

September 16, 2013

Mr. Stephen Wilson
Director SQ&L
CPD Alaska, LLC
201 Arctic Slope Avenue
Anchorage, Alaska 99518-3033
email: Stephen.Wilson@crowley.com

**Re: 2013 Soil Removal and Sampling Report for the Iliamna Tank Farm, Iliamna, Alaska;
ADEC File Number: 2560.38.012**

Dear Mr. Wilson:

Weston Solutions, Inc. (Weston) has prepared this letter report on behalf of CPD Alaska, LLC (CPD-AK) to document the landfarmed soil removal and analytical results of the soil sampling activities conducted in June 2013 at CPD-AK's Iliamna Tank Farm Site. The purpose of the sampling event was to determine whether surface soils had been impacted beneath the landfarm location of a former fuel oil-contaminated soil stockpile. The landfarmed soil had been contaminated from a 1,500-gallon aviation fuel release at the site in 2009. This site is listed in the Alaska Department of Environment Contaminated Sites Database under File Number 2560.38.012; Site Name: Crowley Tank Farm Iliamna Airport.

This report presents the following information: Site background, work accomplished in 2013, analytical results, conclusions and recommendations.

Four attachments provide the accompanying detailed information:

- Attachment 1 - Site Figures
- Attachment 2 - Tables
- Attachment 3 - Field Notes and Forms
- Attachment 4 - Analytical Results, ADEC Data Review Checklist, and Quality Assurance Report (QAR) Memo.

SITE BACKGROUND

CPD-AK's tank farm, at approximately 59°45'16.44" north latitude and 154°54'22.63" west longitude, is located in Iliamna, Alaska, approximately 200 air miles southwest of Anchorage, Alaska and within Bureau of Land Management Public Land Survey Section 9, Township 5 South, Range 33 West, Seward Meridian (Attachment 1, Figure 1). CPD-AK leases the site (Lot 2A, Block 1200) from the Alaska Department of Transportation and Public Facilities.

In September 2005, CPD-AK acquired the tank farm from Yukon Fuels, which had acquired the tank farm from Moody Fuels in 1999. The site is used for the storage and distribution of aviation fuel, home heating oil, diesel fuel, and automobile gasoline.

Between November 4, 2009, and December 14, 2009, approximately 1,500 gallons of aviation fuel leaked from a broken fuel line elbow at the bottom of a tanker truck's fuel tank and onto the soil on the western side of the tank farm. Initial soil remedial activities consisting of the delineation, excavation, stockpiling and characterization of the impacted soils were conducted in December 2009. Approximately 65 loose cubic yards (LCY) of soil were excavated and temporarily stockpiled on site. Analytical results of the excavated soil indicated concentrations of toluene, 8.96 milligrams per kilogram (mg/kg) and 17.6 mg/kg and diesel range organics (DRO) 1,010 mg/kg above ADEC Method Two soil cleanup levels of 6.5 mg/kg and 250 mg/kg, respectively. Upon completion of sampling activities, the excavation was backfilled with approximately 80 LCY of clean fill from the gravel borrow pit at the Newhalen Landfill.

In September 2010, the soil excavated in 2009 was landfarmed on the facility where a historic soil stockpile was located. ADEC approved removal of this historic stockpile to the Newhalen Landfill on September 30, 2010. After removal of the soil, a landfarm was constructed to remediate the 2009 excavated soils. Prior to placement of the soils, analytical samples were collected from the landfarm footprint to be used as future baseline samples. Analytical results indicated that DRO (23.5 mg/kg) and residual range organics (RRO) (70.5 mg/kg) were detected in the samples. However, these results were well below ADEC cleanup levels of 250 mg/kg and 10,000 mg/kg, respectively. Detailed information regarding the 2009 release and activities were submitted by Oasis Environmental (Oasis) in the *2010 Iliamna Fuel Release Response Report, Iliamna, Alaska* and *2011 Soil Stockpile, Iliamna Tank Farm Site, ADEC File Number 2560.38.012*, the *2013 Groundwater Monitoring Work Plan; Iliamna Tank Farm, Iliamna, Alaska*, and the *2013 Iliamna Stockpile Removal and Transport Cost Estimate*, both prepared by Weston, 2013.

In a letter dated August 23, 2011, ADEC approved the removal and transport of the 65 LCY of stockpiled soil to the Newhalen landfill. Soil samples were to be collected after removal of the landfarmed soil to compare to the September 2010 samples, in order to confirm that activities did not impact the surface soils beneath the landfarm.

REGULATORY STANDARDS

Analytical results for the work reported herein have been compared to relevant State of Alaska cleanup criteria. The State of Alaska, through ADEC, has established cleanup criteria for petroleum-contaminated sites. Cleanup standards are defined in 18 AAC 75, Article 3, entitled *Oil and Hazardous Substance Pollution Control Regulations, Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances*. Soil sample results are compared to ADEC Method Two soil cleanup levels found in Table B1 and Table B2 of 19 AAC 75.341.

2013 ACTIVITIES

This section describes field activities conducted by Weston in June 2013 in support of the Iliamna Tank Farm soil removal activities in accordance with the 2013 Work Plan. This work included supervision of the removal and transport of landfarmed soil to the Newhalen landfill, soil sample collection, and waste management. Attachment 3 presents the daily field notes and recorded activities.

Soil Landfarm Removal

Alaska Power and Communications, LLC removed and transported the 65 LCY of soil that had been landfarmed in 2010 from the Iliamna Tank Farm to the Newhalen landfill. The soil was transported in June 2013.

Soil Sampling and Methods

Three discrete grab footprint soil samples and one duplicate were collected on June 30, 2013 from the former soil stockpile/landfarm location for off-site laboratory analysis (Appendix 1, Figure 3). Samples were collected using a clean stainless steel trowel and placed in the appropriate sampling containers with preservatives as required for analysis. Soil samples were submitted to ESC Lab Science (ESC) located in Mt. Juliet, Tennessee, an ADEC-approved laboratory for analytical services. All samples were submitted in accordance with standard chain-of-custody procedures outlined in the work plan. All necessary samples were preserved and stored at a temperature of 4 degrees Celsius ($^{\circ}\text{C}$) \pm 2 $^{\circ}\text{C}$ prior to shipment to ESC.

Soil samples were submitted for the following analyses/methods:

- GRO by Alaska Method (AK) 101
- BTEX by EPA Method SW8260B
- DRO/RRO by AK102/AK103, respectively.

Investigation-Derived Waste Management

One source of investigation-derived waste that existed for this project was solid waste derived from field sampling (nitrile gloves, paper towels, etc.). All solid waste was placed in trash bags and treated as municipal waste to be disposed of at the Newhalen landfill.

ANALYTICAL RESULTS

This section presents a discussion of the analytical results of the three soil samples collected for laboratory analyses on June 30, 2013. The analytical results for the June 30, 2013 sampling event are summarized in Table 1 of Appendix 3. The historic analytical results from 2010 are presented alongside the 2013 results in Table 2. The full deliverable of laboratory analytical results, the completed ADEC Data Review Checklist, and the QAR are provided as Attachment 4.

Laboratory Results

Laboratory analyses of the soil samples indicated that none of the four samples exceeded concentrations of a contaminant of concern above ADEC Method Two soil cleanup levels. GRO was detected above the method detection limit (MDL) but below the reporting limit (RL) in two of the four samples, 13-ILI-101-SO and 13-ILI-104-SO. DRO was detected above the MDL but below the RL in all four samples. RRO was detected in all four samples; in one sample, 13-ILI-104-SO, RRO was detected above the RL, but it was below the ADEC Method Two cleanup level of 10,000 mg/kg. These results were compared to the analytical data for the baseline samples collected in 2009 prior to the placement of the 65 LCY at the landfarm.

CONCLUSIONS

In 2013, the remediated landfarmed soil was successfully removed from the Iliamna Tank Farm and transported to the Newhalen landfill. Compared to the 2010 baseline samples, analytical results are generally consistent with concentrations being non-detect or well below ADEC cleanup criteria. However, soil samples collected in June 2013 were not the original 2010 locations. In comparison, one sample (13-ILI-104-SO) had a result above the 2010 analytical results: 110 mg/kg of RRO, as compared to the two 2010 samples' non-detects with a reporting limit of 52.0 and 59.6 mg/kg for RRO. It should be noted that the 2010 reporting limits are half the value of the 2013 result, and that all RRO results are far below the ADEC cleanup level of 10,000 mg/kg. Analytical results of the 2013 former stockpile footprint indicate that activities did not impact any surface soils beneath the landfarm. No further action is recommended at the former stockpile location.

