ND	42.9
Eureka-South (South Wall)	9/29/10	4.5	8.67	**3.70**	0.0461J	ND	0.0807J	**558**
Eureka-West (West Wall)	9/29/10	5.0	**604**	**10.3**	1.75	**19.2**	**84.7**	**10,900**
Eureka-North (North Wall)	9/29/10	2.5	5.77	**0.164**	0.623	0.0697	1.49	111
Eureka-BTM-North	9/29/10	6.5	26.5	**12.0**	0.117	0.0577J	0.206	68.7
Eureka-BTM-South	9/29/10	7.5	54.2	**21.2**	1.35	0.823	1.59	115

Notes: (1) = ADEC cleanup levels from 18 AAC 75.341 – Soil Cleanup Levels, Tables B1 and B2 (October 9, 2008 revision)
AK = Alaska Method
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, total xylenes
BTM = bottom of excavation
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
ft = feet
GRO = gasoline range organics
J = The quantitation is an estimation
mg/kg = milligrams per kilogram
ND = not detected (below detection limit)

Confirmation samples were maintained in coolers on ice and were delivered to the laboratory. A completed ADEC Laboratory Data Review Checklist is included in Appendix D.

4.0 CONCLUSIONS

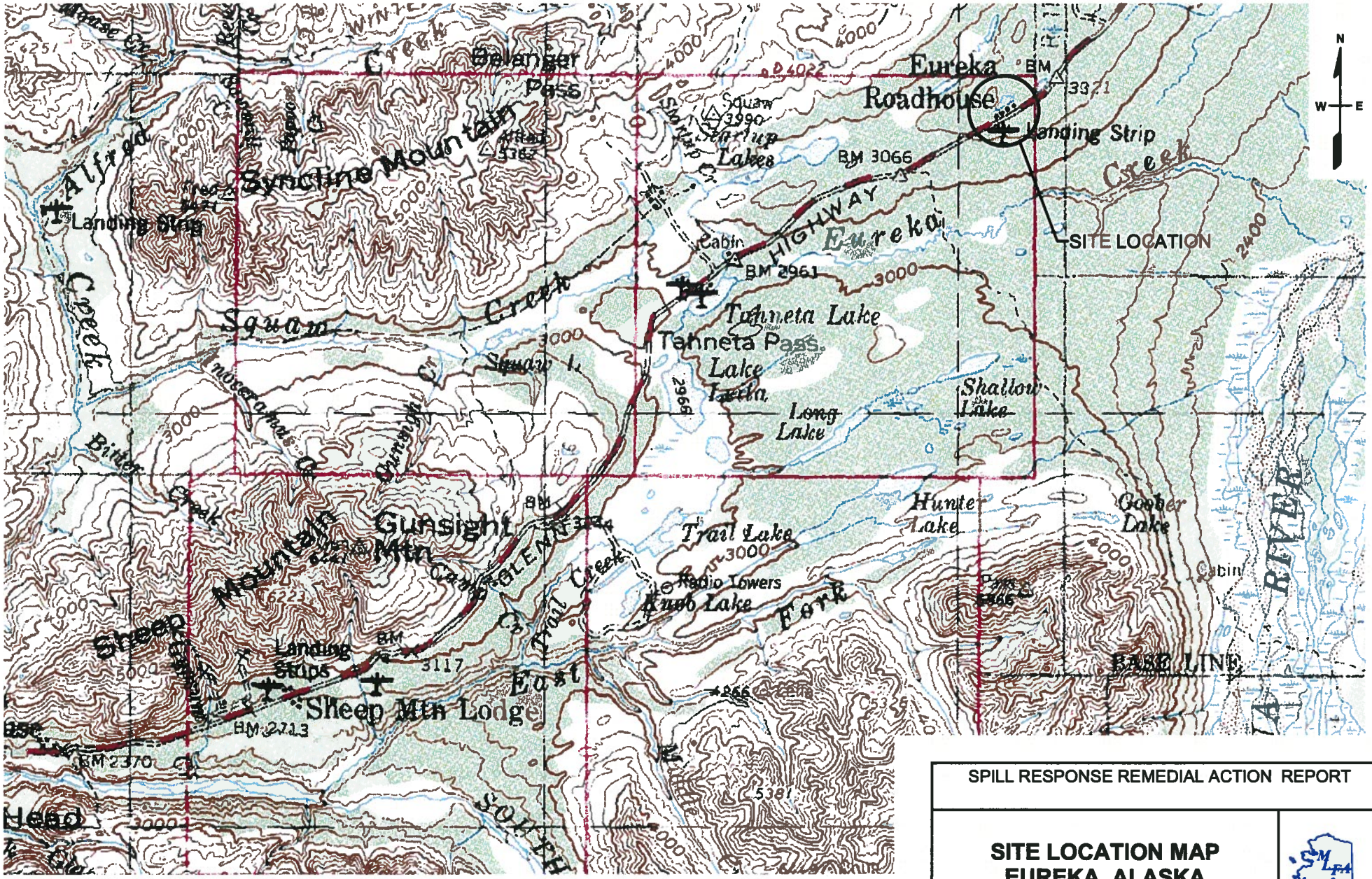
During this excavation effort, 86.23 tons of contaminated soil were removed from beneath and around the tank area. A total of 99.28 tons of contaminated soil were removed from the site, including 13.05 tons removed during initial response efforts. Based on removal of contaminated soil beneath and around the tank to 7 feet deep, site observations, field screening results, and laboratory analyses, MLFA believes that the recent gasoline release has been significantly remediated, and that additional remedial action is not required.

5.0 LIMITATIONS

The Spill Response Excavation Report has been prepared for the exclusive use of CPD. It is intended to provide an understanding of the potential for environmental contamination by hazardous substances or petroleum products at the property assessed. The findings and recommendations in this Report are based upon data and information obtained by MLFA personnel. The findings and recommendations contained in this Report are based on the expertise and experience of MLFA in conducting similar assessments.

MLFA's objective is to perform our work with care, exercising the customary thoroughness and competence of environmental and engineering consulting professionals, in accordance with the standard for professional services at the time and location those services are rendered. It is important to recognize that even the most comprehensive scope of work may fail to detect environmental liability on a particular site. Therefore, MLFA cannot act as insurers and cannot "certify or underwrite" that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in our reports except that our work was performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession.

FIGURES



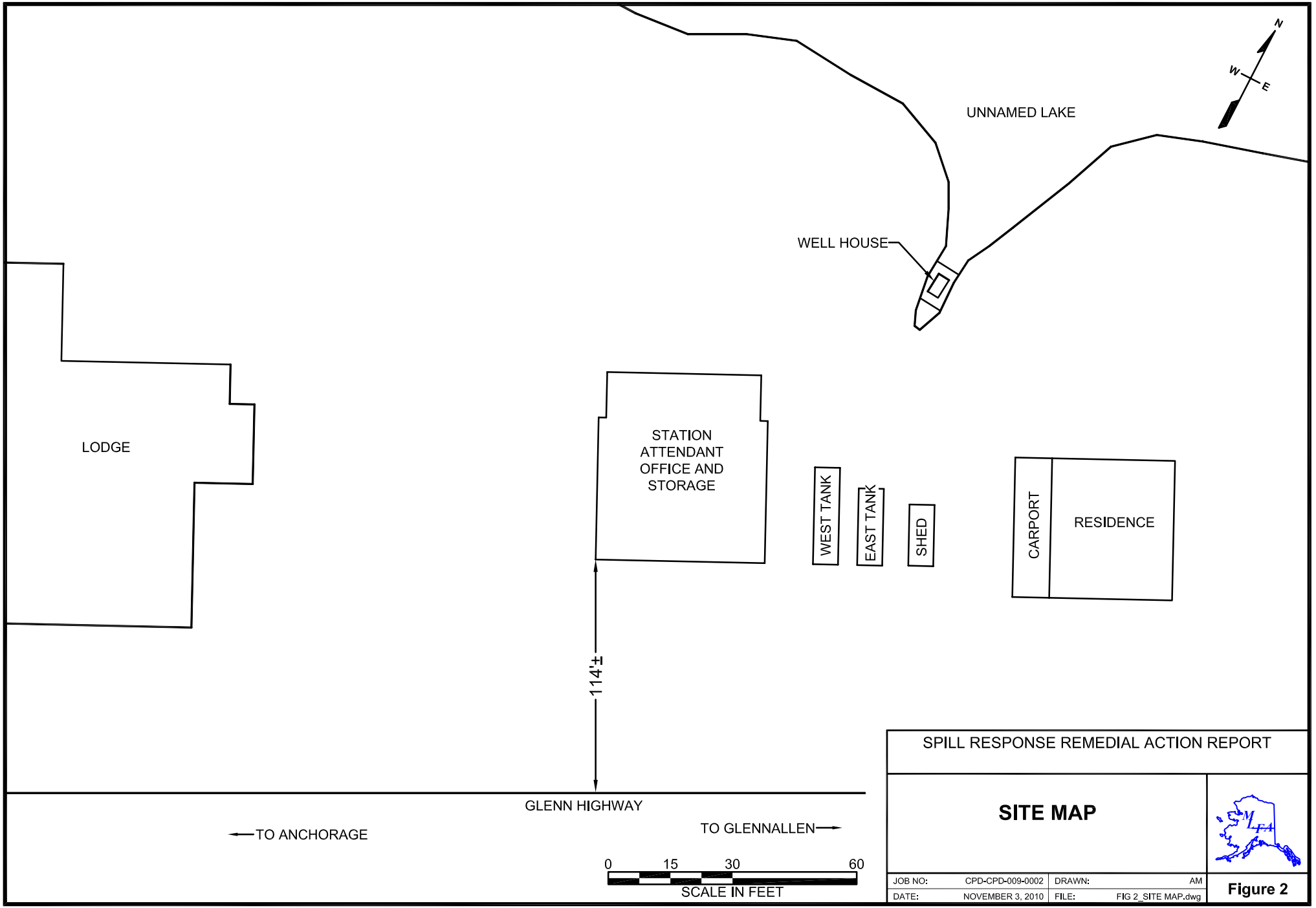
SOURCE: USGS MAP ANCHORAGE, ALASKA, 1962; REVISED 1985

