December 22, 2014 Reference No. 14141827-001-L-Rev0

Mr. Bob Mattson
Alaska Dept. of Environmental Conservation
Prevention & Emergency Response Program
PO Box 111800
Juneau, AK 99811-1800

TEST PITTING AND REMEDIAL EXCAVATION WORKS COMPLETED AT 363- 2ND AVENUE, SKAGWAY, ALASKA

Dear Mr. Mattson:

Golder Associates Ltd (Golder) on behalf of our client Hamilton Construction has prepared this letter to provide the Alaska Department of Environmental Conservation (ADEC) a description of the test pitting, remedial excavation and confirmatory soil sampling ("the work") completed at the property located at 363 – 2nd Avenue, Skagway Alaska ("the Site"). The Site location is shown on Figure 1.

1.0 INTRODUCTION

The Site is currently owned by Alaska Fur Gallery ("property owner") and the work has been undertaken for due diligence purposes following the discovery of suspected contaminated soil on the Site by a neighboring property owner. This letter presents the results of the work conducted on October 3, 20 and 30, 2014. During the work, approximately 200 cubic yards of suspected heating oil-contaminated material was excavated and transported off Site by Hamilton Construction to a permitted land treatment facility (LTF) for disposal.

1.1 Background

The Site consists of a small rectangular lot with one on-Site building. The upper level of the building is used for rental suites and a lower level as commercial retail space. It is understood by Golder that at the time of the investigation the building was vacant. An area of potential environmental concern (APEC) was identified by the presence of petroleum hydrocarbon-like surficial staining on the neighboring property to the east. Golder infers that the source of the contaminated soil was a leaking fuel line that connected two heating oil above ground storage tanks (ASTs) to the rear of the on-Site building. The ASTs were removed prior to the commencement of the works by Golder on October 3, 2014.

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1.2 Scope of Work

Golder's scope of work was developed to address suspected soil contamination from heating oil in the area surrounding the ASTs as well as the neighboring property, and included the following:

- Preparing a health and safety plan;
- Conducting a test pitting program to delineate the extent and volume of contaminated soil;
- Monitoring the excavation and removal of contaminated soil from the Site;
- Conducting confirmatory soil sampling at the extents of the excavation to verify contaminated material was removed; and
- Complete an evaluation of the sample results including any recommendations for further work and preparing this report.

2.0 METHODOLOGY

2.1 Health and Safety Plan

Prior to working at the Site, Golder prepared a Site specific health and safety plan (HASP). Field works were conducted in accordance with the HASP. This plan included the scope of work, identifying the hazards therein, the means of the elimination or control, selection of personal safety equipment, site personnel responsibilities, decontamination procedures and emergency response plan in the event of a site emergency.

2.2 Test Pitting

The test pitting program was conducted on October 3, 2014 and consisted of the excavation of six test pits at the locations shown in Figure 2. The objective of the test pit program was to estimate the total volume of contaminated soil that needed to be excavated from the Site. Prior to the work, a potentiality contaminated "hot spot" was identified directly below the location of the former ASTs (Attachment 1, Photograph 3), evident by surficial staining and a strong hydrocarbon-like odour. Throughout the test pitting, Golder field personnel collected discrete soil samples from the excavator bucket starting from the contamination "hot spot" in order to characterize the contaminants of concern, and moving out to the surrounding area to delineate the extent of the contaminated soil both laterally and vertically. Test pits were excavated to a maximum depth of 10 feet below ground surface using a Kubota, KX161-3 backhoe. One near-surface soil sample was collected from the approximate center of the "hot spot" in order to characterize the soil contamination at the Site. This soil sample was collected using hand-tools from a depth of 0.15 feet below grade.

Golder personnel monitored the test pitting activities, logged and recorded the soil conditions at each test pit, and noted any visual or olfactory evidence of potential contamination. Clean nitrile gloves were used to collect each soil sample and the samples were placed in clean laboratory supplied sample containers. Each soil sample was split into two parts:

- The first sub-sample was field tested for the organic vapor concentration to provide a qualitative indication of volatile or semi-volatile organic contamination; and
- The second sub-sample was collected and submitted to the analytical laboratory for chemical analysis.

Organic vapor concentrations for soil samples were assessed using the dry headspace technique, whereby a plastic bag is half-filled with soil, sealed, and let stand for five minutes. The air from the sample bag headspace is then drawn through the air monitor. All concentrations of organic vapors were measured using a MiniRAE Model 2000 Photoionization Detector (PID), utilizing a 10.6 eV ionizing lamp. The instrument was calibrated to 100 parts per million (ppm) isobutylene gas.

For samples submitted to the laboratory for Volatile Organic Carbon (VOC) analysis, approximately 25 grams of soil from each location was measured into pre-cleaned and labeled laboratory-supplied glass jars for subsequent chemical analysis of VOCs. The samples were preserved with a minimum 25 mL laboratory-supplied methanol to 25 gram soil ratio. Samples submitted for chemical analysis of other parameters were placed unpreserved into pre-cleaned laboratory supplied-glass jars. Sample jars were placed in coolers prior to shipment to the analytical laboratory. Cold packs were also placed in the coolers to maintain low temperatures during shipment.

In total, seven (7) samples, including one duplicate sample, were shipped to Test America in Anchorage, Alaska for chemical analysis of potential contaminants of concerns (PCOC). The selected chemical analysis included: volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, and xylenes (BTEX), gasoline range organics (GRO), diesel range organics (DRO) and residual range organics (RRO). Laboratory analysis was conducted in accordance with methods AK101, AK102 and AK103.

2.3 Soil Excavation and Confirmatory Sampling

Hamilton Construction was retained by the property owner to arrange for the excavation and transport of the contaminated soil to a permitted land treatment facility in Seattle, WA. Hamilton Construction was also responsible for the temporary removal of both ASTs, the fencing separating the two properties, and the external staircase located on the southeast side of the building.

On October 29 and 30, 2014, Golder monitored the excavation and removal of suspected petroleum hydrocarbon-contaminated soil from the area surrounding the former ASTs. The excavation limits are shown on Figure 3. The excavation was laterally bounded and limited by the on-Site building foundation located directly northeast and northwest and extended across the neighboring property to the southeast and into a gravel parking area to the southwest. The depth of the excavation was limited by the depth of the groundwater table. The excavation was divided into two areas: Area 1 was located on the southwest side of the on-Site building in the direct vicinity of the ASTs (Attachment 1, Photograph 6). Area 2 was located on the neighboring property to the southeast (Attachment 1, Photograph 5).

Based on the results of the test pitting program, the inferred contaminated material was loaded into 20 cubic yard containers and transported to a land treatment facility in Seattle, WA. In total, 10 containers of soil totalling approximately 200 cubic yards of inferred contaminated soil was transported to the landfill. During the excavation, Golder field personnel collected discrete soil samples at regular intervals from the excavator bucket and field screened for volatile organic vapours using a portable, photo-ionization detector (PID) as well as assessed for visual and/or olfactory indications of contamination. Once the field screening adequately detected insignificant amounts of contaminant concentrations, the excavation was stopped and confirmatory soil samples were collected from the extent of the excavation (i.e., walls and base) using the standard sampling procedures and protocols outlined in section 2.2 above. The samples were submitted for laboratory analysis of PCOC including GRO, DRO, RRO, and BTEX. Laboratory analysis was conducted in accordance with methods AK101, AK102 and AK103.

Characterization and confirmatory sample locations are outlined in the Table 2 and are shown on Figure 3. In total, four (4) confirmatory samples were submitted for laboratory analysis from Area 1 and eight (8) confirmatory (including one duplicate pair) and one (1) characterization samples were submitted for laboratory analysis from Area 2. Soil samples were selected for analysis based on results of field screening and field observations, as well as to characterize the soil quality at the excavation limits.

The excavation was subsequently backfilled with clean fill supplied by Hamilton Construction.

2.4 Quality Assurance/Quality Control (QA/QC) Program

To document that the sampling and analytical data were interpretable, meaningful and reproducible, conformance to a Golder quality assurance and quality control (QA/QC) program was followed. This involved using QA/QC measures in both the collection (field program) and analysis (laboratory) of samples. The following discussion includes a brief summary of the QA/QC measures implemented by Golder during the field program and during the data review, as well as the QA/QC measures implemented by the analytical laboratory.

The quality assurance (QA) measures used in the collection, preservation and shipment of samples included the following management controls:

- Sampling methods were consistent with established Golder protocols and provincial/federal requirements;
- Field notes were recorded during each stage of the investigation;
- Sample locations were recorded, marked and surveyed in the field; and
- Samples were subsequently transported to the laboratory using Golder chain-of-custody procedures.

The quality control (QC) measures established for the field program included the following technical aspects:

- Submission of blind field duplicate samples (i.e., paired sample analyses). A blind field duplicate sample is a second sample of a certain media (e.g., soil or water) from the same location that is submitted to the analytical laboratory under a separate label such that the laboratory has no prior knowledge that it is a duplicate.
- The relative percent difference (RPD) between paired sample results was used to assess duplicate sample data. The RPD is a measure of the variability between two outcomes from the same procedure or process and is calculated by:

$$\text{RPD}(\%) = \text{absolute}\left(\frac{(x_1 - x_2)}{\text{average}(x_1, x_2)}\right) \times 100$$

  where x_1 is the original sample result and x_2 is the paired analysis result.
- Where the concentration of a given parameter is less than five times the method detection limit (MDL), the laboratory results are considered to be less precise and the RPD is not calculated. For parameters with concentrations less than five times the MDL, the difference factor (DF) between paired analyses results is calculated by:

$$DF = absolute\left(\frac{(x_1 - x_2)}{MDL}\right)$$

where x_1 is the original sample result and x_2 is the paired analysis result.

Golder's internal data quality objectives (DQOs) for environmental samples are as follows:

- A RPD less than or equal to 35% for soil samples submitted for analysis;
- A RPD less than or equal to 20% for groundwater samples submitted for analysis; and
- A DF less than or equal to 2.0.

Where the DQO was exceeded, further investigation of the data quality was required. Data not meeting the DQOs were examined on a case-by-case basis.

The following DQOs and criteria were established for the laboratory analytical program:

- Laboratory paired analyses results should be within laboratory-applied certified values for inorganic elements and organic compounds;
- Analytical recovery results for reference materials or spiked standards should be within laboratory-applied certified values for inorganic elements and organic compounds;
- Analytical blanks should be less than the detection limits used for the specific analysis; and
- Each laboratory analytical batch should include at least one analytical blank, one matrix spike and one laboratory duplicate sample.

3.0 RESULTS

3.1 Soil Stratigraphy

Observations made during the test pitting and excavation work were as follows:

- Surficial staining was observed directly below the ASTs and extended across the lot and onto the neighboring property to the east;
- Brown sand and gravel fill with strong hydrocarbon-like odour was encountered from surface to approximately 3 feet below grade;
- Fine grained, laminated, grey silty sand with weak orange mottling and strong hydrocarbon-like odour was encountered from approximately 3-6 feet below grade (Attachment 1, Photograph 4);
- Light brown, medium to coarse sand and gravel with sub-rounded cobbles and strong hydrocarbon-like odour was encountered below 6 feet;
- The water table was encountered at approximately 13.5 feet below grade (Attachment 1, Photograph 4); and
- PID measurements collected during field screening suggest that soil contamination directly below the ASTs likely extends to the water table below the Site.

3.2 Soil Sampling Analytical Results

3.2.1 Test Pitting Program

In total, seven (7) samples were submitted for analysis of VOCs, BTEX, GRO, DRO and RRO. The results of the analysis are presented in Table 1A in comparison to Alaska DEC Cleanup Levels for the “Under 40 inch Zone”. The Cleanup Levels shown are the most stringent of the "Migration to Groundwater", "Direct Contact", and "Outdoor Inhalation" pathways as well as the maximum allowable concentrations for GRO, DRO and RRO.

Test pit soil sample locations and field measured PID vapour concentrations are outlined in Table 1, below.

Table 1: Summary of Test Pit Soil Sample locations and PID Concentrations

Test Pit Number	Depth (ft)	PID (ppm)	Sample Control Number (SCN)
TP1	0.15	275.2	20718-01*
	0.15	275.2	20718-02*
	0.15	264.5	20718-03
	0.15	381.0	20718-04
	0.15	515.1	20718-05
	3	716.8	20718-06
	6.5	710.1	20718-07
	10	707.5	20718-08*
TP2	1	5.1	20718-09*
TP3	1	4.8	n/a
TP4	2	1.9	20718-10*
TP5	5	976.1	20718-11
TP6	5	7.9	20718-12*
TP7	5	2.4	20760-01*

**sample submitted for laboratory analysis*

Results of the soil analytical results indicated the following:

- All three of the samples collected from TP1 (20718-01, 20718-02 and 20718-08) directly below the AST location had concentrations of DRO that were above the ADEC maximum allowable clean-up level of 12,500 mg/kg with values that ranged from 140,000 mg/kg to 590,000 mg/kg. These samples had respective PID values that ranged from 275.2 to 707.5 ppm. The concentration of GRO from sample 20718-08 exceeded the ADEC maximum allowable concentration of 1,400 mg/kg with a value of 9,900 mg/kg as well as samples 20718-01 and 20718-02 exceeded the ADEC clean-up level of GRO (300 mg/kg) with values of 328 mg/kg and 440 mg/kg, respectfully;
- All three samples from TP1 slightly exceeded the ADEC clean-up level for methylene chloride (0.21 mg/kg; migration to groundwater) with values of 0.22 mg/kg, 0.24 mg/kg and 0.22 mg/kg, respectfully. It is assumed that these concentrations are present due to the use of methanol as an extraction solvent;
- Samples collected from TP2, TP4, TP6 and TP7 were either below the ADEC clean-up levels or less than laboratory reporting limits for all parameters analyzed. These samples had respective PID values that ranged from 1.9 to 7.9 ppm;
- Analytical results suggest that contamination directly below the location of the former ASTs exists at a depth greater than 10 feet below grade;

- In general, results with PID values of less than approximately 10 ppm were below ADEC clean-up levels and/or laboratory reporting limits (RL) for the parameters analyzed; and
- Approximately 200 cubic meters of soil was estimated to be impacted from diesel oil contamination at the Site.

The laboratory analytical report for the test pitting program is included in Attachment 2.

3.2.2 Remedial Excavation and Confirmatory Sampling

In total, four (4) confirmatory samples were submitted for laboratory analysis from Area 1 as well as eight (8) confirmatory and one (1) characterization samples being submitted for analysis from Area 2. The sample types, sample IDs and corresponding PID values are summarized in Table 2. The locations of these samples are shown on Figure 3 – Excavation Plan. The results of the analysis are presented in Table 2A along with the ADEC Cleanup Levels for the “Under 40 inch Zone”. The Cleanup Levels shown are the most stringent of the "Migration to Groundwater", "Direct Contact", and "Outdoor Inhalation" pathways as well as the maximum allowable concentrations for GRO, DRO and RRO.

The laboratory analytical report for the remedial excavation program is included in Attachment 2.