Weston is pleased to support CPD-AK with your soil removal project at the Iliamna Tank Farm. Please do not hesitate to contact me or Mr. Dale Greinke via the contact information below if you have any questions or would like to discuss any part of this report.

Sincerely,

Weston Solutions, Inc.

Callie Gates
Environmental Scientist
Anchorage Office
Phone: (907) 276-6610
email: Callie.Gates@WestonSolutions.com

Dale Greinke
Project Manager
Fairbanks Office
Phone: (907) 456-4930
Email: Dale.Greinke@WestonSolutions.com

Attachments:

1. Site Figures
2. Tables
3. Field Notes and Forms
4. Analytical Results, ADEC Data Review Checklist, QAR Memo

ATTACHMENT 1

SITE FIGURES



425 G Street, Suite 300
Anchorage, AK 99501
(907) 276-6610

Project No:
15036.001.003.0003
Drawn by: SWD
Checked by: LME
Date: 6/18/13

SITE LOCATION MAP

2013 SPRING ILIAMNA TANK FARM ROUTINE
GROUNDWATER MONITORING REPORT
CPD ALASKA, LLC
ILIAMNA, ALASKA

FIGURE

1

Path: W:\GIS\Alaska_IndComm\Crowley\Iliamna\MXD\SI\Iliamna_Location.mxd



425 G Street, Suite 300
 Anchorage, AK 99501
 (907) 276-6610

Project No.:
 15036.001.001.0003
 Drawn by: SWD
 Checked by:
 Date: 08/20/13
 Version: DRAFT

FORMER STOCKPILE LOCATION

2013 ILIAMNA TANK FARM
 CPD-AK, LLC
 ILIAMNA, ALASKA

FIGURE

2

Path: W:\GIS\Alaska_IndComm\Crowley\Iliamna\MXDS\Iliamna_former_stockpile_location_figure2.mxd



425 G Street, Suite 300
 Anchorage, AK 99501
 (907) 276-6610

Project No.:
 15036.001.003.0003
 Drawn by: SWD
 Checked by:
 Date: 08/21/13
 Version: DRAFT

2013 FORMER LANDFARM SOIL SAMPLE LOCATIONS

2013 ILIAMNA TANK FARM
 CPD-AK, LLC
 ILIAMNA, ALASKA

FIGURE

3

Path: W:\GIS\Alaska_IndComm\Crowley\Iliamna\MXDS\Iliamna_former_landfarm_sample_locations_figures3.mxd

ATTACHMENT 2

TABLES

TABLE 1
June 2013 Soil Analytical Results Summary
June 2013 Iliamna Tank Farm Soil Stockpile Removal Report

Location:	Soil Cleanup Level ⁽¹⁾	Footprint	Footprint		Footprint	Trip Blank
Sample ID (13-ILI):		101-SO	102-SO	103-SO	104-SO	TB101-SO
Sample Date:		6/30/2013	6/30/2013	6/30/2013	6/30/2013	6/30/2013
Sample Time:		1140	1145	1150	1155	0800
Dry Weight %:		97.3%	97.3%	86.0%	96.4%	100.0%
ADEC Fuels (AK101, AK102, AK103; mg/kg)						
Gasoline Range Organics	300	2.2 J	ND (1.1)	ND (1.2)	2.5 J	ND (1.1)
Diesel Range Organics	250	6.8 J	3.1 J	2.9 J	39 J6	--
Residual Range Organics	10,000	30 J	12 J	3.1 J	110	--
BTEX (8260B; mg/kg)						
Benzene	0.025	ND (0.014)	ND (0.013)	ND (0.015)	ND (0.014)	ND (0.014)
Toluene	6.5	ND (0.022)	ND (0.021)	ND (0.024)	ND (0.22)	ND (0.22)
Ethylbenzene	6.9	ND (0.015)	ND (0.015)	ND (0.016)	ND (0.015)	ND (0.015)
Total Xylenes	63	ND (0.035)	ND (0.034)	ND (0.038)	ND (0.035)	ND (0.035)

Note: Results above ADEC cleanup values are **underlined & bolded**.

⁽¹⁾ ADEC Method Two Soil Cleanup Levels (18 AAC 75.340 and 341); Table B1 and Table B2, Under 40 Inches, Migration to Groundwater Pathway

Key:

-- = Not analyzed

% = percent

AAC = Alaska Administrative Code

ADEC = Alaska Department of Environmental Conservation

ASTM = American Society for Testing and Materials

BTEX = Benzene, toluene, ethylbenzene, and total xylenes

J= Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

J6= Sample matrix interfered with the ability to make any accurate determination; spike value is low

mg/kg = Milligrams per kilogram

ND = Analyte not detected above the MDL

TABLE 2
Historic Soil Analytical Results 2010 - 2013
June 2013 Iliamna Tank Farm Soil Stockpile Removal Report
CPD Alaska, LLC
Iliamna, Alaska

Footprint Location	Sample No.	Sample Date	Duplicate	Dry Weight (%)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)	BTEX (mg/kg)			
								Benzene	Toluene	Ethylbenzene	Total Xylenes
ADEC Method Two Cleanup Level ⁽¹⁾					300	250	10,000	0.025	6.5	6.9	63
1	10-ILM-01-FP	9/30/2010		96.7%	ND (1.18)	ND (20.0)	ND (49.9)	ND (0.00474)	ND (0.0118)	ND (0.0118)	ND (0.0178)
	13-ILI-101-SO	6/30/2013		97.3%	2.2 J	6.8 J	30 J	ND (0.014)	ND (0.022)	ND (0.015)	ND (0.035)
2	10-ILM-02-FP	9/30/2010		94.9%	ND (1.20)	23.5	70.5	ND (0.00478)	ND (0.0120)	ND (0.0120)	ND (0.0179)
	13-ILI-102-SO	6/30/2013		97.3%	ND (1.1)	3.1 J	12 J	ND (0.013)	ND (0.021)	ND (0.015)	ND (0.034)
	13-ILI-103-SO	6/30/2013	✓	86.0%	ND (1.2)	2.9 J	3.1 J	ND (0.015)	ND (0.024)	ND (0.016)	ND (0.038)
3	10-ILM-03-FP	9/30/2010		93.8%	ND (1.30)	ND (21.0)	ND (52.5)	ND (0.00554)	ND (0.0139)	ND (0.0139)	ND (0.0208)
	13-ILI-104-SO	6/30/2013		96.4%	2.5 J	39 J6	110	ND (0.014)	ND(0.22)	ND (0.015)	ND (0.035)

Notes: Results above ADEC cleanup values are **underlined, bolded, and highlighted yellow**

⁽¹⁾ ADEC Method Two Soil Cleanup Levels (18 AAC 75.340 and 341); Table B1 and B2, Under 40 Inches, Migration to Groundwater Pathway

All 2013 ND data are reported as laboratory MDL

Key:

-- = Not analyzed or not applicable

AAC = Alaska Administrative Code

ADEC = Alaska Department of Environmental Conservation

BTEX = Benzene, toluene, ethylbenzene, and total xylenes

DRO = Diesel-range organics

GRO = Gasoline-range organics

RRO = Residual-range organics

MDL = Method Detection Limit

mg/kg = Milligrams per kilogram

ND = Analyte not detected

J = Estimated Value. Analyte detected at less than the RDL and greater than or equal to the MDL.

JS = Estimated value. Surrogate recoveries outside of method acceptance limits.