SPILL RESPONSE REMEDIAL ACTION REPORT

SITE LOCATION MAP
EUREKA, ALASKA

JOB NO:	CPD-CPD-009-0002	DRAWN:	AM
DATE:	NOVEMBER 3, 2010	FILE:	FIG 1_LOCATION MAP.dwg

Figure 1



SPILL RESPONSE REMEDIAL ACTION REPORT

SITE MAP

JOB NO:	CPD-CPD-009-0002	DRAWN:	AM
DATE:	NOVEMBER 3, 2010	FILE:	FIG 2_SITE MAP.dwg

Figure 2

EUREKA-NORTH
2.5' bgs

GRO = 5.77 mg/kg
Benzene = **0.164 mg/kg**
Toluene = 0.623 mg/kg
Ethylbenzene = 0.0697 mg/kg
Total Xylenes = 1.49 mg/kg
DRO = 111 mg/kg

EUREKA-BTM-NORTH
6.5' bgs

GRO = 26.5 mg/kg
Benzene = **12.0 mg/kg**
Toluene = 0.117 mg/kg
Ethylbenzene = 0.0577 (J) mg/kg
Total Xylenes = 0.206 mg/kg
DRO = 68.7 mg/kg

EUREKA-BTM-SOUTH
7.5' bgs

GRO = 54.2 mg/kg
Benzene = **21.2 mg/kg**
Toluene = 1.35 mg/kg
Ethylbenzene = 0.823 mg/kg
Total Xylenes = 1.59 mg/kg
DRO = 115 mg/kg

EUREKA-WEST
5.0' bgs

GRO = **604 mg/kg**
Benzene = **10.3 mg/kg**
Toluene = 1.75 mg/kg
Ethylbenzene = **19.2 mg/kg**
Total Xylenes = **84.7 mg/kg**
DRO = **10,900 mg/kg**

EUREKA-SOUTH
4.5' bgs

GRO = 8.67 mg/kg
Benzene = **3.70 mg/kg**
Toluene = 0.0461 (J) mg/kg
Ethylbenzene = ND
Total Xylenes = 0.0807 (J) mg/kg
DRO = **558 mg/kg**

EUREKA-EAST, EUREKA-X1
3.0' bgs

GRO = 1.73 (J) mg/kg
= 1.89 (J) mg/kg (Dup)
Benzene = **0.0397 mg/kg**
= **0.0468 mg/kg** (Dup)
Toluene = 0.0309 (J) mg/kg
= 0.0441 (J) mg/kg (Dup)
Ethylbenzene = ND
= ND (Dup)
Total Xylenes = 0.0715 (J) mg/kg
= ND (Dup)
DRO = ND
= 42.9 mg/kg (Dup)

PID-11
3.5' bgs
25 ppm

PID-1
4.5' bgs
170 ppm

PID-4
3.5' bgs
1,100 ppm

PID-14
5.5' bgs
430 ppm

PID-2
4.5' bgs
115 ppm

PID-16
4' bgs
1 ppm

PID-15
4' bgs
8 ppm

PID-3
4' bgs
3,100 ppm

PID-9
5.3' bgs
3,100 ppm

PID-8
6.5' bgs
350 ppm

PID-12
7' bgs
350 ppm

PID-13
5' bgs
3 ppm

PID-10
6.3' bgs
105 ppm

PID-5
4' bgs
120 ppm

PID-7
5' bgs
115 ppm

PID-6
4' bgs
55 ppm

EXCAVATION EXTENT

EAST TANK

WEST TANK

SHED

8'

15'

13'

16'

N
W
E

NOT TO SCALE

LEGEND

◉	CONFIRMATION SAMPLE LOCATION
● PID-X	FIELD SCREENING SAMPLE LOCATION
BOLD	INDICATES QUANTITY EXCEEDS ADEC CLEANUP LEVELS
'	FEET
bgs	BELOW GROUND SURFACE
BTM	BOTTOM OF EXCAVATION
DRO	DIESEL RANGE ORGANICS
Dup	DUPLICATE
GRO	GASOLINE RANGE ORGANICS
(J)	THE QUANTITATION IS AN ESTIMATION
mg/kg	MILLIGRAMS PER KILOGRAM
ND	NOT DETECTED
ppm	PARTS PER MILLION

SPILL RESPONSE REMEDIAL ACTION REPORT

REMEDIATION AND SAMPLE LOCATIONS

JOB NO:	CPD-CPD-009-0002	DRAWN:	GJC
DATE:	NOVEMBER 3, 2010	FILE:	FIG 3_SAMPLE LOCATE.dwg

Figure 3

PHOTOGRAPHS

Photo 1: East tank temporarily moved for excavation, looking northwest.

Photo 2: Preparing to excavate contaminated soil beneath storage tank, looking west.

Photo 3: East tank pad prior to excavating, looking north.

Photo 4: East tank pad prior to excavating, looking southeast.

Photo 5: Water intake structure at lake edge and shed temporarily moved for excavation, with initial trench and screening samples, looking north.

Photo 6: Excavating contaminated soil, looking southeast.

Photo 7: Excavation after filling first truck and screening sample location at shovel tip, looking southwest.

Photo 8: Excavation after filling second truck, with screening samples at sample locations, looking south.

Photo 9: Excavation after filling third truck, showing screening sample location, looking southeast.

Photo 10: Excavation after filling third truck, showing screening sample location, looking northwest.

Photo 11: Excavation after removing and stockpiling contaminated material from the east wall, looking north.

Photo 12: Excavation after removing and stockpiling contaminated material from the east wall, looking north.

Photo 13: Excavation walls lined with polyethylene sheeting prior to backfill.

Photo 14: Backfilling excavation to replace tank.

APPENDIX A

SOIL EXCAVATION AND REMEDIATION WORK PLAN AND ADEC PLAN APPROVAL

Soil Excavation and Remediation Work Plan, August 23, 2010

ADEC Plan Approval Notification, August 23, 2010

Soil Excavation and Remediation Work Plan, August 23, 2010

Michael L. Foster & Associates, Inc.
An Alaskan Owned and Operated Company
Architects • Engineers • Planners • Scientists
Surveyors • General Contracting

August 23, 2010

Mr. Neil Huddleston
Environmental Program Specialist
State of Alaska
Department of Environmental Conservation
Prevention and Emergency Response Program
555 Cordova Street
Anchorage, Alaska 99501

Work Plan – Soil Excavation and Remediation
Eureka Lodge, Milepost 128 Glenn Highway
Eureka, Alaska
MLFA Job No. CPD-CPD-009-0001

Dear Mr. Huddleston:

On behalf of Crowley Petroleum Distribution, Inc. (CPD), we have prepared the following Work Plan for your review. If you have any questions or need additional information, please do not hesitate to contact me at 696-6200 or gjc@mlfaalaska.com.

Sincerely,

MICHAEL L. FOSTER & ASSOCIATES, INC.

Gregory J. Cvitash
Project Engineer

Cc: Gary Schliesing (CPD)
Chuck Stielstra (CPD)
Stephen Wilson (CPD)

WORK PLAN
SOIL EXCAVATION AND REMEDIATION
EUREKA LODGE
EUREKA, ALASKA

Prepared for

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Prepared by

MICHAEL L. FOSTER & ASSOCIATES, INC.

13135 Old Glenn Highway, Suite 200

Eagle River, Alaska 99577

August 11, 2010

MLFA Job No. CPD-CPD-009-0001

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1.0 INTRODUCTION

On June 15 and 16, 2010, 13.05 tons of soil contaminated with supreme unleaded gasoline released Friday, June 11th were excavated by hand and disposed of during initial release response activities at Eureka Lodge (Milepost 128.3 of the Glenn Highway) by Michael L. Foster & Associates, Inc. (MLFA) and Crowley Petroleum Distribution (CPD) representatives. Laboratory analyses of confirmation samples taken from the floor of the excavation and reported in the *Spill Response Report, Crowley Petroleum Distribution, Eureka Lodge, Eureka, Alaska*, prepared by MLFA and dated July 15, 2010, indicated that GRO contamination remained in the soil beneath the tank. Based on this, the Alaska Department of Environmental Conservation (ADEC) has requested the removal of additional contaminated soil beneath the tank. MLFA has developed this Work Plan for these additional activities.

In general, the Work will include the following tasks.

- Temporary removal of the tank and associated piping, and removal of contaminated soil under and around the general location of the tank.
- Collection of two confirmation soil samples from the floor and one confirmation soil sample from each wall of the excavation.
- Laboratory analyses of soil samples.
- Preparation of a Completion Report.