Table 2: Remedial Excavation Sample Type and Location

Area	Type	Location	PID (ppm)	Sample Control Number (SCN)	Sample Number
1	characterization	NE wall-1 (1.5 ft)	<50	na	1
	confirmatory	NE wall-1 (3.3 ft)	0.3	20700-01	2
	characterization	N wall-1 (1.5 ft)	<50	na	3
	confirmatory	N wall-1 (3.3 ft)	0.5	20700-02	4
	characterization	SE wall-1 (1.5 ft)	<50	na	5
	confirmatory	SE wall-1 (3.3 ft)	3.0	20700-03	6
	characterization	W wall-1 (1.5 ft)	<50	na	7
2	confirmatory	N base-1 (4 ft)	0.9	20700-05	8
	confirmatory	SW wall-2 (12 ft)	8.8	20700-06	9
	confirmatory	SE wall-2 (11 ft)	1.8	20700-07	10
	characterization	W base-2 (10 ft)	564.3	na	11
	characterization	W base-2 (11 ft)	518.4	na	12
	confirmatory	W base-2 (13.5 ft)	379.0	20700-08	13
	characterization	N wall-2 (5 ft)	395.2	na	14
	confirmatory	NW wall-2 (12 ft)	320.5	20700-09	15
	confirmatory	NW wall-2 (12 ft, duplicate)	320.5	20700-10	16
	confirmatory	E wall-2 (11 ft)	1.1	20700-11	17
	confirmatory	S wall-2 (12 ft)	1.7	20700-12	18
	characterization	NE wall-2 (8.5 ft)	366.7	20700-04	19
	characterization	E wall-2 (12 ft)	398.1	na	20
	characterization	S wall-2 (13.5 ft)	427.0	na	21
	characterization	W wall-2 (12 ft)	577.9	na	22
	characterization	SW wall-2 (10 ft)	586.2	na	23
	characterization	SE wall-2 (10 ft)	410.3	na	24
	characterization	S wall-2 (11 ft)	495.9	na	25

na = sample not submitted for laboratory analysis.

Results of the soil analytical results indicated the following:

- Confirmatory soil samples collected from the excavation limits (walls and base) in Area 1 (on the neighboring property) contained concentrations of DRO, GRO, RRO and BTEX less than the applicable ADEC clean-up levels;
- Confirmatory soil samples collected from the excavation limits in Area 2 on the east, south, and west walls contained concentrations of DRO, GRO, RRO and BTEX less than the applicable ADEC clean-up levels;
- The sample collected from the base of the excavation in Area 2 (in the direct vicinity of the ASTs location) at 13.5 ft below grade contained concentrations which exceeded the ADEC maximum allowable clean-up levels for GRO and RRO with values of 2,800 mg/kg and 54,000 mg/kg respectfully. This sample also exceeded that ADEC clean-up level for ethylbenzene and total xylenes. The excavation depth could not be extended below the groundwater table without dewatering; and
- Samples collected at 8.5 ft and 12 ft below grade from the northeast wall of the excavation in Area 2 resulted in concentrations that exceeded the ADEC maximum allowable clean-up levels for GRO and RRO with values that ranged from 800 mg/kg to 2,960 mg/kg and 33,000 mg/kg to 77,000 mg/kg, respectfully. The sample collected from 12 feet below grade also exceeded the ADEC clean-up levels for total xylene. The extent of the excavation to the northeast was terminated at the building foundation.

3.2.3 QA/QC Results and Interpretation

Two duplicate pairs from 19 total soil samples were submitted for laboratory analyses during the sampling events of October, 2014. QA/QC analyses are provided in Table 1B (test pitting) and Table 2B (excavation). The results of the duplicate analyses met the DQOs for RPD and DF that were outlined in Section 3.0 for all parameters with the exception of naphthalene between duplicate pairs 20718-01 and 20718-02. Naphthalene had a RPD value of 39% which is slightly above Golder's DQO of 35% for soil. The associated analytical results for both samples were below the applicable ADEC clean-up level.

Test America conducted the chemical analyses of the test pitting and excavation soil samples collected during the remedial excavation program. Test America is an approved laboratory by the Alaska Department of Environmental Conservation Contaminated Sites (ADEC CS). In general, each laboratory analysis batch included at least one method blank, one laboratory duplicate and one reference or control sample. A review of the laboratory's internal QA/QC program is provided Attachment 3 and identified the following QA/QC items:

- Elevated reporting limits are provided for samples 20718-01, 20718-02 and 20818-08 as a result of dilution which the laboratory attibuted to the nature of the sample matrix;
- The surrogate recovery for GRO, DRO and RRO analyses was outside control limits for samples 20718-01, 20718-02, 20700-04, 20700-09 which the laboratory attributed to matrix interferences;
- The reported values for samples 20718-01, 20718-02 and 20718-02 within the GRO retention time window is mainly due to the presence of diesel fuel;
- The trip blank 20701-01 contained concentrations of toluene less than the reporting limit (RL) but greater than the method detection limit (MDL) as well as GRO concentrations greater than both the RL and MDL. The concentrations measured in the blank samples were well below the ADEC Clean-up Levels. These result, though not ideal, are not considered to have impacted the conclusion of the sampling program but should be taken into consideration when reviewing the data;

- In addition, diesel was found above the MDL in the laboratory method blank for batch 250-31056 and 250-31135. This target analyte concentration was less than half of the RL and therefore considered reliable; and
- The detection hydrocarbons in oil range for samples 20718-09, 20718-10, 20718-12 and 20760-01 have been attributed by the laboratory to biogenic interferences. The associated concentrations were well below the applicable ADEC Clean-up Levels and as such are considered reliable;

A copy of the ADEC Laboratory Data Review Checklist is provided in Attachment 3.

In summary, some quality issues were identified during the data review. While these issues may have impacted data accuracy, the overall data is still considered acceptable for the purpose of the overall investigation and for decision-making purposes.

4.0 CONCLUSIONS

Based on the test pitting and remedial excavation results it is inferred that petroleum hydrocarbon contaminated soil exceeding the ADEC clean-up levels for DRO, RRO, total xylene and ethylbenzene remains at the Site in the immediate vicinity of the former ASTs (Area 2). The remaining contaminated material could not be removed below the groundwater table at 13.5 ft below grade (without dewatering) and because the building foundation prevented the excavation from extending further to the northeast.

Soil samples at the limits of the excavation in Area 1 were less than the ADEC clean –up levels on the neighboring property and no further excavation in this area is required.

5.0 RECOMMENDATIONS

Based on the results from the works conducted at the Site in October, 2014, Golder recommends the following:

- Installation of a groundwater monitoring well in the vicinity of the former ASTs to assess impacts to the groundwater quality at the Site. Based on the soil quality at the water table it is assumed that two additional groundwater monitoring wells would also be required in locations hydraulically down-gradient of the Site (inferred to be to the southwest) to determine the extent of the dissolved hydrocarbon plume. Monitoring wells should be constructed in general accordance with the ADEC November 2011 Monitoring Well Guidance document and ASTM 5092-04e1 Standard Practice for Design and Installation of Ground Water Monitoring Wells (2005); and
- Following a review of groundwater analytical results, potential remediation options should be evaluated to address the remaining soil and groundwater contamination at the site.

6.0 LIMITATIONS AND USE OF THE REPORT

This report has been prepared for the sole benefit of Hamilton Construction and Alaska Fur Gallery and is intended to provide an indication of remedial progress at the Site. This report may not be relied upon by any other person(s) or entity without the express written consent of Golder Associates Ltd., Hamilton Construction, or Alaska Fur Gallery. The inferences concerning the conditions of the Site contained in this report are based on information obtained during the environmental sampling program conducted by Golder personnel, and are based solely on conditions at the time of the sampling. Therefore, the potential remains for the presence of unknown, unidentified or unforeseen contamination in areas not inspected as part of this study.

Any uses that a third party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such third parties. Golder Associates Ltd accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The findings and conclusions documented in this report have been prepared for the specific application to this project, the services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

The content of this report is based on information collected during our environmental sampling, our present understanding of the Site, and our professional judgment in light of such information available at the time of this report. This report provides a professional opinion, and therefore no warranty is either expressed, implied or made as to the conclusions, advice and recommendations offered in this report. This report does not provide a legal opinion regarding compliance with applicable laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statutes are subject to change.

7.0 CLOSURE

We trust that this report provides you with the information you require at this time. Should you have any further questions or concerns, please do not hesitate to call the undersigned.

Yours very truly,

GOLDER ASSOCIATES LTD.

Erin Adshead, B.Sc., GIT
Environmental Geologist

Tamra Reynolds, M.Sc., P.Geo.
Senior Hydrogeologist

Gary Hamilton, P.Geo.
Principal, Geologist

EA/TR/lih

CC: Jeff Hamilton, Hamilton Construction Ltd.

Attachments:
Figure 1 – Site Plan
Figure 2 – Test Pit Locations
Figure 3 – Remedial Excavation Plan
Table 1A – Test Pitting Analytical Results
Table 1B – Test Pitting Analytical Results QA/QC
Table 2A– Remedial Excavation and Confirmatory Sampling Results
Table 2B – Remedial Excavation and Confirmatory Sampling Results QA/QC
Attachment 1 – Site Photographs
Attachment 2 – Laboratory Analytical Reports
Attachment 3 – ADEC Laboratory Data Review Checklist

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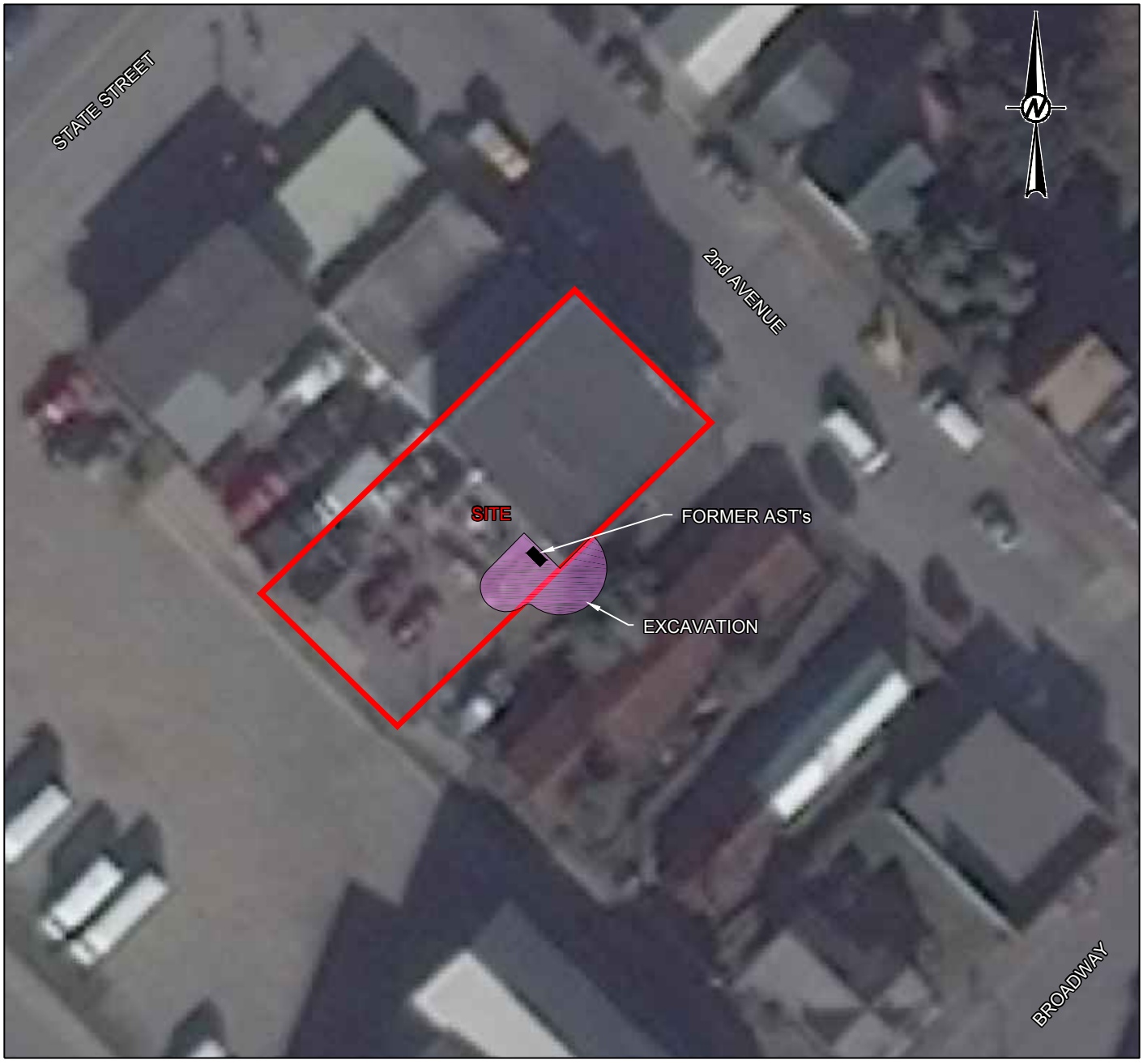

0 24 48
1"=40' FEET

LEGEND

SITE BOUNDARY

EXCAVATION

REFERENCE

Base imagery obtained from Bing Maps for ArcGIS published by the Microsoft Corporation (Sept. 2010).
Bing Maps Image is to be used for surrounding detail reference only,
Bing Maps Image is Not to Scale.
Datum: NAD83 Projection: UTM Zone 8