J6= sample matrix interfered with the ability to make any accuratedetermination; spike value is low

ATTACHMENT 3

FIELD NOTES AND FORMS

5/21/13

34

Tuesday

ILI GWM

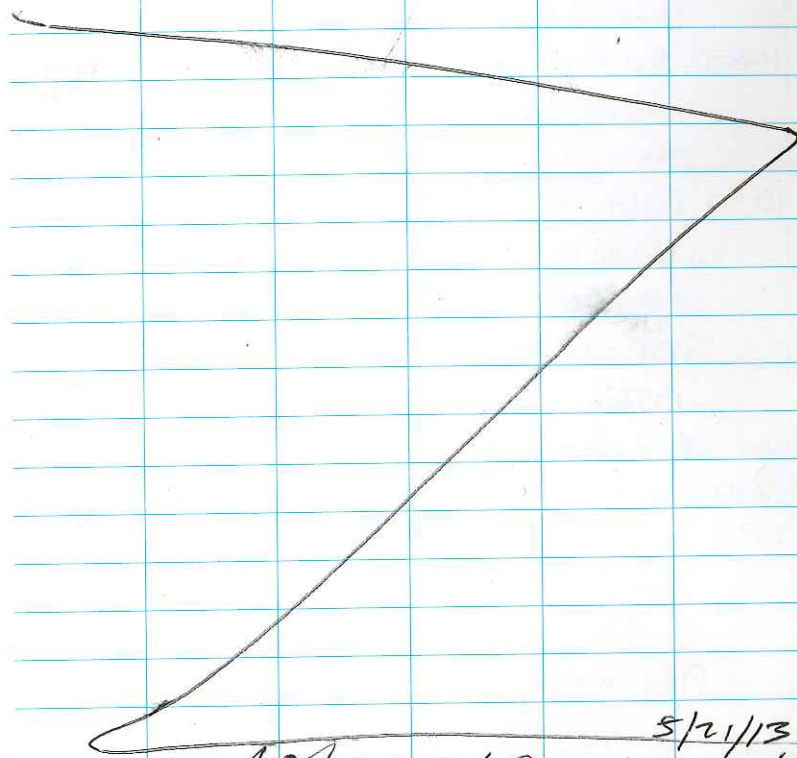
A. Olson / C. Gates

40°F
10-15 mph
overcast

1715 finished sampling mw-2,
well has heaved so cap
no longer fits & the lock
no longer locks.

1730 Departed site for camp to
unload gear, pack coolers,
& update COC.

0800 Trip Blank → GRO, BTEX
13-ILI-TB101 5/20/13



A. Olson

5/21/13

4/4

6/30/13

ILI

Sunday

C. Gates / M. Mylet

50°F, overcast
15-25 mph
wind

0900 Departed ANC for Iliamna.

1030 Arrived in Iliamna. Picked
up van and sample equipment
from Crowley Warehouse.

1100 ~~Set~~ Set up for sampling
in the tank farm area.
Collected samples from 3
locations plus one duplicate.

1140 Collected sample 13-ILI-101-SO

1145 collected sample 13-ILI-102-SO
and duplicate, 1150 13-ILI-103-SO

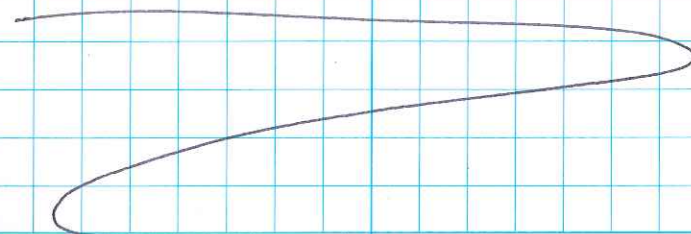
1155 Collected sample 13-ILI-104-SO

1215 Packed cooler for shipment
to Anchorage on ACE.

1300 Drove to Newhalen to see
how filling was going.

1500 Departed ILI for ANC

0800 Trip Blank → GRO, BTEX
13-ILI-TB101-SO



C. Gates

6/30/13 *Blue in the Rain*



Daily Tailgate Safety Meeting

Site Location:

Hiamna / Newhalen

Date:

6/30/13

HSE Hazard Identification/Considerations

Hazard possibilities	Considerations	Comments
<input checked="" type="checkbox"/> Slips, trips & falls	<input checked="" type="checkbox"/> Hazard areas acknowledged	
<input checked="" type="checkbox"/> Adverse weather conditions	<input checked="" type="checkbox"/> Proper clothing available	layer
<input type="checkbox"/> Noise	<input type="checkbox"/> Hearing protection	
<input checked="" type="checkbox"/> Power tools/hand tools	<input checked="" type="checkbox"/> Inspected & in good working condition	
	<input checked="" type="checkbox"/> Operator familiar with proper use	
<input checked="" type="checkbox"/> Presence of heavy equipment	<input checked="" type="checkbox"/> Communication/eye contact w/ operator	
<input type="checkbox"/> Electrical	<input type="checkbox"/> GFCI/Power shut-off switch or breaker	
<input checked="" type="checkbox"/> Flam./explosive materials	<input checked="" type="checkbox"/> Correct storage/secure if transporting	
<input checked="" type="checkbox"/> Hazardous materials	<input checked="" type="checkbox"/> Spill prevention measures in place	
	<input checked="" type="checkbox"/> MSDS readily available	
<input checked="" type="checkbox"/> Travel to and from site	<input checked="" type="checkbox"/> Load secured	
	<input checked="" type="checkbox"/> Vehicle in good working condition	
<input checked="" type="checkbox"/> Wildlife interaction	<input checked="" type="checkbox"/> Right of way to wildlife/avoid interaction	
<input type="checkbox"/> Travel over sensitive areas	<input type="checkbox"/> Minimize unnecessary impacts	
<input type="checkbox"/> Hazardous atmospheres	<input type="checkbox"/> Atmospheric monitoring devices (i.e. PID)	
<input type="checkbox"/> Below ground utilities	<input type="checkbox"/> Utility location complete	
<input checked="" type="checkbox"/> Pinch Points	<input checked="" type="checkbox"/> Hand protection	
<input type="checkbox"/> Vibration	<input type="checkbox"/> Anti-vibration gloves	
<input type="checkbox"/> Overhead hazards	<input type="checkbox"/> Power lines, loose items, pipelines, etc.	
<input checked="" type="checkbox"/> Site traffic	<input checked="" type="checkbox"/> Reflective and/or bright colored clothing	
Other -- Perform site walk and talk through activities to recognize other hazards(Use comment section if necessary)		
<input checked="" type="checkbox"/> Windborn debris -	<input checked="" type="checkbox"/> safety glasses	

PPE (As necessary to reduce or eliminate hazards)

<input checked="" type="checkbox"/> Hard hats	<input checked="" type="checkbox"/> Foot protection (i.e. steel toes,	<input type="checkbox"/> H2S monitor, PID, Multi-gas meter
<input checked="" type="checkbox"/> Safety glasses	<input checked="" type="checkbox"/> Hand (i.e anti-vibration, nitrile)	<input type="checkbox"/> Respirators or dust guard
<input type="checkbox"/> Hearing protection	<input type="checkbox"/> Flotation devices	<input type="checkbox"/> Fall protection
<input type="checkbox"/> Fire resistant clothing	<input type="checkbox"/> Slip Protection (ice grippers)	<input type="checkbox"/> Face Shields
<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:

Other considerations

<input type="checkbox"/> Spill kit	<input type="checkbox"/> Viable means of communication available	<input checked="" type="checkbox"/> Safe site access/egress
<input type="checkbox"/> Fire extinguisher	<input type="checkbox"/> Ensure necessary permits are in place	<input checked="" type="checkbox"/> Proper waste disposal
<input checked="" type="checkbox"/> First aid kit	<input type="checkbox"/> Confined space/trenching hazards	

Emergency gathering area: Van

Location of nearest medical facility: Clinic

Emergency contacts:

Police: 911

Ambulance: 911

Fire: 911

Other:

Comments or special considerations:

Wear safety glasses to reduce chance of windborn debris / dust in eyes.

I understand the HSE hazards of this job and agree to work safe and work smart.

Print name/company

Signature

Callie Gates / Weston
MARTY MYLER / WESTON

Callie Gates
Marty Myler

ATTACHMENT 4

ANALYTICAL RESULTS, ADEC DATA REVIEW CHECKLIST, QAR MEMO

Laboratory Data Review Checklist

Completed by:

Title: Date:

CS Report Name: Report Date:

Consultant Firm:

Laboratory Name: Laboratory Report Number:

ADEC File Number: ADEC Hazard ID:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
☒ Yes ☐ No ☐ NA (Please explain.) 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 ☒ NA (Please explain.) Comments:

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?
☒ Yes ☐ No ☐ NA (Please explain.) Comments:

- b. Correct analyses requested?
☒ Yes ☐ No ☐ NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?
☒ Yes ☐ No ☐ NA (Please explain.) Comments:

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

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

All 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

☒ NA (Please explain.)