2.0 EXCAVATION AND CONFIRMATION SOIL SAMPLING

MLFA will oversee the continued excavation at Eureka Lodge. The additional activity is anticipated to be completed in two days. The tank and associated piping will temporarily be moved, and contaminated soil under and around the general location of the tank will be removed. MLFA anticipates up to 25 tons of additional contaminated material will be removed. Contaminated soil will be placed directly into a sidedump trailer used to haul clean backfill material to the site. If contaminated soil is removed in excess of the trailer capacity, the soil will be stockpiled on plastic sheeting on site and covered, and will be loaded into another sidedump trailer later that day or the following day.

MLFA will direct the excavation activities with a combination of olfactory and visual assessment and field screening of total volatile organics using a photo ionization detector (PID) to help delineate the horizontal and vertical extents of contamination. The PID will be calibrated on site in accordance with the manufacturer's operating manual. PID readings and locations will be documented for future reference.

Upon completion of the excavation, MLFA will collect six confirmation soil samples and one duplicate from the base and the four walls of the excavation. Each sample will be

placed in appropriate laboratory-supplied containers with preservatives. The samples will be labeled and placed in an ice chest with blue ice and transported to an ADEC-approved laboratory using standard chain-of-custody procedures. Samples will be analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101; benzene, toluene, ethyl benzene, and total xylenes (BTEX) by U.S. Environmental Protection Agency Method (EPA) 8021B; and diesel range organics (DRO) by AK 102. Laboratory analyses of soil samples will not be used to determine excavation limits, but will be documented for future reference only.

Clean gravel material transported to the site will be used to backfill the excavation. The excavation will be lined with clear polyethylene sheeting prior to backfilling. The tank and associated piping will be replaced and re-connected and the tank will be returned to service on the third day of field activity. Contaminated soil will be transported by covered load to Alaska Soil Recycling (ASR) for thermal remediation.

3.0 REPORT PREPARATION

A Completion Report will be prepared to document field activities. The Report will also contain field screening results, laboratory analyses, a site sketch and photos documenting the excavation area and sampling locations, and documentation of contaminated soil disposal.

4.0 SCHEDULE

Field work is scheduled to be completed prior to freeze-up in Fall 2010. The Work will be coordinated between the lodge owner, CPD, ADEC, and MLFA. The Completion Report will be completed approximately thirty days after receipt of all analytical results.

ADEC Plan Approval Notification, August 23, 2010

Gregory J. Cvitash

From: Huddleston, Neil W (DEC) [neil.huddleston@alaska.gov]
Sent: Monday, August 23, 2010 6:56 PM
To: Gregory J. Cvitash; Traci R. Bradford
Cc: Brown, John L (DEC)
Subject: RE: Eureka Lodge: Work Plan for additional cleanup

The plan is approved. Please do coordinate with the landowner -- he felt a bit out of the loop on the initial cleanup. I recommended he add some additional spill containment for the sake of his well, and I'd think this an excellent time to do that. But that's up to him.

I will not be able to check email or phone messages consistently this week, so if you have any urgent questions during that time, please contact John Brown.

Regards,
Neil

-----Original Message-----
From: Gregory J. Cvitash [mailto:gjc@mlfaalaska.com]
Sent: Mon 8/23/2010 3:05 PM
To: Huddleston, Neil W (DEC)
Subject: RE: Eureka Lodge: Work Plan for additional cleanup

Neil:

We do not know. We had planned on coordinating the work with the lodge owner after receiving ADEC approval of the cleanup work plan.

Greg

-----Original Message-----
From: Huddleston, Neil W (DEC) [mailto:neil.huddleston@alaska.gov]
Sent: Monday, August 23, 2010 12:28 PM
To: Gregory J. Cvitash
Subject: RE: Eureka Lodge: Work Plan for additional cleanup

Greg, do you know if the owner has any interest in adding additional containment, like a lined berm, while the tank is off its pad?

Neil

-----Original Message-----
From: Gregory J. Cvitash [mailto:gjc@mlfaalaska.com]
Sent: Monday, August 23, 2010 12:02 PM
To: Huddleston, Neil W (DEC)
Cc: Chuck.Stielstra@Crowley.com; gary.schliesing@crowley.com; Stephen.Wilson@crowley.com; Beth.Virgin@crowley.com; Traci R. Bradford
Subject: Eureka Lodge: Work Plan for additional cleanup

Neil:

Please see the attached letter and work plan. Please contact me and Traci Bradford (trb@mlfaalaska.com) with review comments or plan approval at your earliest convenience.

Thank you.

Gregory J. Cvitash
Project Engineer

Michael L. Foster and Associates, Inc.
Main Line: (907)696-6200
Direct Line: (907)696-6230
Fax: (907)696-6202
email: gjc@mlfaalaska.com

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APPENDIX B

ADEC CONTAMINATED SOIL TRANSPORT APPROVAL AND DISPOSAL CONFIRMATION

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Prevention and Emergency Response Program

Contaminated Soil Transport and Treatment Approval Form

ADEC SPILL #	SPILL NAME	
10239916202	Crowley Eureka Lodge gasoline overfill	
SPILL LOCATION		
Eureka Lodge, Milepost 128 Glenn Highway		
CONTAMINATED SOIL'S CURRENT LOCATION		**SOURCE OF THE CONTAMINATION**
Eureka Lodge		Tank overfill
TYPE OF CONTAMINATION	**ESTIMATED VOLUME**	**DATE(S) STOCKPILE GENERATED**
Supreme Unleaded Gasoline	100 tons	9/28/2010
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, BTEX, and/or Chlorinated Solvents)*		
GRO/BTEX / DRO		
COMMENTS		

Facility Accepting the Contaminated Soil

NAME OF THE FACILITY	ADDRESS/PHONE NUMBER
Alaska Soil Recycling	1040 O'Malley Road, Anchorage, Alaska 349-3333

Responsible Party and Contractor Information

BUSINESS/NAME	ADDRESS/PHONE NUMBER
Crowley Petroleum Dist, Inc. (RP)	201 Arctic Slope Ave, Anchorage, AK 99518 (907)777-5505
Michael L Foster & Assoc, Inc. (Contractor)	13135 Old Glenn Hwy, Eagle River, AK 99577 (907)696-6200

Gregory J. Cvitash
Name of the Person Requesting Approval (printed)

Project Engineer, Michael L Foster & Assoc., Inc.
Title/Association

Signature

9/24/10 - will call in volume on 9/28/10
Date

907-242-2719
Phone Number

ADEC USE ONLY

Based on the information provided, ADEC approves transport of the above mentioned material for treatment in accordance with the approved facility operations plan. The RP or their consultant must submit to the ADEC Project Manager a copy of weight receipts of the loads transported to the facility and a post treatment analytical report or other approved ADEC treatment/disposal notification. The contaminated soil shall be transported as a covered load in compliance with 18 AAC 60.015.

Neil Huddleston
ADEC Project Manager Name (printed)

Environmental Program Specialist
Project Manager Title

Signature

9/29/2010
Date

269-7542
Phone Number

Rev. 7/2009

ASR ALASKA SOIL RECYCLING A division of Anchorage Sand & Gravel Co., Inc.

1040 O'Malley Road, Anchorage, Alaska 99515
Phone (907) 349-3333 Fax (907) 344-2844 www.anchsand.com

October 25, 2010

Neil Huddleston
State of Alaska
Department of Environmental Conservation
555 Cordova St.
Anchorage, AK 99501

Via Email:
neil.huddleston@alaska.gov

Re: Soil disposal from Crowley Eureka Lodge - gasoline overflow
ADEC Spill# 10239916202

Dear Mr. Huddleston:

On September 29 & 30, 2010, Alaska Soil Recycling (ASR), a division of Anchorage Sand & Gravel Co. Inc. (AS&G) received an additional 86.23 tons of petroleum impacted soil from the above referenced site at ASR's facility located at 2301 Spar Ave., Anchorage, Alaska.

In accordance with ASR's approved facility operations plan:
1. These soils are to be co-mingled with other soils unless otherwise indicated,
2. These soils are covered by the bonding requirements of the 18 AAC 75.365; and,
3. There is no further remedial action required by the responsible party for these soils.

Please contact me should you require additional information or have any questions; otherwise, please acknowledge receipt of this information by signing below and forward to my attention by fax or email.

Sincerely,

ALASKA SOIL RECYCLING

Brad E. Quade

Brad E. Quade
Manager

Acknowledged By: John L. Brown, EPS IV
For Neil Huddleston Date: 10/25/10

Attachment: ADEC approval to transport
Cc: Mr. Greg Cvitash, M.L. Foster & Associates, Inc.
Mr. Robert Weimer, ADEC

APPENDIX C

SOIL ANALYSES RESULTS

SGS Work Order 1105256, October 7, 2010

SGS North America Inc.
Alaska Division
Level II Laboratory Data Report

Project:	CDP-009-002 Roadhouse Excavati
Client:	Michael L Foster & Associates
SGS Work Order:	1105256

Released by:

Contents:

Note:
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

Case Narrative

Customer: FOSTERM **Michael L Foster & Associates**

Project: 1105256 **CDP-009-002 Roadhouse Excavati**

Refer to the sample receipt form for information on sample condition.

1105256002 PS **Eureka-X1**

AK102 - Diesel range organics result is biased high due to heavier hydrocarbons contributing to the middle distillate range.

1105256003 PS **Eureka-South**

AK102 - The pattern is consistent with a weathered middle distillate.

1105256004 PS **Eureka-West**

AK101 - BFB (surrogate) recovery does not meet QC criteria (biased high) due to matrix interference.

AK102 - The pattern is consistent with a weathered middle distillate.

AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample dilution.

1105256005 PS **Eureka-North**

AK102 - The pattern is consistent with a weathered middle distillate.