CLIENT

ALASKA FUR GALLERY

PROJECT

TEST PITTING AND REMEDIAL EXCAVATION WORKS
363-2nd AVE, SKAGWAY, ALASKA

TITLE

PROJECT LOCATION

CONSULTANT

Golder Associates

YYYY-MM-DD	2014-12-12
PREPARED	RTJ
DESIGN	EA
REVIEW	TR
APPROVED	TR

PROJECT No.	PHASE	Rev.	FIGURE
1414827	1000	-	1

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0 25 mm

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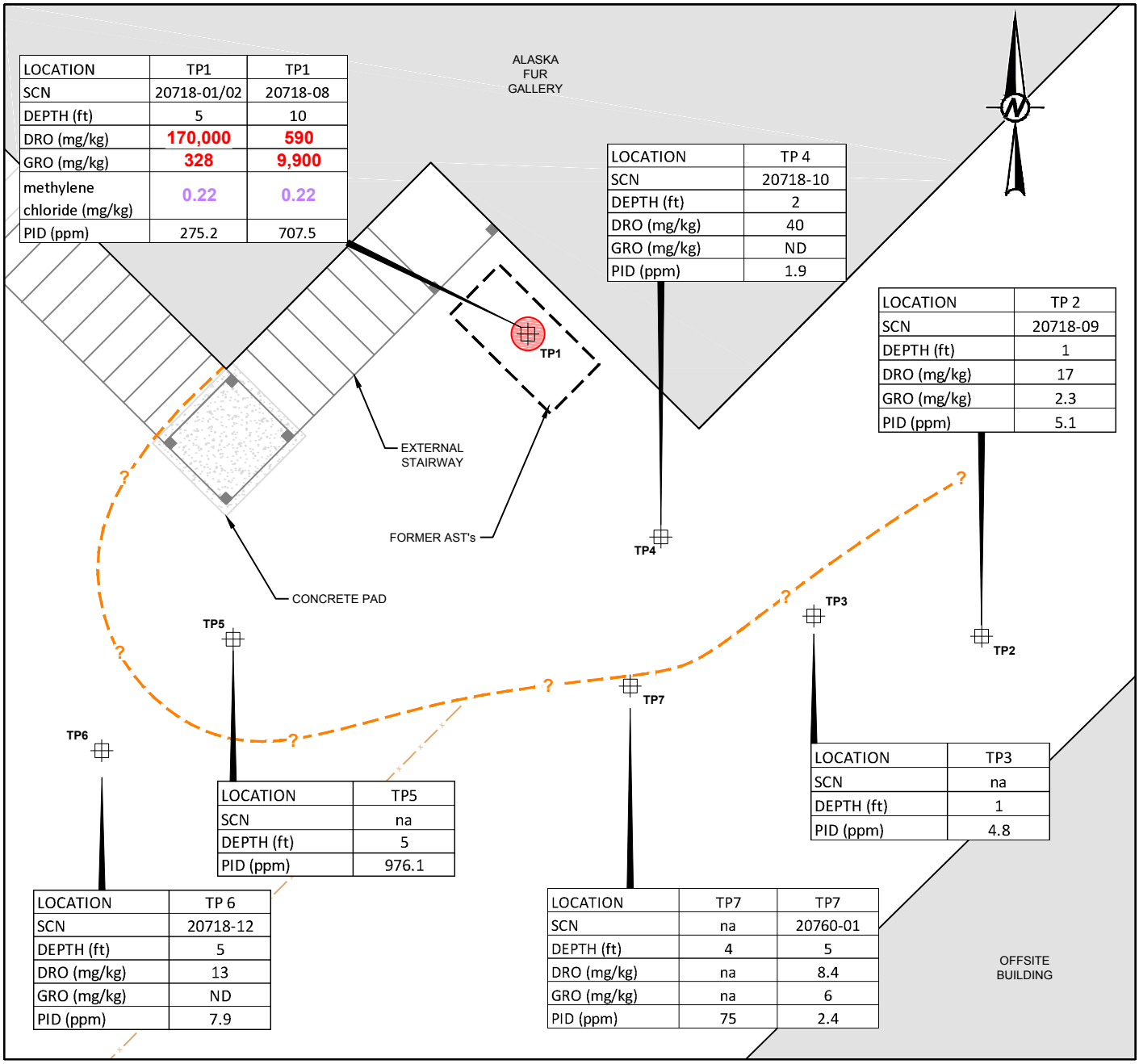


LOCATION	TP1	TP1
SCN	20718-01/02	20718-08
DEPTH (ft)	5	10
DRO (mg/kg)	170,000	590
GRO (mg/kg)	328	9,900
methylene chloride (mg/kg)	0.22	0.22
PID (ppm)	275.2	707.5

LOCATION	TP 4
SCN	20718-10
DEPTH (ft)	2
DRO (mg/kg)	40
GRO (mg/kg)	ND
PID (ppm)	1.9

LOCATION	TP 2
SCN	20718-09
DEPTH (ft)	1
DRO (mg/kg)	17
GRO (mg/kg)	2.3
PID (ppm)	5.1

LOCATION	TP3
SCN	na
DEPTH (ft)	1
PID (ppm)	4.8

LOCATION	TP5
SCN	na
DEPTH (ft)	5
PID (ppm)	976.1

LOCATION	TP 6
SCN	20718-12
DEPTH (ft)	5
DRO (mg/kg)	13
GRO (mg/kg)	ND
PID (ppm)	7.9

LOCATION	TP7	TP7
SCN	na	20760-01
DEPTH (ft)	4	5
DRO (mg/kg)	na	8.4
GRO (mg/kg)	na	6
PID (ppm)	75	2.4

LEGEND

- WALL SAMPLE LESS THAN CSR CL STANDARDS
- TEST PIT CONCENTRATIONS EXCEED ADEC CLEAN-UP LEVEL
- APPROXIMATE DRO/GRO PLUME ABOVE ADEC CLEAN-UP LEVELS
- FENCE

NOTES

RED = CONCENTRATION EXCEEDS ADEC MAXIMUM ALLOWABLE CLEAN-UP LEVEL
PURPLE = CONCENTRATION EXCEEDS ADEC CLEAN-UP LEVEL

REFERENCE

DRAWING IS BASED ON A SITE SKETCH COMPLETED BY LINDSAY CARSON ON DECEMBER 11th, 2014

CLIENT

ALASKA FUR GALLERY

PROJECT

TEST PITTING AND REMEDIAL EXCAVATION WORKS
363-2nd AVE, SKAGWAY, ALASKA

TITLE

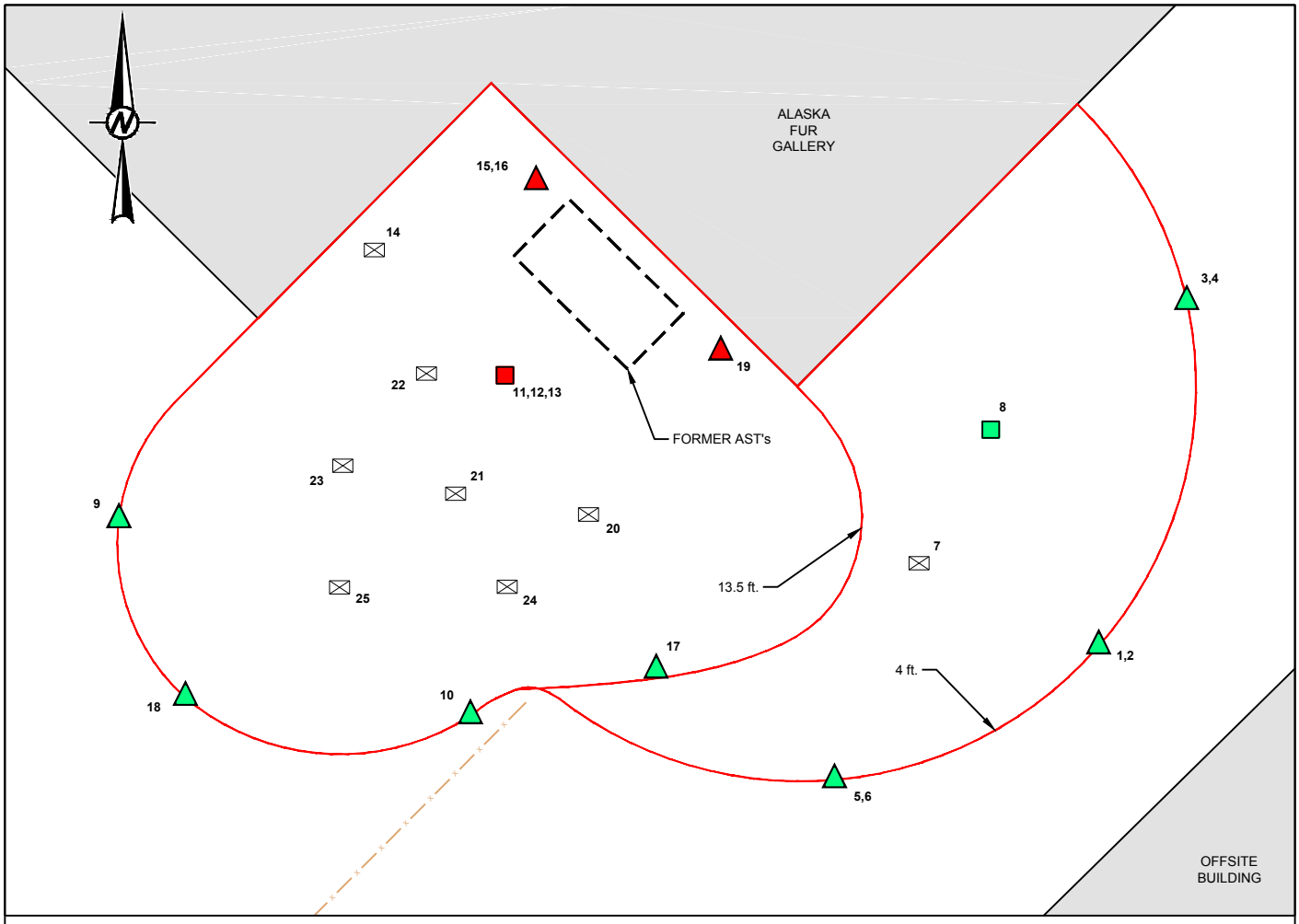
TEST PIT LOCATIONS

CONSULTANT

Golder Associates

YYYY-MM-DD	2014-12-19
PREPARED	RTJ
DESIGN	EA
REVIEW	TR
APPROVED	TR

PROJECT No.	PHASE	Rev.	FIGURE
1414827	1000	-	2



Sample N0.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SCN	na	20700-01	na	20700-02	na	20700-03	na	20700-05	20700-06	20700-07	na	na	20700-08	na	20700-09	20700-10 (dup)
DEPTH (ft)	1.5	3.3	1.5	3.3	1.5	3	1.5	4	12	11	10	11	13.5	5	12	12
DRO (mg/kg)	-	4.5	-	ND	-	3.6	-	6.6	12	56	-	-	**54000**	-	**53000**	**77000**
GRO (mg/kg)	-	ND	-	2.2	-	ND	-	ND	ND	ND	-	-	**2800**	-	**2960**	**2680**
PID (ppm)	<50	0.3	<50	0.3	<50	0.3	<50	0.9	8.8	1.8	564.3	518.4	320.5	395.2	320.5	320.5

Sample N0.	17	18	19	20	21	22	23	24	25
SCN	20700-11	20700-12	20700-04	na	na	na	na	na	na
DEPTH (ft)	11	11	8.5	12	13.5	12	10	10	11
DRO (mg/kg)	2.2	2.2	**33000**	-	-	-	-	-	-
GRO (mg/kg)	ND	ND	**800**	-	-	-	-	-	-
PID (ppm)	1.1	1.1	1.1	398.1	427	577.9	586.2	410.3	495.9

0 4 8
3/16"=1'-0" FEET

LEGEND

- WALL SAMPLE LESS THAN ADEC SOIL CLEAN-UP LEVELS
- WALL SAMPLE EXCEEDS ADEC SOIL CLEAN-UP LEVELS
- FLOOR SAMPLE LESS THAN ADEC SOIL CLEAN-UP LEVELS
- FLOOR SAMPLE EXCEEDS ADEC SOIL CLEAN-UP LEVELS
- SAMPLE NOT SUBMITTED FOR LABORATORY ANALYSIS
- EXCAVATION FLOOR BOUNDARY
- FENCE

NOTES

RED = CONCENTRATION EXCEEDS ADEC MAXIMUM ALLOWABLE CLEAN-UP LEVEL
PURPLE = CONCENTRATION EXCEEDS ADEC CLEAN-UP LEVEL

REFERENCE

DRAWING IS BASED ON A SITE SKETCH COMPLETED BY LINDSAY CARSON ON DECEMBER 11th, 2014

CLIENT

ALASKA FUR GALLERY

PROJECT

TEST PITTING AND REMEDIAL EXCAVATION WORKS
363-2nd AVE, SKAGWAY, ALASKA

TITLE

EXCAVATION PLAN

CONSULTANT

Golder Associates

YYYY-MM-DD	2014-12-19
PREPARED	RTJ
DESIGN	EA
REVIEW	TR
APPROVED	TR

PROJECT No.	PHASE	Rev.	FIGURE
1414827	1000	-	3

TABLE 1A
Test Pitting
Soil Analytical Results
363 2nd Avenue, Skagway, AK
Alaska Fur Co.

Location	ADEC Soil Clean-Up Level[1]	ADEC Maximum Allowable Clean-Up Level[2]	TP1	TP1	TP1	TP2	TP4	TP6	TP7
SCN			20718-01	20718-02	20718-08	20718-09	20718-10	20718-12	20760-01
Depth (ft)			0.5	0.5	10.0	1.0	2.0	5.0	5.0
OVM (ppm)			275.2	275.2	707.5	5.1	1.9	7.9	2.4
Date			03-Oct-14	03-Oct-14	03-Oct-14	03-Oct-14	03-Oct-14	03-Oct-14	03-Oct-14
QA/QC			FDA	FD					
BTEX									
benzene	0.025		ND	ND	ND	ND	ND	ND	ND
toluene	6.5		0.94	1.20	0.82	ND	ND	ND	ND
ethylbenzene	6.9		1.82	2.60	1.54	ND	ND	ND	ND
xylene (total m,p,o)	63		20	28	42	ND	ND	ND	ND
Petroleum Hydrocarbons									
gasoline range organics (GRO)	300	1400	328	440	9900	2.3	ND	ND	5.6
diesel range organics (DRO)	250	12500	170000	140000	590000	17	40	13	8.4
residual range organics (RRO)	11000	22000	2800	2400	650	30	110	23	8.0
Volatile Organic Compounds									
1,1,1-trichloroethane	0.82		ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	25		ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene (1,1-dichloroethylene)	0.030		ND	ND	ND	ND	ND	ND	ND
cis-1,2-dichloroethene (cis-1,2-dichloroethylene)	0.24		ND	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene (trans-1,2-dichloroethylene)	0.37		ND	ND	ND	ND	ND	ND	ND
methylene chloride (chloromethane)	0.21		0.220	0.240	0.220	0.044	0.054	0.051	0.066
naphthalene	20		4.4	7.6	5.6	ND	ND	ND	ND
styrene	0.96		ND	ND	ND	ND	ND	ND	ND
tetrachloroethene (tetrachloroethylene, PCE)	0.024		ND	ND	ND	ND	ND	ND	ND
trichloroethene (trichloroethylene,TCE)	0.020		ND	ND	ND	ND	ND	ND	ND
vinyl chloride (chloroethene)	0.0085		ND	ND	ND	ND	ND	ND	ND

Notes:

All concentrations are in milligrams per kilogram (mg/kg).

1. Tables B1 & B2, method two of "18 AAC 75, Articles 3 and 9, "Oil and Other Hazardous Substances Pollution Control"
Regulations as amended through April 8, 2012 - "Migration to Groundwater", under 40 zone "Outdoor Inhalation" or under 40 zone "Direct Contact", whichever is most stringent.

2. Table B2, method two of "18 AAC 75, Arcticles 3 and 9, "Oil and Other Hazardous Substances Pollution Control", standards for maximum allowable concentrations of petroleum hydrocarbon soil clean-up levels.

FDA - Field Duplicate Available
FD - Field Duplicate
ND - Not detected at concentrations above laboratory reporting limit
OVM - Organic Vapor Monitoring
ppm - parts per million
Data reported from TestAmerica, Portland, OR

Result exceeds clean-up level.	X
Result exceeds maximum allowable soil clean-up level.	X

TABLE 1B
Test Pitting
Soil QA/QC Analytical Results
363 2nd Avenue, Skagway, AK
Alaska Fur Co.