Comments:

There were no discrepancies with the samples in the shipment.

e. Data quality or usability affected? (Please explain.)

Comments:

Not applicable.

4. Case Narrative

a. Present and understandable?

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

QC items identified in the case narrative or definitions/glossary are discussed in the relevant sections of this checklist. No additional QC items were identified.

c. Were all corrective actions documented?

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

No further corrective actions were noted.

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

Comments:

There was no effect on data quality or usability.

5. Samples Results

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

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

b. All applicable holding times met?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

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

☐ Yes ☒ No ☐ NA (Please explain.)

Comments:

Benzene in soil all of the samples showed PQLs greater than the Cleanup Level due to dilutions. Benzene in soil DLs were less than the Cleanup Levels.

e. Data quality or usability affected?

Comments:

These samples were informative and qualitative in nature, not compliance samples. The Benzene in soil results for the samples in this SDG samples were reported to the MDL. Benzene in soil was not detected between the MDL and the PQL, so no action was taken.

6. QC Samples

a. Method Blank

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

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

iii. If above PQL, what samples are affected?

Comments:

Not applicable.

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

☐ Yes ☐ No ☒ NA (Please explain.)

Comments:

No data flags were required.

v. Data quality or usability affected? (Please explain.)

Comments:

There was no effect on the data quality or usability.

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

☐ NA (Please explain.)

Comments:

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

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

No metals samples were submitted or analyzed for this sample delivery group.

- 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

☐ NA (Please explain.)

Comments:

DRO MS and MSD were recovered below the QC limits.

- 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

☐ NA (Please explain.)

Comments:

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

Comments:

DRO result for sample 13-ILI-104-SO was affected.

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

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

DRO result for sample 13-ILI-104-SO was flagged as estimated (J).

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

Comments:

DRO data quality for one sample was affected. DRO data are usable.

Comments:

c. Surrogates – Organics Only

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

☒ Yes

☐ No

☐ NA (Please explain.)

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

☐ NA (Please explain.)

Comments:

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

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

No data flags were required.

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

Comments:

There was no effect on data quality or usability.

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

☐ NA (Please explain.)

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

☐ NA (Please explain.)

Comments:

- iii. All results less than PQL?

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

Not applicable.

v. Data quality or usability affected? (Please explain.)

Comments:

Not applicable.

e. Field Duplicate

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

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

Sample 13-ILI-103-SO is a field duplicate of sample 13-ILI-102-SO.

ii. Submitted blind to lab?

☒ Yes

☐ No

☐ NA (Please explain.)

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

☐ NA (Please explain.)

Comments:

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

Comments:

Field duplicate RPD values were acceptable. RRO data are usable.

f. Decontamination or Equipment Blank (If not used explain why).

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

Collection of decon/equipment blanks is not required for this project.

i. All results less than PQL?

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

No decon/equipment blanks were collected.

ii. If above PQL, what samples are affected?

Comments:

Not applicable. No decon/equipment blanks were collected.

iii. Data quality or usability affected? (Please explain.)

Comments:

Not applicable. No decon/equipment blanks were collected.

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

a. Defined and appropriate?

☒ Yes

☐ No

☐ NA (Please explain.)

Comments:

Qualification of results that do not meet project DQOs generally follows the EPA National Functional Guidelines.



Weston Solutions, Inc.
Suite 300
425 G Street
Anchorage, Alaska 99501
Phone: (907) 276-6610 • FAX: (907) 276-6694
www.westonsolutions.com

MEMORANDUM

Date: August 7, 2013
From: Linda Korobka, Technical Manager, Weston Solutions, Inc., Okemos, Michigan
To: Dale Greinke, Project Manager, Weston Solutions, Inc., Fairbanks, Alaska
Subject: **Quality Assurance Review, 2013 Iliamna Tank Farm Additional Assessment Report, Iliamna, Alaska**
Ref: Weston Project Numbers: 15036.001.003.8888

Laboratory Quality Assurance/Quality Control (QA/QC) data associated with the analysis of project samples was reviewed to evaluate the integrity of the analytical data generated during June 2013 soil sampling for the 2013 Iliamna Tank Farm Additional Assessment project in Iliamna, Alaska. Environmental samples were shipped to ESC Lab Sciences in Mt. Juliet, Tennessee in one sample delivery group (SDG): L644975. Sample identification included the prefix 13-ILI-to indicate samples were collected from the Iliamna Tank Farm project in 2013. Samples were collected, reported, and shipped in general accordance with the ADEC-approved work plan (Weston 2013).

All data were reviewed in accordance with appropriate EPA procedural guidance documents (USEPA 2008) and ADEC regulatory guidance documents (ADEC 2009; 2010). This data review focuses on criteria for the following QA/QC parameters and their effect on the quality of data and usability: sample handling and chain-of-custody (CoC) documentation; holding time compliance; field QA/QC (trip blanks, field duplicate) results; laboratory QA/QC (method blanks, laboratory control samples, surrogates, matrix spike and matrix spike duplicate [MS/MSD]) results and analytical methods; method reporting limits; precision and accuracy; and completeness. In absence of other regulatory QC guidance, method- and/or standard operating procedure-specific QC limits were utilized to apply qualifiers to the data.

Samples were tested using the following methods for the associated analytes:

- BTEX; (United States Environmental Protection Agency [EPA] Method 8260B)
- Gasoline-range organics (GRO, AK101)
- Diesel-range organics (DRO, AK102)
- Residual-range organics (RRO, AK103)

All sample results are considered usable and meet project objectives; however, a few results are considered estimated. The completeness for this project is 100%. The details of this review and qualification of the data are summarized in the following sections.

SAMPLE HANDLING AND CHAIN OF CUSTODY

All sample coolers were delivered with custody seals intact. CoC forms, laboratory sample receipt forms, and case narratives were reviewed to determine if any sample handling activities might affect the integrity of the samples and the quality of the associated data.

All sample containers in the sample coolers were received at the laboratory intact and with proper documentation. The cooler received for this event was within the temperature range of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

FIELD QA/QC

Field QA/QC protocols are designed to monitor for possible contamination during collection and transport of samples collected in the field. Collection and analysis of field duplicates also facilitates an evaluation of precision that takes into account potential variables associated with sampling procedures and laboratory analyses. For this project, trip blanks and field duplicates were submitted for analysis.

Trip Blanks

A soil trip blank was prepared by the laboratory, shipped to the site with the empty sample bottles/containers, stored with sample containers during the field event, and transported with the collected samples back to the laboratory for analysis. The trip blanks were placed in the same cooler as the other project volatile organics samples (GRO/BTEX).

The soil trip blank sample was analyzed for VOCs and GRO and was non-detect (ND) for all analytes.

Field Duplicates

There were 3 primary soil samples, 1 soil trip blank sample and 1 soil field duplicate sample submitted – primary 13-ILI-102-SO with duplicate 13-ILI-103-SO.

The frequency of field duplicate collection met the 10% frequency requirements specified in the work plan. When analytes were present in concentrations below the MRL in one or both samples, no valid comparison could be made. All primary sample and duplicate RPDs met applicable ADEC recommended limits of <50% in soil.

Overall, there was adequate comparability of field duplicate results to meet project data quality objectives.

LABORATORY QA/QC

Method Blanks

Method blanks were analyzed concurrent with a batch of 20 or fewer primary samples for each of the analytical procedures performed for this project. Method blanks were analyzed at the required frequency and target analytes were not detected (ND) in the blanks at concentrations above the analytical reporting limit or PQL.

Laboratory Control Samples

The laboratory monitors internal precision and accuracy for each analytical batch with a set of laboratory control samples (LCS/LCSD). A known quantity of target analytes are added to blank laboratory control samples prior to extraction and analysis and recoveries are calculated. Acceptable recovery criteria vary with each analytical method, analyte and matrix. All LCS/LCSD sample recoveries (%R) met laboratory and project QC goals.