1105256006 PS **Eureka-BTM-North**

AK102 - The pattern is consistent with a weathered middle distillate.

1105256007 PS **Eureka-BTM-South**

AK102 - The pattern is consistent with a weathered middle distillate.

Laboratory Analytical Report

Client: **Michael L Foster & Associates**
13135 Old Glenn Hwy., Ste. 210
Eagle River, AK 99577

Attn: **Traci Bradford**
T: (907) 696-6200 F:(907) 696-6202
trb@mlfaalaska.com

Project: **CDP-009-002 Roadhouse Excavati**

Workorder No.: **1105256**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Jennifer Serna

jennifer.serna@sgs.com
Project Manager

Contents (Bookmarked in PDF):

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and AK100001 for NELAP (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6010B, 6020, 7470A, 7471B, 8021B, 8081B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, the National Environmental Laboratory Accreditation Program and other regulatory authorities. The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RL	Reporting Limit
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are integrated per SOP.

Client Name: Michael L Foster & Associates
Project Name: CDP-009-002 Roadhouse Excavati
Workorder No.: 1105256

Analytical Methods

Method Description	Analytical Method
AK101/8021 Combo. (S)	AK101
AK101/8021 Combo. (S)	SW8021B
Diesel Range Organics (S)	AK102
Percent Solids SM2540G	SM20 2540G

Sample ID Cross Reference

Lab Sample ID	Client Sample ID
1105256001	Eureka-East
1105256002	Eureka-X1
1105256003	Eureka-South
1105256004	Eureka-West
1105256005	Eureka-North
1105256006	Eureka-BTM-North
1105256007	Eureka-BTM-South
1105256008	Eureka-TB1

Detectable Results Summary

Print Date: 10/6/2010 4:27 pm

Client Sample ID: **Eureka-East**
SGS Ref. #: 1105256001

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	1.73J	mg/Kg
Benzene	39.7	ug/Kg
Toluene	30.9J	ug/Kg
o-Xylene	34.9J	ug/Kg
P & M -Xylene	36.6J	ug/Kg

Client Sample ID: **Eureka-X1**
SGS Ref. #: 1105256002

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	1.89J	mg/Kg
Benzene	46.8	ug/Kg
Toluene	44.1J	ug/Kg
Semivolatile Organic Fuels Department		
Diesel Range Organics	42.9	mg/Kg

Client Sample ID: **Eureka-South**
SGS Ref. #: 1105256003

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	8.67	mg/Kg
Benzene	3700	ug/Kg
Toluene	46.1J	ug/Kg
o-Xylene	22.0J	ug/Kg
P & M -Xylene	58.7J	ug/Kg
Semivolatile Organic Fuels Department		
Diesel Range Organics	558	mg/Kg

Client Sample ID: **Eureka-West**
SGS Ref. #: 1105256004

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	604	mg/Kg
Benzene	10300	ug/Kg
Toluene	1750	ug/Kg
Ethylbenzene	19200	ug/Kg
o-Xylene	40200	ug/Kg
P & M -Xylene	44500	ug/Kg
Semivolatile Organic Fuels Department		
Diesel Range Organics	10900	mg/Kg

Detectable Results Summary

Print Date: 10/6/2010 4:27 pm

Client Sample ID: **Eureka-North**
SGS Ref. #: 1105256005

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	5.77	mg/Kg
Benzene	164	ug/Kg
Toluene	623	ug/Kg
Ethylbenzene	69.7	ug/Kg
o-Xylene	503	ug/Kg
P & M -Xylene	983	ug/Kg
Semivolatile Organic Fuels Department		
Diesel Range Organics	111	mg/Kg

Client Sample ID: **Eureka-BTM-North**
SGS Ref. #: 1105256006

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	26.5	mg/Kg
Benzene	12000	ug/Kg
Toluene	117	ug/Kg
Ethylbenzene	57.7J	ug/Kg
o-Xylene	145	ug/Kg
P & M -Xylene	61.2	ug/Kg
Semivolatile Organic Fuels Department		
Diesel Range Organics	68.7	mg/Kg

Client Sample ID: **Eureka-BTM-South**
SGS Ref. #: 1105256007

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	54.2	mg/Kg
Benzene	21200	ug/Kg
Toluene	1350	ug/Kg
Ethylbenzene	823	ug/Kg
o-Xylene	930	ug/Kg
P & M -Xylene	661	ug/Kg
Semivolatile Organic Fuels Department		
Diesel Range Organics	115	mg/Kg

Client Sample ID: **Eureka-TB1**
SGS Ref. #: 1105256008

Parameter	Result	Units
Volatile Fuels Department		
Gasoline Range Organics	1.16J	mg/Kg

Client Sample ID: **Eureka-East**
SGS Ref. #: 1105256001
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 83.0

Collection Date/Time: 09/29/10 11:45
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	39.7	17.0	5.43	ug/Kg	1	VFC10206		
Ethylbenzene	40.8 U	67.9	20.4	ug/Kg	1	VFC10206		
Gasoline Range Organics	1.73J	3.39	1.02	mg/Kg	1	VFC10206		
o-Xylene	34.9J	67.9	20.4	ug/Kg	1	VFC10206		
P & M -Xylene	36.6J	67.9	20.4	ug/Kg	1	VFC10206		
Toluene	30.9J	67.9	20.4	ug/Kg	1	VFC10206		
1,4-Difluorobenzene <surr>	95.7	80-120		%	1	VFC10206		
4-Bromofluorobenzene <surr>	106	50-150		%	1	VFC10206		

Batch Information

Analytical Batch: VFC10206
Analytical Method: AK101
Analysis Date/Time: 10/02/10 21:22
Dilution Factor: 1
Initial Prep Wt./Vol.: 63.536 g
Container ID:1105256001-B
Analyst: EAB

Analytical Batch: VFC10206
Analytical Method: SW8021B
Analysis Date/Time: 10/02/10 21:22
Dilution Factor: 1
Initial Prep Wt./Vol.: 63.536 g
Container ID:1105256001-B
Analyst: EAB

Client Sample ID: **Eureka-East**
SGS Ref. #: 1105256001
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 83.0

Collection Date/Time: 09/29/10 11:45
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	14.8 U	23.8	7.39	mg/Kg	1	XFC9553	XXX23800	
5a Androstane <surr>	98.8	50-150		%	1	XFC9553	XXX23800	

Batch Information

Analytical Batch: XFC9553
Analytical Method: AK102
Analysis Date/Time: 10/04/10 18:34
Dilution Factor: 1

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.322 g
Prep Extract Vol.: 1 mL
Container ID:1105256001-A
Analyst: LCE

Client Sample ID: **Eureka-East**
SGS Ref. #: 1105256001
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 83.0

Collection Date/Time: 09/29/10 11:45
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	83.0			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256001-A
Analyst: LP

Client Sample ID: **Eureka-X1**
SGS Ref. #: 1105256002
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 81.6

Collection Date/Time: 09/29/10 11:50
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	46.8	22.3	7.13	ug/Kg	1	VFC10206		
Ethylbenzene	53.4 U	89.1	26.7	ug/Kg	1	VFC10206		
Gasoline Range Organics	1.89J	4.45	1.34	mg/Kg	1	VFC10206		
o-Xylene	53.4 U	89.1	26.7	ug/Kg	1	VFC10206		
P & M -Xylene	53.4 U	89.1	26.7	ug/Kg	1	VFC10206		
Toluene	44.1J	89.1	26.7	ug/Kg	1	VFC10206		
1,4-Difluorobenzene <surr>	95.5	80-120		%	1	VFC10206		
4-Bromofluorobenzene <surr>	105	50-150		%	1	VFC10206		

Batch Information

Analytical Batch: VFC10206
Analytical Method: AK101
Analysis Date/Time: 10/02/10 21:41
Dilution Factor: 1
Initial Prep Wt./Vol.: 45.986 g
Container ID:1105256002-B
Analyst: EAB

Analytical Batch: VFC10206
Analytical Method: SW8021B
Analysis Date/Time: 10/02/10 21:41
Dilution Factor: 1
Initial Prep Wt./Vol.: 45.986 g
Container ID:1105256002-B
Analyst: EAB

Client Sample ID: **Eureka-X1**
SGS Ref. #: 1105256002
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 81.6

Collection Date/Time: 09/29/10 11:50
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	42.9	24.5	7.58	mg/Kg	1	XFC9553	XXX23800	
5a Androstane <surr>	112	50-150		%	1	XFC9553	XXX23800	

Batch Information

Analytical Batch: XFC9553
Analytical Method: AK102
Analysis Date/Time: 10/04/10 18:44
Dilution Factor: 1

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.038 g
Prep Extract Vol.: 1 mL
Container ID:1105256002-A
Analyst: LCE

Client Sample ID: **Eureka-X1**
SGS Ref. #: 1105256002
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 81.6

Collection Date/Time: 09/29/10 11:50
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	81.6			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256002-A
Analyst: LP

Client Sample ID: **Eureka-South**
SGS Ref. #: 1105256003
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.9

Collection Date/Time: 09/29/10 12:05
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	3700	15.1	4.82	ug/Kg	1	VFC10212		
Ethylbenzene	36.2 U	60.2	18.1	ug/Kg	1	VFC10212		
Gasoline Range Organics	8.67	3.01	0.903	mg/Kg	1	VFC10212		
o-Xylene	22.0J	60.2	18.1	ug/Kg	1	VFC10212		
P & M -Xylene	58.7J	60.2	18.1	ug/Kg	1	VFC10212		
Toluene	46.1J	60.2	18.1	ug/Kg	1	VFC10212		
1,4-Difluorobenzene <surr>	105	80-120		%	1	VFC10212		
4-Bromofluorobenzene <surr>	107	50-150		%	1	VFC10212		

Batch Information

Analytical Batch: VFC10212
Analytical Method: AK101
Analysis Date/Time: 10/05/10 22:59
Dilution Factor: 1
Initial Prep Wt./Vol.: 69.546 g
Container ID:1105256003-B
Analyst: EAB

Analytical Batch: VFC10212
Analytical Method: SW8021B
Analysis Date/Time: 10/05/10 22:59
Dilution Factor: 1
Initial Prep Wt./Vol.: 69.546 g
Container ID:1105256003-B
Analyst: EAB

Client Sample ID: **Eureka-South**
SGS Ref. #: 1105256003
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.9

Collection Date/Time: 09/29/10 12:05
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	558	23.5	7.30	mg/Kg	1	XFC9553	XXX23800	
5a Androstane <surr>	78.8	50-150		%	1	XFC9553	XXX23800	

Batch Information

Analytical Batch: XFC9553
Analytical Method: AK102
Analysis Date/Time: 10/04/10 18:54
Dilution Factor: 1

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.03 g
Prep Extract Vol.: 1 mL
Container ID:1105256003-A
Analyst: LCE

Client Sample ID: **Eureka-South**
SGS Ref. #: 1105256003
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.9

Collection Date/Time: 09/29/10 12:05
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	84.9			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256003-A
Analyst: LP

Client Sample ID: **Eureka-West**
SGS Ref. #: 1105256004
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 85.5

Collection Date/Time: 09/29/10 12:15
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result		LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	10300		84.4	27.0	ug/Kg	5	VFC10210		
Ethylbenzene	19200		338	101	ug/Kg	5	VFC10210		
Gasoline Range Organics	604		16.9	5.06	mg/Kg	5	VFC10210		
o-Xylene	40200		338	101	ug/Kg	5	VFC10210		
P & M -Xylene	44500		338	101	ug/Kg	5	VFC10210		
Toluene	1750		338	101	ug/Kg	5	VFC10210		
1,4-Difluorobenzene <surr>	100		80-120		%	5	VFC10210		
4-Bromofluorobenzene <surr>	2300	*	50-150		%	5	VFC10210		

Batch Information

Analytical Batch: VFC10210
Analytical Method: AK101
Analysis Date/Time: 10/05/10 00:34
Dilution Factor: 5
Initial Prep Wt./Vol.: 57.738 g
Container ID:1105256004-B
Analyst: EAB

Analytical Batch: VFC10210
Analytical Method: SW8021B
Analysis Date/Time: 10/05/10 00:34
Dilution Factor: 5
Initial Prep Wt./Vol.: 57.738 g
Container ID:1105256004-B
Analyst: EAB

Client Sample ID: **Eureka-West**
SGS Ref. #: 1105256004
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 85.5

Collection Date/Time: 09/29/10 12:15
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result		LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	10900		462	143	mg/Kg	20	XFC9557	XXX23800	
5a Androstane <surr>	0	*	50-150		%	20	XFC9557	XXX23800	

Batch Information

Analytical Batch: XFC9557
Analytical Method: AK102
Analysis Date/Time: 10/05/10 16:17
Dilution Factor: 20

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.369 g
Prep Extract Vol.: 1 mL
Container ID:1105256004-A
Analyst: LCE

Client Sample ID: **Eureka-West**
SGS Ref. #: 1105256004
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 85.5

Collection Date/Time: 09/29/10 12:15
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	85.5			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256004-A
Analyst: LP

Client Sample ID: **Eureka-North**
SGS Ref. #: 1105256005
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.4

Collection Date/Time: 09/29/10 12:25
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	164	15.5	4.96	ug/Kg	1	VFC10210		
Ethylbenzene	69.7	62.0	18.6	ug/Kg	1	VFC10210		
Gasoline Range Organics	5.77	3.10	0.930	mg/Kg	1	VFC10210		
o-Xylene	503	62.0	18.6	ug/Kg	1	VFC10210		
P & M -Xylene	983	62.0	18.6	ug/Kg	1	VFC10210		
Toluene	623	62.0	18.6	ug/Kg	1	VFC10210		
1,4-Difluorobenzene <surr>	95	80-120		%	1	VFC10210		
4-Bromofluorobenzene <surr>	94.7	50-150		%	1	VFC10210		

Batch Information

Analytical Batch: VFC10210
Analytical Method: AK101
Analysis Date/Time: 10/04/10 23:19
Dilution Factor: 1
Initial Prep Wt./Vol.: 60.195 g
Container ID:1105256005-B
Analyst: EAB

Analytical Batch: VFC10210
Analytical Method: SW8021B
Analysis Date/Time: 10/04/10 23:19
Dilution Factor: 1
Initial Prep Wt./Vol.: 60.195 g
Container ID:1105256005-B
Analyst: EAB

Client Sample ID: **Eureka-North**
SGS Ref. #: 1105256005
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.4

Collection Date/Time: 09/29/10 12:25
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	111	22.8	7.07	mg/Kg	1	XFC9553	XXX23800	
5a Androstane <surr>	78.9	50-150		%	1	XFC9553	XXX23800	

Batch Information

Analytical Batch: XFC9553
Analytical Method: AK102
Analysis Date/Time: 10/04/10 19:13
Dilution Factor: 1

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.119 g
Prep Extract Vol.: 1 mL
Container ID:1105256005-A
Analyst: LCE

Client Sample ID: **Eureka-North**
SGS Ref. #: 1105256005
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.4

Collection Date/Time: 09/29/10 12:25
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	87.4			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256005-A
Analyst: LP

Client Sample ID: **Eureka-BTM-North**
SGS Ref. #: 1105256006
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 82.5

Collection Date/Time: 09/29/10 12:35
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	12000	72.3	23.1	ug/Kg	5	VFC10210		
Ethylbenzene	57.7J	57.8	17.4	ug/Kg	1	VFC10206		
Gasoline Range Organics	26.5	2.89	0.868	mg/Kg	1	VFC10206		
o-Xylene	145	57.8	17.4	ug/Kg	1	VFC10206		
P & M -Xylene	61.2	57.8	17.4	ug/Kg	1	VFC10206		
Toluene	117	57.8	17.4	ug/Kg	1	VFC10206		
1,4-Difluorobenzene <surr>	102	80-120		%	5	VFC10210		
4-Bromofluorobenzene <surr>	109	50-150		%	1	VFC10206		

Batch Information

Analytical Batch: VFC10206
Analytical Method: AK101
Analysis Date/Time: 10/02/10 22:38
Dilution Factor: 1
Initial Prep Wt./Vol.: 82.566 g
Container ID:1105256006-B
Analyst: EAB

Analytical Batch: VFC10206
Analytical Method: SW8021B
Analysis Date/Time: 10/02/10 22:38
Dilution Factor: 1
Initial Prep Wt./Vol.: 82.566 g
Container ID:1105256006-B
Analyst: EAB

Analytical Batch: VFC10210
Analytical Method: SW8021B
Analysis Date/Time: 10/05/10 00:53
Dilution Factor: 5
Initial Prep Wt./Vol.: 82.566 g
Container ID:1105256006-B
Analyst: EAB

Client Sample ID: **Eureka-BTM-North**
SGS Ref. #: 1105256006
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 82.5

Collection Date/Time: 09/29/10 12:35
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	68.7	24.2	7.50	mg/Kg	1	XFC9553	XXX23800	
5a Androstane <surr>	83.2	50-150		%	1	XFC9553	XXX23800	

Batch Information

Analytical Batch: XFC9553
Analytical Method: AK102
Analysis Date/Time: 10/04/10 19:23
Dilution Factor: 1

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.03 g
Prep Extract Vol.: 1 mL
Container ID:1105256006-A
Analyst: LCE

Client Sample ID: **Eureka-BTM-North**
SGS Ref. #: 1105256006
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 82.5

Collection Date/Time: 09/29/10 12:35
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	82.5			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256006-A
Analyst: LP

Client Sample ID: **Eureka-BTM-South**
SGS Ref. #: 1105256007
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.4

Collection Date/Time: 09/29/10 12:45
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	21200	80.0	25.6	ug/Kg	5	VFC10210		
Ethylbenzene	823	64.0	19.2	ug/Kg	1	VFC10206		
Gasoline Range Organics	54.2	3.20	0.960	mg/Kg	1	VFC10206		
o-Xylene	930	64.0	19.2	ug/Kg	1	VFC10206		
P & M -Xylene	661	64.0	19.2	ug/Kg	1	VFC10206		
Toluene	1350	64.0	19.2	ug/Kg	1	VFC10206		
1,4-Difluorobenzene <surr>	108	80-120		%	5	VFC10210		
4-Bromofluorobenzene <surr>	120	50-150		%	1	VFC10206		

Batch Information

Analytical Batch: VFC10206
Analytical Method: AK101
Analysis Date/Time: 10/02/10 22:57
Dilution Factor: 1
Initial Prep Wt./Vol.: 64.933 g
Container ID:1105256007-B
Analyst: EAB

Analytical Batch: VFC10206
Analytical Method: SW8021B
Analysis Date/Time: 10/02/10 22:57
Dilution Factor: 1
Initial Prep Wt./Vol.: 64.933 g
Container ID:1105256007-B
Analyst: EAB