Location	ADEC Soil Clean-Up Levels[1]	ADEC Maximum Allowable Clean-Up Level[2]	TP1	TP1	Method Detection Limit	Mean	Relative Percent Difference	Difference Factor
SCN			20718-01	20718-02				
Depth (ft)			0.5	0.5				
OVM (ppm)			275.2	275.2				
Date			03-Oct-14	03-Oct-14				
QA/QC			FDA	FD				
BTEX								
benzene	0.025		ND	ND	0.08	NC	NC	NA
toluene	6.5		0.94	1.20	0.060	2	17%	NA
ethylbenzene	6.9		1.82	2.60	0.072	3	25%	NA
xylene (total m,p,o)	63		20	28	0.24	34	24%	NA
Petroleum Hydrocarbons								
gasoline range organics (GRO)	300	1400	328	440	10	548	20%	NA
diesel range organics (DRO)	250	12500	170000	140000	23	240000	13%	NA
residual range organics (RRO)	11000	22000	2800	2400	38	4000	10%	NA
Volatile Organic Compounds								
1,1,1-trichloroethane	0.82		ND	ND	0.084	NC	NC	NA
1,1-dichloroethane	25		ND	ND	0.076	NC	NC	NA
1,1-dichloroethene (1,1-dichloroethylene)	0.030		ND	ND	0.064	NC	NC	NA
cis-1,2-dichloroethene (cis-1,2-dichloroethylene)	0.24		ND	ND	0.110	NC	NC	NA
trans-1,2-dichloroethene (trans-1,2-dichloroethylene)	0.37		ND	ND	0.080	NC	NC	NA
methylene chloride (chloromethane)	0.21		0.220	0.240	0.056	0.340	6%	NA
naphthalene	20		4.4	7.6	0.097	8.2	**39%**	NA
styrene	0.96		ND	ND	0.072	NC	NC	NA
tetrachloroethene (tetrachloroethylene, PCE)	0.024		ND	ND	0.110	NC	NC	NA
trichloroethene (trichloroethylene,TCE)	0.020		ND	ND	0.084	NC	NC	NA
vinyl chloride (chloroethene)	0.0085		ND	ND	0.400	NC	NC	NA

Notes:

All concentrations are in milligrams per kilogram (mg/kg).

1. Tables B1 & B2, method two of "18 AAC 75, Articles 3 and 9, "Oil and Other Hazardous Substances Pollution Control"
Regulations as amended through April 8, 2012 - "Migration to Groundwater", under 40 zone "Outdoor Inhalation" or under 40 zone "Direct Contact", whichever is most stringent.

2. Table B2, method two of "18 AAC 75, Arcticles 3 and 9, "Oil and Other Hazardous Substances Pollution Control", standards for maximum allowable concentrations of petroleum hydrocarbon soil clean-up levels.

FDA - Field Duplicate Available
FD - Field Duplicate
ND - Not detected at concentrations above laboratory reporting limit
OVM - Organic Vapor Monitoring
ppm - parts per million
NA - Not applicable
NC - Not calculated
Data reported from TestAmerica, Portland, OR
Result exceeds clean-up level. X
Result exceeds maximum allowable soil clean-up level. X
Method Detection Limit indicates the minimum concentration that could be measured by laboratory instrumentation for a specific sample.
Mean indicates the mean or average value calculated of a field duplicate pair (the FDA and the FD).
Relative Percent Difference is calculated when the mean value is greater than five times the method detection limit; Golder's internal QA/QC target is less than 35%.
Difference Factor is calculated when the mean value is less than five times the method detection limit; Golder's internal QA/QC target is less than 2.
BOLD indicates the parameter analysed exceeds Golder's internal QA/QC targets.

TABLE 2A
Remedial Excavation and Conformatory Sampling
Soil Analytical Results
363 2nd Avenue, Skagway, AK
Alaska Fur Co.

Location	ADEC Soil Clean-Up Level[1]	ADEC Maximum Allowable Clean-Up Level[2]	NE-Wall-1	N-Wall-1	SE-Wall-1	N-Base-1	NE-Wall-2	SW-Wall-2	SE-Wall-2	W-Base-2	NW-Wall-2	NW-Wall-2	E-Wall-2	S-Wall-2
SCN			20700-01	20700-02	20700-03	20700-05	20700-04	20700-06	20700-07	20700-08	20700-09	20700-10	20700-11	20700-12
Depth (ft)			3.3	3.3	3.3	4.0	8.5	12.0	11.0	13.5	12.0	12.0	11.0	12.0
OVM (ppm)			0.3	0.5	3.0	0.9	366.7	8.8	1.8	379.0	320.5	320.5	1.1	0.7
Date			29-Oct-14	29-Oct-14	29-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14	30-Oct-14
QA/QC											FDA	FD		
BTEX														
benzene	0.025		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
toluene	6.5		ND	ND	ND	ND	ND	ND	ND	4.3	1.1	0.9	ND	ND
ethylbenzene	6.9		ND	ND	ND	ND	0.65	ND	ND	13	3.7	3.4	ND	ND
xylene (total m,p,o)	63		ND	ND	ND	ND	5	ND	ND	140	85	70	ND	ND
Petroleum Hydrocarbons														
gasoline range organics (GRO)	300	1400	ND	2.2	ND	ND	800	ND	ND	2800	2960	2680	ND	ND
diesel range organics (DRO)	250	12500	4.5	ND	3.6	6.6	33000	12	56	54000	53000	77000	2.2	ND
residual range organics (RRO)	11000	22000	11	3.6	4.7	6.6	700	4.8	12	820	580	710	3.2	ND

Notes:
All concentrations are in milligrams per kilogram (mg/kg).
1. Tables B1 & B2, method two of "18 AAC 75, Articles 3 and 9, "Oil and Other Hazardous Substances Pollution Control'
Regulations as amended through April 8, 2012 - "Migration to Groundwater", under 40 zone "Outdoor Inhalation" or under 40 zone "Direct Contact", whichever is most stringent.
2. Table B2, method two of "18 AAC 75, Arcticles 3 and 9, "Oil and Other Hazardous Substances Pollution Control", standards for maximum allowable concentrations of petroleum hydrocarbon soil clean-up levels
FDA - Field Duplicate Available
FD - Field Duplicate
ND - Not detected at concentrations above laboratory reporting limit
OVM - Organic Vapor Monitoring
ppm - parts per million
Data reported from TestAmerica, Portland, OR

Result exceeds clean-up level	X
Result exceeds maximum allowable soil clean-	X

TABLE 2B
Remedial Excavation and Confirmatory Sample
Soil QA/QC Analytical Results
363 2nd Avenue, Skagway, AK
Alaska Fur Co.

Location	ADEC Soil Cean-Up Levels[1]	ADEC Maximum Allowable Clean-Up Level[2]	NW-Wall-2	NW-Wall-2	Method Detection Limit	Mean	Relative Percent Difference	Difference Factor	Trip Blank	Field Blank
SCN			20700-09	20700-10					20701-01	20701-02
Depth (ft)			12.0	12.0					-	-
OVM (ppm)			320.5	320.5					-	-
Date			30-Oct-14	30-Oct-14					30-Oct-14	30-Oct-14
QA/QC			FDA	FD						
BTEX										
benzene	0.025		ND	ND	0.15	NC	NC	NA	ND	ND
toluene	6.5		1.1	0.9	0.11	1.6	13%	NA	0.016	ND
ethylbenzene	6.9		3.7	3.4	0.13	5.4	6%	NA	ND	ND
xylene (total m,p,o)	63		85	70	0.44	120	13%	NA	ND	ND
Petroleum Hydrocarbons										
gasoline range organics (GRO)	300	1400	2960	2680	7.7	4300	7%	NA	11	ND
diesel range organics (DRO)	250	12500	53000	77000	19	91500	26%	NA	-	-
residual range organics (RRO)	11000	22000	580	710	31	935	14%	NA	-	-

Notes:

All concentrations are in milligrams per kilogram (mg/kg).

1. Tables B1 & B2, method two of "18 AAC 75, Articles 3 and 9, "Oil and Other Hazardous Substances Pollution Control"

Regulations as amended through April 8, 2012 - "Migration to Groundwater", under 40 zone "Outdoor Inhalation" or under 40 zone "Direct Contact", whichever is most stringent.

2. Table B2, method two of "18 AAC 75, Arcticles 3 and 9, "Oil and Other Hazardous Substances Pollution Control", standards for maximum allowable concentrations of petroleum hydrocarbon soil clean-up levels.

FDA - Field Duplicate Available

FD - Field Duplicate

ND - Not detected at concentrations above laboratory reporting limit

OVM - Organic Vapor Monitoring

ppm - parts per million

NA - Not applicable

NC - Not calculated

(-) - Not analyzed

Data reported from TestAmerica, Portland, OR

Result exceeds clean-up level. X

Result exceeds maximum allowable soil clean-u X

Method Detection Limit indicates the minimum concentration that could be measured by laboratory instrumentation for a specific sample.

Mean indicates the mean or average value calculated of a field duplicate pair (the FDA and the FD).

Relative Percent Difference is calculated when the mean value is greater than five times the method detection limit; Golder's internal QA/QC target is less than 35%.

Difference Factor is calculated when the mean value is less than five times the method detection limit; Golder's internal QA/QC target is less than 2.

BOLD indicates the parameter analysed exceeds Golder's internal QA/QC targets.

ATTACHMENT 1

Site Photographs

Photograph 1 – Rear view of the Site building looking northeast. Location of former ASTs directly in front of the Kubota backhoe.

Photograph 2 - Former ASTs after being removed from the Site.

Photograph 3 – "hot spot" area directly below the former ASTs (looking north) showing dark grey surficial staining.

Photograph 4 - TP1: grey silty sand visible from approximately 3 feet to 6 feet followed by brown sand and gravel with cobble (>6 feet).

Photograph 5 - "Area 1" excavation on the neighboring property looking north.

Photograph 6 - "Area 2" excavation looking north. Dark grey hydrocarbon-like staining visible at the location directly below the former ASTs.

Photograph 7 - "Area 2" excavation looking northwest. Groundwater seepage at approximately 13.5 feet below grade.

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ATTACHMENT 2

Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-21835-1
Client Project/Site: 1414827

For:
Golder Associates Inc.
2121 Abbott Rd #100
Anchorage, Alaska 99507-3443

Attn: Tamra Reynolds

Vanessa Berry

Authorized for release by:
10/16/2014 9:18:53 PM

Vanessa Berry, Project Manager II
(503)906-9233
vanessa.berry@testamericainc.com

Table of Contents

Sample Summary

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-21835-1	20718-01	Solid	10/03/14 00:00	10/06/14 09:10
250-21835-2	20718-02	Solid	10/03/14 00:00	10/06/14 09:10
250-21835-8	20718-	Solid	10/03/14 00:00	10/06/14 09:10
250-21835-9	20718-	Solid	10/03/14 00:00	10/06/14 09:10
250-21835-10	20718-10	Solid	10/03/14 00:00	10/06/14 09:10
250-21835-12	20718-12	Solid	10/03/14 00:00	10/06/14 09:10
250-21835-13	20760-01	Solid	10/03/14 00:00	10/06/14 09:10

Job ID: 250-21835-1

Laboratory: TestAmerica Portland

Narrative

Job Narrative
250-21835-1

Comments
No additional comments.

Receipt
The samples were received on 10/6/2014 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
Method(s) 8260B: The following sample(s) was diluted due to the nature of the sample matrix: 20718-01 (250-21835-1), 20718-02 (250-21835-2), 20718-08 (250-21835-8). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Method(s) AK101: The following reported values for sample(s) within the Gasoline Range Organics (GRO) retention time window is mainly due to the presence of diesel fuel: (250-21835-8 DU), 20718-01 (250-21835-1), 20718-02 (250-21835-2), 20718-08 (250-21835-8).

Method(s) AK101: Surrogate recovery for the following sample(s) was outside control limits: 20718-01 (250-21835-1), 20718-02 (250-21835-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) AK102 & 103: Surrogate recovery for the following sample(s) was outside control limits: 20718-01 (250-21835-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) AK102 & 103: The method blank for batch 250-31056 contained Diesel above the method detection limit. This target analyte concentration was less than half of the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. (MB 250-31056/1-A),

Method(s) AK102 & 103: The method blank for batch 250-31135 contained Diesel above the method detection limit. This target analyte concentration was less than half of the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. (MB 250-31135/1-A)

Method(s) AK102 & 103: Detected hydrocarbons in oil range is mainly due to biogenic interference. 20718-09 (250-21835-9), 20718-10 (250-21835-10), 20718-12 (250-21835-12), 20760-01 (250-21835-13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: 20718-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-1
Matrix: Solid
Percent Solids: 70.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		400	84	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Benzene	ND		400	80	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
1,1-Dichloroethane	ND		400	76	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Ethylbenzene	**910**		400	72	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
1,1-Dichloroethene	ND		400	64	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Xylenes, Total	**10000**		1200	240	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Naphthalene	**2200**		800	97	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Toluene	**470**		400	60	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
cis-1,2-Dichloroethene	ND		400	110	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Methylene Chloride	**110**	**J**	2000	56	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Styrene	ND		400	72	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Tetrachloroethene	ND		400	110	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
trans-1,2-Dichloroethene	ND		400	80	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Trichloroethene	ND		400	84	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2
Vinyl chloride	ND		2000	400	ug/Kg	☼	10/08/14 14:57	10/08/14 18:19	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:19*	*2*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:19*	*2*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:19*	*2*
Toluene-d8 (Surr)	*101*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:19*	*2*

Client Sample ID: 20718-02
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-2
Matrix: Solid
Percent Solids: 76.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		370	77	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Benzene	ND		370	74	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
1,1-Dichloroethane	ND		370	70	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Ethylbenzene	**1300**		370	66	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
1,1-Dichloroethene	ND		370	59	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Xylenes, Total	**14000**		1100	220	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Naphthalene	**3800**		740	88	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Toluene	**600**		370	55	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
cis-1,2-Dichloroethene	ND		370	100	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Methylene Chloride	**120**	**J**	1800	52	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Styrene	ND		370	66	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Tetrachloroethene	ND		370	99	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
trans-1,2-Dichloroethene	ND		370	74	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Trichloroethene	ND		370	77	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2
Vinyl chloride	ND		1800	370	ug/Kg	☼	10/08/14 14:57	10/08/14 18:41	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:41*	*2*
4-Bromofluorobenzene (Surr)	*105*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:41*	*2*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:41*	*2*
Toluene-d8 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/08/14 18:41*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: 20718-08
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-8
Matrix: Solid
Percent Solids: 92.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		260	55	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Benzene	ND		260	52	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
1,1-Dichloroethane	ND		260	50	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Ethylbenzene	**770**		260	47	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
1,1-Dichloroethene	ND		260	42	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Xylenes, Total	**21000**		780	150	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Naphthalene	**2700**		520	63	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Toluene	**410**		260	39	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
cis-1,2-Dichloroethene	ND		260	73	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Methylene Chloride	**110**	**J**	1300	37	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Styrene	ND		260	47	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Tetrachloroethene	ND		260	70	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
trans-1,2-Dichloroethene	ND		260	52	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Trichloroethene	ND		260	55	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2
Vinyl chloride	ND		1300	260	ug/Kg	☼	10/08/14 14:57	10/08/14 19:03	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/08/14 19:03*	*2*
4-Bromofluorobenzene (Surr)	*98*		*75 - 125*	*10/08/14 14:57*	*10/08/14 19:03*	*2*
Dibromofluoromethane (Surr)	*97*		*75 - 125*	*10/08/14 14:57*	*10/08/14 19:03*	*2*
Toluene-d8 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/08/14 19:03*	*2*