Matrix Spikes

Extra volumes of primary field samples were not collected and submitted to the laboratory for matrix spike/matrix spike duplicate (MS/MSD) analyses. The laboratory chose sample 13-ILI-104-SO for the DRO MS/MSD.

Matrix spikes have a known quantity of target analytes added (spiked) to field samples. Spike recoveries are calculated and are used to evaluate both site conditions and laboratory quality control.

The DRO MS/MSD RPD value met the relative percent difference (RPD) limit. The DRO MS and MSD were recovered below the laboratory and project QC limits. The DRO result in the parent sample (13-ILI-104-SO) was qualified as estimated (J).

Internal Standard Recovery

Internal standards are chemical substances that are added in a constant amount to samples, the blank and calibration standards and are used for instrumentation calibration. All internal standard recoveries met laboratory and project QC goals for target analytes.

Surrogates

System Monitoring Compounds (Surrogates) are specified for organic chromatographic analytical procedures. Surrogates are compounds similar to target analytes. These compounds are added to each sample prior to collection or extraction. Subsequent surrogate recovery indicates overall method performance.

Surrogate recoveries were within prescribed control limits for all primary samples, LCS/LCSDs and MS/MSDs.

Method Detection Limits

The laboratory established method detection limits (MDL) were below the ADEC cleanup levels. The laboratory established Practical Quantitation limits (PQLs) were below the ADEC cleanup levels except for Benzene in soil for the following samples.

Sample	Dilution		Dilution
13-ILI-101-SO	50X	13-ILI-104-SP	50.5X
13-ILI-102-SO	49.5X	13-ILI-TB101-SO	50X
13-ILI-103-SO	55X		

MDLs and PQLs for all VOC sample results were elevated due to dilutions.

VOCs in soil were reported to concentrations between the MDL and PQL. No action was taken because benzene was not detected in any of these samples between the MDL and PQL.

PRECISION AND ACCURACY

Precision criteria monitor analytical reproducibility. Accuracy criteria monitor agreement of measured results with “true values” established by spiking applicable samples with a known quantity of analyte or surrogate. Precision and accuracy were evaluated by comparing LCS/LCSDs, MS/MSDs and field duplicate pairs for this project. Field duplicates and MS/MSD samples were collected in accordance with Work Plan specifications. Field duplicate RPDs met applicable control limits, with any exceptions noted in previous sections. Recoveries and RPDs for all LCS/LSCD and MS/MSD samples were within required limits, with any exceptions noted in previous sections. Data Quality Objectives of at least an overall 90% accuracy in QC samples were met.

COMPLETENESS

Data completeness is defined as the percentage of usable data (usable data divided by the total possible data). The overall project completeness goal is 100%:

$$\% \text{ completeness} = \frac{\text{number of valid (i.e., non-R flagged) results}}{\text{number of possible results}}$$

All requested analyses were performed in accordance with work plan specifications. Completeness for this project is 100%.

REPRESENTATIVENESS

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were specified in the Work Plan and verified in the field to account accurately for site variations and sample matrices. The DQO for representativeness were met.

COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this project followed applicable field sampling techniques and specific analytical methodology. The DQO for comparability was met.

DATA SUMMARY

Based upon the information provided, all data are acceptable for use. All requested analyses were performed in accordance with work plan specifications. Completeness for this project is 100%. The EPA National Functional Guidelines (EPA 2008) were used to evaluate the acceptability of the data. Overall, data quality meets DQOs established in the work plan for this project.

REFERENCES:

- ADEC. 2002. Underground Storage Tanks Procedures Manual, November 7.
- ADEC. 2005. Draft Guidance on Developing Conceptual Site Models, March 24.
- ADEC. 2008. 18 AAC 75, Oil and Other Hazardous Substances Pollution Control, October 9.
- ADEC. 2009. Technical Memorandum: Environmental Laboratory Data and Quality Assurance Requirements. March.
- ADEC. 2010. Laboratory Data Review Checklist. Version 2.7. January.
- WESTON. 2013. Iliamna Tank Farm Additional Assessment Work Plan.
- USEPA. 2008. Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA 540/R-94/012).

Quality Control Summary

SDG: L644975

For: Weston Solutions- Anchorage, AK

Project: Iliamna Soil

July 16, 2013

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Total Solids by Method 2540 G-2011

Laboratory Control Sample

Samples L644975-01, -04, -02, and -03 were analyzed in analytical batch WG671149. The laboratory control sample associated with these samples was within the laboratory control limits.

Sample Duplicate Analysis

For analytical batch WG671149 sample duplicate analysis was performed on sample L645495-02. The relative percent differences were within the method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Method AK101

Laboratory Control Sample

Samples L644975-03, -05, -01, -02, and -04 were analyzed in analytical batch WG670592. The laboratory control sample associated with these samples was within the laboratory control limits for all compounds.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG670592 matrix spike/matrix spike duplicate analysis was performed on sample L644654-12. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile Organic Compounds by Method 8260B

Laboratory Control Sample

Samples L644975-01, -02, -03, -04, and -05 were analyzed in analytical batch WG670693. The laboratory control sample associated with these samples was within the laboratory control limits for all compounds.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG670693 matrix spike/matrix spike duplicate analysis was performed on sample L645192-05. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L644975

For: Weston Solutions- Anchorage, AK

Project: Iliamna Soil

July 16, 2013

AK102 / AK103

Laboratory Control Sample

Samples L644975-04, -01, -03, and -02 were analyzed in analytical batch WG670864. The laboratory control sample associated with these samples was within the laboratory control limits.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG670864, matrix spike/matrix spike duplicate analysis was performed on sample L644975-04. The spike recoveries were below the laboratory control limits. The relative percent difference was within control limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain
ESC Representative
ESC Lab Sciences



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Marty Mylet
Weston Solutions- Anchorage, AK
425 G Street, Suite 300
Anchorage, AK 99501

Report Summary

Monday July 15, 2013

Report Number: L644975

Samples Received: 07/03/13

Client Project:

Description: Iliamna

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Marty Mylet
Weston Solutions- Anchorage, AK
425 G Street, Suite 300
Anchorage, AK 99501

July 15, 2013

Date Received : July 03, 2013
Description : Iliamna Soil

Sample ID : 13-ILI-101-SO

Collected By : CG / MM
Collection Date : 06/30/13 11:40

ESC Sample # : L644975-01

Site ID :

Project # :

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	97.3	0.0333	0.100	%		2540 G-2	07/11/13	1
TPHGAK C6 to C10	2.2	1.1	5.1	mg/kg	J	AK101	07/07/13	50
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.7			% Rec.		AK101	07/07/13	50
Benzene	U	0.014	0.051	mg/kg		8260B	07/08/13	50
Toluene	U	0.022	0.26	mg/kg		8260B	07/08/13	50
Ethylbenzene	U	0.015	0.051	mg/kg		8260B	07/08/13	50
Total Xylenes	U	0.035	0.15	mg/kg		8260B	07/08/13	50
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	07/08/13	50
Dibromofluoromethane	95.7			% Rec.		8260B	07/08/13	50
a,a,a-Trifluorotoluene	103.			% Rec.		8260B	07/08/13	50
4-Bromofluorobenzene	108.			% Rec.		8260B	07/08/13	50
AK102 DRO C10-C25	6.8	1.1	20.	mg/kg	J	AK102/10	07/14/13	1
AK103 RRO C25-C36	30.	2.2	100	mg/kg	J	AK102/10	07/14/13	1
Surrogate Recovery								
o-Terphenyl	66.5			% Rec.		AK102/10	07/14/13	1
n-Triacontane d62	102.			% Rec.		AK102/10	07/14/13	1

Results listed are dry weight basis.