Analytical Batch: VFC10210
Analytical Method: SW8021B
Analysis Date/Time: 10/05/10 01:11
Dilution Factor: 5
Initial Prep Wt./Vol.: 64.933 g
Container ID:1105256007-B
Analyst: EAB

Client Sample ID: **Eureka-BTM-South**
SGS Ref. #: 1105256007
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.4

Collection Date/Time: 09/29/10 12:45
Receipt Date/Time: 09/30/10 09:55

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	115	23.5	7.30	mg/Kg	1	XFC9553	XXX23800	
5a Androstane <surr>	87.2	50-150		%	1	XFC9553	XXX23800	

Batch Information

Analytical Batch: XFC9553
Analytical Method: AK102
Analysis Date/Time: 10/04/10 19:33
Dilution Factor: 1

Prep Batch: XXX23800
Prep Method: SW3550C
Prep Date/Time: 10/04/10 13:30

Initial Prep Wt./Vol.: 30.189 g
Prep Extract Vol.: 1 mL
Container ID:1105256007-A
Analyst: LCE

Client Sample ID: **Eureka-BTM-South**
SGS Ref. #: 1105256007
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.4

Collection Date/Time: 09/29/10 12:45
Receipt Date/Time: 09/30/10 09:55

Solids

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	84.4			%	1	SPT8253		

Batch Information

Analytical Batch: SPT8253
Analytical Method: SM20 2540G
Analysis Date/Time: 09/30/10 18:20
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL
Container ID:1105256007-A
Analyst: LP

Client Sample ID: **Eureka-TB1**
SGS Ref. #: 1105256008
Project ID: CDP-009-002 Roadhouse Excavati
Matrix: Soil/Solid (dry weight)

Collection Date/Time: 09/29/10 12:55
Receipt Date/Time: 09/30/10 09:55

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Benzene	8.00 U	12.5	4.00	ug/Kg	1	VFC10206		
Ethylbenzene	30.0 U	50.0	15.0	ug/Kg	1	VFC10206		
Gasoline Range Organics	1.16J	2.50	0.750	mg/Kg	1	VFC10206		
o-Xylene	30.0 U	50.0	15.0	ug/Kg	1	VFC10206		
P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	1	VFC10206		
Toluene	30.0 U	50.0	15.0	ug/Kg	1	VFC10206		
1,4-Difluorobenzene <surr>	94.7	80-120		%	1	VFC10206		
4-Bromofluorobenzene <surr>	92.2	50-150		%	1	VFC10206		

Batch Information

Analytical Batch: VFC10206
Analytical Method: AK101
Analysis Date/Time: 10/02/10 23:35
Dilution Factor: 1
Initial Prep Wt./Vol.: 49.989 g
Container ID:1105256008-A
Analyst: EAB

Analytical Batch: VFC10206
Analytical Method: SW8021B
Analysis Date/Time: 10/02/10 23:35
Dilution Factor: 1
Initial Prep Wt./Vol.: 49.989 g
Container ID:1105256008-A
Analyst: EAB

SGS Ref.#	994021	Method Blank	**Printed Date/Time**	10/06/2010 16:27
Client Name	Michael L Foster & Associates		**Prep Batch**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Method**	
Matrix	Soil/Solid (dry weight)		**Date**	

QC results affect the following production samples:

1105256001, 1105256002, 1105256003, 1105256004, 1105256005, 1105256006, 1105256007

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Solids					
Total Solids	100			%	09/30/10
Batch SPT8253					
Method SM20 2540G					
Instrument					

SGS Ref.#	994469	Method Blank	**Printed Date/Time**	10/06/2010 16:27
Client Name	Michael L Foster & Associates		**Prep Batch**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Method**	
Matrix	Soil/Solid (dry weight)		**Date**	

QC results affect the following production samples:

1105256001, 1105256002, 1105256006, 1105256007, 1105256008

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Volatile Fuels Department					
Gasoline Range Organics	1.50 U	2.50	0.750	mg/Kg	10/02/10
Surrogates					
4-Bromofluorobenzene <surr>	80.2	50-150		%	10/02/10
Batch VFC10206					
Method AK101					
Instrument HP 5890 Series II PID+HECD VBA					
Benzene	8.00 U	12.5	4.00	ug/Kg	10/02/10
Ethylbenzene	30.0 U	50.0	15.0	ug/Kg	10/02/10
o-Xylene	30.0 U	50.0	15.0	ug/Kg	10/02/10
P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	10/02/10
Toluene	30.0 U	50.0	15.0	ug/Kg	10/02/10
Surrogates					
1,4-Difluorobenzene <surr>	94.7	80-120		%	10/02/10
Batch VFC10206					
Method SW8021B					
Instrument HP 5890 Series II PID+HECD VBA					

SGS Ref.#	994647	Method Blank	**Printed Date/Time**	10/06/2010	16:27
Client Name	Michael L Foster & Associates		**Prep Batch**	XXX23800	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Method**	SW3550C	
Matrix	Soil/Solid (dry weight)		**Date**	10/04/2010	

QC results affect the following production samples:

1105256001, 1105256002, 1105256003, 1105256004, 1105256005, 1105256006, 1105256007

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	12.4 U	20.0	6.20	mg/Kg	10/04/10
Surrogates					
5a Androstane <surr>	75.6	60-120		%	10/04/10

Batch XFC9553
Method AK102
Instrument HP 6890 Series II FID SV D R

SGS Ref.#	994796	Method Blank	**Printed Date/Time**	10/06/2010 16:27
Client Name	Michael L Foster & Associates		**Prep Batch**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Method**	
Matrix	Soil/Solid (dry weight)		**Date**	

QC results affect the following production samples:

1105256004, 1105256005, 1105256006, 1105256007

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Volatile Fuels Department					
Gasoline Range Organics	0.808J	2.50	0.750	mg/Kg	10/04/10
Surrogates					
4-Bromofluorobenzene <surr>	88.5	50-150		%	10/04/10
Batch VFC10210					
Method AK101					
Instrument HP 5890 Series II PID+HECD VBA					
Benzene	8.00 U	12.5	4.00	ug/Kg	10/04/10
Ethylbenzene	30.0 U	50.0	15.0	ug/Kg	10/04/10
o-Xylene	30.0 U	50.0	15.0	ug/Kg	10/04/10
P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	10/04/10
Toluene	30.0 U	50.0	15.0	ug/Kg	10/04/10
Surrogates					
1,4-Difluorobenzene <surr>	93.6	80-120		%	10/04/10
Batch VFC10210					
Method SW8021B					
Instrument HP 5890 Series II PID+HECD VBA					

SGS Ref.#	995171 Method Blank	**Printed Date/Time**	10/06/2010 16:27	
Client Name	Michael L Foster & Associates	**Prep**	**Batch**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Method**	
Matrix	Soil/Solid (dry weight)		**Date**	

QC results affect the following production samples:

1105256003

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Volatile Fuels Department					
Gasoline Range Organics	1.50 U	2.50	0.750	mg/Kg	10/05/10
Surrogates					
4-Bromofluorobenzene <surr>	88.2	50-150		%	10/05/10
Batch VFC10212					
Method AK101					
Instrument HP 5890 Series II PID+HECD VBA					
Benzene	8.00 U	12.5	4.00	ug/Kg	10/05/10
Ethylbenzene	30.0 U	50.0	15.0	ug/Kg	10/05/10
o-Xylene	30.0 U	50.0	15.0	ug/Kg	10/05/10
P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	10/05/10
Toluene	30.0 U	50.0	15.0	ug/Kg	10/05/10
Surrogates					
1,4-Difluorobenzene <surr>	93.2	80-120		%	10/05/10
Batch VFC10212					
Method SW8021B					
Instrument HP 5890 Series II PID+HECD VBA					

SGS Ref.#	994022	Duplicate	**Printed Date/Time**	10/06/2010	16:27
Client Name	Michael L Foster & Associates		**Prep Batch**		
Project Name/#	CDP-009-002 Roadhouse Excavati		**Method**		
Original	1105220001		**Date**		
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1105256001, 1105256002, 1105256003, 1105256004, 1105256005, 1105256006, 1105256007

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
Solids						
Total Solids	89.8	88.6	%	1	(< 15)	09/30/2010
Batch SPT8253						
Method SM20 2540G						
Instrument						

SGS Ref.#	994470	Lab Control Sample	**Printed Date/Time**	10/06/2010	16:27
	994471	Lab Control Sample Duplicate	**Prep Batch**		
Client Name	Michael L Foster & Associates		**Method**		
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**		
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1105256001, 1105256002, 1105256006, 1105256007, 1105256008

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1320	106	(80-125)			1250 ug/Kg	10/02/2010
	LCSD	1320	106		0	(< 20)	1250 ug/Kg	10/02/2010
Ethylbenzene	LCS	1380	111	(85-125)			1250 ug/Kg	10/02/2010
	LCSD	1380	111		0	(< 20)	1250 ug/Kg	10/02/2010
o-Xylene	LCS	1370	109	(85-125)			1250 ug/Kg	10/02/2010
	LCSD	1370	109		0	(< 20)	1250 ug/Kg	10/02/2010
P & M -Xylene	LCS	2770	111	(85-125)			2500 ug/Kg	10/02/2010
	LCSD	2770	111		0	(< 20)	2500 ug/Kg	10/02/2010
Toluene	LCS	1350	108	(85-120)			1250 ug/Kg	10/02/2010
	LCSD	1350	108		0	(< 20)	1250 ug/Kg	10/02/2010
Surrogates								
1,4-Difluorobenzene <surr>	LCS		98	(80-120)				10/02/2010
	LCSD		98		0			10/02/2010

Batch VFC10206
Method SW8021B
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	994472	Lab Control Sample	**Printed Date/Time**	10/06/2010 16:27
	994473	Lab Control Sample Duplicate	**Prep Batch**	
Client Name	Michael L Foster & Associates		**Method**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**	
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1105256001, 1105256002, 1105256006, 1105256007, 1105256008

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	11.1	99	(60-120)			11.3 mg/Kg	10/02/2010
	LCSD	11.3	101		2	(< 20)	11.3 mg/Kg	10/02/2010
Surrogates								
4-Bromofluorobenzene <surr>	LCS		84	(50-150)				10/02/2010
	LCSD		83		1			10/02/2010

Batch VFC10206
Method AK101
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	994648	Lab Control Sample	**Printed Date/Time**	10/06/2010	16:27
	994649	Lab Control Sample Duplicate	**Prep Batch**	XXX23800	
Client Name	Michael L Foster & Associates		**Method**	SW3550C	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**	10/04/2010	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1105256001, 1105256002, 1105256003, 1105256004, 1105256005, 1105256006, 1105256007

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	180	108	(75-125)			167 mg/Kg	10/04/2010
	LCSD	177	106		2	(< 20)	167 mg/Kg	10/04/2010
Surrogates								
5a Androstane <surr>	LCS		108	(60-120)				10/04/2010
	LCSD		102		6			10/04/2010

Batch XFC9553
Method AK102
Instrument HP 6890 Series II FID SV D R

SGS Ref.#	994797	Lab Control Sample	**Printed Date/Time**	10/06/2010 16:27
	994798	Lab Control Sample Duplicate	**Prep Batch**	
Client Name	Michael L Foster & Associates		**Method**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**	
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1105256004, 1105256005, 1105256006, 1105256007

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1300	104	(80-125)			1250 ug/Kg	10/04/2010
	LCSD	1270	102		2	(< 20)	1250 ug/Kg	10/04/2010
Ethylbenzene	LCS	1360	109	(85-125)			1250 ug/Kg	10/04/2010
	LCSD	1340	107		2	(< 20)	1250 ug/Kg	10/04/2010
o-Xylene	LCS	1350	108	(85-125)			1250 ug/Kg	10/04/2010
	LCSD	1320	105		2	(< 20)	1250 ug/Kg	10/04/2010
P & M -Xylene	LCS	2740	109	(85-125)			2500 ug/Kg	10/04/2010
	LCSD	2680	107		2	(< 20)	2500 ug/Kg	10/04/2010
Toluene	LCS	1330	106	(85-120)			1250 ug/Kg	10/04/2010
	LCSD	1300	104		2	(< 20)	1250 ug/Kg	10/04/2010
Surrogates								
1,4-Difluorobenzene <surr>	LCS		97	(80-120)				10/04/2010
	LCSD		97		0			10/04/2010

Batch	VFC10210
Method	SW8021B
Instrument	HP 5890 Series II PID+HECD VBA

SGS Ref.#	994799	Lab Control Sample	**Printed Date/Time**	10/06/2010 16:27
	994800	Lab Control Sample Duplicate	**Prep Batch**	
Client Name	Michael L Foster & Associates		**Method**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**	
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1105256004, 1105256005, 1105256006, 1105256007

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	11.2	100	(60-120)			11.3 mg/Kg	10/04/2010
	LCSD	11.3	100		1	(< 20)	11.3 mg/Kg	10/04/2010
Surrogates								
4-Bromofluorobenzene <surr>	LCS		87	(50-150)				10/04/2010
	LCSD		90		3			10/04/2010

Batch VFC10210
Method AK101
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	995172	Lab Control Sample	**Printed Date/Time**	10/06/2010 16:27
	995173	Lab Control Sample Duplicate	**Prep Batch**	
Client Name	Michael L Foster & Associates		**Method**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**	
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1105256003

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1370	110	(80-125)			1250 ug/Kg	10/05/2010
	LCSD	1380	110		0	(< 20)	1250 ug/Kg	10/05/2010
Ethylbenzene	LCS	1440	115	(85-125)			1250 ug/Kg	10/05/2010
	LCSD	1440	115		0	(< 20)	1250 ug/Kg	10/05/2010
o-Xylene	LCS	1430	114	(85-125)			1250 ug/Kg	10/05/2010
	LCSD	1430	114		0	(< 20)	1250 ug/Kg	10/05/2010
P & M -Xylene	LCS	2890	115	(85-125)			2500 ug/Kg	10/05/2010
	LCSD	2890	116		0	(< 20)	2500 ug/Kg	10/05/2010
Toluene	LCS	1400	112	(85-120)			1250 ug/Kg	10/05/2010
	LCSD	1400	112		0	(< 20)	1250 ug/Kg	10/05/2010
Surrogates								
1,4-Difluorobenzene <surr>	LCS		97	(80-120)				10/05/2010
	LCSD		97		0			10/05/2010

Batch VFC10212
Method SW8021B
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	995174	Lab Control Sample	**Printed Date/Time**	10/06/2010 16:27
	995175	Lab Control Sample Duplicate	**Prep Batch**	
Client Name	Michael L Foster & Associates		**Method**	
Project Name/#	CDP-009-002 Roadhouse Excavati		**Date**	
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1105256003

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	11.6	103	(60-120)			11.3 mg/Kg	10/05/2010
	LCSD	11.4	102		1	(< 20)	11.3 mg/Kg	10/05/2010
Surrogates								
4-Bromofluorobenzene <surr>	LCS		91	(50-150)				10/05/2010
	LCSD		89		2			10/05/2010

Batch VFC10212
Method AK101
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	994474	Matrix Spike	**Printed Date/Time**	10/06/2010 16:27
	994475	Matrix Spike Duplicate	**Prep Batch**	
			Method	
			Date	

Original 1106761001
Matrix Soil/Solid (dry weight)

QC results affect the following production samples:
1105256001, 1105256002, 1105256006, 1105256007, 1105256008

Parameter	Qualifiers		Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount		Analysis Date
Volatile Fuels Department											
Benzene		MS	(13.3) U	1023	103	(80-125)			993	ug/Kg	10/02/2010
		MSD		1041	105		2	(< 20)	993	ug/Kg	10/02/2010
Ethylbenzene		MS	(53.2) U	1068	107	(85-125)			993	ug/Kg	10/02/2010
		MSD		1083	109		1	(< 20)	993	ug/Kg	10/02/2010
o-Xylene		MS	(53.2) U	1061	107	(85-125)			993	ug/Kg	10/02/2010
		MSD		1076	108		1	(< 20)	993	ug/Kg	10/02/2010
P & M -Xylene		MS	(53.2) U	2145	108	(85-125)			1986	ug/Kg	10/02/2010
		MSD		2168	109		2	(< 20)	1986	ug/Kg	10/02/2010
Toluene		MS	(53.2) U	1039	105	(85-120)			993	ug/Kg	10/02/2010
		MSD		1060	107		2	(< 20)	993	ug/Kg	10/02/2010
Surrogates											
1,4-Difluorobenzene <surr>		MS		973	98	(80-120)					10/02/2010
		MSD		975	98		0				10/02/2010

Batch VFC10206
Method SW8021B
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	994801	Matrix Spike	**Printed Date/Time**	10/06/2010 16:27
	994802	Matrix Spike Duplicate	**Prep Batch**	
			Method	
			Date	

Original 1105256005
Matrix Soil/Solid (dry weight)

QC results affect the following production samples:
1105256004, 1105256005, 1105256006, 1105256007

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount		Analysis Date
Volatile Fuels Department										
Benzene	MS	164	1430	106	(80-125)			1190	ug/Kg	10/04/2010
	MSD		1430	107		0	(< 20)	1190	ug/Kg	10/04/2010
Ethylbenzene	MS	69.7	1396	112	(85-125)			1190	ug/Kg	10/04/2010
	MSD		1407	112		0	(< 20)	1190	ug/Kg	10/04/2010
o-Xylene	MS	503	1716	102	(85-125)			1190	ug/Kg	10/04/2010
	MSD		1728	103		1	(< 20)	1190	ug/Kg	10/04/2010
P & M -Xylene	MS	983	3398	102	(85-125)			2380	ug/Kg	10/04/2010
	MSD		3432	103		1	(< 20)	2380	ug/Kg	10/04/2010
Toluene	MS	623	1762	96	(85-120)			1190	ug/Kg	10/04/2010
	MSD		1785	98		1	(< 20)	1190	ug/Kg	10/04/2010
Surrogates										
1,4-Difluorobenzene <surr>	MS		1190	100	(80-120)					10/04/2010
	MSD		1178	100		0				10/04/2010

Batch VFC10210
Method SW8021B
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	995176	Matrix Spike	**Printed Date/Time**	10/06/2010 16:27
	995177	Matrix Spike Duplicate	**Prep Batch**	
			Method	
			Date	

Original 1105337002
Matrix Soil/Solid (dry weight)