Client Sample ID: 20718-09
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-9
Matrix: Solid
Percent Solids: 91.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		120	24	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Benzene	ND		120	23	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
1,1-Dichloroethane	ND		120	22	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Ethylbenzene	ND		120	21	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
1,1-Dichloroethene	ND		120	18	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Xylenes, Total	ND		350	68	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Naphthalene	ND		230	28	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Toluene	ND		120	17	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
cis-1,2-Dichloroethene	ND		120	32	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Methylene Chloride	**44**	**J**	580	16	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Styrene	ND		120	21	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Tetrachloroethene	ND		120	31	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
trans-1,2-Dichloroethene	ND		120	23	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Trichloroethene	ND		120	24	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1
Vinyl chloride	ND		580	120	ug/Kg	☼	10/08/14 14:57	10/09/14 09:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:29*	*1*
4-Bromofluorobenzene (Surr)	*102*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:29*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:29*	*1*
Toluene-d8 (Surr)	*101*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:29*	*1*

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: 20718-10
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-10
Matrix: Solid
Percent Solids: 77.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		190	39	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Benzene	ND		190	38	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
1,1-Dichloroethane	ND		190	36	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Ethylbenzene	ND		190	34	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
1,1-Dichloroethene	ND		190	30	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Xylenes, Total	ND		560	110	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Naphthalene	ND		380	45	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Toluene	ND		190	28	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
cis-1,2-Dichloroethene	ND		190	53	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Methylene Chloride	**54**	**J**	940	26	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Styrene	ND		190	34	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Tetrachloroethene	ND		190	51	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
trans-1,2-Dichloroethene	ND		190	38	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Trichloroethene	ND		190	39	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1
Vinyl chloride	ND		940	190	ug/Kg	☼	10/08/14 14:57	10/08/14 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:12*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:12*	*1*
Toluene-d8 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:12*	*1*

Client Sample ID: 20718-12
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-12
Matrix: Solid
Percent Solids: 82.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		160	34	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Benzene	ND		160	32	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
1,1-Dichloroethane	ND		160	31	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Ethylbenzene	ND		160	29	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
1,1-Dichloroethene	ND		160	26	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Xylenes, Total	ND		480	95	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Naphthalene	ND		320	39	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Toluene	ND		160	24	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
cis-1,2-Dichloroethene	ND		160	45	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Methylene Chloride	**51**	**J**	810	23	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Styrene	ND		160	29	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Tetrachloroethene	ND		160	43	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
trans-1,2-Dichloroethene	ND		160	32	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Trichloroethene	ND		160	34	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1
Vinyl chloride	ND		810	160	ug/Kg	☼	10/08/14 14:57	10/08/14 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:34*	*1*
4-Bromofluorobenzene (Surr)	*98*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:34*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:34*	*1*
Toluene-d8 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:34*	*1*

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: 20760-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-13
Matrix: Solid
Percent Solids: 79.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		170	36	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Benzene	ND		170	34	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
1,1-Dichloroethane	ND		170	33	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Ethylbenzene	ND		170	31	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
1,1-Dichloroethene	ND		170	28	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Xylenes, Total	ND		520	100	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Naphthalene	ND		340	41	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Toluene	ND		170	26	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
cis-1,2-Dichloroethene	ND		170	48	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Methylene Chloride	**66**	**J**	860	24	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Styrene	ND		170	31	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Tetrachloroethene	ND		170	46	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
trans-1,2-Dichloroethene	ND		170	34	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Trichloroethene	ND		170	36	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1
Vinyl chloride	ND		860	170	ug/Kg	☼	10/08/14 14:57	10/08/14 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:57*	*1*
4-Bromofluorobenzene (Surr)	*96*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:57*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:57*	*1*
Toluene-d8 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/08/14 17:57*	*1*

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Client Sample ID: 20718-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-1
Matrix: Solid
Percent Solids: 70.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	82		32	10	mg/Kg	☼	10/07/14 09:49	10/08/14 19:02	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*33*	*X*	*50 - 150*	*10/07/14 09:49*	*10/08/14 19:02*	*4*

Client Sample ID: 20718-02
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-2
Matrix: Solid
Percent Solids: 76.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	110		29	9.6	mg/Kg	☼	10/07/14 09:49	10/08/14 19:31	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*31*	*X*	*50 - 150*	*10/07/14 09:49*	*10/08/14 19:31*	*4*

Client Sample ID: 20718-08
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-8
Matrix: Solid
Percent Solids: 92.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	990		52	17	mg/Kg	☼	10/07/14 09:49	10/08/14 13:30	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*91*		*50 - 150*	*10/07/14 09:49*	*10/08/14 13:30*	*10*

Client Sample ID: 20718-09
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-9
Matrix: Solid
Percent Solids: 91.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	2.3	J	4.6	1.5	mg/Kg	☼	10/07/14 09:49	10/10/14 13:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*96*		*50 - 150*	*10/07/14 09:49*	*10/10/14 13:00*	*1*

Client Sample ID: 20718-10
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-10
Matrix: Solid
Percent Solids: 77.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		7.5	2.4	mg/Kg	☼	10/07/14 09:49	10/10/14 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*92*		*50 - 150*	*10/07/14 09:49*	*10/10/14 13:28*	*1*

Client Sample ID: 20718-12
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-12
Matrix: Solid
Percent Solids: 82.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		6.4	2.1	mg/Kg	☼	10/07/14 09:49	10/08/14 18:33	1

Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	55		50 - 150	10/07/14 09:49	10/08/14 18:33	1

Client Sample ID: 20760-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-13
Matrix: Solid
Percent Solids: 79.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	5.6	J	6.9	2.2	mg/Kg	☼	10/07/14 09:49	10/08/14 14:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	94		50 - 150	10/07/14 09:49	10/08/14 14:28	1

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Client Sample ID: 20718-01 — **Lab Sample ID: 250-21835-1**
Date Collected: 10/03/14 00:00 — **Matrix: Solid**
Date Received: 10/06/14 09:10 — **Percent Solids: 70.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	17000		180	23	mg/Kg	☼	10/07/14 10:13	10/13/14 13:34	10
RRO (nC25-nC36)	280	J	350	38	mg/Kg	☼	10/07/14 10:13	10/13/14 13:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*103*		*50 - 150*	*10/07/14 10:13*	*10/13/14 13:34*	*10*
1-Chlorooctadecane	*215*	*X*	*50 - 150*	*10/07/14 10:13*	*10/13/14 13:34*	*10*

Client Sample ID: 20718-02 — **Lab Sample ID: 250-21835-2**
Date Collected: 10/03/14 00:00 — **Matrix: Solid**
Date Received: 10/06/14 09:10 — **Percent Solids: 76.8**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	14000		160	21	mg/Kg	☼	10/07/14 10:13	10/13/14 13:54	10
RRO (nC25-nC36)	240	J	330	35	mg/Kg	☼	10/07/14 10:13	10/13/14 13:54	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*102*		*50 - 150*	*10/07/14 10:13*	*10/13/14 13:54*	*10*
1-Chlorooctadecane	*140*		*50 - 150*	*10/07/14 10:13*	*10/13/14 13:54*	*10*

Client Sample ID: 20718-08 — **Lab Sample ID: 250-21835-8**
Date Collected: 10/03/14 00:00 — **Matrix: Solid**
Date Received: 10/06/14 09:10 — **Percent Solids: 92.0**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	5900		130	17	mg/Kg	☼	10/07/14 10:13	10/13/14 14:14	10
RRO (nC25-nC36)	65	J	270	29	mg/Kg	☼	10/07/14 10:13	10/13/14 14:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*100*		*50 - 150*	*10/07/14 10:13*	*10/13/14 14:14*	*10*
1-Chlorooctadecane	*133*		*50 - 150*	*10/07/14 10:13*	*10/13/14 14:14*	*10*

Client Sample ID: 20718-09 — **Lab Sample ID: 250-21835-9**
Date Collected: 10/03/14 00:00 — **Matrix: Solid**
Date Received: 10/06/14 09:10 — **Percent Solids: 91.1**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	17	B	13	1.7	mg/Kg	☼	10/07/14 10:13	10/10/14 23:25	1
RRO (nC25-nC36)	30		27	2.9	mg/Kg	☼	10/07/14 10:13	10/10/14 23:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*96*		*50 - 150*	*10/07/14 10:13*	*10/10/14 23:25*	*1*
1-Chlorooctadecane	*91*		*50 - 150*	*10/07/14 10:13*	*10/10/14 23:25*	*1*

Client Sample ID: 20718-10 — **Lab Sample ID: 250-21835-10**
Date Collected: 10/03/14 00:00 — **Matrix: Solid**
Date Received: 10/06/14 09:10 — **Percent Solids: 77.9**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	40	B	16	2.0	mg/Kg	☼	10/07/14 10:13	10/10/14 23:45	1
RRO (nC25-nC36)	110		32	3.5	mg/Kg	☼	10/07/14 10:13	10/10/14 23:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*100*		*50 - 150*	*10/07/14 10:13*	*10/10/14 23:45*	*1*
1-Chlorooctadecane	*88*		*50 - 150*	*10/07/14 10:13*	*10/10/14 23:45*	*1*

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Client Sample ID: 20718-12
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-12
Matrix: Solid
Percent Solids: 82.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	13	J B	15	1.9	mg/Kg	☼	10/07/14 10:13	10/11/14 00:05	1
RRO (nC25-nC36)	23	J	30	3.2	mg/Kg	☼	10/07/14 10:13	10/11/14 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*94*		*50 - 150*	*10/07/14 10:13*	*10/11/14 00:05*	*1*
1-Chlorooctadecane	*87*		*50 - 150*	*10/07/14 10:13*	*10/11/14 00:05*	*1*

Client Sample ID: 20760-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-13
Matrix: Solid
Percent Solids: 79.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	8.4	J B	15	2.0	mg/Kg	☼	10/07/14 10:13	10/11/14 00:25	1
RRO (nC25-nC36)	8.0	J	31	3.3	mg/Kg	☼	10/07/14 10:13	10/11/14 00:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*93*		*50 - 150*	*10/07/14 10:13*	*10/11/14 00:25*	*1*
1-Chlorooctadecane	*84*		*50 - 150*	*10/07/14 10:13*	*10/11/14 00:25*	*1*

General Chemistry

Client Sample ID: 20718-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	71		0.010	0.010	%			10/07/14 15:18	1

Client Sample ID: 20718-02
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	77		0.010	0.010	%			10/07/14 15:18	1

Client Sample ID: 20718-08
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-8
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.0		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	92		0.010	0.010	%			10/07/14 15:18	1

Client Sample ID: 20718-09
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-9
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.9		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	91		0.010	0.010	%			10/07/14 15:18	1

Client Sample ID: 20718-10
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-10
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	78		0.010	0.010	%			10/07/14 15:18	1

Client Sample ID: 20718-12
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-12
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	83		0.010	0.010	%			10/07/14 15:18	1

Client Sample ID: 20760-01
Date Collected: 10/03/14 00:00
Date Received: 10/06/14 09:10

Lab Sample ID: 250-21835-13
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21		0.010	0.010	%			10/07/14 15:18	1
Percent Solids	79		0.010	0.010	%			10/07/14 15:18	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-31110/1-A
Matrix: Solid
Analysis Batch: 31138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31110

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		100	21	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Benzene	ND		100	20	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
1,1-Dichloroethane	ND		100	19	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Ethylbenzene	ND		100	18	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
1,1-Dichloroethene	ND		100	16	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Xylenes, Total	ND		300	59	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Naphthalene	ND		200	24	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Toluene	ND		100	15	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
cis-1,2-Dichloroethene	ND		100	28	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Methylene Chloride	ND		500	14	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Styrene	ND		100	18	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Tetrachloroethene	ND		100	27	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
trans-1,2-Dichloroethene	ND		100	20	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Trichloroethene	ND		100	21	ug/Kg		10/08/14 14:57	10/09/14 09:04	1
Vinyl chloride	ND		500	100	ug/Kg		10/08/14 14:57	10/09/14 09:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:04*	*1*
4-Bromofluorobenzene (Surr)	*105*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:04*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:04*	*1*
Toluene-d8 (Surr)	*101*		*75 - 125*	*10/08/14 14:57*	*10/09/14 09:04*	*1*

Lab Sample ID: LCS 250-31110/2-A
Matrix: Solid
Analysis Batch: 31138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	2000	1950		ug/Kg		98	80 - 125
Benzene	2000	1920		ug/Kg		96	80 - 120
1,1-Dichloroethane	2000	1910		ug/Kg		95	80 - 120
Ethylbenzene	2000	2030		ug/Kg		101	80 - 125
1,1-Dichloroethene	2000	1920		ug/Kg		96	75 - 125
m,p-Xylene	4000	4180		ug/Kg		104	80 - 120
o-Xylene	2000	2070		ug/Kg		104	80 - 125
Xylenes, Total	6000	6250		ug/Kg		104	70 - 130
Naphthalene	2000	1920		ug/Kg		96	80 - 130
Toluene	2000	1990		ug/Kg		100	80 - 120
cis-1,2-Dichloroethene	2000	1900		ug/Kg		95	75 - 125
Methylene Chloride	2000	1980		ug/Kg		99	75 - 125
Styrene	2000	2110		ug/Kg		105	80 - 125
Tetrachloroethene	2000	1940		ug/Kg		97	80 - 125
trans-1,2-Dichloroethene	2000	1880		ug/Kg		94	75 - 125
Trichloroethene	2000	1940		ug/Kg		97	80 - 125
Vinyl chloride	2000	1790		ug/Kg		90	10 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-31110/2-A
Matrix: Solid
Analysis Batch: 31138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		75 - 125
Dibromofluoromethane (Surr)	102		75 - 125
Toluene-d8 (Surr)	101		75 - 125

Lab Sample ID: 250-21835-9 MS
Matrix: Solid
Analysis Batch: 31138

Client Sample ID: 20718-09
Prep Type: Total/NA
Prep Batch: 31110

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		2300	2060		ug/Kg	☼	90	80 - 125
Benzene	ND		2300	2020		ug/Kg	☼	88	80 - 125
1,1-Dichloroethane	ND		2300	2030		ug/Kg	☼	88	80 - 125
Ethylbenzene	ND		2300	2180		ug/Kg	☼	94	80 - 125
1,1-Dichloroethene	ND		2300	2010		ug/Kg	☼	87	70 - 130
m,p-Xylene	ND		4610	4490		ug/Kg	☼	97	75 - 135
o-Xylene	ND		2300	2250		ug/Kg	☼	98	70 - 130
Xylenes, Total	ND		6910	6740		ug/Kg	☼	98	70 - 130
Naphthalene	ND		2300	2180		ug/Kg	☼	95	70 - 130
Toluene	ND		2300	2020		ug/Kg	☼	87	70 - 130
cis-1,2-Dichloroethene	ND		2300	1990		ug/Kg	☼	87	75 - 120
Methylene Chloride	44	J	2300	2080		ug/Kg	☼	88	70 - 120
Styrene	ND		2300	2270		ug/Kg	☼	99	85 - 120
Tetrachloroethene	ND		2300	1990		ug/Kg	☼	86	75 - 140
trans-1,2-Dichloroethene	ND		2300	1930		ug/Kg	☼	84	70 - 130
Trichloroethene	ND		2300	2230		ug/Kg	☼	97	80 - 125
Vinyl chloride	ND		2300	1640		ug/Kg	☼	71	10 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 125
4-Bromofluorobenzene (Surr)	101		75 - 125
Dibromofluoromethane (Surr)	100		75 - 125
Toluene-d8 (Surr)	100		75 - 125