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Marty Mylet
Weston Solutions- Anchorage, AK
425 G Street, Suite 300
Anchorage, AK 99501

July 15, 2013

Date Received : July 03, 2013
Description : Iliamna Soil
Sample ID : 13-ILI-102-SO
Collected By : CG / MM
Collection Date : 06/30/13 11:45

ESC Sample # : L644975-02

Site ID :

Project # :

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	97.3	0.0333	0.100	%		2540 G-2	07/11/13	1
TPHGAK C6 to C10	U	1.1	5.1	mg/kg		AK101	07/07/13	49.5
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.3			% Rec.		AK101	07/07/13	49.5
Benzene	U	0.013	0.051	mg/kg		8260B	07/08/13	49.5
Toluene	U	0.021	0.25	mg/kg		8260B	07/08/13	49.5
Ethylbenzene	U	0.015	0.051	mg/kg		8260B	07/08/13	49.5
Total Xylenes	U	0.034	0.15	mg/kg		8260B	07/08/13	49.5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	07/08/13	49.5
Dibromofluoromethane	92.7			% Rec.		8260B	07/08/13	49.5
a,a,a-Trifluorotoluene	105.			% Rec.		8260B	07/08/13	49.5
4-Bromofluorobenzene	110.			% Rec.		8260B	07/08/13	49.5
AK102 DRO C10-C25	3.1	1.1	20.	mg/kg	J	AK102/10	07/14/13	1
AK103 RRO C25-C36	12.	2.2	100	mg/kg	J	AK102/10	07/14/13	1
Surrogate Recovery								
o-Terphenyl	63.0			% Rec.		AK102/10	07/14/13	1
n-Triacontane d62	95.8			% Rec.		AK102/10	07/14/13	1

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REPORT OF ANALYSIS

Marty Mylet
Weston Solutions- Anchorage, AK
425 G Street, Suite 300
Anchorage, AK 99501

July 15, 2013

Date Received : July 03, 2013
Description : Iliamna Soil

Sample ID : 13-ILI-103-SO

Collected By : CG / MM
Collection Date : 06/30/13 11:50

ESC Sample # : L644975-03

Site ID :

Project # :

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	86.0	0.0333	0.100	%		2540 G-2	07/11/13	1
TPHGAK C6 to C10	U	1.2	6.4	mg/kg		AK101	07/07/13	55
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.3			% Rec.		AK101	07/07/13	55
Benzene	U	0.015	0.064	mg/kg		8260B	07/08/13	55
Toluene	U	0.024	0.32	mg/kg		8260B	07/08/13	55
Ethylbenzene	U	0.016	0.064	mg/kg		8260B	07/08/13	55
Total Xylenes	U	0.038	0.19	mg/kg		8260B	07/08/13	55
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	07/08/13	55
Dibromofluoromethane	92.5			% Rec.		8260B	07/08/13	55
a,a,a-Trifluorotoluene	106.			% Rec.		8260B	07/08/13	55
4-Bromofluorobenzene	109.			% Rec.		8260B	07/08/13	55
AK102 DRO C10-C25	2.9	1.1	23.	mg/kg	J	AK102/10	07/14/13	1
AK103 RRO C25-C36	3.1	2.2	120	mg/kg	J	AK102/10	07/14/13	1
Surrogate Recovery								
o-Terphenyl	75.0			% Rec.		AK102/10	07/14/13	1
n-Triacontane d62	122.			% Rec.		AK102/10	07/14/13	1

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Fax (615) 758-5859

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REPORT OF ANALYSIS

Marty Mylet
Weston Solutions- Anchorage, AK
425 G Street, Suite 300
Anchorage, AK 99501

July 15, 2013

Date Received : July 03, 2013
Description : Iliamna Soil

Sample ID : 13-ILI-104-SO

Collected By : CG / MM
Collection Date : 06/30/13 11:55

ESC Sample # : L644975-04

Site ID :

Project # :

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	96.4	0.0333	0.100	%		2540 G-2	07/11/13	1
TPHGAK C6 to C10	2.5	1.1	5.2	mg/kg	J	AK101	07/07/13	50.5
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.9			% Rec.		AK101	07/07/13	50.5
Benzene	U	0.014	0.052	mg/kg		8260B	07/08/13	50.5
Toluene	U	0.022	0.26	mg/kg		8260B	07/08/13	50.5
Ethylbenzene	U	0.015	0.052	mg/kg		8260B	07/08/13	50.5
Total Xylenes	U	0.035	0.16	mg/kg		8260B	07/08/13	50.5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	07/08/13	50.5
Dibromofluoromethane	92.1			% Rec.		8260B	07/08/13	50.5
a,a,a-Trifluorotoluene	104.			% Rec.		8260B	07/08/13	50.5
4-Bromofluorobenzene	116.			% Rec.		8260B	07/08/13	50.5
AK102 DRO C10-C25	39.	1.1	21.	mg/kg	J6	AK102/10	07/14/13	1
AK103 RRO C25-C36	110	2.2	100	mg/kg		AK102/10	07/14/13	1
Surrogate Recovery								
o-Terphenyl	61.2			% Rec.		AK102/10	07/14/13	1
n-Triacontane d62	91.2			% Rec.		AK102/10	07/14/13	1

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1-800-767-5859
Fax (615) 758-5859

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REPORT OF ANALYSIS

Marty Mylet
Weston Solutions- Anchorage, AK
425 G Street, Suite 300
Anchorage, AK 99501

July 15, 2013

Date Received : July 03, 2013
Description : Iliamna Soil
Sample ID : 13-ILI-TB101-SO
Collected By : CG / MM
Collection Date : 06/30/13 08:00

ESC Sample # : L644975-05

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPHGAK C6 to C10	U	1.1	5.0	mg/kg		AK101	07/07/13	50
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.0			% Rec.		AK101	07/07/13	50
Benzene	U	0.014	0.050	mg/kg		8260B	07/08/13	50
Toluene	U	0.022	0.25	mg/kg		8260B	07/08/13	50
Ethylbenzene	U	0.015	0.050	mg/kg		8260B	07/08/13	50
Total Xylenes	U	0.035	0.15	mg/kg		8260B	07/08/13	50
Surrogate Recovery								
Toluene-d8	99.3			% Rec.		8260B	07/08/13	50
Dibromofluoromethane	92.1			% Rec.		8260B	07/08/13	50
a,a,a-Trifluorotoluene	105.			% Rec.		8260B	07/08/13	50
4-Bromofluorobenzene	112.			% Rec.		8260B	07/08/13	50

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 07/15/13 18:57 Printed: 07/15/13 18:58

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L644975-01	WG670864	SAMP	AK102 DRO C10-C25	R2743600	J
	WG670864	SAMP	AK103 RRO C25-C36	R2743600	J
	WG670592	SAMP	TPHGAK C6 to C10	R2736781	J
L644975-02	WG670864	SAMP	AK102 DRO C10-C25	R2743600	J
	WG670864	SAMP	AK103 RRO C25-C36	R2743600	J
L644975-03	WG670864	SAMP	AK102 DRO C10-C25	R2743600	J
	WG670864	SAMP	AK103 RRO C25-C36	R2743600	J
L644975-04	WG670864	SAMP	AK102 DRO C10-C25	R2743600	J6
	WG670864	SAMP	AK103 RRO C25-C36	R2743600	J
	WG670592	SAMP	TPHGAK C6 to C10	R2736781	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
07/15/13 at 18:58:07

TSR Signing Reports: 358
R5 - Desired TAT

Analyze ALL Trip Blanks received even if not marked on the COC. Log all samples for QC2MODCN.
Create a cooler receipt form for all samples received.