QC results affect the following production samples:
1105256003

Parameter	Qualifiers		Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount		Analysis Date
Volatile Fuels Department											
Benzene		MS	(11.2) U	1312	106	(80-125)			1239	ug/Kg	10/05/2010
		MSD		1360	109		3	(< 20)	1239	ug/Kg	10/05/2010
Ethylbenzene		MS	(42.0) U	1372	110	(85-125)			1239	ug/Kg	10/05/2010
		MSD		1408	113		3	(< 20)	1239	ug/Kg	10/05/2010
o-Xylene		MS	26.6J	1372	108	(85-125)			1239	ug/Kg	10/05/2010
		MSD		1408	111		3	(< 20)	1239	ug/Kg	10/05/2010
P & M -Xylene		MS	(42.0) U	2744	110	(85-125)			2491	ug/Kg	10/05/2010
		MSD		2828	114		3	(< 20)	2491	ug/Kg	10/05/2010
Toluene		MS	(42.0) U	1336	108	(85-120)			1239	ug/Kg	10/05/2010
		MSD		1384	111		3	(< 20)	1239	ug/Kg	10/05/2010
Surrogates											
1,4-Difluorobenzene <surr>		MS		1196	96	(80-120)					10/05/2010
		MSD		1199	96		0				10/05/2010

Batch VFC10212
Method SW8021B
Instrument HP 5890 Series II PID+HECD VBA

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1105256

Nationwide
- Maryland
- New York
- Indiana
- Kentucky

.us.sgs.com

46-0706

(1) CLIENT: Michael L Foster + Associates
CONTACT: Greg Civitash PHONE NO: 696-6200
PROJECT NAME: Eureka Roadhouse Excavation PROJECT/ PWSID/ PERMIT#: CPD-CPD-009-002
REPORTS TO: T Bradford EMAIL: trk@mlfaalaska.com
INVOICE TO: QUOTE #: 5290
P.O. #:

SGS Reference #:

page _____ of _____

(2)

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	Analysis Required (3) DRO-AK102	EPA 8260B BTEX AK101/8021B								REMARKS/ LOC ID
(1) A,B	Eureka-East	9/29/10	1145	S	2	G		✓	✓								
(2)	Eureka-X1		1150		2	G		✓	✓								
(3)	Eureka-South		1205		2	G		✓	✓								
(4)	Eureka-West		1215		2	G		✓	✓								
(5)	Eureka-North		1225		2	G		✓	✓								
(6)	Eureka-Btm-North		1235		2	G		✓	✓								
(7)	Eureka-Btm-South		1245		2	G		✓	✓								
(8) A	Eureka-TB1	↓	1235	↓	1				✓								

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Traci R Bradford	9/30/10	955	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By: 9/30/10 0955

(4)

DOD Project? YES NO

Cooler ID _____

Data Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Temperature Blank °C: 3.4 #203 or Ambient [ ]
(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

SGS

1105256

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	~~Yes~~ No ~~N/A~~ ~~Yes~~ No N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)? * ***Note: Exemption permitted for chilled samples collected less than 8 hours ago.*** Cooler ID: 1 @ 3.4 w/ Therm.ID: 203 Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ ***Note: If non-compliant, use form FS-0029 to document affected samples/analyses.*** If samples are received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank <u>nor</u> cooler temp can be obtained, note "ambient" or "chilled." **If temperature(s) <0°C, were all sample containers ice free?**	~~Yes~~ No N/A Yes No ~~N/A~~	
Delivery method (specify all that apply): ~~Client~~ USPS Alert Courier Road Runner ~~AK Air~~ Lynden Carlile ERA PenAir FedEx UPS NAC Other:	Note airbill/tracking # See Attached ~~or N/A~~	
→ For samples received with payment, note amount ($) and cash / check / CC (circle one). ~~N/A~~ → For samples received in FBKS, ANCH staff will verify all criteria are reviewed.	SRF Initiated by: ~~N/A~~	
Do samples **match COC*** (i.e., sample IDs, dates/times collected)? * ***Note: Exemption permitted if collection times differ by less than an hour; in which case, the times on the COC will be used.*** Are analyses requested unambiguous?	~~Yes~~ No N/A ~~Yes~~ No N/A	
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): ~~Bubble Wrap~~ Separate plastic bags Vermiculite Other:	~~Yes~~ No N/A	
Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB? Were the bottles provided by SGS? (Note apparent exceptions.)	Yes No ~~N/A~~ ~~Yes~~ No N/A	
Were **proper containers** (type/mass/volume/preservative*) used? * ***Note: Exemption permitted for waters to be analyzed for metals.*** Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples?	Yes No ~~N/A~~ ~~Yes~~ No N/A	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? If pH was adjusted, were bottles flagged (i.e., stickers)? ***Refer to attached bottle sheet (form F066) for documentation.***	Yes No ~~N/A~~ Yes No ~~N/A~~	
For **RUSH** <u>or</u> **SHORT HOLD TIME** samples, were the COC & this SRF flagged, bottles flagged (e.g., stickers) and lab notified?	Yes No ~~N/A~~	
For client requested, **site-specific QC** (e.g., MS/MSD/DUP), were bottles flagged (e.g., stickers) and numbered accordingly?	Yes No ~~N/A~~	
For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No ~~N/A~~	
Was the WO# recorded in Front Counter/Sample Receiving log? **For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?**	~~Yes~~ No N/A Yes No ~~N/A~~	SRF Completed by: Bottle Sheet by: PM = N/A
Was **PEER REVIEW** of sample numbering completed (i.e., compare WO# on containers to COC, container ID on containers to COC, unique lab ID on each container?)	Yes No N/A	Peer Reviewed by: Metrics:
Additional notes (if applicable):		

WO# (7 digits)	Sample # - Sample #	Container ID - Container ID	Matrix	QC	Preservative (CHECKED)	TEST GROUP	PRINT LABELS	Notes: ANOMALIES - *e.g., preservative added* or SPECIAL HANDLING - *e.g., Multi-Incremental (MI), Field Filter (FF), Lab Filter (LF), use "same jar as" (SJA) for QC, 2xMeOH, bubbles, etc.*
SAMPLE ID			TYPE		CONTAINERS	ANALYSIS		Type comments below:
1105256	001 - 007	A - A	2 Soil		N/A	S_Weigh_Out		
1105256	001 - 007	B - B	2 Soil		MeOH+BFB *	S_GRO/VOC		
1105256	008 - 008	A - A	2 Soil	Trip Blank	MeOH+BFB *	S_GRO/VOC		

Returned Bottles Inventory

Name of individual dropping off bottles: R. Bradford

Date Received: 9/30/10

Client Name: Michael L Foster Associates

Received by: Annie

Project Name: Eureka Roadhouse

SGS PM:

Preservative:	unpres.	H2SO4	HCl	HNO3	NaOH	other	vials of MeOH
HDPE/Nalgene:							
1-L							
500-ml							
250-ml							
125-ml							
other							
Amber Glass:							
1-L BR							
500-ml BR							
250-ml BR							
125-ml BR							
8-oz SS							
4-oz SS	2						
4-oz w/ septa	2						
40-ml VOA vial							
other							
Subtotal:	4						

Note: AK101 kits (i.e., 4-oz preweighed/septa and vial with 25 ml MeOH+BFB) are billed @ $7/kit while all other jars (regardless of size or preservative) are billed at $4/bottle unless otherwise quoted.
These prices are only for bottles returned to the lab for disposal.
Unused/unreturned bottles are billed separately. Please see accounting for current price list.

Amount to Invoice Client: $

WO#:

APPENDIX D

ADEC LABORATORY DATA REVIEW CHECKLIST

Checklist for SGS Work Order 1105256, October 7

Laboratory Data Review Checklist

Completed by:	Traci Bradford
Title:	Project Engineer
Date:	October 21, 2010
CS Report Name:	CPD-009-002 Roadhouse Excavation
Report Date:	October 7, 2010
Consultant Firm:	Michael L. Foster & Associates, Inc.
Laboratory Name:	SGS North America Inc.
Laboratory Report Number:	1105256
ADEC File Number:	
ADEC RecKey Number:	

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☉ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☐ No Comments:

   NA

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☉ Yes ☐ No Comments:

   b. Correct analyses requested?

   ☉ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

☑ Yes ☐ No Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☑ Yes ☐ No Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☑ Yes ☐ No Comments:

Samples were received in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☑ No Comments:

There were no discrepancies noted by the lab.

e. Data quality or usability affected? Explain.

Comments:

NA

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality not affected, since surrogates biased high due to hydrocarbon interference.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☉ Yes ○ No Comments:

b. All applicable holding times met?

☉ Yes ○ No Comments:

c. All soils reported on a dry weight basis?

☉ Yes ○ No Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

☉ Yes ○ No Comments:

e. Data quality or usability affected?

Comments:

NA

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☉ Yes ○ No Comments:

ii. All method blank results less than PQL?

☉ Yes ○ No Comments:

iii. If above PQL, what samples are affected?

Comments:

NA

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments:

NA

v. Data quality or usability affected? Explain.

Comments:

NA

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☐ No Comments:

NA

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

NA

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments:

NA

vii. Data quality or usability affected? (Use comment box to explain)

Comments:

NA

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☑ No Comments:

Eureka-West BFB surrogate recovery biased high due to matrix interference for AK101. For AK102, 5a-Androstane surrogate recovery is outside QC criteria due to sample dilution.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

Data usability not affected.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (if not, enter explanation below.)

☑ Yes ☐ No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

One cooler submitted.

iii. All results less than PQL?

☑ Yes ☐ No Comments:

iv. If above PQL, what samples are affected?

Comments:

NA

v. Data quality or usability affected? Explain.

Comments:

NA

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☑ No Comments:

Eureka-East / Eureka-X1 greater than 50% for DRO. Results estimated for these values.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

NA

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? Explain.

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☐ Yes ☐ No Comments:

NA

Michael L. Foster & Associates, Inc.

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