Lab Sample ID: 250-21835-9 MSD
Matrix: Solid
Analysis Batch: 31138

Client Sample ID: 20718-09
Prep Type: Total/NA
Prep Batch: 31110

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		2300	2030		ug/Kg	☼	88	80 - 125	2	25
Benzene	ND		2300	2000		ug/Kg	☼	87	80 - 125	1	25
1,1-Dichloroethane	ND		2300	1990		ug/Kg	☼	87	80 - 125	2	25
Ethylbenzene	ND		2300	2180		ug/Kg	☼	95	80 - 125	0	25
1,1-Dichloroethene	ND		2300	1980		ug/Kg	☼	86	70 - 130	2	25
m,p-Xylene	ND		4610	4460		ug/Kg	☼	97	75 - 135	1	25
o-Xylene	ND		2300	2250		ug/Kg	☼	98	70 - 130	0	25
Xylenes, Total	ND		6910	6710		ug/Kg	☼	97	70 - 130	0	25
Naphthalene	ND		2300	2230		ug/Kg	☼	97	70 - 130	2	25
Toluene	ND		2300	2040		ug/Kg	☼	88	70 - 130	1	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-21835-9 MSD — **Client Sample ID: 20718-09**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31138 — **Prep Batch: 31110**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	ND		2300	2020		ug/Kg	☼	88	75 - 120	1	25
Methylene Chloride	44	J	2300	2110		ug/Kg	☼	90	70 - 120	2	25
Styrene	ND		2300	2280		ug/Kg	☼	99	85 - 120	0	25
Tetrachloroethene	ND		2300	1960		ug/Kg	☼	85	75 - 140	1	25
trans-1,2-Dichloroethene	ND		2300	1980		ug/Kg	☼	86	70 - 130	3	25
Trichloroethene	ND		2300	2170		ug/Kg	☼	94	80 - 125	3	25
Vinyl chloride	ND		2300	1620		ug/Kg	☼	70	10 - 140	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*
4-Bromofluorobenzene (Surr)	*104*		*75 - 125*
Dibromofluoromethane (Surr)	*101*		*75 - 125*
Toluene-d8 (Surr)	*99*		*75 - 125*

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Lab Sample ID: MB 250-31054/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31128 — **Prep Batch: 31054**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		4.0	1.3	mg/Kg		10/07/14 09:49	10/08/14 10:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*103*		*50 - 150*	*10/07/14 09:49*	*10/08/14 10:36*	*1*

Lab Sample ID: LCS 250-31054/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31128 — **Prep Batch: 31054**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	25.0	26.1		mg/Kg		104	60 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*109*		*50 - 150*

Lab Sample ID: LCSD 250-31054/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31128 — **Prep Batch: 31054**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	25.0	26.2		mg/Kg		105	60 - 120	0	20

Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued)

Lab Sample ID: LCSD 250-31054/3-A
Matrix: Solid
Analysis Batch: 31128

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31054

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	102		50 - 150

Lab Sample ID: 250-21835-13 MS
Matrix: Solid
Analysis Batch: 31128

Client Sample ID: 20760-01
Prep Type: Total/NA
Prep Batch: 31054

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	5.6	J	43.0	48.7		mg/Kg	☼	100	60 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	99		50 - 150

Lab Sample ID: 250-21835-8 DU
Matrix: Solid
Analysis Batch: 31128

Client Sample ID: 20718-08
Prep Type: Total/NA
Prep Batch: 31054

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	990		1030		mg/Kg	☼	4	20

Surrogate	DU %Recovery	DU Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	93		50 - 150

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Lab Sample ID: MB 250-31056/1-A
Matrix: Solid
Analysis Batch: 31279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31056

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	2.73	J	12	1.6	mg/Kg		10/07/14 10:13	10/10/14 21:25	1
RRO (nC25-nC36)	ND		25	2.7	mg/Kg		10/07/14 10:13	10/10/14 21:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triacontane	95		50 - 150	10/07/14 10:13	10/10/14 21:25	1
1-Chlorooctadecane	81		50 - 150	10/07/14 10:13	10/10/14 21:25	1

Lab Sample ID: LCS 250-31056/2-A
Matrix: Solid
Analysis Batch: 31279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31056

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C25)	124	117		mg/Kg		95	75 - 125
RRO (nC25-nC36)	74.4	70.5		mg/Kg		95	60 - 120

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC) (Continued)

Lab Sample ID: LCS 250-31056/2-A
Matrix: Solid
Analysis Batch: 31279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31056

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Triacontane	*97*		*50 - 150*
1-Chlorooctadecane	*86*		*50 - 150*

Lab Sample ID: LCSD 250-31056/3-A
Matrix: Solid
Analysis Batch: 31279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31056

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C25)			123	121		mg/Kg		98	75 - 125	3	20
RRO (nC25-nC36)			74.0	71.0		mg/Kg		96	60 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Triacontane	*96*		*50 - 150*
1-Chlorooctadecane	*93*		*50 - 150*

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-21835-13 DU
Matrix: Solid
Analysis Batch: 31072

Client Sample ID: 20760-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	21			20		%				3	20
Percent Solids	79			80		%				0.8	20

Certification Summary

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Laboratory: TestAmerica Portland

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-012	12-26-14
California	State Program	9	2597	09-30-15
Oregon	NELAP	10	OR100021	01-09-15
USDA	Federal		P330-11-00092	04-17-17
Washington	State Program	10	C586	06-23-15

Method Summary

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-21835-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
AK101	Alaska - Gasoline Range Organics (GC)	ADEC	TAL PRT
AK102 & 103	Alaska - Diesel Range Organics & Residual Range Organics (GC)	ADEC	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ADEC = Alaska Department of Environmental Conservation

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

CHAIN-OF-CUSTODY RE

T No. 20718 page 1 of 2

250-21835 Chain of Custody

Golder Associates
500–4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604-298-6623 Fax: 604-298-5253

Project Number: 141482-[redacted]

y Name: TEST AMERICA
9405 Nimbus Ave SW
Beaverton, OR 97008

Golder Contact: Tamra Reynolds | Golder E-mail Address: tamra_reynolds@golder.com | Tel/Fax: 503-906-9200 | Contact: Vanessa Berry

Office the final reports should be sent to:

- [X] 500–4260 Still Creek Drive, Burnaby, BC V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- [ ] 202–2790 Gladwin Road, Abbotsford, BC V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- [ ] 2640 Douglas Street, Victoria, BC V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D/M/Y)	[redacted]	Number of Containers	Analyses Required: DRO/RRO	CPAH	BTEX/VOC						Hold	RUSH	Remarks (over)
20718 -01		Soil	3/10/14		2	X	X	X								
-02						X	X	X								
-03														X		
-04														X		
-05														X		
-06					2	X	X	X						X		
-07														X		
-08						X	X	X								
-09						X	X	X								
-10						X	X	X								
-11														X		
-12						X	X	X								

Sampler's Signature: E Liebrecht	Relinquished by: Signature: E Liebrecht	Company: Golder	Date: 10/3/14	Time	Received by: Signature	Company
Sample Storage (°C)	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments:	Method of Shipment:	Waybill No.:	Received for Lab by:	Date: 10/6/14	Time: 0900	
	Shipped by:	Shipment Condition: Seal Intact:	Temp (°C)	Cooler opened by:	Date	Time

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report

3.8 IR/P-T

21835

CHAIN-OF-CUSTODY RECORD/ANALYSIS REQUEST

№ 20760 page 2 of 2

Golder Associates

500–4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604-298-6623 Fax: 604-298-5253

Project Number: 1414827		Laboratory Name: TEST AMERICA	
[redacted]		Address: 9405 Nimbus Ave. S.W Beaverton, OR 97008	
Golder Contact: Tamra Reynolds	Golder E-mail Address: tamra-reynolds@golder.com	Tel/Fax: 503-906-9200	Contact: Vanessa Barry

Office the final reports should be sent to:

- ☑ 500–4260 Still Creek Drive, Burnaby, BC V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- ☐ 202–2790 Gladwin Road, Abbotsford, BC V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ☐ 2640 Douglas Street, Victoria, BC V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D/M/Y)	[redacted]	Number of Containers	DRO / RRO	GRO	BTEX / VOC							HOLD	RUSH	Remarks (over)
20760 -01		Soil	3/10/14		2	X	X	X									
-02															X		
-03																	
-04																	
-05																	
-06																	
-07																	
-08																	
-09																	
-10																	
-11																	
-12																	

Analyses Required

Sampler's Signature	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
E. Liebrecht	E. Liebrecht	Golder	Oct 3/14			
Sample Storage (°C)	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.:	Received for Lab by:	Date	Time
			PM M.	10/6/14	0910
	Shipped by:	Shipment Condition: Seal Intact:	Temp (°C)	Cooler opened by:	Date	Time
			3.8			

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report

IR/P-8

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 250-21835-1

Login Number: 21835

List Source: TestAmerica Portland

List Number: 1

Creator: Svabik-Seror, Philip M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-22477-1
Client Project/Site: 1414827

For:
Golder Associates Inc.
#500-4260 Still Creek Drive
Burnaby, British Columbia V5C6C6

Attn: Tamara Reynolds

Vanessa Berry

Authorized for release by:
11/11/2014 9:50:46 PM

Vanessa Berry, Project Manager II
(503)906-9233
vanessa.berry@testamericainc.com

Table of Contents

Sample Summary

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-22477-1	20700-01	Solid	10/29/14 00:00	11/03/14 08:42
250-22477-2	20700-02	Solid	10/29/14 00:00	11/03/14 08:42
250-22477-3	20700-03	Solid	10/29/14 00:00	11/03/14 08:42
250-22477-4	20700-04	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-5	20700-05	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-6	20700-06	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-7	20700-07	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-8	20700-08	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-9	20700-09	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-10	20700-10	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-11	20700-11	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-12	20700-12	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-13	20701-01	Solid	10/30/14 00:00	11/03/14 08:42
250-22477-14	20701-02	Solid	10/30/14 00:00	11/03/14 08:42

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Job ID: 250-22477-1

Laboratory: TestAmerica Portland

Narrative

Job Narrative
250-22477-1

Comments
No additional comments.

Receipt
The samples were received on 11/3/2014 8:42 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

Except:

Sample containers are labeled with a date of 10/29/14, however the CoC indicates a sampling date of 10/30/14. Client noted this discrepancy on the CoC and samples were logged in per CoC. 20700-04 (250-22477-4), 20700-05 (250-22477-5), 20700-06 (250-22477-6), 20700-07 (250-22477-7), 20700-08 (250-22477-8), 20700-09 (250-22477-9), 20700-10 (250-22477-10), 20700-11 (250-22477-11), 20700-12 (250-22477-12)

GC/MS VOA
Method(s) 8260B: The following sample(s) was diluted due to the nature of the sample matrix: 20700-04 (250-22477-4), 20700-08 (250-22477-8), 20700-09 (250-22477-9), 20700-10 (250-22477-10). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Method(s) AK101: The following reported values for sample(s) within the Gasoline Range Organics (GRO) retention time window is manly due to diesel fuel: 20700-04 (250-22477-4), 20700-08 (250-22477-8), 20700-09 (250-22477-9), 20700-10 (250-22477-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) AK102 & 103: Surrogate recovery for the following sample(s) was outside control limits: 20700-04 (250-22477-4), 20700-09 (250-22477-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: 20700-01 — **Lab Sample ID: 250-22477-1**
Date Collected: 10/29/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 92.4**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		380	74	ug/Kg	☼	11/04/14 10:37	11/05/14 14:05	1
Benzene	ND		130	25	ug/Kg	☼	11/04/14 10:37	11/05/14 14:05	1
Ethylbenzene	ND		130	23	ug/Kg	☼	11/04/14 10:37	11/05/14 14:05	1
Toluene	ND		130	19	ug/Kg	☼	11/04/14 10:37	11/05/14 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:05*	*1*
4-Bromofluorobenzene (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:05*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:05*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:05*	*1*

Client Sample ID: 20700-02 — **Lab Sample ID: 250-22477-2**
Date Collected: 10/29/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		350	68	ug/Kg	☼	11/04/14 10:37	11/05/14 14:31	1
Benzene	ND		120	23	ug/Kg	☼	11/04/14 10:37	11/05/14 14:31	1
Ethylbenzene	ND		120	21	ug/Kg	☼	11/04/14 10:37	11/05/14 14:31	1
Toluene	ND		120	17	ug/Kg	☼	11/04/14 10:37	11/05/14 14:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:31*	*1*
4-Bromofluorobenzene (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:31*	*1*
Dibromofluoromethane (Surr)	*95*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:31*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:31*	*1*

Client Sample ID: 20700-03 — **Lab Sample ID: 250-22477-3**
Date Collected: 10/29/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 79.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		480	94	ug/Kg	☼	11/04/14 10:37	11/05/14 14:57	1
Benzene	ND		160	32	ug/Kg	☼	11/04/14 10:37	11/05/14 14:57	1
Ethylbenzene	ND		160	29	ug/Kg	☼	11/04/14 10:37	11/05/14 14:57	1
Toluene	ND		160	24	ug/Kg	☼	11/04/14 10:37	11/05/14 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:57*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:57*	*1*
Toluene-d8 (Surr)	*100*		*75 - 125*	*11/04/14 10:37*	*11/05/14 14:57*	*1*

Client Sample ID: 20700-04 — **Lab Sample ID: 250-22477-4**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**1000**	**J**	1900	380	ug/Kg	☼	11/04/14 10:37	11/05/14 17:36	5
Benzene	ND		640	130	ug/Kg	☼	11/04/14 10:37	11/05/14 17:36	5
Ethylbenzene	**130**	**J**	640	110	ug/Kg	☼	11/04/14 10:37	11/05/14 17:36	5
Toluene	ND		640	95	ug/Kg	☼	11/04/14 10:37	11/05/14 17:36	5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 125	11/04/14 10:37	11/05/14 17:36	5
4-Bromofluorobenzene (Surr)	101		75 - 125	11/04/14 10:37	11/05/14 17:36	5
Dibromofluoromethane (Surr)	98		75 - 125	11/04/14 10:37	11/05/14 17:36	5
Toluene-d8 (Surr)	99		75 - 125	11/04/14 10:37	11/05/14 17:36	5

Client Sample ID: 20700-05
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-5
Matrix: Solid
Percent Solids: 91.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		380	75	ug/Kg	☼	11/04/14 10:37	11/05/14 15:24	1
Benzene	ND		130	26	ug/Kg	☼	11/04/14 10:37	11/05/14 15:24	1
Ethylbenzene	ND		130	23	ug/Kg	☼	11/04/14 10:37	11/05/14 15:24	1
Toluene	ND		130	19	ug/Kg	☼	11/04/14 10:37	11/05/14 15:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 125	11/04/14 10:37	11/05/14 15:24	1
4-Bromofluorobenzene (Surr)	97		75 - 125	11/04/14 10:37	11/05/14 15:24	1
Dibromofluoromethane (Surr)	96		75 - 125	11/04/14 10:37	11/05/14 15:24	1
Toluene-d8 (Surr)	99		75 - 125	11/04/14 10:37	11/05/14 15:24	1