Sample: L644975-01 Account: WESTONAAK Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 18:57
SHIPPING = \$150 x 1 cooler
Sample: L644975-02 Account: WESTONAAK Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 18:57
Sample: L644975-03 Account: WESTONAAK Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 18:57
Sample: L644975-04 Account: WESTONAAK Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 18:57
Sample: L644975-05 Account: WESTONAAK Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 18:57

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Total Solids by Method 2540 G-2011		
Project No:		Matrix:	Soil - mg/kg
Project:	Iliamna Soil	EPA ID:	TN00003
Collection Date:	6/30/2013	Analytic Batch:	WG671149
Analysis Date:	7/11/2013 3:04:00 PM	Analyst:	487
Instrument ID:	LOGBAL1	Extraction Date:	7/10/2013
Sample Numbers:	L644975-01, -04, -02, -03		

Method Blank

Analyte	CAS	PQL	Qualifiers
Total Solids		<0.100	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Total Solids	50.0	50.0	100	85 - 115	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test: Total Solids by Method 2540 G-2011

Project No:

Matrix: Soil - mg/kg

Project: Iliamna Soil

EPA ID: TN00003

Collection Date: 6/30/2013

Analytic Batch: WG671149

Analysis Date: 7/11/2013 3:04:00 PM

Analyst: 487

Instrument ID: LOGBAL1

Extraction Date: 7/10/2013

Sample Numbers: L644975-01, -04, -02, -03

Sample Duplicate

L645495-02

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Total Solids	82.6	83.1	0.6	5	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Method AK101	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670592
Collection Date:	6/30/2013	Analyst:	403
Analysis Date:	7/6/2013		
Instrument ID:	VOCGC1		
Sample Numbers:	L644975-03, -05, -01, -02, -04		

Method Blank

Analyte	CAS	PQL	Qualifiers
TPHGAK C6 to C10		<5.00	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPHGAK C6 to C10	5.50	5.02	91.3	60 - 120	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPHGAK C6 to C10	5.50	4.83	87.8	60 - 120	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Method AK101	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670592
Collection Date:	6/30/2013	Analyst:	403
Analysis Date:	7/6/2013		
Instrument ID:	VOCGC1		
Sample Numbers:	L644975-03, -05, -01, -02, -04		

Surrogate Summary

Laboratory Sample ID	a,a,a-Trifluorotoluene - FID		a,a,a-Trifluorotoluene - PID	
	ppb	% Rec	ppb	% Rec
LCS WG670592	193	96.4	211	106
LCSD WG670592	194	97.0	211	105
MS WG670592	190	95.1	208	104
MSD WG670592	191	95.4	207	104
Blank WG670592	191	95.6	197	98.3
L644975-01	191	95.7	196	97.8
L644975-02	191	95.3	196	98.1
L644975-03	191	95.3	196	97.9
L644975-04	192	95.9	196	98.0
L644975-05	190	95.0	196	98.0

a,a,a-Trifluorotoluene (FID)	200 ppb	Limits - 59 - 128
a,a,a-Trifluorotoluene (PID)	200 ppb	Limits - 54 - 144

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Method AK101	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670592
Collection Date:	6/30/2013	Analyst:	403
Analysis Date:	7/6/2013		
Instrument ID:	VOCGC1		
Sample Numbers:	L644975-03, -05, -01, -02, -04		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
TPHGAK C6 to C10	5.50	5.02	91.3	4.83	87.8	60-120		3.9	20	

Matrix Spike/Matrix Spike Duplicate

L644654-12

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
TPHGAK C6 to C10	27.5	0.0886	21.0	76.1	21.8	79.1	55-109		3.8	20	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Method AK101	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670592
Collection Date:	6/30/2013	Analyst:	403
Analysis Date:	7/6/2013		
Instrument ID:	VOCGC1		
Sample Numbers:	L644975-03, -05, -01, -02, -04		

Internal Standard Response and Retention Time Summary

FileID:0706_05.D

Date:7/6/2013

Time:7:33 PM

	Response	IS - FID	Response	IS - PID
		RT		RT
12 Hour Std	19694071	6.53	4662270	6.53
Upper Limit	39388142	7.03	9324540	7.03
Lower Limit	9847035.5	6.03	2331135	6.03
<hr/>				
Sample ID	Response	RT	Response	RT
Blank WG670592	17678249	6.53	4287067	6.53
L644975-01	15327003	6.52	3770351	6.52
L644975-02	16545844	6.52	4030498	6.52
L644975-03	17243538	6.55	4206762	6.55
L644975-04	16959161	6.52	4160185	6.52
L644975-05	15851063	6.52	3864347	6.52
LCS WG670592	19710190	6.53	4533624	6.53
LCSD WG670592	20863970	6.52	4767075	6.52
MS WG670592	18688296	6.53	4306892	6.53
MSD WG670592	18834226	6.52	4354202	6.52

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Volatile Organic Compounds by Method 8260B		
Project No:		Matrix:	Soil - mg/kg
Project:	Iliamna Soil	EPA ID:	TN00003
Collection Date:	6/30/2013	Analytic Batch:	WG670693
Analysis Date:	7/8/2013	Analyst:	466
Instrument ID:	VOCMS16		
Sample Numbers:	L644975-01, -02, -03, -04, -05		

Method Blank

Analyte	CAS	PQL	Qualifiers
Benzene	71-43-2	<0.0010	
Toluene	108-88-3	<0.0050	
Ethylbenzene	100-41-4	<0.0010	
m&p-Xylene	1330-20-7	<0.0030	
o-Xylene	1330-20-7	<0.0030	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0225	90.0	72 - 120	
Toluene	0.0250	0.0242	96.6	74 - 155	
Ethylbenzene	0.0250	0.0267	107	76 - 126	
m&p-Xylene	0.0500	0.0522	104	75 - 125	
o-Xylene	0.0250	0.0267	107	75 - 128	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0232	92.9	72 - 120	
Toluene	0.0250	0.0251	100	74 - 155	
Ethylbenzene	0.0250	0.0289	116	76 - 126	
m&p-Xylene	0.0500	0.0562	112	75 - 125	
o-Xylene	0.0250	0.0279	112	75 - 128	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Volatile Organic Compounds by Method 8260B		
Project No:		Matrix:	Soil - mg/kg
Project:	Iliamna Soil	EPA ID:	TN00003
Collection Date:	6/30/2013	Analytic Batch:	WG670693
Analysis Date:	7/8/2013	Analyst:	466
Instrument ID:	VOCMS16		
Sample Numbers:	L644975-01, -02, -03, -04, -05		

Surrogate Summary

Laboratory Sample ID	Dibromofluoromethane		Toluene-d8		4-Bromofluorobenzene		Alternate Surrogate a,a,a-Trifluorotoluene	
	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG670693	39.7	99.2	40.1	100	41.0	103	41.6	104
LCSD WG670693	38.2	95.5	39.9	99.8	40.8	102	41.5	104
MS WG670693	39.7	99.1	39.1	97.8	31.6	79.0	41.8	104
MSD WG670693	38.5	96.4	39.4	98.4	32.4	81.1	41.4	103
Blank WG670693	38.5	96.3	39.8	99.5	40.8	102	41.7	104
L644975-01	38.3	95.7	40.1	100	43.2	108	41.4	103
L644975-02	37.1	92.7	40.3	101	43.9	110	42.0	105
L644975-03	37.0	92.5	40.1	100	43.5	109	42.3	106
L644975-04	36.8	92.1	40.5	101	46.4	116	41.5	104
L644975-05	36.8	92.1	39.7	99.3	44.7	112	42.1	105

Dibromofluoromethane	40 ppb	72 - 135
Toluene - d8	40 ppb	90 - 113
4-Bromofluorobenzene	40 ppb	67 - 133
Alternate Surrogate		
a,a,a-Trifluorotoluene	40 ppb	89 - 115

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test: Volatile Organic Compounds by Method 8260B
Project No: Matrix: Soil - mg/kg
Project: Iliamna Soil EPA ID: TN00003
Collection Date: 6/30/2013 Analytic Batch: WG670693
Analysis Date: 7/8/2013 Analyst: 466
Instrument ID: VOCMS16
Sample Numbers: L644975-01, -02, -03, -04, -05

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
Benzene	0.0250	0.0225	90.0	0.0232	92.9	72-120		3.2	20	
Toluene	0.0250	0.0242	96.6	0.0251	100	74-155		3.7	20	
Ethylbenzene	0.0250	0.0267	107	0.0289	116	76-126		7.9	20	
m&p-Xylene	0.0500	0.0522	104	0.0562	112	75-125		7.4	20	
o-Xylene	0.0250	0.0267	107	0.0279	112	75-128		4.5	20	

Matrix Spike/Matrix Spike Duplicate

L645192-05

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
Benzene	0.0250	0.0000	0.0175	70.0	0.0169	67.6	44-131		3.4	21	
Toluene	0.0250	0.0000	0.0180	72.1	0.0171	68.4	43-127		5.2	21	
Ethylbenzene	0.0250	0.0000	0.0188	75.1	0.0166	66.6	38-139		12	27	
m&p-Xylene	0.0500	0.0000	0.0356	71.1	0.0320	64.0	39-136		11	27	
o-Xylene	0.0250	0.0000	0.0189	75.5	0.0167	66.8	38-139		12	26	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	Volatile Organic Compounds by Method 8260B		
Project No:		Matrix:	Soil - mg/kg
Project:	Iliamna Soil	EPA ID:	TN00003
Collection Date:	6/30/2013	Analytic Batch:	WG670693
Analysis Date:	7/8/2013	Analyst:	466
Instrument ID:	VOCMS16		
Sample Numbers:	L644975-01, -02, -03, -04, -05		

Internal Standard Response and Retention Time Summary

FileID:0708_02.D

Date:7/8/2013

Time:10:12 AM

	IS1		IS2		IS3		IS4	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hour Std	415856	4.32	723051	4.64	115967	5.79	306485	8.15
Upper Limit	831712	4.82	1446102	5.14	231934	6.29	612970	8.65
Lower Limit	207928	3.82	361525.5	4.14	57983.5	5.29	153242.5	7.65

Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
Blank WG670693	406460	4.32	711232	4.64	110879	5.79	302340	8.15
L644975-01	392065	4.31	689845	4.63	102727	5.79	294606	8.15
L644975-02	380752	4.31	663107	4.64	99543	5.79	298142	8.15
L644975-03	387355	4.31	675718	4.64	98671	5.79	288195	8.15
L644975-04	379135	4.31	659786	4.64	94415	5.79	297750	8.15
L644975-05	383146	4.31	664166	4.64	96047	5.79	297409	8.15
LCS WG670693	418329	4.32	739207	4.64	116347	5.79	312551	8.15
LCSD WG670693	411472	4.32	722638	4.64	112496	5.79	306238	8.15
MS WG670693	381693	4.32	651425	4.64	104867	5.79	166711	8.15
MSD WG670693	397845	4.32	677565	4.64	112792	5.79	204753	8.15

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	AK102 / AK103	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670864
Collection Date:	6/30/2013	Analyst:	187
Analysis Date:	7/14/2013	Extraction Date:	7/8/2013
Instrument ID:	SVGC16		
Sample Numbers:	L644975-04, -01, -03, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
AK102 DRO C10-C25		<20.0	
AK103 RRO C25-C36		<100	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
AK102 DRO C10-C25	60.0	55.5	92.6	75 - 125	
AK103 RRO C25-C36	60.0	50.2	83.6	60 - 120	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
AK102 DRO C10-C25	60.0	56.4	94.1	75 - 125	
AK103 RRO C25-C36	60.0	48.1	80.1	60 - 120	

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	AK102 / AK103	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670864
Collection Date:	6/30/2013	Analyst:	187
Analysis Date:	7/14/2013	Extraction Date:	7/8/2013
Instrument ID:	SVGC16		
Sample Numbers:	L644975-04, -01, -03, -02		

Surrogate Summary

Laboratory Sample ID	n-Triacontane d62		o-Terphenyl	
	ppm	% Rec	ppm	% Rec
Blank WG670864	2.03	101	0.557	69.6
LCSD WG670864	2.24	112	0.696	86.9
LCSD WG670864	2.36	118	0.734	91.8
LCSD WG670864	1.65	82.7	0.585	73.1
L644975-01	2.04	102	0.532	66.5
LCS WG670864	2.15	107	0.545	68.1
L644975-02	1.92	95.8	0.504	63.0
L644975-03	2.44	122	0.600	75.0
L644975-04	1.82	91.2	0.489	61.2
MS WG670864	2.00	99.9	0.504	63.0
MSD WG670864	2.05	103	0.548	68.5

n-Triacontane d62

True Value: 2ppm Limits: 50 - 150

o-Terphenyl

True Value: 0.8ppm Limits: 50 - 150

Quality Control Summary

SDG: L644975

Weston Solutions- Anchorage, AK

Test:	AK102 / AK103	Matrix:	Soil - mg/kg
Project No:		EPA ID:	TN00003
Project:	Iliamna Soil	Analytic Batch:	WG670864
Collection Date:	6/30/2013	Analyst:	187
Analysis Date:	7/14/2013	Extraction Date:	7/8/2013
Instrument ID:	SVGC16		
Sample Numbers:	L644975-04, -01, -03, -02		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
AK102 DRO C10-C25	60.0	55.5	92.6	56.4	94.1	75-125		1.6	20	
AK103 RRO C25-C36	60.0	50.2	83.6	48.1	80.1	60-120		4.2	20	

Matrix Spike/Matrix Spike Duplicate

L644975-04

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
AK102 DRO C10-C25	60.0	38.4	67.8	49.1	73.6	58.8	75-125	J6	8.3	20	

Weston Solutions- Anchorage, AK 425 G Street, Suite 300 Anchorage, AK 99501				Billing information: Accounts Payable 425 G St., Ste. 300 Anchorage, AK 99501				Analysis/Container/Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">AK101 / V8260BTEX 60mlAmb/MCOH/Syr</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">AK102/103 / TS 4ozClr-NoPres</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOC Screen 2ozClr-NoPres</div> </div>				Chain of Custody Page <u>1</u> of <u>1</u> ESC L-A-B S-C-I-E-N-C-E-S 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859 K109			
Report to: Don Frank / Ashley Olson <i>Callie Gates</i>				Email: <i>callie.gates@westonsolutions.com</i> <i>daniel.frank@westonsolution.com</i>											
Project Description: Iliamna				City/State Collected:											
Phone: (907) 276-6610 FAX:		Client Project #:		Lab Project # WESTONAAK-ILIAMNA											
Collected by (print): <i>C. Gates / M. Mylet</i>		Site/Facility ID#:		P.O.#:											
Collected by (signature): <i>Callie Gates</i>		Rush? (Lab MUST Be Notified) ___ Same Day 200% ___ Next Day 100% ___ Two Day 50% ___ Three Day 25%		Date Results Needed STD Turn		Email? ___ No <input checked="" type="checkbox"/> Yes FAX? ___ No ___ Yes		No. of Cntrs							
Immediately Packed on Ice N ___ Y <input checked="" type="checkbox"/>															
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time									
13-141-101-SC			SS		6/30/13	1140	3	X	X	X					
13-141-102-SC			SS		↓	1145	3	X	X	X					
13-141-103-SC			SS			1150	3	X	X	X					
13-141-104-SC			SS			1155	3	X	X	X					
TRIP BLANK 13-141-TB101-SC			SS			0800	1	X							
			SS				3	X	X	X					

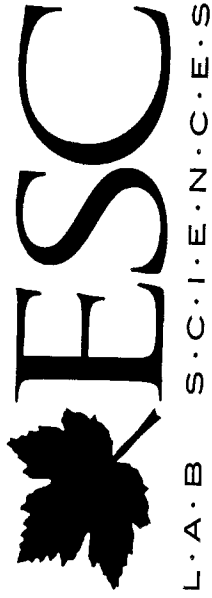
*Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other _____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature) <i>Callie Gates</i> Relinquished by: (Signature) Relinquished by: (Signature)	Date: 7/2/13	Time: 1400	Received by: (Signature) 	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only) <i>MS</i>	
	Date:	Time:	Received by: (Signature)	Temp: 7.1 Date: 7-3-13	Bottles Received: 13 Time: 6930	COC Seal Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA
	Date:	Time:	Received for lab by: (Signature) 	Date:	Time:	pH Checked: _____ NCF: _____



Cooler Receipt Form

Client: WESTONAAKCooler Received On: 7/3/13 and Opened On: 7/3/13 By: Zach Chigir

 (Signature)
Temperature of cooler when opened: 3.1 Degrees Celsius/ Was sufficient ice used: Yes ☒ No ☐What kind of packing material was used? Bubblewrap ☒ Peanuts ☐ Other ☐ None ☐Were custody seals on outside of cooler and intact? Yes ☒ No ☐Were custody papers properly filled out (ink, signed, etc.)? ☒ ☐Did you sign the custody papers in the appropriate place? ☒ ☐Did all bottles arrive in good condition? ☒ ☐Were all bottle labels complete? (#, date, signed, pres, etc)? ☒ ☐Did all bottle labels and tags agree with custody papers? ☒ ☐Were correct bottles used for the analyses requested? ☒ ☐Was sufficient amount of sample sent in each bottle? ☒ ☐Were correct preservatives used? ☐ ☐ N/AIf applicable, was an observable VOA headspace present? ☐ ☐ N/ANon Conformance Generated: ☐ ☒
(See attached NCF if yes)