Client Sample ID: 20700-06
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-6
Matrix: Solid
Percent Solids: 95.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		350	69	ug/Kg	☼	11/04/14 10:37	11/05/14 15:50	1
Benzene	ND		120	24	ug/Kg	☼	11/04/14 10:37	11/05/14 15:50	1
Ethylbenzene	ND		120	21	ug/Kg	☼	11/04/14 10:37	11/05/14 15:50	1
Toluene	ND		120	18	ug/Kg	☼	11/04/14 10:37	11/05/14 15:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 125	11/04/14 10:37	11/05/14 15:50	1
4-Bromofluorobenzene (Surr)	99		75 - 125	11/04/14 10:37	11/05/14 15:50	1
Dibromofluoromethane (Surr)	98		75 - 125	11/04/14 10:37	11/05/14 15:50	1
Toluene-d8 (Surr)	98		75 - 125	11/04/14 10:37	11/05/14 15:50	1

Client Sample ID: 20700-07
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-7
Matrix: Solid
Percent Solids: 97.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		330	66	ug/Kg	☼	11/04/14 10:37	11/05/14 16:17	1
Benzene	ND		110	22	ug/Kg	☼	11/04/14 10:37	11/05/14 16:17	1
Ethylbenzene	ND		110	20	ug/Kg	☼	11/04/14 10:37	11/05/14 16:17	1
Toluene	ND		110	17	ug/Kg	☼	11/04/14 10:37	11/05/14 16:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 125	11/04/14 10:37	11/05/14 16:17	1
4-Bromofluorobenzene (Surr)	99		75 - 125	11/04/14 10:37	11/05/14 16:17	1
Dibromofluoromethane (Surr)	97		75 - 125	11/04/14 10:37	11/05/14 16:17	1
Toluene-d8 (Surr)	100		75 - 125	11/04/14 10:37	11/05/14 16:17	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: 20700-08
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-8
Matrix: Solid
Percent Solids: 91.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	28000		2100	410	ug/Kg	☼	11/04/14 10:37	11/05/14 18:02	5
Benzene	ND		690	140	ug/Kg	☼	11/04/14 10:37	11/05/14 18:02	5
Ethylbenzene	2600		690	120	ug/Kg	☼	11/04/14 10:37	11/05/14 18:02	5
Toluene	860		690	100	ug/Kg	☼	11/04/14 10:37	11/05/14 18:02	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:02*	*5*
4-Bromofluorobenzene (Surr)	*109*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:02*	*5*
Dibromofluoromethane (Surr)	*96*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:02*	*5*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:02*	*5*

Client Sample ID: 20700-09
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-9
Matrix: Solid
Percent Solids: 85.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	17000		2200	440	ug/Kg	☼	11/04/14 10:37	11/05/14 18:29	5
Benzene	ND		740	150	ug/Kg	☼	11/04/14 10:37	11/05/14 18:29	5
Ethylbenzene	740		740	130	ug/Kg	☼	11/04/14 10:37	11/05/14 18:29	5
Toluene	220	J	740	110	ug/Kg	☼	11/04/14 10:37	11/05/14 18:29	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:29*	*5*
4-Bromofluorobenzene (Surr)	*109*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:29*	*5*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:29*	*5*
Toluene-d8 (Surr)	*100*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:29*	*5*

Client Sample ID: 20700-10
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-10
Matrix: Solid
Percent Solids: 88.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	14000		2100	410	ug/Kg	☼	11/04/14 10:37	11/05/14 18:55	5
Benzene	ND		700	140	ug/Kg	☼	11/04/14 10:37	11/05/14 18:55	5
Ethylbenzene	680	J	700	130	ug/Kg	☼	11/04/14 10:37	11/05/14 18:55	5
Toluene	180	J	700	100	ug/Kg	☼	11/04/14 10:37	11/05/14 18:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:55*	*5*
4-Bromofluorobenzene (Surr)	*111*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:55*	*5*
Dibromofluoromethane (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:55*	*5*
Toluene-d8 (Surr)	*100*		*75 - 125*	*11/04/14 10:37*	*11/05/14 18:55*	*5*

Client Sample ID: 20700-11
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-11
Matrix: Solid
Percent Solids: 96.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		290	58	ug/Kg	☼	11/04/14 10:37	11/05/14 16:43	1
Benzene	ND		98	20	ug/Kg	☼	11/04/14 10:37	11/05/14 16:43	1
Ethylbenzene	ND		98	18	ug/Kg	☼	11/04/14 10:37	11/05/14 16:43	1
Toluene	ND		98	15	ug/Kg	☼	11/04/14 10:37	11/05/14 16:43	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 16:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 16:43*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 16:43*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 16:43*	*1*

Client Sample ID: 20700-12 — **Lab Sample ID: 250-22477-12**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 95.0**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		360	71	ug/Kg	☼	11/04/14 10:37	11/05/14 17:10	1
Benzene	ND		120	24	ug/Kg	☼	11/04/14 10:37	11/05/14 17:10	1
Ethylbenzene	ND		120	22	ug/Kg	☼	11/04/14 10:37	11/05/14 17:10	1
Toluene	ND		120	18	ug/Kg	☼	11/04/14 10:37	11/05/14 17:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 17:10*	*1*
4-Bromofluorobenzene (Surr)	*98*		*75 - 125*	*11/04/14 10:37*	*11/05/14 17:10*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 17:10*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 17:10*	*1*

Client Sample ID: 20701-01 — **Lab Sample ID: 250-22477-13**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		300	59	ug/Kg		11/04/14 10:37	11/05/14 13:12	1
Benzene	ND		100	20	ug/Kg		11/04/14 10:37	11/05/14 13:12	1
Ethylbenzene	ND		100	18	ug/Kg		11/04/14 10:37	11/05/14 13:12	1
Toluene	**16**	**J**	100	15	ug/Kg		11/04/14 10:37	11/05/14 13:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:12*	*1*
4-Bromofluorobenzene (Surr)	*96*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:12*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:12*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:12*	*1*

Client Sample ID: 20701-02 — **Lab Sample ID: 250-22477-14**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		300	59	ug/Kg		11/04/14 10:37	11/05/14 13:38	1
Benzene	ND		100	20	ug/Kg		11/04/14 10:37	11/05/14 13:38	1
Ethylbenzene	ND		100	18	ug/Kg		11/04/14 10:37	11/05/14 13:38	1
Toluene	ND		100	15	ug/Kg		11/04/14 10:37	11/05/14 13:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:38*	*1*
4-Bromofluorobenzene (Surr)	*96*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:38*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:38*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*	*11/04/14 10:37*	*11/05/14 13:38*	*1*

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Client Sample ID: 20700-01
Date Collected: 10/29/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-1
Matrix: Solid
Percent Solids: 92.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		5.0	1.6	mg/Kg	☼	11/04/14 10:06	11/04/14 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*83*		*50 - 150*	*11/04/14 10:06*	*11/04/14 16:58*	*1*

Client Sample ID: 20700-02
Date Collected: 10/29/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-2
Matrix: Solid
Percent Solids: 95.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**2.2**	**J**	4.6	1.5	mg/Kg	☼	11/04/14 10:06	11/04/14 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*86*		*50 - 150*	*11/04/14 10:06*	*11/04/14 15:26*	*1*

Client Sample ID: 20700-03
Date Collected: 10/29/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-3
Matrix: Solid
Percent Solids: 79.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		6.4	2.1	mg/Kg	☼	11/04/14 10:06	11/04/14 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*84*		*50 - 150*	*11/04/14 10:06*	*11/04/14 15:57*	*1*

Client Sample ID: 20700-04
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-4
Matrix: Solid
Percent Solids: 93.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**200**		20	6.6	mg/Kg	☼	11/04/14 10:06	11/04/14 20:32	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*85*		*50 - 150*	*11/04/14 10:06*	*11/04/14 20:32*	*4*

Client Sample ID: 20700-05
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-5
Matrix: Solid
Percent Solids: 91.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		5.1	1.7	mg/Kg	☼	11/04/14 10:06	11/04/14 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*80*		*50 - 150*	*11/04/14 10:06*	*11/04/14 16:28*	*1*

Client Sample ID: 20700-06
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-6
Matrix: Solid
Percent Solids: 95.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		4.7	1.5	mg/Kg	☼	11/04/14 10:06	11/04/14 18:30	1

Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	85		50 - 150	11/04/14 10:06	11/04/14 18:30	1

Client Sample ID: 20700-07 — **Lab Sample ID: 250-22477-7**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 97.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		4.5	1.5	mg/Kg	☼	11/04/14 10:06	11/05/14 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	98		50 - 150	11/04/14 10:06	11/05/14 17:02	1

Client Sample ID: 20700-08 — **Lab Sample ID: 250-22477-8**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 91.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**700**		22	7.2	mg/Kg	☼	11/04/14 10:06	11/04/14 21:02	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	77		50 - 150	11/04/14 10:06	11/04/14 21:02	4

Client Sample ID: 20700-09 — **Lab Sample ID: 250-22477-9**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 85.7**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**740**		24	7.7	mg/Kg	☼	11/04/14 10:06	11/04/14 21:33	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	81		50 - 150	11/04/14 10:06	11/04/14 21:33	4

Client Sample ID: 20700-10 — **Lab Sample ID: 250-22477-10**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 88.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**670**		22	7.2	mg/Kg	☼	11/04/14 10:06	11/04/14 22:03	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	82		50 - 150	11/04/14 10:06	11/04/14 22:03	4

Client Sample ID: 20700-11 — **Lab Sample ID: 250-22477-11**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 96.7**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		3.9	1.3	mg/Kg	☼	11/04/14 10:06	11/04/14 19:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	79		50 - 150	11/04/14 10:06	11/04/14 19:31	1

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Client Sample ID: 20700-12
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-12
Matrix: Solid
Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		4.8	1.6	mg/Kg	☼	11/04/14 10:06	11/04/14 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*79*		*50 - 150*	*11/04/14 10:06*	*11/04/14 20:01*	*1*

Client Sample ID: 20701-01
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-13
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**11**		4.0	1.3	mg/Kg		11/04/14 10:06	11/04/14 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*80*		*50 - 150*	*11/04/14 10:06*	*11/04/14 14:02*	*1*

Client Sample ID: 20701-02
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-14
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		4.0	1.3	mg/Kg		11/04/14 10:06	11/04/14 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*82*		*50 - 150*	*11/04/14 10:06*	*11/04/14 14:32*	*1*

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Client Sample ID: 20700-01 — **Lab Sample ID: 250-22477-1**
Date Collected: 10/29/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 92.4**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	4.5	J	13	1.7	mg/Kg	☼	11/05/14 08:38	11/05/14 17:53	1
RRO (nC25-nC36)	11	J	27	2.9	mg/Kg	☼	11/05/14 08:38	11/05/14 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*97*		*50 - 150*	*11/05/14 08:38*	*11/05/14 17:53*	*1*
1-Chlorooctadecane	*112*		*50 - 150*	*11/05/14 08:38*	*11/05/14 17:53*	*1*

Client Sample ID: 20700-02 — **Lab Sample ID: 250-22477-2**
Date Collected: 10/29/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 95.1**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	ND		13	1.7	mg/Kg	☼	11/05/14 08:52	11/05/14 18:13	1
RRO (nC25-nC36)	3.6	J	26	2.8	mg/Kg	☼	11/05/14 08:52	11/05/14 18:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*99*		*50 - 150*	*11/05/14 08:52*	*11/05/14 18:13*	*1*
1-Chlorooctadecane	*110*		*50 - 150*	*11/05/14 08:52*	*11/05/14 18:13*	*1*

Client Sample ID: 20700-03 — **Lab Sample ID: 250-22477-3**
Date Collected: 10/29/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 79.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	3.6	J	16	2.0	mg/Kg	☼	11/05/14 08:52	11/05/14 18:52	1
RRO (nC25-nC36)	4.7	J	31	3.4	mg/Kg	☼	11/05/14 08:52	11/05/14 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*98*		*50 - 150*	*11/05/14 08:52*	*11/05/14 18:52*	*1*
1-Chlorooctadecane	*104*		*50 - 150*	*11/05/14 08:52*	*11/05/14 18:52*	*1*

Client Sample ID: 20700-04 — **Lab Sample ID: 250-22477-4**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	3300		130	17	mg/Kg	☼	11/05/14 08:52	11/06/14 14:12	10
RRO (nC25-nC36)	70	J	270	29	mg/Kg	☼	11/05/14 08:52	11/06/14 14:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*98*		*50 - 150*	*11/05/14 08:52*	*11/06/14 14:12*	*10*
1-Chlorooctadecane	*106*		*50 - 150*	*11/05/14 08:52*	*11/06/14 14:12*	*10*

Client Sample ID: 20700-05 — **Lab Sample ID: 250-22477-5**
Date Collected: 10/30/14 00:00 — **Matrix: Solid**
Date Received: 11/03/14 08:42 — **Percent Solids: 91.7**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	6.6	J	14	1.7	mg/Kg	☼	11/05/14 08:52	11/05/14 22:26	1
RRO (nC25-nC36)	6.6	J	27	2.9	mg/Kg	☼	11/05/14 08:52	11/05/14 22:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*104*		*50 - 150*	*11/05/14 08:52*	*11/05/14 22:26*	*1*
1-Chlorooctadecane	*108*		*50 - 150*	*11/05/14 08:52*	*11/05/14 22:26*	*1*

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Client Sample ID: 20700-06
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-6
Matrix: Solid
Percent Solids: 95.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	12	J	13	1.7	mg/Kg	☼	11/05/14 08:52	11/05/14 22:46	1
RRO (nC25-nC36)	4.8	J	26	2.8	mg/Kg	☼	11/05/14 08:52	11/05/14 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*77*		*50 - 150*	*11/05/14 08:52*	*11/05/14 22:46*	*1*
1-Chlorooctadecane	*80*		*50 - 150*	*11/05/14 08:52*	*11/05/14 22:46*	*1*

Client Sample ID: 20700-07
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-7
Matrix: Solid
Percent Solids: 97.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	56		13	1.6	mg/Kg	☼	11/05/14 08:52	11/05/14 23:05	1
RRO (nC25-nC36)	12	J	26	2.8	mg/Kg	☼	11/05/14 08:52	11/05/14 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*87*		*50 - 150*	*11/05/14 08:52*	*11/05/14 23:05*	*1*
1-Chlorooctadecane	*92*		*50 - 150*	*11/05/14 08:52*	*11/05/14 23:05*	*1*

Client Sample ID: 20700-08
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-8
Matrix: Solid
Percent Solids: 91.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	5400		140	17	mg/Kg	☼	11/05/14 08:52	11/06/14 07:48	10
RRO (nC25-nC36)	82	J	270	29	mg/Kg	☼	11/05/14 08:52	11/06/14 07:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*73*		*50 - 150*	*11/05/14 08:52*	*11/06/14 07:48*	*10*
1-Chlorooctadecane	*86*		*50 - 150*	*11/05/14 08:52*	*11/06/14 07:48*	*10*

Client Sample ID: 20700-09
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-9
Matrix: Solid
Percent Solids: 85.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	5300		150	19	mg/Kg	☼	11/05/14 08:52	11/06/14 08:07	10
RRO (nC25-nC36)	58	J	290	31	mg/Kg	☼	11/05/14 08:52	11/06/14 08:07	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*78*		*50 - 150*	*11/05/14 08:52*	*11/06/14 08:07*	*10*
1-Chlorooctadecane	*217*	*X*	*50 - 150*	*11/05/14 08:52*	*11/06/14 08:07*	*10*

Client Sample ID: 20700-10
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-10
Matrix: Solid
Percent Solids: 88.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	7700		140	18	mg/Kg	☼	11/05/14 08:52	11/06/14 08:26	10
RRO (nC25-nC36)	71	J	280	30	mg/Kg	☼	11/05/14 08:52	11/06/14 08:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*135*		*50 - 150*	*11/05/14 08:52*	*11/06/14 08:26*	*10*
1-Chlorooctadecane	*137*		*50 - 150*	*11/05/14 08:52*	*11/06/14 08:26*	*10*

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Client Sample ID: 20700-11
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-11
Matrix: Solid
Percent Solids: 96.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	**2.2**	**J**	13	1.6	mg/Kg	☼	11/05/14 08:52	11/06/14 00:22	1
RRO (nC25-nC36)	**3.2**	**J**	26	2.8	mg/Kg	☼	11/05/14 08:52	11/06/14 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*100*		*50 - 150*	*11/05/14 08:52*	*11/06/14 00:22*	*1*
1-Chlorooctadecane	*109*		*50 - 150*	*11/05/14 08:52*	*11/06/14 00:22*	*1*

Client Sample ID: 20700-12
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-12
Matrix: Solid
Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	ND		13	1.7	mg/Kg	☼	11/05/14 08:52	11/06/14 00:41	1
RRO (nC25-nC36)	ND		26	2.8	mg/Kg	☼	11/05/14 08:52	11/06/14 00:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*102*		*50 - 150*	*11/05/14 08:52*	*11/06/14 00:41*	*1*
1-Chlorooctadecane	*111*		*50 - 150*	*11/05/14 08:52*	*11/06/14 00:41*	*1*

General Chemistry

Client Sample ID: 20700-01
Date Collected: 10/29/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.6		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	92		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-02
Date Collected: 10/29/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.9		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	95		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-03
Date Collected: 10/29/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	79		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-04
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-4
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	94		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-05
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-5
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.3		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	92		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-06
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-6
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.9		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	95		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-07
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-7
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.7		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	97		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-08
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42
Lab Sample ID: 250-22477-8
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.4		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	92		0.010	0.010	%			11/04/14 10:30	1

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

General Chemistry

Client Sample ID: 20700-09
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-9
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	86		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-10
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-10
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	89		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-11
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-11
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.3		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	97		0.010	0.010	%			11/04/14 10:30	1

Client Sample ID: 20700-12
Date Collected: 10/30/14 00:00
Date Received: 11/03/14 08:42

Lab Sample ID: 250-22477-12
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.0		0.010	0.010	%			11/04/14 10:30	1
Percent Solids	95		0.010	0.010	%			11/04/14 10:30	1

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: 250-22477-11 MS
Matrix: Solid
Analysis Batch: 32010

Client Sample ID: 20700-11
Prep Type: Total/NA
Prep Batch: 31907

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	ND		5860	6160		ug/Kg	☼	105	70 - 130
Benzene	ND		1950	1800		ug/Kg	☼	92	80 - 125
Ethylbenzene	ND		1950	2090		ug/Kg	☼	107	80 - 125
Toluene	ND		1950	1930		ug/Kg	☼	99	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*
Dibromofluoromethane (Surr)	*99*		*75 - 125*
Toluene-d8 (Surr)	*101*		*75 - 125*

Lab Sample ID: 250-22477-11 MSD
Matrix: Solid
Analysis Batch: 32010

Client Sample ID: 20700-11
Prep Type: Total/NA
Prep Batch: 31907

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total	ND		5860	6230		ug/Kg	☼	106	70 - 130	1	25
Benzene	ND		1950	1810		ug/Kg	☼	93	80 - 125	1	25
Ethylbenzene	ND		1950	2110		ug/Kg	☼	108	80 - 125	1	25
Toluene	ND		1950	1920		ug/Kg	☼	98	70 - 130	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*
4-Bromofluorobenzene (Surr)	*102*		*75 - 125*
Dibromofluoromethane (Surr)	*100*		*75 - 125*
Toluene-d8 (Surr)	*102*		*75 - 125*

Lab Sample ID: MB 250-31984/6
Matrix: Solid
Analysis Batch: 31984

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		300	59	ug/Kg			11/05/14 10:07	1
Benzene	ND		100	20	ug/Kg			11/05/14 10:07	1
Ethylbenzene	ND		100	18	ug/Kg			11/05/14 10:07	1
Toluene	ND		100	15	ug/Kg			11/05/14 10:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/05/14 10:07*	*1*
4-Bromofluorobenzene (Surr)	*99*		*75 - 125*		*11/05/14 10:07*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 125*		*11/05/14 10:07*	*1*
Toluene-d8 (Surr)	*100*		*75 - 125*		*11/05/14 10:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-31984/4
Matrix: Solid
Analysis Batch: 31984

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	6000	5990		ug/Kg		100	70 - 130
Benzene	2000	1750		ug/Kg		87	80 - 120
Ethylbenzene	2000	2030		ug/Kg		101	80 - 125
Toluene	2000	1840		ug/Kg		92	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*
Dibromofluoromethane (Surr)	*100*		*75 - 125*
Toluene-d8 (Surr)	*100*		*75 - 125*

Method: AK101 - Alaska - Gasoline Range Organics (GC)

Lab Sample ID: MB 250-31900/1-A
Matrix: Solid
Analysis Batch: 31972

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31900

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		4.0	1.3	mg/Kg		11/04/14 10:06	11/04/14 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*87*		*50 - 150*	*11/04/14 10:06*	*11/04/14 12:55*	*1*

Lab Sample ID: LCS 250-31900/2-A
Matrix: Solid
Analysis Batch: 31972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	30.0	26.4		mg/Kg		88	60 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*94*		*50 - 150*

Lab Sample ID: LCSD 250-31900/3-A
Matrix: Solid
Analysis Batch: 31972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31900

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	30.0	25.7		mg/Kg		86	60 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*93*		*50 - 150*

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Lab Sample ID: MB 250-31946/1-B
Matrix: Solid
Analysis Batch: 31989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31946

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	ND		12	1.6	mg/Kg		11/05/14 08:38	11/05/14 16:55	1
RRO (nC25-nC36)	ND		25	2.7	mg/Kg		11/05/14 08:38	11/05/14 16:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Triacontane	*96*		*50 - 150*	*11/05/14 08:38*	*11/05/14 16:55*	*1*
1-Chlorooctadecane	*107*		*50 - 150*	*11/05/14 08:38*	*11/05/14 16:55*	*1*

Lab Sample ID: LCS 250-31946/2-B
Matrix: Solid
Analysis Batch: 31989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31946

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C25)			125	95.6		mg/Kg		77	75 - 125		
RRO (nC25-nC36)			75.0	64.4		mg/Kg		86	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Triacontane	*84*		*50 - 150*
1-Chlorooctadecane	*87*		*50 - 150*

Lab Sample ID: LCSD 250-31946/3-B
Matrix: Solid
Analysis Batch: 31989

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31946

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C25)			125	111		mg/Kg		89	75 - 125	15	20
RRO (nC25-nC36)			74.9	75.9		mg/Kg		101	60 - 120	16	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Triacontane	*98*		*50 - 150*
1-Chlorooctadecane	*100*		*50 - 150*

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-22477-1 DU
Matrix: Solid
Analysis Batch: 31903

Client Sample ID: 20700-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	7.6			8.3		%				9	20
Percent Solids	92			92		%				0.8	20

Certification Summary

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Laboratory: TestAmerica Portland

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-012	12-26-14
California	State Program	9	2597	09-30-15
Oregon	NELAP	10	OR100021	01-09-15
USDA	Federal		P330-11-00092	04-17-17
Washington	State Program	10	C586	06-23-15

Method Summary

Client: Golder Associates Inc.
Project/Site: 1414827

TestAmerica Job ID: 250-22477-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
AK101	Alaska - Gasoline Range Organics (GC)	ADEC	TAL PRT
AK102 & 103	Alaska - Diesel Range Organics & Residual Range Organics (GC)	ADEC	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ADEC = Alaska Department of Environmental Conservation

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

500–4260
Burnaby, British Columbia, Canada
Telephone: 604-298-6623 Fax: 604-298-5253

250-22477 Chain of Custody

IN-OF-CUSTODY RECORD/ANALYSIS REQUEST

№ 20700 page 1 of 2

Project Number: 14 14 827		Laboratory Name: Test America
[redacted]		Address: 9405 Nimbus Ave SW Beaverton, OR 97008
Golder Contact: Tamara Reynolds	Golder E-mail Address: Tamara-Reynolds @golder.com	Tel/Fax: 503-906-9200
		Contact: Vanessa Berry

Office the final reports should be sent to:

- ☒ 500–4260 Still Creek Drive, Burnaby, BC V5C 6C6, Tel: 604-298-6623, Fax: 604-298-5253
- ☐ 202–2790 Gladwin Road, Abbotsford, BC V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ☐ 2640 Douglas Street, Victoria, BC V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D/M/Y)	[redacted]	Analyses Required: Number of Containers	DRO/HRO	GRO	BTEX/VOCs						RUSH	Remarks (over)
20700 -01		Soil	29/10/14		2	X	X	X					1		
-02			↓												
-03															
-04			30/10/14												
-05															
-06															
-07															
-08															
-09															
-10															
-11															
↓ -12			↓		↓	↓	↓	↓							

Sampler's Signature	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Sample Storage (°C) ON ICE	Relinquished by: Signature	Company	Date 11/3/14	Time 0842	Received by: Signature	Company

Comments:	Method of Shipment:	Waybill No.:	Received for Lab by:	Date	Time
note sample jars 20700-04 to 12 sat Oct 29, really they were sampled Oct 30	Shipped by: Wings	Shipment Condition: Seal Intact:	Temp (°C) / Cooler opened by:	Date	Time

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report

2.4 (2.2 corr) digital

22477

CHAIN-OF-CUSTODY RECORD/ANALYSIS REQUEST

№ 20701 page 2 of 2

Golder Associates

500–4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604-298-6623 Fax: 604-298-5253

Project Number: 14 14 827	Laboratory Name: Test America
[redacted]	Address: 9405 Nimbus Ave SW Beaverton OR 97008
Golder Contact: Tanna Reynolds	Golder E-mail Address: Tanna_Reynolds@golder.com
Tel/Fax: 503-906-9200	Contact: Vanessa Berry

Office the final reports should be sent to:

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- ❑ 202–2790 Gladwin Road, Abbotsford, BC V2T 4S8, Tel: 604-850-8786, Fax: 604-850-8756
- ❑ 2640 Douglas Street, Victoria, BC V8T 4M1, Tel: 250-881-7372, Fax: 250-881-7470

Sample Control Number (SCN)	[redacted]	Sample Matrix (over)	Date Sampled (D/M/Y)	[redacted]	Number of Containers	DRO/RRO	GRO	BTEX/VOCs							RUSH	Remarks (over)
20701 –01		Trip Blank	30/10/14		1	[redacted]	X	X								
20701 –02		Field Blank	↓		1	X	X	X								
–03																
–04																
–05																
–06																
–07																
–08																
–09																
–10																
–11																
–12																

Analyses Required

Sampler's Signature	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Sample Storage (°C) on ICE	Relinquished by: Signature	Company	Date 11/3/14	Time 0842	Received by: Signature	Company TFP
Comments:	Method of Shipment: Air	Waybill No.:	Received for Lab by:		Date	Time
	Shipped by: Wings	Shipment Condition: Seal Intact:	Temp (°C)	Cooler opened by:	Date	Time

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 250-22477-1

Login Number: 22477

List Source: TestAmerica Portland

List Number: 1

Creator: Svabik-Seror, Philip M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Dates on containers do not match CoC for many samples.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

ATTACHMENT 3

ADEC Laboratory Data Review Checklist

Laboratory Data Review Checklist

Completed by:	Lindsay Carson
Title:	Environmental Engineer (E.I.T, Yukon Territory)
Date:	December 11, 2014
CS Report Name:	Remedial Soil Excavation, Alaska Fur Co., 363 2nd Avenue, Skagway, Alaska
Report Date:	October 16, 2014 November 11, 2014
Consultant Firm:	Golder Associates Ltd.
Laboratory Name:	TestAmerica Laboratories Inc.
Laboratory Report Number:	250-21835-1 250-22477-1
ADEC File Number:	Not Assigned
ADEC RecKey Number:	Not Assigned

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:

   Not Applicable

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:

Samples were received at between 2.2°C and 3.8°C.

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

☒ Yes ☐ No Comments:

Samples were properly preserved.

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

☒ Yes ☐ No Comments:

Samples arrived 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:

Sample containers were labeled with a date of 10/29/14, however the chain of custody (COC) indicated a sampling date of 10/30/14. Client noted this discrepancy on the COC and samples were logged according to the COC date.

e. Data quality or usability affected? Explain.

Comments:

No

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:

Elevated method blank may bias higher DRO and RRO results.

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:

Samples 20701-01 (trip blank) and 20701-02 (field blank) were reported on a wet basis; however, these samples did not contain soil.

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

☐ Yes ☒ No Comments:

Samples 20718-01, 20718-02, 20718-08, 20700-04, 20700-08, 20700-09, and 20700-10 exceeded standard(s) for one or more of the following analytes: ethylbenzene, xylene, DRO, GRO, and methylene chloride.

e. Data quality or usability affected? Explain.

Comments:

No

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:

The method blank for DRO and RRO analyses contained Diesel above the method detection limit for laboratory batches 250-31056 and 250-31135; however, laboratory concentrations were less than half of the reporting limit.

iii. If above PQL, what samples are affected?

Comments:

DRO was found in the blank and sample for 20718-09, 20718-10, 20718-12, and 20760-01.

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

☑ Yes ☐ No Comments:

v. Data quality or usability affected? Explain.

Comments:

Elevated method blank may bias higher DRO levels.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

Not applicable

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. (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:

None

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

☑ Yes ☐ No Comments:

vii. Data quality or usability affected? Explain.

Comments:

No

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:

The surrogate recovery for GRO, DRO and RRO analyses was outside control limits for samples 20718-01, 20718-02, 20700-04, 20700-09; the laboratory attributed this to matrix interferences.

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? Explain.

Comments:

No

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

i. One trip blank reported per matrix, analysis and cooler?

☑ Yes ☐ No Comments:

ii. All results less than PQL?

☑ Yes ☐ No Comments:

Sample 20701-01 (trip blank) contained concentrations of toluene less than the reporting limit but greater than the method detection limit, and GRO greater than both the reporting limit and method detection limit.

iii. If above PQL, what samples are affected?

Comments:

Samples 20700-01 to 20700-12 collected during the corresponding submission (October 29-30, 2014) were affected.

iv. Data quality or usability affected? Explain.

Comments:

Elevated trip blank may bias higher GRO levels.

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:

Yes

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

RPD (%) = 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:

Highest RPD value was 39% for naphthalene between duplicate samples 20718-01 and 20718-02, all other analytes less than 30% and below the recommended 50% RPD for soil.

iv. Data quality or usability affected? Explain.

Comments:

Not applicable

f. Decontamination or Equipment Blank (if applicable)

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

Not applicable

ii. If above PQL, what samples are affected?

Comments:

Not applicable

iii. Data quality or usability affected? Explain.

Comments:

Not applicable

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

a. Defined and appropriate?

☒ Yes ☐ No Comments: