#### **CITY OF UNALASKA**

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Via Certified Mail - Return Receipt Requested

September 11, 2012

Meghan Dooley Alaska Department of Environmental Conservation Contaminated Sites Program 555 Cordova Street Anchorage, AK 99501

#### Re: City of Unalaska – Drainage Projects

Dear Ms. Dooley:

The attached document presents the results of a soils characterization and work plan addendum for City of Unalaska storm drain improvements near the Rocky Point Management Area and the Pre-WWII Tank Farm area in Dutch Harbor, Alaska.

If you have any questions or concerns regarding this matter, please contact myself or Robert Lund at 907-581-1260.

Sincerely,

Nancy Peterson Director of Public Works



Prepared by

**City of Unalaska Department of Public Works** PO Box 610 Unalaska, Alaska 99685

Prepared for

Ilulaq Lake / East Point Road & Delta Way Drainage Improvements DPW Project No. 10101 Dutch Harbor, Alaska

September 11, 2012

Prepared By Robert Lund, P.E.

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#### LIST OF ACRONYMS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ARD	Aleutian Recording District
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
°C	degrees centigrade
CCV	continuing calibration verification
СМР	corrugated metal pipe
CoC	chain of custody
COPC	contaminants of potential concern
CPP	corrugated polyethylene pipe
CULs	cleanup levels
DL	detection level. 2x the DL is the LOD.
DUP	duplicate
DRO	diesel range organics
DPW	City of Unalaska Department of Public Works
DW	Delta Way
EPA	Environmental Protection Agency
EP	East Point Road
FUDS	formerly used defense sites
GRO	gasoline range organics
GPS RTK	global positionings system with real time kinematic satellite navigation
J	the guantification is an estimation
LCS/LCSD	lab control sample and lab control sample duplicate
LOD	limits of detection is the lowest statistical level at which the laboratory can qualify the presence of an analyte
LOQ	limits of quantification is the lowest level the lab can quantify an analyte
LNAPL	light non-aqueous phase liquid
MLLW	mean lower low water (tide level, 0.00 feet elevation in NGVD 29 elevation system)
MS/MSD	matrix spike and matrix spike duplicate
NAD 83	North American datum 1983 (horizontal)
NGVD 29	national geodetic vertical datum 1929
No.	number
NOAA	national oceanic and atmospheric administration
PAHs	polynuclear aromatic hydrocarbons
PE	professional engineer
PQL	practical quantification level
PID	photo-ionization detector
ppmv	parts per million by volume
QC	quality control
RPD	relative percent difference
PQL	practical quantification limit (same as the LOQ)
REPDL	LOQ unless a lab value is j-flagged, in which case it is the LOD
QA/QC	quality assurance quality control
RPMA	Rocky Point Management Area
RRO	residual range organics
ТРН	total petroleum hydrocarbons (GRO + DRO + RRO)
тв	trip blank
USACE	United States Army Corps of Engineers
USDIGS	United States Department of the Interior Geological Survey
USGS	United States Geological Survey
WRCC	Western Region Climate Center

#### 1.0 INTRODUCTION

The City of Unalaska (the City) has prepared this *Characterization Report and Work Plan Addendum* (the *Report*) to document the May 2012 characterization of soils along the path of future storm drain improvements at the Ilulaq Lake/East Point Road & Delta Way Drainage Project (the *Project*) in Dutch Harbor, Alaska. The purpose of the characterization was to delineate fuel contamination in the top 4-feet bgs of soil along the future storm drain improvements also shown in **Attachment A**.

Previously, the City submitted a *Work Plan* to ADEC for the *Project* entitled *Work Plan for Ilulaq Lake/East Point Road & Delta* Way dated February 29, 2011 (the *Work Plan*). ADEC approved the *Work Plan* with conditions on March 2, 2012. ADEC correspondence is included in **Attachment B**. The *Work Plan* also included civil engineering design plans for the storm drain installation (the *Plans*).

This *Report* follows ADECs 2009 *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* through presentation of the following elements:

- A Project description and background;
- A narrative description of fieldwork and any Work Plan deviations;
- The results and findings;
- A revised site conceptual model;
- The proposed cleanup levels;
- A Work Plan Addendum which defines eligible soils;
- An assessment of data quality; and
- The conclusions and recommendations.

This *Report also* adopts the ADEC guidance documents listed in **Section 10** by reference.

#### 1.1 SITE DESCRIPTION AND BACKGROUND

The storm drain installations are both placed in Section 3, Township 73 South, Range 118 West, USGS Quadrangle Unalaska.

The City owns the public rights of way including East Point Loop Road and Delta Way and has also established public utility easements through privately owned land adjacent to these rights of way. The path of the storm drain improvements are within these public rights of way and in other areas designated as public utility easements. These areas are contiguous to the Rocky Point Management Area (the RPMA) and the World War Two Tank Farm FUDS Site No. F10AK084103 on Amaknak Island (the FUDS Site).

The RPMA and the FUDS Site have been used as bulk petroleum storage and distribution facilities for the fueling of marine vessels and loading of tanker trucks for over 70 years. The Department of Defense initially operated fueling facilities through the conclusion of World War II. Standard Oil of California, a corporate predecessor to Chevron, subsequently leased portions of the facilities until 1986. Since 1986, Delta Western has leased and operated portions of the facility for fueling operations. Surface rights to most of the land on Amaknak Island, including the RPMA and the FUDS Site, were transferred to Ounalashka Corporation in response to the Alaska Native Claims Act of 1971 (Stantec, 2010).

#### East Point Road Storm Drain

The East Point Road storm drain replaces an existing storm drain and will run from Ilulaq Lake to Iliuliuk Bay, which is on the ADEC 2010 list of impaired waters for total petroleum hydrocarbons.

The East Point Road storm drain originates at Ilulaq Lake at Station 0+00 (53° 53' 14.03355" North latitude, -166° 32' 12.56411" West longitude in NAD 83). Ilulaq Lake's only surface water hydraulic connection to Iliuliuk Harbor is through this storm drain. This portion of Ilulaq Lake is recorded on ARD Plat No. 305-1988-88-14. At Station 0+29, the Storm Drain enters an easement through the Horizon Lines, Inc. (Horizon) yard, which is located on Tract A of ARD Plat 305-1994-94-1. The Horizon yard is used to store and load/off-load cargo containers. At Station 1+59, the Storm Drain enters the East Point Road right of way which is an unpaved gravel road. At Station 12+69, the Storm Drain leaves the East Point Road right of way and is converted to a sediment separator as it enters a utility easement which crosses ARD Plat No. 305-90-5 through Parcel 1-A and connects to the existing Iliuliuk Bay outfall pipe at Station 13+36. This area is currently crossed by aboveground and operational Delta Western, Inc. (Delta Western) fuel lines. The Iliuliuk Harbor outfall pipe is an existing 24" diameter CPP drain which discharges at Station 13+78 (53° 53' 23.92637" North latitude, -166° 32' 7.24855" West longitude in NAD 83; 1378 horizontal feet of drain pipe away from Station 0+00). Connection will be made to the existing 24" CMP at Station 13+36.

The East Point Road storm drain runs through or is in a right of way adjoining land zoned Marine Related/Industrial from Station 0+00 to Station 12+69. From Station 12+69 through Station 13+36, it runs through land zoned Marine Dependent Industrial. These zoning descriptions are per City of Unalaska Code of Ordinances 8.12.060. With the exception of East

Point Road right of way, all of these properties are owned by the Ounalashka Corporation and leased to others.

#### Delta Way Storm Drain (revised from the Work Plan)

The Delta Way storm drain will replace an existing storm drain and runs from about half way up Delta Way down to Iliuliuk Harbor. The route has been changed from the original *Work Plan* depiction. In the new route, the storm drain runs along a straight path from Station 0+00 to the Delta Western Dock (**Attachment A**).

The new Delta Way storm drain originates at the tie in of an existing storm drain line to a catch basin at Station 0+00 in the Delta Way right of way (53° 53' 24.94687" North latitude, -166° 32' 16.37548" West longitude in NAD 83). At Station 3+25, the storm drain begins the crossing of East Point Road. At Station 3+72, the storm drain enters an easement through the Delta Western Dock approach on Tract B of ARD Plat No. 305-1990-90-5 and discharges to Iliuliuk Bay at Station 4+71 (53° 53' 27.71448" North latitude, -166° 32' 10.05367" West longitude in NAD 83; 471 horizontal feet of drain pipe away from Station 0+00).

The Delta Way storm drain runs through or is in a right of way which adjoins land zoned Marine Related/Industrial from Station 0+00 to Station 3+72. From Station 3+72 to Station 4+71, the land is zoned Marine Dependent Industrial. These zoning descriptions are per City of Unalaska Code of Ordinances 8.12.060. With the exception of Delta Way and East Point Road rights of way, all of these properties are owned by the Ounalashka Corporation.

#### 1.2 REGIONAL AND LOCAL GEOLOGY/HYDROGEOLOGY

The new storm drains are located in Unalaska (Port of Dutch Harbor), Alaska, across from the entrance of Dutch Harbor to Iliuliuk Bay.

The bedrock underlying the area is typically found at depths from exposed to 12-feet bgs. The Unalaska area consists of interbedded volcanic flows of andesites and basalt extrusive rocks known as the Unalaska Formation (Drewes, et. al., 1961). The USGS found the bedrock to be dominated by hydrothermally altered volcanic rocks that are intruded by numerous dikes and veins. Some altered tuffs as well as outcrops of coarse sandstone are also present (Lemke, 1995). Formations of granodiorite batholith (typically mined and crushed for engineered fill which is used extensively in developed areas such as roads and parking areas) are also present in Unalaska (USDIGS 1028).

The native surface soil in the area is generally somewhat permeable coarse-silty loam (dark brown) or clay (orange/brown) or is composed of till which consists of stony material interbedded with clay (orange/brown) and silt (dark brown). Soils tend to contain more clay (orange/brown) towards the bottom. These soils extend five to twelve feet bgs or more and are interbedded with layers of colluvial sediments ranging from a few inches to a few feet in

thickness (Drewes, et. al., 1961). Numerous lenses of volcanic ash and lapilli are also found throughout the top-soil.

The area has been developed over the years and many feet of aggregate and silty fill material must be assumed to have replaced and/or overlaid native bedrock or soils (USACE 2009 estimates 4 to 6-feet within in the FUDS Site). Cobbles or to some extent sand would be expected in areas that were formerly part of a beach prior to development.

Groundwater flows through the unconsolidated sediments in the Unalaska area and typically away from the nearby mountains towards the coast. Groundwater is also found in secondary openings, including fractures or joints found in the volcanic bedrock (Lemke, 1995). Groundwater is typically found at depths around 10-feet bgs and may be subject to tidal influence (USACE 2009 estimated measurable influence 400-feet inland). During storm events, field observations have shown that groundwater most readily flows between the base of engineered fill and native soils, through seeps in silty/clay material, and in the degraded aggregate along the top of bedrock. Due to the hilly terrain and native clay like materials, discrete discontinuous pockets of groundwater or other liquids may be expected.

The Unalaska/Dutch Harbor area has a mean annual precipitation of about 60.90 inches of water. The mean annual snow fall is about 91.2 inches. The snow water equivalent is included in the precipitation total (WRCC, 2012).

According to NOAA, 2003, the mean range of tides between MHW and MLLW in Unalaska are about 3.73-feet. The maximum high and low tides recorded in Unalaska have a range of 9.18 feet historically. The highest tide was recorded January 27, 1960, at 6.70-feet above MLLW and the lowest was recorded January 29, 1999, at 2.48-feet below MLLW.

It can be very windy in Unalaska; the structural design wind speed exceeds 130 mph plus per ASCE 7-05 (approximately 50 to 100-year return period). The average monthly wind speed ranges from a low of 8.3 mph in July to a high of 12.7 mph in November (Alaska Energy Authority, 2005).

#### 2.0 PROJECT NARRATIVE

#### 2.1 BACKGROUND

The preparer of this Report is an employee of the City and a qualified person as stipulated in 18 AAC 75.990 and conditionally approved by ADEC (**Attachment B**). All field activities were performed by (sampling) or under the supervisory control (excavation and backfill) of the author of this report in general accordance with the *Work Plan*. Field support was provided by a representative of Regan Engineering in company with the author, and excavations of test pits were performed by the City Department of Public Works, also under the direction of the author.

Test pit excavations are referenced to the *Plans* stationing system (see **Attachment A**, DW-0+00 through DW-4+00 and EP-1+60 through EP-13+36) and were staked out with GPS-RTK equipment referenced to the *Plans* coordinate system at minimum 50-feet intervals. Per the *Work Plan*, utility locates were first provided, then test pits were advanced to 4-feet bgs, sampled, and finally backfilled with the excavator bucket. Materials were segregated so that they were backfilled in the reverse order in which they were excavated. The test pit excavations were not advanced below groundwater once it was evidenced. One test hole on East Point Road was advanced with hand tools because it was situated across live aboveground fuel lines in an area not easily accessible with heavy equipment.

For the purposes of this Report, the term "groundwater" means water that flooded in through the sidewalls or floor of an excavation. It is unknown whether the liquid was hydraulically connected to the shallow groundwater throughout the *Project* area, was seepage from surface water, or both.

The sampler entered the excavations to collect soil samples directly using sterile sample spoons and geo-cores (see exception in *Work Plan Deviations*). PID screens were collected from each test pit from 2-feet bgs (a sidewall sample) and 4-feet bgs (a floor sample) unless groundwater prevented advancement to 4-feet, in which case a PID screen was only collected from 2-feet bgs.

At least one confirmation sample was collected from each test pit from the horizon with the highest PID reading. Four duplicate confirmation samples were collected during the *Project*, a trip blank was stored with and submitted with each shipment of samples, and a temperature blank was included in each shipped sample cooler.

Soil samples were maintained at temperature inside a refrigerator and then shipped to the laboratory (SGS Labs), under chain of custody procedures and documentation, by air cargo, in coolers, on icepacks.

#### 2.2 WORK PLAN DEVIATIONS

Deviations from the Work Plan or significant discoveries are identified below.

In locations where soil was of a cementitious character and contained substantial aggregate, samples for GRO/BTEX were collected with a sterile sample spoon rather than a geo-core because a sample could be collected with the spoon with far less disturbance. This was a common condition for the surface soils which often consisted of discrete layers of well graded highly consolidated aggregate (road base).

Groundwater was evidenced in EP-1+60, EP-2+10, EP-2+60, EP-3+10, EP-3+60, EP-4+10, and EP-4+60. Apparent LNAPL or sheen was evidenced at EP-1+60, EP-2+10, EP-2+60, EP-4+10, and EP-4+60. No tests were performed to determine the composition of the apparent LNAPL. Olfactory and chromatic evidence indicated they were composed of fuel rather than foam or mineral sheen.

Test pits were not advanced further when apparent groundwater was evidenced above 4-feet bgs (EP-1+60, EP-2+10, EP-2+60, EP-3+10 and EP-3+60). A screen and confirmation sample was only collected from 2-feet bgs at these locations with the exception of EP-2+60. At EP-2+60 apparent groundwater and LNAPL was evidenced at 6 inches bgs and no samples were collected.

If the higher of the two PID readings was at 2-feet bgs, then a confirmation sample was collected from both 2-feet and 4-feet bgs (EP-4+10, EP-9+10, and EP-10+60).

Confirmation samples were also collected from both 2-feet and 4-feet bgs in those locations where the 4-feet bgs PID reading was more than 10 times higher than the PID reading at 2-feet bgs (EP-4+60, EP-5+10, EP-5+60, and EP-6+10).

EP-13+10 was moved back to EP-12+97 due to accessibility issues with guard rails. Because the last sample was collected at EP-13+36 (39 feet away), the 50 feet spacing between test pits was still maintained.

EP-13+36 was advanced with hand shovels rather than an excavator bucket due to accessibility issues with live aboveground fuel pipelines.

An apparent end of a 6 or 8 inch steel fuel line was located at DW-4+00 which was exuding a viscous dark oil. ADEC was informed of the pipe on May 10, 2012 (**Attachment B**). The soil sample DW-4+00-4 was not biased into the oily material as it appeared to be a small discrete mass at the end of the pipe. The pipe was undamaged by the excavator.

An unmarked and unknown 6 or 8 inch diameter steel pipe was uncovered at EP-5+60 at about 3.5–feet bgs to top of pipe and also in-line with the future storm drain. The pipe was scratched but otherwise undamaged by the excavator.

Planned samples from DW-4+50 and DW-5+00 were not collected due to the presence of a new office trailer. This *Report* notes a reroute of the Delta Way storm drain beginning at DW-2+75 which continues straight to discharge beneath the Delta Western Dock.

#### 2.3 CHRONOLOGY

#### Utility Locates

On March 26, 2012, the City used GPS-RTK equipment to verify horizontal alignment with the *Plans* coordinate system and staked out the test pit locations on Delta Way. Activities also included notification of local businesses of upcoming activities and clearing privately owned equipment from the right of way. Test pit locations along East Point Road were similarly staked out on March 30, 2012.

On Monday, March 30, 2012, the City Department of Public Utilities and TelAlaska located and marked their underground utilities in the *Project* vicinity along Delta Way. Additionally, on May 2, 2012, underground utility locates were also performed on East Point Road.

#### Soil Sampling

Field notes are included in Attachment C.

On May 1, 2012, the City mobilized to the *Project* area and advanced 8 test pits to 4-feet bgs from DW-0+00 to DW-3+50 along Delta Way. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. Confirmation samples were collected from each test pit at 4-feet bgs as the PID readings were most elevated at the floor level. No groundwater or free fuel was encountered. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 3, 2012, the City mobilized to the *Project* area and advanced 9 test pits from EP-1+60 to EP-5+60 along East Point Road. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs (except where apparent groundwater was uncovered above 4-feet bgs within the excavation). Confirmation samples were collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 4, 2012, the City mobilized to the *Project* area and advanced 6 test pits from EP-6+10 to EP-8+60 along East Point Road. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. At a minimum, a confirmation sample was collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 7, 2012, the City mobilized to the *Project* area and advanced 7 test pits from EP-9+10 to EP-12+10 along East Point Road. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. At a minimum, a confirmation sample was collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 8, 2012, the City mobilized to the *Project* area and advanced 3 test pits from EP-12+60 to EP-12+97 and at DW-4+00 along East Point Road and Delta Way, respectively. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. At a minimum, a confirmation sample was collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 9, 2012, the City sent confirmation samples from May 1 and May 3, 2012, to SGS Labs via Penair Cargo, in coolers on icepacks.

On May 10, 2012, the City sent confirmation samples from May 4, May 7, and May 8, 2012, to SGS Labs via Penair Cargo, in coolers, and on icepacks.

On May 11, 2012, the City mobilized to the *Project* area and advanced 1 test pit at EP-13+36 along East Point Road. A field screen was collected from the test pit at 2-feet bgs and 4-feet bgs. A confirmation sample was collected from 4-feet bgs as the PID meter read 0.0 ppmv at both elevations. The test pit was backfilled with hand shovels following sampling. The confirmation sample was stored in a refrigerator at the City DPW yard storage warehouse.

On May 22, 2012, the City sent confirmation samples from May 11, 2012, to SGS Labs via Penair Cargo, in coolers, and on icepacks.

#### 3.0 **RESULTS AND FINDINGS**

#### 3.1 SOIL DATA

Field notes are included in **Attachment C**. Laboratory analytical reports and CoC documentation are included in **Attachment D**. A photolog is included in **Attachment F**.

#### 3.2 FIELD SCREENING RESULTS

During soil removal activities, the field screening samples were collected/analyzed in general accordance with ADECs May 2010 *DRAFT Field Sampling Guidance* and the conditionally approved *Work Plan*. Field screening was performed with a MiniRae Lite PID meter span calibrated daily with 0 ppmv fresh air to 100 ppmv isobutylene. Field screen results were used to guide the location of field confirmation samples.

Field screen PID readings are presented in **Table 1**.

#### 3.3 ANALYTICAL RESULTS

During soil removal activities, the confirmation samples were collected/stored/transported/analyzed under CoC procedures in accordance with the ADEC May 2010 *DRAFT Field Sampling Guidance* and the conditionally approved *Work Plan*. The laboratory which analyzed the confirmation samples was SGS Laboratories, Inc.

The analytical results are presented in **Table 2**, and a map with sample locations is presented in **Attachment A**.

All of the confirmation samples were analyzed for the following COPC:

- BTEX by EPA Method 8021B;
- GRO by AK 101;
- DRO by AK 102;
- PAHs by EPA Method 8270D; and
- RRO by AK 103.

At least 10% of the confirmation samples were double analyzed with duplicates submitted blind to the lab.

A trip blank was analyzed for each sample shipment event for GRO/BTEX.

The following is a summary of confirmation samples whose analytical results exceeded the most stringent cleanup levels (18 AAC 75.340 Table B1 and/or B2 Method 2 Migration to Groundwater in the over 40 inch precipitation zone).

Along Delta Way:

- DW-3+00-4 for DRO at 262 mg/kg; and
- DW-3+50-4 for benzene at 51.7 mg/kg.

Along East Point Road:

- EP-1+60-2 for DRO at 893 mg/kg;
- EP-2+10-2 for DRO at 366 mg/kg;
- EP-4+60-4 for DRO 1870 mg/kg;
- EP-5+10-4 for DRO at 2080 mg/kg;
- EP-5+60-4 for DRO at 523 mg/kg; and
- EP-13+36-4 for DRO at 254 mg/kg.

### 4.0 REVISED SITE CONCEPTUAL MODEL

No revisions are proposed to the February 29, 2011, *Work Plan*'s Preliminary Site Conceptual Model, which is adopted by reference.

#### 5.0 PROPOSED CLEANUP LEVELS

No revisions are proposed to the *Work Plan's* proposed CULs, which are adopted by reference for clarity.

This *Report* addresses the pre-characterization of soils along the storm drain routes. These soils may be eligible for disposal as clean fill off site if they do not exceed the CULs from 18 AAC 75.340 Table B1 and/or B2 Method 2 Migration to Groundwater in the over 40 inch Precipitation Zone (Method 2 CULs) for all COPCs.

Numerical concentration values for the applicable soil CULs are shown in **Table 2**.

#### 6.0 WORK PLAN ADDENDUM

Overburden soils were characterized during execution of the pre-characterization portions of the *Work Plan*. The intent was to provide a reasonable delineation of soil above the proposed storm drains (from 0 to 4-feet bgs) which may be beneficially reused as clean fill. **Table 3** shows the extents of the new storm drain locations that are eligible for disposal as clean fill (highlighted green). Those portions which are ineligible, including all soil below 4-feet bgs, must be managed as contaminated soil as described in the *Work Plan* (highlighted red).

Criteria for eligible soils are based on the results of confirmation sampling and the maximum concentration detected within decision units per 18 AAC 75.380(c) (1).

An assumption was made that a point from the 0 to 2-feet bgs horizon without a confirmation sample was below CULs for COPC if:

- It had a lower PID reading than the confirmation sample point in the same test pit from 4-feet bgs; and
- The confirmation sample from the same test pit at 4-feet bgs was below CULs for all COPC.

The horizontal delineation was developed by extrapolating confirmation sample results midway to adjacent confirmation sample points from the same vertical horizon. Uncharacterized zones are assumed ineligible.



Table 3 – Delineation of eligible soils.

#### 7.0 QUALITY ASSURANCE SUMMARY

A data quality assurance summary was completed in accordance with ADEC's March 2009 *Environmental Laboratory Data and Quality Assurance Requirements*. The laboratory data as used in this *Report* appears to be complete and usable. Data Quality Assurance forms and a narrative for each lab report generated during this *Project* are included in **Attachment E**.

#### 8.0 CONCLUSIONS & RECOMMENDATIONS

Between May 1 and May 11, 2012, the City performed soil characterization activities along Delta Way and East Point Road. The results of those activities were used to delineate those portions above 4-feet bgs which are eligible for beneficial reuse offsite or onsite as clean fill.

The City requests ADEC's review and acceptance of the delineation of eligible soils provided by this *Report*.

#### 9.0 **REFERENCES**

- AECOM Technical Services for USACE, 2009. FINAL 2009 Groundwater Monitoring Program Report, Amaknak Pre-WWII Tank Farm Contract No. W911KB-08-D-0004 Task Order 0007 FUDS Property No. F10AK084103.
- Alaska Energy Authority, 2005. Weather Station Wind Resource Summary for Dutch Harbor (Unalaska Airport), AK.
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- Lemke, K.J. and A.M. Vanderpool, 1995. *Overview of Environmental and Hydrogeologic Conditions at Dutch Harbor, Alaska.* US Geological Survey Open-File Report 95-411, Anchorage, Alaska.
- National Oceanic and Atmospheric Administration, 2003. Published Benchmark Sheet for 9462620 Unalaska, Dutch Harbor Alaska Datums Page.
- Stantec Consulting Corporation, 2010. 2010 Pipeline Closure Documentation Rocky Point Management Area Dutch Harbor, Unalaska, Alaska. Stantec Consulting Corporation for Chevron Environmental Management Company.
- United States Department of the Interior Geological Survey (USDIGS 1028). Geologic Map of Unalaska Island, Alaska, and Adjacent Submarine Areas – Bulletin 1028 Plate 75.
- Western Regional Climate Center, 2012. Dutch Harbor Alaska Period of Record General Climate Summary – Precipitation Station:(502587) http://www.wrcc.dri.edu/cgibin/cliMAIN.pl?ak2587

#### **10.0 DOCUMENTS ADOPTED BY REFERENCE**

- Alaska Department of Environmental Conservation, May 2010. Draft Field Sampling Guidance. <u>http://www.dec.state.ak.us/spar/csp/guidance/Draft%20Field%20Sampling%20Guidance</u>. <u>.pdf</u>
- Alaska Department of Environmental Conservation. Laboratory Data Review Checklist. http://www.dec.state.ak.us/spar/csp/guidance/amga/lab-data-review-checklist.pdf
- Alaska Department of Environmental Conservation, October 2010. Policy Guidance on Developing Conceptual Site Models. <u>http://www.dec.state.ak.us/spar/csp/guidance/FINAL%20CSM%20Guidance%20Master</u> %20Nov%202010.pdf
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- Alaska Department of Environmental Conservation, March 2009. *Technical Memorandum Environmental Laboratory Data and Quality Assurance Requirements*. http://www.dec.state.ak.us/spar/csp/guidance/tm\_lab\_ga.pdf
- Alaska Department of Environmental Conservation, August 12, 2008. Technical Memorandum 08-001. Guidelines for Data Reporting, Data Reduction, and Treatment of Non-Detect Values.

http://www.dec.state.ak.us/spar/csp/guidance/tech-memo-data-reporting-and-ND.pdf

## **FIGURES**

#### Figure 1 Delta Way PID to TPH Plot Ilulaq Lake / East Point Road and Delta Way Drainage Improvements Dutch Harbor, Alaska



PID Reading (ppmv)

Figure 2 East Point Road PID to TPH Plot Ilulaq Lake / East Point Road and Delta Way Drainage Improvements Dutch Harbor, Alaska



## TABLES

# Table 1 Field Screen Results Ilulaq Lake / East Point Road & Delta Way Drainage Improvements Dutch Harbor, Alaska

		Confirmation		
	PID	Sample		
	Reading	Taken?	Elevation	
Sample ID	(ppmv)	(yes/no)	(ft bgs)	Field Notes
DW-0+00-2	0.0	no	2	Aggregate, grey. No odor, no stain.
DW-0+00-4	0.0	yes	4	Dark silt fine. No odor, no stain.
DW-0+50-2	0.0	no	2	Aggregate. No odor, no stain.
DW-0+50-4	0.1	yes	4	Cobbles & silt. No odor, no stain.
DW-1+00-2	0.3	no	2	Cobbles & silt. No odor, no stain.
DW-1+00-4	0.3	yes	4	Cobbles & silt. No odor, no stain.
DW-1+50-2	0.3	no	2	Cobbles & silt. No odor, no stain.
DW-1+50-4	0.3	yes	4	Cobbles & silt. No odor, no stain.
DW-2+00-2	0.0	no	2	Cobbles & silt. No odor, no stain.
DW-2+00-4	0.0	yes	4	Silt. No odor, no stain.
DW-2+50-2	0.1	no	2	Cobbles & silt. No stain, no odor.
DW-2+50-4	0.1	yes	4	Cobbles & silt. No stain, no odor. DUP-01.
DW-3+00-2	0.3	no	2	Cobbles & silt. No odor, no stain.
DW-3+00-4	0.4	yes	4	Cobbles & silt. No odor, no stain.
DW-3+50-2	0.1	no	2	Cobbles & silt. No stain, no odor.
DW-3+50-4	0.1	yes	4	Cobbles & silt. No stain, no odor.
DW-4+00-2	0.9	no	2	Aggregate. No odor, no stain.
DW-4+00-4	1.0	yes	4	Aggregate/silt. No odor, no stain, no gw. A.
EP-1+60-2	3.7	yes	2	Aggregate. gw @ 3' bgs, sheen.
EP-1+60-4				
EP-2+10-2	106.7	yes	2	Aggregate. gw @ 2-1/2' bgs, sheen.
EP-2+10-4				
EP-2+60-2				gw @ 6", no sample.
EP-2+60-4				
EP-3+10-2	1.7	yes	2	Aggregate. gw @ 2-1/2', no sheen.
EP-3+10-4				
EP-3+60-2	2.1	ves	2	Aggregate. Gw @ 2-1/2' bgs. No odor, no sheen.
EP-3+60-4				
EP-4+10-2	3.2	ves	2	Aggregate. No odor, no stain.
EP-4+10-4	2.7	ves	4	Aggregate & silt. Gw @ 4-1/2', possible LNAPL.
EP-4+60-2	3.7	ves	2	Aggregate & sand. No odor, no sheen.
EP-4+60-4	100.0	ves	4	Aggregate & sand. Gw @ 4-1/2' approx, possible LNAPL.
EP-5+10-2	4.9	ves	2	Aggregate & silt. No stain, no odor.
EP-5+10-4	119.1	ves	4	Cobbles & silt. Stain, odor, no gw.
EP-5+60-2	4.1	ves	2	Aggregate, No stain, no odor.
EP-5+60-4	328.7	ves	4	Orange/red silt/shot rock. No stain. odor. no gw.
EP-6+10-2	5.7	ves	2	Brown silt & aggregate, No odor, no stain.
EP-6+10-4	114.4	ves	4	Brown silt/med plasticity. No odor, no stain, no gw (except seepage from culvert), DUP-02,
EP-6+60-2	2.1	no	2	Silt & aggregate. No odor, no stain.
EP-6+60-4	2.2	ves	4	Brown silt & cobbles/sand. No odor. no stain. gw 4-1/2'.
EP-7+10-2	3.1	no	2	Silt & aggregate/sand. No odor, no stain.
EP-7+10-4	4.0	ves	4	Brown silt/shot rock. No odor, no stain, no gw.
EP-7+60-2	4.6	no	2	Aggregate. No odor, no stain.
EP-7+60-4	4.9	ves	4	Aggregate/silt/shot rock. No odor, no stain, no gw.
EP-8+10-2	4.4	no	2	Aggregate. No odor, no stain.
EP-8+10-4	5.7	yes	4	Silt/shot rock. No odor, no stain, no gw.
EP-8+60-2	2.1	no	2	Aggregate. No odor, no stain.
EP-8+60-4	3.7	yes	4	Silt & shot rock. No odor, no stain, no gw.
EP-9+10-2	2.8	yes	2	Aggregate. No odor, no stain.
EP-9+10-4	1.8	yes	4	Shot rock & silt. No odor, no stain, no gw.
EP-9+60-2	2.2	no	2	Aggregate. No odor, no stain.
EP-9+60-4	2.9	yes	4	Aggregate/silt. No odor, no stain, no gw.
EP-10+10-2	1.4	no	2	Aggregate/silt/shot rock. No odor, no stain, no gw.
EP-10+10-4	3.0	yes	4	Aggregate. No odor, no stain.
EP-10+60-2	2.4	yes	2	Aggregate. No odor, no stain.
EP-10+60-4	0.8	ves	4	Aggregate/silt/shot rock. No odor, no stain, no gw.
EP-11+10-2	3.1	no	2	Aggregate. No odor, no stain.
EP-11+10-4	4.0	yes	4	Aggregate/silt. No odor, no stain, no gw.
EP-11+60-2	1.8	no	2	Aggregate. No odor, no stain.
EP-11+60-4	2.3	yes	4	Aggregate/shot rock. No odor, no stain, no gw. DUP-03.
EP-12+10-2	0.9	no	2	Aggregate/silt. No odor, no stain.
EP-12+10-4	1.1	yes	4	Silt/shot rock/aggregate. No odor, no stain, no gw.
EP-12+60-2	0.1	no	2	Aggregate. No odor, no stain.
EP-12+60-4	0.2	yes	4	Aggregate/silt/cobbles. No odor, no stain, no gw.
EP-12+97-2	0.4	no	2	Aggregate. No odor, no stain.

#### Table 1 Field Screen Results

#### Ilulaq Lake / East Point Road & Delta Way Drainage Improvements

Dutch Harbor, Alaska

EP-12+97-4	0.7	yes	4	Aggregate/silt/cobbles. No odor, no stain, no gw. DUP-04.
EP-13+36-2	0.0	no	2	Aggregate & silt. No stain, no odor.
EP-13+36-4	0.0	yes	4	Aggregate & silt. No stain, no odor, no gw.

#### Notes:

B = located steel pipe, likely a fuel line.

- Abbreviations: DW = Delta Way DUP = duplicate

  - EP = East Point Road
  - ft bgs = feet below ground surface gw = groundwater

    - ID = identification
  - LNAPL = light non-aqueus phase liquid
    - PID = photo ionization detector
  - ppmv = parts per million by volume

A = located end of 6" steel pipe at about 3-1/2' bgs. Appears to be leaking viscous black oil.

# Table 1 Soil Analytical Results Ilulaq Lake / East Point Road & Delta Way Drainage Improvements Dutch Harbor, Alaska

					GRO AK101 (mg/kg)	DRO AK102 (mg/kg)	RRO AK101 (mg/kg)	TPH (mg/kg)	Benzene EPA 8021B (ug/kg)	Toluene EPA 8021B (ug/kg)	Ethyl- benzene EPA 8021B (ug/kg)	o- Xylene EPA 8021B (ug/kg)	P&M- Xylene EPA 8021B (ug/kg)	Total Xylenes (ug/kg)	1-Methyl-Naphthalene EPA 8270D (ug/kg)	2-Methyl-Naphthalene EPA 8270D (ug/kg)	Acenaphthene EPA 8270D (ug/kg)	Acenaphthylene EPA 8270D (ug/kg)	Anthracene EPA 8270D (ug/kg)	Benzo(a)anthracene EPA 8270D (ug/kg)	Benzo(a)pyrene EPA 8270D (ug/kg)	Benzo(b)fluoranthene EPA 8270D (ug/kg)	Benzo(g,h,i)perylene EPA 8270D (ug/kg)	Benzo(k)fluoranthene EPA 8270D (ug/kg)	Chrysene EPA 8270D (ug/kg)	Dibenz(a,h)anthracene EPA 8270D (ug/kg)	Fluoranthene EPA 8270D (ug/kg)	Fluorene EPA 8270D (ug/kg)	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)	Naphthalene EPA 8270D (ug/kg)	Phenanthrene EPA 8270D (ug/kg)	Pyrene EPA 8270D (ug/kg)	Total Solids (%)
18 AAC 75.340 Tak Migration to Ground	ble B1 Method 2 Soil Cleanup I water (ug/kg)	evels Over 40	0 Inch Zor	ie ixceedence					25	6,500	6,900			63,000	6,100	6,100	180,000	180,000	3,000,000	3,600	2,100	12,000	38,700,000	120,000	360,000	4,000	1,400,000	220,000	41,000	20,000	3,000,000	1,000,000	
18 AAC 75.340 Tak Migration to Ground	ble B2 Method 2 Soil Cleanup I lwater (mg/kg)	evels Over 40	0 Inch Zor	ie xceedence	260	230	9,700																										
Sample Date/Time	Sample ID	SGS Notes Rep	S Lab F port ID	PID Reading (ppmv)	GRO AK101 (mg/kg)	DRO AK102 (mg/kg)	RRO AK101 (mg/kg)	TPH (mg/kg)	Benzene EPA 8021B (ug/kg)	Toluene EPA 8021B (ug/kg)	Ethyl- benzene EPA 8021B (ug/kg)	o- Xylene EPA 8021B (ug/kg)	P&M- Xylene EPA 8021B (ug/kg)	Total Xylenes (ug/kg)	1-Methyl-Naphthalene EPA 8270D (ug/kg)	2-Methyl-Naphthalene EPA 8270D (ug/kg)	Acenaphthene EPA 8270D (ug/kg)	Acenaphthylene EPA 8270D (ug/kg)	Anthracene EPA 8270D (ug/kg)	Benzo(a)anthracene EPA 8270D (ug/kg)	Benzo(a)pyrene EPA 8270D (ug/kg)	Benzo(b)fluoranthene EPA 8270D (ug/kg)	Benzo(g,h,i)perylene EPA 8270D (ug/kg)	Benzo(k)fluoranthene EPA 8270D (ug/kg)	Chrysene EPA 8270D (ug/kg)	Dibenz(a,h)anthracene EPA 8270D (ug/kg)	Fluoranthene EPA 8270D (ug/kg)	Fluorene EPA 8270D (ug/kg)	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)	Naphthalene EPA 8270D (ug/kg)	Phenanthrene EPA 8270D (ug/kg)	Pyrene EPA 8270D (ug/kg)	Total Solids (%)
05/01/2012 10:00		110	01501	0.0	< 9.52	- 24 2	54.8	54.8	< 15 1	- 99.6	- 99.6	- 99.6	< 170.6	0.0	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	50.6	69.2	< 20.6	< 20.6	< 20.6	< 20.6	02.4	< 20.6	< 20.6	< 20.6	92.4	60	50.8
05/01/2012 10:00	DW-0+50-4	112	21591	0.3	< 4.5	< 15.44	70.5	70.5	< 24	< 46.8	< 46.8	< 46.8	< 89.8	0.0	< 18.8	< 18.8	< 18.8	< 18.8	< 18.8	45.8	61.5	81.1	39.2	< 18.8	40.2	< 18.8	70.6	< 18.8	< 18.8	< 18.8	55	67.7	79.3
05/01/2012 10:20	DW-1+00-4	112	21591	0.3	< 3.5	< 72.4	142	142	< 18.7	< 36.4	< 36.4	< 36.4	< 70.2	0.0	32.5	40.4	< 17.44	< 17.44	182	599	736	719	542	190	412	127	640	42.9	462	71.6	565	783	85.2
05/01/2012 11:00	DW-1+50-4	112	21591	0.3	< 3.66	< 73.4	543	543	< 19.56	< 38.2	< 38.2	< 38.2	< 73.4	0.0	< 17.58	< 17.58	< 17.58	< 17.58	< 17.58	37.9	47.3	< 17.58	31	< 17.58	< 17.58	< 17.58	46.1	< 17.58	< 17.58	< 17.58	< 17.58	47.1	84.4
05/01/2012 11:45	DW-2+00-4 DW-2+50-4 (DUP-01)	112	21591	0.0	< 0.74	< 16.8	69.6 80.4	69.6 80.4	< 30	< 10.2	< 10.2	< 10.2	< 135	0.0	< 25.0	< 25.0	< 25.0	< 25.0	< 20.0	9.05	57.4 15.1	73.0 - 41	< 25.0 13.1	< 25.0	51.0 8 38	< 25.0	93.4 15.8	< 25.0	< 20.0 8 58	< 20.0	60.9 8 18	07.0 18.6	20 73 3
05/01/2012 00:00	DUP-01	112	21591	0.1	< 6.14	< 19.28	104	104	< 32.8	< 63.8	< 63.8	< 63.8	< 122.8	0.0	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	64
	Relative Percent Difference						26%																										14%
05/01/2012 09:30	DW-3+00-4	112	21591	0.4	< 3.54	262	1370	1632	< 18.86	< 36.8	< 36.8	< 36.8	< 70.8	0.0	< 34.6	< 34.6	< 34.6	< 34.6	60.9	205	219	277	188	< 34.6	143	< 34.6	311	< 34.6	118	< 34.6	187	317	86.4
05/01/2012 13:30	DW-3+50-4	112	21591	0.1	< 3.6	158	877	1035	51.7	100	< 37.6	< 37.6	< 72.2	0.0	67.1	113	< 34.2	< 34.2	< 34.2	67.5	93.3	117	109	< 34.2	< 34.2	< 34.2	94.8	< 34.2	57.4	79.8	< 34.2	100	87
05/08/2012 11:30	DW-4+00-4	112	21591	1.0	< 4.66	< 85.2	145	145	< 24.8	< 48.4	< 48.4	< 48.4	< 93.2	0.0	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	41	55.6 10.20	36	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	72
05/03/2012 09:20	EP-1+00-2 EP-2+10-2	112	21591	3.7 106 7	< 3.5	366	181	547	< 18.66	< 36.4	< 36.4	< 36.4	< 70	0.0	< 17.36	< 17.36	< 17.36	< 17.36	< 17.36	< 17.36	33.5	< 10.30 69.2	< 17.36	< 17.36	35.5	< 17.36	< 10.30 84.5	< 17.36	< 17.36	< 17.36	40.3	< 10.30 72.3	86.2
05/03/2012 10:10	EP-3+10-2	112	21591	1.7	< 3.44	46	94.3	140.3	< 18.38	< 35.8	< 35.8	< 35.8	< 69	0.0	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	85.1
05/03/2012 10:30	EP-3+60-2	112	21591	2.1	< 4.12	< 16.1	42	42	< 22	< 43	< 43	< 43	< 82.6	0.0	< 19.26	< 19.26	< 19.26	< 19.26	< 19.26	< 19.26	34.1	39	< 19.26	< 19.26	< 19.26	< 19.26	52	< 19.26	< 19.26	< 19.26	44.2	46.8	76.9
05/03/2012 11:00	EP-4+10-2	112	21591	3.2	< 3.48	29.8	40.5	70.3	< 18.54	< 36.2	< 36.2	< 36.2	< 69.6	0.0	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	88.6
05/03/2012 11:30	EP-4+10-4	112	21591	2.7	< 4.16	178	95.5	273.5	< 22.2	< 43.2	< 43.2	< 43.2	< 83.2	0.0	< 17.52	< 17.52	< 17.52	< 17.52	< 17.52	32.5	31.6	49.3	< 17.52	< 17.52	30.9	< 17.52	37.4	< 17.52	< 17.52	< 17.52	< 17.52	33.5	83.9
05/03/2012 14:10	EP-4+60-2	112	21591	3.7	< 3.34	31	28.9	59.9 3660	< 17.84	< 34.8	< 34.8	< 34.8	< 67	0.0	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	88.6
05/03/2012 14:00	EP-4+00-4 EP-5+10-4 (EP-5+10-2)	112	21591	4 9	< 4.1	173	234	407	< 21.8	< 42.6	< 42.6	< 42.6	< 81.8	0.0	< 17 64	< 17 64	< 17 64	< 17 64	< 17 64	< 17.64	46.6	57	56.3	< 17 64	29.6	< 17 64	37.2	< 17 64	39.7	< 17 64	< 17 64	41.4	84.9
05/03/2012 15:20	EP-5-10-4 (EP-5+10-4)	112	21591	119.1	9.08	2080	2620	4709.08	< 23	< 45	< 45	141	< 86.6	141	< 39.4	< 39.4	< 39.4	< 39.4	200	260	165	< 39.4	75.5	< 39.4	418	< 39.4	191	403	< 39.4	< 39.4	870	960	75.6
05/03/2012 16:40	EP-5+60-2	112	21591	4.1	< 3.62	151	490	641	< 19.32	< 37.6	< 37.6	< 37.6	< 72.4	0.0	< 16.98	< 16.98	< 16.98	< 16.98	< 16.98	< 16.98	39.3	< 16.98	48.3	< 16.98	< 16.98	< 16.98	31.6	< 16.98	< 16.98	< 16.98	< 16.98	52.9	87.8
05/03/2012 16:30	EP-5+60-4	112	21591	328.7	< 5.12	523	311	834	< 27.4	< 53.4	< 53.4	< 53.4	< 102.6	0.0	< 21.4	< 21.4	< 21.4	< 21.4	< 21.4	43.2	48.7	< 21.4	38.5	< 21.4	48.8	< 21.4	80.9	< 21.4	< 21.4	< 21.4	50.3	87.9	69.5
05/04/2012 09:40	EP-6+10-2	112	21608	5.7	< 7.44	< 22.2	< 22.2	0	< 39.6	< 77.2	< 77.2	< 77.2	< 148.6	0.0	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	55.8
05/04/2012 09:30	DUP-02	112	21608	114.4	< 6.14	< 18.82	< 19.00 51.6	51.6	< 32.8	< 63.8	< 63.8	< 63.8	< 122.8	0.0	31.7	10.3	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.52	< 4.7	< 4.7	< 4.7	< 4.7	< 4.52	< 4.7	< 4.7	14.2	< 4.52	< 4.52	65.1
	Relative Percent Difference						90%								17%	9%						59%					106%			18%	101%	84%	4%
05/04/2012 10:00	EP-6+60-4	112	21608	4.0	< 3.8	26	105	131	< 20.2	< 39.4	< 39.4	< 39.4	< 75.8	0.0	< 17.02	< 17.02	< 17.02	< 17.02	< 17.02	38.4	42.2	58.7	39.2	< 17.02	38	< 17.02	49.9	< 17.02	< 17.02	< 17.02	< 17.02	52.7	85.8
05/04/2012 13:30	EP-7+10-4	112	21608	4.0	< 5.34	< 17.32	38.2	38.2	< 28.4	< 55.4	< 55.4	< 55.4	< 106.8	0.0	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	< 4.14	70.5
05/04/2012 14:00	EF-/+00-4 EP-8+10-4	112	21608	4.9 5.7	< 4.00	29 29.4	130	120.7	< 18 22	< 42.4	< 42.4	< 42.4	< 68.4	0.0	< 16 14	0.34 < 16 14	< 3.72 < 16 14	< 3.72 < 16 14	< 16 14	<b>∠3.3</b> < 16.14	∠1.3 < 16.14	<b>∠9.0</b> < 16.14	29.9	< 16 14	< 16 14	< 3.72 < 16 14	40.3 27 4	< 3.72	< 16 14	< 3.72 < 16 14	< 16 14	27.5	92.6
05/04/2012 15:45	EP-8+60-4	112	21608	3.7	< 3.74	171	68.8	239.8	< 19.98	< 39	< 39	< 39	< 75	0.0	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	< 3.36	87.8
05/07/2012 09:45	EP-9+10-2	112	21608	2.8	< 3.3	< 13.16	57.1	57.1	< 17.62	< 34.4	< 34.4	< 34.4	< 66	0.0	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	< 3.18	93.7
05/07/2012 09:30	EP-9+10-4	112	21608	1.8	< 3.66	< 14.08	48.7	48.7	< 19.52	< 38	< 38	< 38	< 73.2	0.0	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	87.6
05/07/2012 10:30	EP-9+60-4	112	21608	2.9	< 3.4	< 14.1	58.8 87.1	58.8 129 /	< 18.14	< 35.4	< 35.4	< 35.4	< 68	0.0	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	6.1	<b>8.4</b> 7	9.79	7.41	< 3.42	6.61	< 3.42	12	< 3.42	< 3.42	< 3.42	< 3.42	11.7	87.1
05/07/2012 13:45	EP-10+60-2	112	21608	24	< 2.98	< 13.2	57.1	57.1	< 15.86	< 31	< 31	< 31	< 59.4	0.0	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	< 3.2	93.5
05/07/2012 13:30	EP-10+60-4	112	21608	0.8	< 3.48	101	148	249	< 18.5	< 36	< 36	< 36	< 69.4	0.0	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	20.2	16.9	25.2	13.4	6.98	19.2	< 3.4	30.7	< 3.4	10.3	< 3.4	9.27	28.5	87
05/07/2012 14:45	EP-11+10-4	112	21608	4.0	< 3.26	< 13.28	36.1	36.1	< 17.42	< 34	< 34	< 34	< 65.4	0.0	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	< 3.22	92.7
05/07/2012 15:00	EP-11+60-4 (DUP-03)	112	21608	2.3	< 3.9	26.2	91.1	117.3	< 20.8	< 40.4	< 40.4	< 40.4	< 77.8	0.0	< 3.48	< 3.48	< 3.48	< 3.48	6.07	45	37.2	58.1	20.9	12.9	31.8	6.25	54.4	< 3.48	20	< 3.48	18.9	48.1	84.3
05/07/2012 00:00	DUP-03 Relative Percent Difference	112	21608	2.3	< 3.52	26.7	100	126.7	< 18.76	< 36.6	< 36.6	< 36.6	< /0.4	0.0	< 3.42	< 3.42	< 3.42	< 3.42	< 3.42	26.7	25.6	39.7	16.1 26%	10.9 17%	20.3	< 3.42	34.3	< 3.42	14.6 31%	< 3.42	12.8	30.8	86 2%
05/07/2012 15:30	EP-12+10-4	112	21608	1.1	< 5	44.1	236	280.1	< 26.6	< 52	< 52	< 52	< 100	0.0	< 4.52	< 4.52	< 4.52	< 4.52	< 4,52	16.3	16.8	24.9	10.5	< 4.52	15.9	< 4.52	20.9	< 4.52	8.65	< 4,52	16.4	18.7	72.6
05/08/2012 10:00	EP-12+60-4	112	21608	0.2	< 3.46	34.9	97.3	132.2	< 18.5	< 36	< 36	< 36	< 69.4	0.0	< 3.76	< 3.76	< 3.76	< 3.76	< 3.76	26.2	25.6	41.2	15.6	8.05	19.2	< 3.76	33.8	< 3.76	14	< 3.76	15.4	29.9	85.9
05/08/2012 11:30	EP-12+97-4 (DUP-04)	112	21608	0.4	< 3.9	33	113	146	< 20.8	< 40.6	< 40.6	< 40.6	< 78	0.0	< 3.9	< 3.9	7.61	< 3.9	35	119	86.2	132	47.1	35.7	97.1	11.8	233	8.78	44.2	< 3.9	114	140	83.5
05/08/2012 00:00	DUP-04	112	21608	0.4	< 3.92	32.7	103	135.7	< 21	< 40.8	< 40.8	< 40.8	< 78.6	0.0	< 3.6	< 3.6	8.73	< 3.6	28.6	90.9	75.7	115	47.4	31.3	79.8	12.2	209	8.7	46	< 3.6	94.6	165	83.1
	Relative Percent Difference	140				1%	9%			- 19 6	- 10 6	- 10 6	- 02 4				14%		20%	2/%	13%	14% 225	1%	13%	20%	3%	11%	1%	4%		19%	16%	0.5%
05/01/2012 10:30	TB-01	112	21591		24.8 U	2.34			≤ 25 12.4 U	24.8 U	24.8 U	< 40.0 49.6 U	< 93.4 49.6 U	0.0	< J0.4	< 30.4 	< J0.4 	< 30.4 						< 30.4 		< J0.4	520	< J0.4		< J0.4 	200		
05/04/2012 00:00	TB-02	112	21608		2.49 U				12.4 U	24.9 U	24.9 U	24.9 U	49.7 U	0.0																			
05/11/2012 16:30	TB-03	112	21774		2.52 U				12.6 U	25.2 U	25.2 U	25.2 U	50.3 U	0.0																			
1																																	

# Table 1 Soil Analytical Results Ilulaq Lake / East Point Road & Delta Way Drainage Improvements Dutch Harbor, Alaska

	8 AAC 75.340 Table Aligration to Groundwa	8 AAC 75.340 Table	
	e B2 Method 2 Soil Cleanu vater (mg/kg)	e B1 Method 2 Soil Cleanu vater (ug/kg)	
	p Levels (	p Levels (	
SGS Lab	Over 40 Inch	Over 40 Inch	
PID Reading	Zone Exceedence	Zone Exceedence	
GRO AK101	260		GRO AK101 (mg/kg)
DRO AK102	230		DRO AK102 (mg/kg)
RRO AK101	9,700		RRO AK101 (mg/kg)
ТРН			TPH (mg/kg)
Benzene EPA 8021B		25	Benzene EPA 8021B (ug/kg)
Toluene EPA 8021B		6,500	Toluene EPA 8021B (ug/kg)
Ethyl- benzene EPA 8021B		6,900	Ethyl- benzene EPA 8021B (ug/kg)
o- Xylene EPA 8021B			o- Xylene EPA 8021B (ug/kg)
P&M- Xylene EPA 8021B			P&M- Xylene EPA 8021B (ug/kg)
Total Xylenes		63,000	Total Xylenes (ug/kg)
Methyl-Naphthalene A 8270D (ug/kg)		6,100	1-Methyl-Naphthalene EPA 8270D (ug/kg)
Methyl-Naphthalene A 8270D (ug/kg)		6,100	2-Methyl-Naphthalene EPA 8270D (ug/kg)
:enaphthene A 8270D (ug/kg)		180,000	Acenaphthene EPA 8270D (ug/kg)
:enaphthylene A 8270D (ug/kg)		180,000	Acenaphthylene EPA 8270D (ug/kg)
ithracene A 8270D (ug/kg)		3,000,000	Anthracene EPA 8270D (ug/kg)
nzo(a)anthracene A 8270D (ug/kg)		3,600	Benzo(a)anthracene EPA 8270D (ug/kg)
nzo(a)pyrene A 8270D (ug/kg)		2,100	Benzo(a)pyrene EPA 8270D (ug/kg)
nzo(b)fluoranthene A 8270D (ug/kg)		12,000	Benzo(b)fluoranthene EPA 8270D (ug/kg)
:nzo(g,h,i)perylene A 8270D (ug/kg)		38,700,000	Benzo(g,h,i)perylene EPA 8270D (ug/kg)
nzo(k)fluoranthene A 8270D (ug/kg)		120,000	Benzo(k)fluoranthene EPA 8270D (ug/kg)
rrysene A 8270D (ug/kg)		360,000	Chrysene EPA 8270D (ug/kg)
oenz(a,h)anthracene A 8270D (ug/kg)		4,000	Dibenz(a,h)anthracene EPA 8270D (ug/kg)
Joranthene A 8270D (ug/kg)		1,400,000	Fluoranthene EPA 8270D (ug/kg)
Jorene A 8270D (ug/kg)		220,000	Fluorene EPA 8270D (ug/kg)
leno(1,2,3- )pyrene 'A 8270D (ug/kg)		41,000	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)
phthalene A 8270D (ug/kg)		20,000	Naphthalene EPA 8270D (ug/kg)
enanthrene A 8270D (ug/kg)		3,000,000	Phenanthrene EPA 8270D (ug/kg)
rene A 8270D (ug/kg)		1,000,000	Pyrene EPA 8270D (ug <sup>i</sup> kg)
tal Solids (%)			Total Solids (%)

Notes:

#### Abbreviations:

Ins.
= per the lab document the analyte was tested for but not detected (ND U-qualified). The numerical value given is the detecton level (DL) times 2, which is the limit of detection (LOD), i.e. a statistical estimation of the lowest amount detectable by the particular instrument under ideal conditions.

is the limit of detection (LOD), i.e. a statistical estimation of the low % = percent DRO = diesel range organics EPA = Environmental Protection Agency (denotes laboratory method) ft bgs = feet below ground surface GRO = gasoline range organics ID = identification

ID = identification J = per the lab report document the quantitation is an estimate mg/kg = milligrams of constituent per kilogram of soil matrix PID = photo ionization detector RRO = residual range organcis U = per the lab report document the analyte was tested for but not detected ug/kg = micrograms of constituent per kilogram of soil matrix

# ATTACHMENT A



# **ATTACHMENT B**





#### Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE Contaminated Sites Program

> 555 Cordova Street Anchorage, Alaska 99501 Phone: 907.269.7503 Fax: 907.269.7649 dec.alaska.gov

File No: 2542.38.018

September 17, 2012

Nancy Peterson City of Unalaska, Department of Public Works P.O. Box 610 Unalaska, Alaska 99685

## Re: Approval of the revised Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road and Delta Way For the City of Unalaska

Dear Ms. Peterson;

Thank you for submitting the response to comments and the revised report referenced above which was received electronically by the Alaska Department of Environmental Conservation on September 13, 2012. ADEC has reviewed the responses and determined they adequately address our comments. ADEC approves of the report and the delineation of contaminated and uncontaminated soils presented in the report. Please submit a final hard copy report to ADEC for our files.

If you have any questions regarding this letter please contact me at (907) 269-3056 or Meghan.dooley@alaska.gov.

Sincerely,

Meghan Dooley C Environmental Program Specialist

cc: Robert Lund (via email)

REVIEW

#### PROJECT: City of Unalaska Drainage Improvements COMMENTS DOCUMENT: draft Characterization Report for Ilulaq Lake/East Point Road & Delta Way Drainage Improvements Location: Amaknak Island, Alaska

City of Unalaska/ADEC		DEC	<b>DATE:</b> August 24, 2012 <b>REVIEWER:</b> Meghan Dooley (DEC) <b>PHONE:</b> 269-3056	Acti	on taken on comme	nt by:					
Item No.	Drawing Sheet No., Spec. Para.		COMMENTS		REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)				

1.	Page 3.10	Please provide results of exceedances with associated locations.	А	Revised the text with the requested information.
2.	Page 6.13, Table 3	Delta Way: Confirmation samples were collected in the soil noted as contaminated, but are not labeled on the table.	А	Revised to include locations on Delta Way.
3.	Page 6.13	Please provide more information about the vault: depth, where any openings are, etc. If the soil within the vault is exposed to the smear zone, it cannot be assumed that the soil is still clean.	А	Per Stantec the bottom of vault is about 14' bgs. Text referencing the vault on page 6.13 has been removed.
4.	Page 8.15	ADEC concurs with the delineation of eligible soils presented in the report.	А	Okay

# STATE OF ALASKA

#### DEPT. OF ENVIRONMENTAL CONSERVATION

#### DIVISION OF SPILL PREVENTION AND RESPONSE CONTAMINATED SITES PROGRAM

555 Cordova Street Anchorage, AK 99501 PHONE (907) 269-3056 FAX (907) 269-7649 www.dec.state.ak.us

SEAN PARNELL, GOVERNOR

File No: 2542.38.018

March 2, 2012

Nancy Peterson City of Unalaska, Department of Public Works P.O. Box 610 Unalaska, Alaska 99685

## Re: Approval for the revised Work Plan for Ilulaq Lake/East Point Road and Delta Way Drainage Improvements and

Dear Ms. Peterson,

Thank you for submitting the draft work plan referenced above which was received by the Department of Environmental Conservation (ADEC) electronically on March 1, 2012. ADEC has carefully reviewed the revised plan and has determined that all comments have been adequately addressed. ADEC approves of the revised plan. Please submit a final hardcopy of the work plan to ADEC. Should any major deviation from the approved work plan occur please contact ADEC immediately.

The approved work plan requested a waiver for the requirement for having an impartial third party conduct the site characterization and excavation activities detailed in the work plan. The State of Alaska under regulation 18 Alaska Administrative Code (AAC) 75.355 requires that "the analysis is conducted or supervised by a qualified, impartial third party." Under 18 AAC 75.390, however, "If the department determines that a waiver of modification will be protective of human health, safety, and welfare of the environment, the department will waive or modify the site cleanup rules based on a review of the quantity or concentration of the discharge or release, soil and groundwater conditions, surface water and topography, geology water and land use, construction methods and materials, and any other human health or environmental factor important to the evaluation."

The City of Unalaska (City) has proposed that the work be conducted by a City employee, Robert Lund. ADEC formally waives the requirement for having an impartial third party conduct and oversee site work. ADEC grants this waiver

G/SPAR/SPAR-CS/38 Case Files (Contaminated Sites)/2542 Dutch Harbor/2542 38 018 Dutch Harbor Rocky Point/3-2-2012 Approval Letter Drainage Improvement Plan and Qualified Person Waiver docx

Control our Menerated Property
specifically for Robert Lund on this project only and reserves the right to revoke the waiver based on adequacy of work performed.

If you have any questions regarding this letter please contact me at (907) 269-3056 or Meghan.Dooley@alaska.gov.

Sincerely,

Meghan Dooley Environmental Program Specialist

Cc: Tyler Zimmerman, City of Unalaska

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

# ATTACHMENT C

Date: 5/1/12

Weather: Overcast 50°F Page lof

w

Time of Arrival: 0900

Time of Departure:. 1200

Sampler & Other Personnel On-site:.

Robot Lund & Gity DPW Rouds CREW

SAP/QAP Calculations:.

Per wast plan Iscien @ 2' and iscreen at 4' bas. collect highest PID as confirmation sample

PPE / Sampling Equipment Used:.

sterile nitice gloves & disposable sample spoons

**PID Calibration Record:** Model No:. Serial No:. Zero Gas (ppm) Reading Comments: Adjust:. (ppm) 590ok Mini Rae Lite 100 100 901909 0.0

## General Sample Locations/Descriptions/Types:.

Delta way 0 to0 to 3+50

Samples Released To ( Lab/Shipping Arrangements/Preservation Method ):.

565 labs in coolers on ice packs. Samplesstored in refrigerator

PID Notes: 0930 / DW-3+00-4 0.4 No oda No Stain cobbles & silt Dw-3+00-2 0.3 cobbles & silt No odos No stain 1000/ DW-0+00-4 0.0 dark silf fine No Stain Nocobr DW-2+00-2 0.0 aggregate grey No odor No Stain 1020 DW-1+00-4 0.3 no stain cobbles & silt No adol 1100 DW-1+00-2 0.3 no ador no stain cobbles & sitt No obl no stan Gobbles y silt no odoc no stain DW-1450-2 0.3 cobbles y sitt no stain cobblestsiff No odo ( 1115/ DW-0+50-4 0.1 no stain aggiesate NO odos 1145 DW-0+50-2 0.0 nostain cobbles ysilt No odor Dw-2+00-2 0.0

	-5					
Date:. 5/1/12			Weather:.	Overce	st 50	"F 2.
Time of Arrival:. 1300			Time of De	parture:. /	430	123
Sampler & Other Personnel (	On-site:.		_			
SAP/QAP Calculations:.						
PPE / Sampling Equipment L	lsed:.					
PID Calibration Record:. Model No:.	Serial No:.	Zero Adjust:.	Gas (ppm)	Reading (ppm)		Comments:.
Mini Rac Lite			100			
	ascriptions/T					
General Sample Locations/D	eachpuonari	ypes				
General Sample Locations/D	escriptions/	ypes				
General Sample Locations/D	escriptionari	ypes				
General Sample Locations/D	Shipping Arra	ngements	/Preservatio	n Method ):.		
General Sample Locations/D Samples Released To ( Lab/S	Shipping Arra	ngements	/Preservatio	n Method ):.		
General Sample Locations/D Samples Released To ( Lab/S	Shipping Arra	ngements	/Preservatio	n Method ):.		
General Sample Locations/D Samples Released To ( Lab/s Notes:.	Shipping Arra	ngements	/Preservatio	n Method ):.		
General Sample Locations/D Samples Released To ( Lab/s Notes:. DW-3+20-4 0	Shipping Arra	ngements	Preservatio	n Method ):.	No st	Gin NO O
General Sample Locations/D Samples Released To (Lab/S Notes:. Dw-3+50-4 0 Dw-3+50-2 0	Shipping Arra	ngements Gobble	Preservatio	on Method ):. DuP-o	No st No st No sta	Kin NO 0 aia NO 00 ch NO 00
General Sample Locations/D Samples Released To (Lab/S Notes:. DW-3+50-4 0 DW-3+50-2 0 DW-2+50-4 0 DW-2+50-4 0	Shipping Arra	ngements cobble cobble s	Preservation	DuP-o	No st No st No sta No Sta	sin no or ain no or in no or in No od

Date: 5/3/12

Weather: Overcigt 50 f (10f2

Time of Arrival:. 0900

Time of Departure:. //4/

Sampler & Other Personnel On-site:.

Robert Lund NCity DPW Roads Crew

## **SAP/QAP Calculations:.**

Per work plan I screen @ 2'bss & I screen@ 4'bgs. Take confirmation sample from highest PID

## PPE / Sampling Equipment Used:.

Nitrik gloves and sterile samples poons + geocores

Model No:.	Serial No:.	Zero Adjust:.	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590 901	0.0	100	100.4	Okay

## General Sample Locations/Descriptions/Types:.

East Point Road, glab, 1460 -7

565 Labs in	cookis	01	ice. Samples	stored	10	refigerator	

PID Notes:. EP-1+60-4 NA NA aggiegate gw@3'bgs, sher7 0920 VEP-1460-2 3.7 EP-2+10-4 NA NA aggilante gw@22 bgs, 54een 0945 VEP-2+10-2 106.7 EP-2+60-4 NA 6w 10 6" no sample NA EP-21-88-2 6w@ 212', No sheen 1010V EP-3+10-4 NA No odos, no speca aggregate EP-3+10-2 NA, gw@ 22 bis aggregate No odor, no sheen aggregate No odor, no stain aggregate NSilt Gw@42, possible LNAPL 1.7 1030 LEP-3+60 - 4 NA EP-3+60 - 2 2.1 3.2 1100 VEP-4410 - 2 2.7 1130 JEP-4+10-4

. .

Sampler & Other Per	sonnel On	-site:.						
~					_			
SAP/QAP Calculation	IS:.							
		1						
PPE / Sampling Equi	pment Use	əd:.						
PID Calibration Reco	rd:.	Ourial Max	7		Deeding		Commonto	
Model No:.		Serial No:.	Adjust:	Gas (ppm)	(ppm)		Comments.	
Mini Rae Lite	e			100				
			ale a la co					
General Sample Loca	ations/Des	criptions/Ty	ypes:.					
General Sample Loca	ations/Des	criptions/Ty	ypes:.		-			
General Sample Loca	ations/Des	criptions/Ty	ypes:.					
General Sample Loca	ations/Des o ( Lab/Shi	criptions/Ty	ypes:. ngements	/Preservatio	on Method	I ):.		
General Sample Loca	ations/Des o ( Lab/Shi	criptions/Ty	ypes:. ngements	/Preservatio	on Method	I ):.		
General Sample Loca	ations/Des o ( Lab/Shi	criptions/Ty	ypes:. ngements	/Preservatio	on Method	I ):.		
General Sample Loca	ations/Des o ( Lab/Shi	criptions/Ty	ypes:. ngements	/Preservatio	on Method	I ):.		
General Sample Loca	ations/Des o ( Lab/Shi	ecriptions/Ty	ypes:.	/Preservatio	on Method	I ):.		
General Sample Loca Samples Released To Notes:. EP-4+60 - 4	ations/Des o ( Lab/Shi	ocriptions/Ty	ngements	Preservatio	on Method	1):. Gw@4	4/2 approx, possib	ble c
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2	100.0 3.7	ocriptions/Ty	ags(cg)	Arc & signate of sav	on Method	1):. Gw@4 No одо	t's approx, possib T nosseen	ble L
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4	100.0 3,7 119.	ipping Arra	aggicg aggicg cobble	Are & si ate & si ate & sa ate & sa ate & sa ate & si ate & si	on Method	1):. Gw@4 No odo Stain, ou	the approx, possible T no sheen dos, no Gw	5h C
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 4 EP-5+10 - 2	100.0 3.7 119.1 4.9	ipping Arra	aggrega aggrega aggrega cobbla	ate & si ate & si ate & sa ate & sa ate & si ate & si	on Method	I):. Gw@4 No odo Stain, ou No stain	t'z approx, possib T noster dos, no Gw no odor	ble L
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 2 EP-5+10 - 2 EP-5+10 - 2	100.0 3.7 119.1 4.9 32.8.7	ipping Arra	aggrega aggrega aggrega cobble aggrega cobble	Atc & signation	on Method	1):. Gw@4 No odo Stain, od No stain, No stain	t'z approx, possib T no sheen dos, no Gw no odor edo ( Noon	ble C
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 2 EP-5+10 - 2 EP-5+10 - 2	100.0 3.7 119.1 4.9 32.8.7	ipping Arra	aggicg aggicg aggicg cobble aggic orange	Atc & si atc & si atc & sa atc & sa atc & si t satc & si t satc & si t t	It Shotcock N	I):. Gw Q4 No odo Stain, ou No stain, No stain,	H2 approx, possib T no sheen doi, no Gw no od or odo (, No gw	5/e C
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 2 EP-5+60 - 7 EP-5+60 - 2	100.0 3,7 119.1 4.9 32.8.7 4.1	ipping Arra	aggieg aggieg	Are & si ate & si ate & sa ate & si t sate & si t ate	on Method	I):. Gw@4 No odo Stain, od No stain, No stain, Io stain,	t's approx, possib T no sheen doi, no Gw no odor odo (, Nogw no odor no odor	ble c
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General Sample Loca Samples Released To Notes:. EP-4+60 - 2 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 2 EP-5+60 - 7 EP-5+60 - 7 EP-5+60 - 2	ations/Des o (Lab/Shi 100.0 3.7 119.1 4.9 32.8.7 4.1	ipping Arra	aggrega aggrega aggrega cobbla aggrega cobbla	Are & si ate & si ate & sa ate & sa ate & si ate & si ate ate	on Method	I):. Gw Q4 No odo Stain, ou No stain, Vo stain, Vo stain, Vo stain,	H2 approx, possib T no sheen doi, no Gw no odor odo ( Nogw no odor no odor	5/e C
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 2 EP-5+60 - 7 EP-5+60 - 7 EP-5+60 - 2	100.0 3.7 119.1 4.9 32.8.7 4.1	ipping Arran	aggicg aggicg aggicg cobble aggicg cobble aggicg	Ate & si ate & si ate & sa ate & sa ate & si sate & si ate ate	It shotcoct w	I):. Gw @4 No odo Stain, ou No stain, No stain, Io stain, Io stain, Io stain,	42 approx, possible T no sheen doi, no Gw no odor odor, Nogw no odor a fuel linz	ble c
General Sample Loca Samples Released To Notes:. EP-4+60 - 4 EP-4+60 - 2 EP-5+10 - 4 EP-5+10 - 2 EP-5+60 - 7 EP-5+60 - 2	ations/Des o (Lab/Shi 100.0 3.7 119.1 4.9 32.8.7 4.1	ipping Arran	aggicg aggicg aggicg cobbly aggicg cobbly aggicg	Are & sin ate & sin ate & san ate & sin sate & sin ate ate	on Method	1):. Gw@4 No odo Stain, od No stain, No stain, Io stain, Iitely	42 approx, possib T no sheen dos, no Gw no odor odor, Nogw no odor a fuel line honer	Sk C

Date: 5/4/12

Weather: OULICAST/flurries 40°F

Time of Arrival: 0900

Time of Departure:. //00

Sampler & Other Personnel On-site:.

Robert Lund & DPW Roads Dept

SAP/QAP Calculations:

Per work plan SAP/Quap Iscreen@4'655 & Iscreen@ 2'695 highest PID as confirmation sample

PPE / Sampling Equipment Used:.

Nitrile gloves, sterile sample spoons & geocores

**PID Calibration Record:.** Model No:. Serial No: Gas (ppm) Reading Comments: Zero Adjust: (ppm) 590-901907 0.0 okay 99.9 Mini Rae Lite 100

## General Sample Locations/Descriptions/Types:

FP 6+10-7

In cookis on ice packs to 565 1865, refrigerator

DUP-02 No odor no stain, No swiescht 114.4 brn silt/med plast 0970 / EP-6+10-4 scepay from coluit no odol nostrin, ben silt & aggregate 0540 VEP-6+10-2 5.7 No odor, no stain, 6W42 1000 V. EP-6+60-4 2.2 bin silt Acapples/Sand no odois no stain EP-6+60-2 2.1 sitt Nagsregate no dos, no stainnosu 1330 VEP-7+10-4 4.0 br 5: Alshotioch silt Naggregale/sund no doi, no stain 3.1 EP-7+10-2 agging a telsilt/shotrack no odos no stain, no 50 1400 / EP-7+60-4 4.9 aggregate No odor, no stain, no gw EP-7+60-2 4.6 silf/shotrock 1500 JEP-8+10 -4 5.7 No odor, no stain aggiegate silt & shot could EP-8+10-2 4.4 No oder, no stain, no 5 w 550 EP-8+60-4 3.7 No odar, no stain FP-8+60-2 2.1 aggregate

Date:. 5/7/12

Weather: Over ces + 35°

Time of Arrival:. 0900

Time of Departure: 1145 Page 1 of 2

Sampler & Other Personnel On-site:.

Kobert Lund & City DRN Roads crew

SAP/QAP Calculations:. Per work plan & SAPQAP 2PID screens per testhole, at least one confirmation from each test hole

PPE / Sampling Equipment Used:.

Sterile nitrile glaves/ sample spoors/ geocores **PID Calibration Record:.** 

Model No:. Serial No:. Gas (ppm) Reading Comments: Zero Adjust: (ppm) 590 Mini Rae Lite 100 100 OK 0.0

## General Sample Locations/Descriptions/Types:.

EP-9+10 to EP-12+10

565 labs in cookers on icepacta. Samples stored in refrigeritor

Notes:.

0930 J, EP-9+10-4 1.8 Shot rack 1 sitt No odos nostain, nosu 0945 EP- 9+10-2 2.8 assignte no doi, no stain 1030 JEP-9+60-4 2.9 assugate/silt No odal, no stain, nosw EP-9+60-2 2.2 aggregite no dol, no.stain assigntelshotrocklailt noodor, no stans nogw 1100 / EP-10+10-4 3.0 EP-10+10-2 1.4 aggregate Noodor, no stain assignte/silt/shot out No ador, no stain, no su 1330 VEP-10+60-4 0.8 aggingate No odos, no stain 13451 EP-101 60-2 2.4 No oddi, no strin, NO 5W agregate sitt 1445 / EP-11+10-4 4.0 No odas, no strin 1500 / EP-11+10-2 3.1 agreste 1500 / EP-11+60-4 2. 3 Dup-03 agsiegate/shot cock No odoly no stain, 10 50 no adoi, no stain EP-11+60-21.8 agglegate

Date: 5/7/12

Time of Arrival:. / 300

Weather: Overcast 45° (afternoon)

Page 20 FZ

Time of Departure:. 1600

Sampler & Other Personnel On-site:.

SAP/QAP Calculations:.

PPE / Sampling Equipment Used:.

PID Calibration Record:.

Model No:.	Serial No:.	Zero Adjust:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite			100		

General Sample Locations/Descriptions/Types:.

Notes:. 1530 VEP-12+10-4 1.1 silt/shotrock/aggragetz No odos, no stain No an aggregete/silt No adal, no stain EP-12+10-2 0.9

Date: 5/8/12

Weather: Overcist 40°F

Time of Arrival:.0900

Time of Departure:. //45

Sampler & Other Personnel On-site:.

Robert Lund NPPW Poads Crew

SAP/QAP Calculations:.

Per work plan & SAP/QAP 2 pill screens per test hole, at least 1 confirmation sample per test hole.

PPE / Sampling Equipment Used:.

sterile nitrile glouis/ sample spoors A geocorry

**PID Calibration Record:.** Model No:. Serial No:. Gas (ppm) Reading Comments:. Zero Adjust:. (ppm) 590 Mini Rae Lite 0.0 100 100 oK

General Sample Locations/Descriptions/Types:.

EP-12+60-712+97 & DW-4+00

565 labs in coolers on ice Samples stored in refigurator

Notes: 1000 / EP-12-160-4 0.2 assugeta/silt/cobbles no odol, no strin, no su 1030 J EP-12+97-4 0.7 Dutor assissate/siltlabbles no odor, no stain, no gi EP-12+97-2 0.4 assissate/siltlabbles no odor, no stain, no gi 1130 / Div- 4+00-4 1.0 assusatesitt no odol, no stain, no gart aggregate no odol, no stain Dw-4. +00 -2 0.9 \* located and of 6" steel pipe, appears to be leaking viscous Walt oil.

Date:. 5/11/12

Weather: OUSCAST 55°F

Time of Arrival:. /300

Time of Departure:. 1500

Sampler & Other Personnel On-site:.

Robert Lund & Regan Engineering

SAP/QAP Calculations:. Per work plan. H'deep test hole w/ field screen @ 2' 14' bags, hollect confirmation sample from highest PiD

PPE / Sampling Equipment Used:..

Nitrile glores sterile sample spoons & geocares

**PID Calibration Record:.** Model No:. Serial No: Zero Gas (ppm) Reading Comments: Adjust: (ppm) 500 901907 0.0 OK 100 100 Mini Rae Lite

General Sample Locations/Descriptions/Types:.

East point Road 13+36, opposite side of pipelines, hand dis

569 labs via Penair, chilled in refrigerator, shipped on icepacty in cooker

Notes:

KV EP-13+36-4 0.0 aggregate & sitt No stain, no odor, nogu EP-13+36-2 0.0 aggregate N silt No stain, no odos \* Hand dug w/ shove due to feel lines

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

# ATTACHMENT D



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

Project: Client: SGS Work Order: Ilulaq Lake East Point Rd DW Unalaska City-Public Works 1121591

Released by:

#### Contents:

Cover Page Case Narrative Final Report Pages Quality Control Summary Forms Chain of Custody/Sample Receipt Forms



Client Name: Unalaska City-Public Works Project Name: Ilulaq Lake East Point Rd DW Workorder No.: 1121591

## Sample Comments

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

Lab Sample ID 1121591001	<u>Sample Type</u> PS	<u>Client Sample ID</u> DW-0+00-4
	AK102/103 - Unknown	n hydrocarbon with several peaks is present.
1121591002	PS	DW-0+50-4
	AK102/103 - Unknowr	n hydrocarbon with several peaks is present.
1121591003	PS	DW-1+00-4
	AK102/103 - The patte AK102/103 - Sample v	ern is consistent with a lube oil. was diluted due to dark color of extract;therefore the LOQ was elevated.
1121591004	PS	DW-1+50-4
	AK102/103 - The patte AK102/103 - Sample v 8270D SIM- Surrogate	ern is consistent with a lube oil. was diluted due to dark color of extract;therefore the LOQ was elevated. e (2-fluorobiphenyl) recovery is outside of QC criteria due to sample dilution.
1121591005	PS	DW-2+00-4
	AK102/103 - Unknowr	n hydrocarbon with several peaks is present.
1121591006	PS	DW-2+50-4
	AK102/103 - The patte	ern is consistent with a lube oil.
1121591007	PS	DW-3+00-4
	AK102/103 - The patte	ern is consistent with a lube oil.
1121591008	PS	DW-3+50-4
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1121591009	PS	DW-4+00-4
	AK102/103 - Unknowr	n hydrocarbon with several peaks is present.
1121591010	PS	DUP-01
	AK102/103 - Unknowr 8270D SIM - Elevated	n hydrocarbon with several peaks is present. LOQs due to sample dilution. Sample diluted due to dark extract.
1121591011	PS	EP-1+60-2
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1121591012	PS	EP-2+10-2
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1121591013	PS	EP-3+10-2
	AK102/103 - Unknowr 8270D SIM - Elevated	n hydrocarbon with several peaks is present. LOQs due to sample dilution. Sample diluted due to dark extract.
1121591014	PS	EP-3+60-2
	AK102/103 - Unknowr	n hydrocarbon with several peaks is present.

1121591015	PS	EP-4+10-2
	AK102/103 - Unknowr 8270D SIM - Elevated	n hydrocarbon with several peaks is present. LOQs due to sample dilution. Sample diluted due to dark extract.
1121591016	PS	EP-4+10-4
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1121591017	PS	EP-4+60-2
	AK102/103 - The patte 8270D SIM - Elevated	ern is consistent with a weathered middle distillate. LOQs due to sample dilution. Sample diluted due to dark extract.
1121591018	PS	EP-4+60-4
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1121591019	PS	EP-5+10-4
	AK102/103 - Unknowr	n hydrocarbon with several peaks is present.
1121591020	PS	EP-5-10-4
	AK102/103 - The patte 8270D SIM- Surrogate	ern is consistent with a weathered middle distillate. e (2-fluorobiphenyl and terphenyl-d14) recovery is outside of QC criteria due to sample dilution.
1121591021	PS	EP-5+60-2
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1121591022	PS	EP-5+60-4
	AK102/103 - The patte	ern is consistent with a weathered middle distillate.
1086051	* MS	1121529001MS
	8270D SIM - MS recover for accuracy.	very for naphthalene, benzo(a)anthracene and benzo[a]pyrene is outside of QC criteria. Refer to LCS
1086052	* MSD	1121529001MSD
	8270D SIM - MSD rec 8270D SIM- MS/MSD	overy for naphthalene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy. RPD for acenaphthene does not meet QC criteria.
1086095	* LCSD	LCSD for HBN 1339070 [VXX/2346
	8021B - LCSD recove LOQ.	ry is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than
1086113	* CCV2	CCV2 for HBN 1339072 (VFC/1097
	8021B - CCV recovery LOQ.	is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than
1086246	* MS	1121591018MS
	WO	
	8270D SIM - MS/MSD	recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086247	8270D SIM - MS/MSD * MSD	recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086247	8270D SIM - MS/MSD * MSD 8270D SIM - MS/MSD	recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy. 1121591018MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086247 1086280	8270D SIM - MS/MSD * MSD 8270D SIM - MS/MSD * CCV2	Precovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy. 1121591018MSD Precovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy. CCV2 for HBN 1339072 (VFC/1097
1086247 1086280	8270D SIM - MS/MSD * MSD 8270D SIM - MS/MSD * CCV2 8021B - CCV recovery LOQ.	<ul> <li>recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.</li> <li>1121591018MSD</li> <li>recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.</li> <li>CCV2 for HBN 1339072 (VFC/1097</li> <li>v is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than</li> </ul>

associated field samples.



#### **Report of Manual Integrations**

Print Date: 5/29/2012 3:25 pm

Laboratory ID	Client Sample ID	Analytical Batch	Method	<u>Analyte</u>	Reason
1086051	1121529001MS	XMS6656	8270D SIMS (F	Phenanthrene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	PNF
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Chrysene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Acenaphthene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Chrysene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Phenanthrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Chrysene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591001	DW-0+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591001	DW-0+00-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591002	DW-0+50-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591002	DW-0+50-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591004	DW-1+50-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591004	DW-1+50-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591005	DW-2+00-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591005	DW-2+00-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591007	DW-3+00-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591007	DW-3+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591007	DW-3+00-4	XMS6656	8270D SIMS (F	Phenanthrene	RP
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591009	DW-4+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591009	DW-4+00-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591011	EP-1+60-2	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591011	EP-1+60-2	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Acenaphthylene	SP
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Chrysene	BLC

SGS North America Inc. Environmental Division 200 West Potter Drive Anchorage AK 99518 t(907)562.2343 f(907)561 5301 www.ussgs.com Member of SGS Group

Laboratory ID	Client Sample ID	Analytical Batch	<u>Method</u>	Analyte	Reason
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591013	EP-3+10-2	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591013	EP-3+10-2	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	PNF
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Benzo[g,h,i]perylene	RP
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Chrysene	RP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Acenaphthylene	SP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Anthracene	RP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Phenanthrene	BLC
1121591020	EP-5-10-4	XMS6663	8270D SIMS (F	Anthracene	RP
1121591020	EP-5-10-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591020	EP-5-10-4	XMS6663	8270D SIMS (F	Phenanthrene	BLC
1121591021	EP-5+60-2	XMS6663	8270D SIMS (F	Anthracene	RP
1121591021	EP-5+60-2	XMS6663	8270D SIMS (F	Phenanthrene	BLC
1121591022	EP-5+60-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591022	EP-5+60-4	XMS6663	8270D SIMS (F	Phenanthrene	BLC

Manual Integration Reason Code Descriptions

Code	Description
0	Original Chromatogram
М	Modified Chromatogram
SS	Skimmed surrogate
BLG Close	ed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP Rem	oved split peak
FPS Force	ed peak start/stop
BLC Base	line correction
PNF Peak	not found by software

All DRO/RRO analysis are integrated per SOP.



# Laboratory Analytical Report

Client: Unalaska City-Public Works P.O. Box 610 Unalaska, AK 99685

> Attn: Robert Lund T: 907-581-1260 F: rlund@ci.unalaska.ak.us

Project: Ilulag Lake East Point Rd DW

Workorder No.: 1121591

#### Certification:

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

Forest Taylor

Forest.Taylor@sgs.com Project Manager

#### Contents (Bookmarked in PDF):

Cover Page Glossary Sample Summary Forms Case Narrative Sample Results Forms Batch Summary Forms (by method) Quality Control Summary Forms (by method) Chain of Custody/Sample Receipt Forms Attachments (if applicable)





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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the

provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

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

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



## SAMPLE SUMMARY

Print Date: 5/29/2012 3:25 pm

Client Name: Unalaska City-Public Works Project Name: Ilulaq Lake East Point Rd DW Workorder No.: 1121591

## Analytical Methods

Method Description	Analytical Method
8270 PAH SIM Semi-Volatiles GC/MS	8270D SIMS (PAH)
AK101/8021 Combo. (S)	AK101
AK101/8021 Combo. (S)	SW8021B
Diesel/Residual Range Organics	AK102
Diesel/Residual Range Organics	AK103
Percent Solids SM2540G	SM21 2540G

## Sample ID Cross Reference

Lab Sample ID	Client Sample ID
1121591001	DW-0+00-4
1121591002	DW-0+50-4
1121591003	DW-1+00-4
1121591004	DW-1+50-4
1121591005	DW-2+00-4
1121591006	DW-2+50-4
1121591007	DW-3+00-4
1121591008	DW-3+50-4
1121591009	DW-4+00-4
1121591010	DUP-01
1121591011	EP-1+60-2
1121591012	EP-2+10-2
1121591013	EP-3+10-2
1121591014	EP-3+60-2
1121591015	EP-4+10-2
1121591016	EP-4+10-4
1121591017	EP-4+60-2
1121591018	EP-4+60-4
1121591019	EP-5+10-4
1121591020	EP-5-10-4
1121591021	EP-5+60-2
1121591022	EP-5+60-4
1121591023	TB-01



Client Sample ID: DW-0+00-4				
SGS Ref. #: 1121591001	Parameter	<u>Result</u>	<u>Units</u>	
Semivolatile Organic Fuels Department				
	Residual Range Organics	54.8	mg/Kg	
Polynuclear Aromatics GC/MS				
	Phenanthrene	83.4	ug/Kg	
	Fluoranthene	92.4	ug/Kg	
	Pyrene	69.0	ug/Kg	
	Benzo[b]Fluoranthene	68.2	ug/Kg	
	Benzo[a]pyrene	50.6	ug/Kg	
Client Sample ID: DW-0+50-4				
SGS Ref. #: 1121591002	Parameter	<u>Result</u>	<u>Units</u>	
Semivolatile Organic Fuels Department				
	Residual Range Organics	70.5	mg/Kg	
Polynuclear Aromatics GC/MS				
	Phenanthrene	55.0	ug/Kg	
	Fluoranthene	70.6	ug/Kg	
	Pyrene	67.7	ug/Kg	
	Benzo(a)Anthracene	45.8	ug/Kg	
	Chrysene	40.2	ug/Kg	
		04.4		
	Benzo[b]Fluoranthene	81.1	ug/kg	
	Benzo[b]Fluoranthene Benzo[a]pyrene	81.1 61.5	ug/Kg ug/Kg	



Client Sample ID: DW-1+00-4			
SGS Ref. #: 1121591003	Parameter_	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Residual Range Organics	142	mg/Kg
Polynuclear Aromatics GC/MS			
	Naphthalene	71.6	ug/Kg
	2-Methylnaphthalene	40.4	ug/Kg
	1-Methylnaphthalene	32.5	ug/Kg
	Fluorene	42.9	ug/Kg
	Phenanthrene	565	ug/Kg
	Anthracene	182	ug/Kg
	Fluoranthene	640	ug/Kg
	Pyrene	783	ug/Kg
	Benzo(a)Anthracene	599	ug/Kg
	Chrysene	412	ug/Kg
	Benzo[b]Fluoranthene	719	ug/Kg
	Benzo[k]fluoranthene	190	ug/Kg
	Benzo[a]pyrene	736	ug/Kg
	Indeno[1,2,3-c,d] pyrene	462	ug/Kg
	Dibenzo[a,h]anthracene	127	ug/Kg
	Benzo[g,h,i]perylene	542	ug/Kg
Client Sample ID: DW-1+50-4			
SGS Ref. #: 1121591004	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Residual Range Organics	543	mg/Kg
Polynuclear Aromatics GC/MS			
	Fluoranthene	46.1	ug/Ka
	Pvrene	47.1	ug/Ka
	Benzo(a)Anthracene	37.9	ug/Kg
	Benzo[a]pyrene	47.3	ug/Ka
	Benzo[g,h,i]perylene	31.0	ug/Kg



Client Sample ID: DW-2+00-4			
SGS Ref. #: 1121591005	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Residual Range Organics	69.6	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	60.9	ug/Kg
	Fluoranthene	93.4	ug/Kg
	Pyrene	87.8	ug/Kg
	Benzo(a)Anthracene	51.5	ug/Kg
	Chrysene	51.6	ug/Kg
	Benzo[b]Fluoranthene	73.8	ug/Kg
	Benzo[a]pyrene	57.4	ug/Kg
Client Sample ID: DW-2+50-4			
Client Sample ID: <b>DW-2+50-4</b> SGS Ref. #: 1121591006	Parameter_	<u>Result</u>	<u>Units</u>
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department	Parameter	<u>Result</u>	<u>Units</u>
Client Sample ID: <b>DW-2+50-4</b> SGS Ref. #: 1121591006 <b>Semivolatile Organic Fuels Department</b>	Parameter Residual Range Organics	<u>Result</u> 80.4	<u>Units</u> mg/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	<u>Parameter</u> Residual Range Organics	<u>Result</u> 80.4	<u>Units</u> mg/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene	<u>Result</u> 80.4 8.18	<u>Units</u> mg/Kg ug/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene Fluoranthene	<u>Result</u> 80.4 8.18 15.8	<u>Units</u> mg/Kg ug/Kg ug/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene Fluoranthene Pyrene	Result 80.4 8.18 15.8 18.6	<u>Units</u> mg/Kg ug/Kg ug/Kg ug/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene Fluoranthene Pyrene Benzo(a)Anthracene	<u>Result</u> 80.4 8.18 15.8 18.6 9.05	<u>Units</u> mg/Kg ug/Kg ug/Kg ug/Kg ug/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene Fluoranthene Pyrene Benzo(a)Anthracene Chrysene	Result 80.4 8.18 15.8 18.6 9.05 8.38	<u>Units</u> mg/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene Fluoranthene Pyrene Benzo(a)Anthracene Chrysene Benzo[a]pyrene	Result 80.4 8.18 15.8 18.6 9.05 8.38 15.1	Units mg/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg
Client Sample ID: DW-2+50-4 SGS Ref. #: 1121591006 Semivolatile Organic Fuels Department Polynuclear Aromatics GC/MS	Parameter Residual Range Organics Phenanthrene Fluoranthene Pyrene Benzo(a)Anthracene Chrysene Benzo[a]pyrene Indeno[1,2,3-c,d] pyrene	Result 80.4 8.18 15.8 18.6 9.05 8.38 15.1 8.58	Units mg/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg



Client Sample ID: DW-3+00-4			
SGS Ref. #: 1121591007	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Depart	ment		
	Diesel Range Organics	262	mg/Kg
	Residual Range Organics	1370	mg/Kg
Polynuclear Arematics GC/MS			
Toryndelear Aromatics Comio	Dhananthrana	107	ua/Ka
		107	ug/Kg
	Alluracene	00.9	ug/Kg
	Puropo	217	ug/Kg
	Pylelle Denze(a)Anthropping	317	ug/Kg
	Benzo(a)Anthracene	205	ug/Kg
		143	ug/Kg
	BenzolbjFluoranthene	2//	ug/Kg
	Benzolajpyrene	219	ug/Kg
	Indeno[1,2,3-c,d] pyrene	118	ug/Kg
	Benzo[g,h,i]perylene	188	ug/Kg
Client Sample ID: DW-3+50-4			
SGS Ref. #: 1121591008	Parameter	Result	Units
Volatile Fuels Department			
	Benzene	51.7	ug/Kg
	Toluene	100	ug/Kg
Semivoletile Organic Fuele Depart			
Semivolatile Organic Fuels Depart	Disast Danas Organiza	450	
	Diesei Range Organics	158	mg/Kg
	Residual Range Organics	877	mg/Kg
Polynuclear Aromatics GC/MS			
	Naphthalene	79.8	ug/Kg
	2-Methylnaphthalene	113	ug/Kg
	1-Methylnaphthalene	67.1	ug/Kg
	Fluoranthene	94.8	ug/Kg
	Pyrene	100	ug/Kg
	Benzo(a)Anthracene	67.5	ug/Kg
	Benzo[b]Fluoranthene	117	ug/Kg
	Benzo[a]pyrene	93.3	ug/Kg
	Indeno[1,2,3-c,d] pyrene	57.4	ug/Kg
	Donzola h ilnordono	109	na/Ka



Client Sample ID: DW-4+00-4			
SGS Ref. #: 1121591009	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Residual Range Organics	145	mg/Kg
Delawards and America CO/MO			
Polynuclear Aromatics GC/MS			
	Benzo[b]Fluoranthene	55.6	ug/Kg
	Benzo[a]pyrene	41.0	ug/Kg
	Benzo[g,h,i]perylene	36.0	ug/Kg
Client Sample ID: DUP-01			
SGS Ref. #: 1121591010	Parameter	Result	Units
Semivolatile Organic Fuels Department	<u>r uramotor</u>	Rooun	<u>enne</u>
	Residual Range Organics	104	mg/Kg
Client Sample ID: EP-1+60-2			
SGS Ref. #: 1121591011	Parameter	<u>Result</u>	<u>Units</u>
Volatile Fuels Department			
	Gasoline Range Organics	9.33	mg/Kg
Semivolatile Organic Fuels Department			
<b>o</b> .	Diesel Range Organics	893	mg/Kg
	Residual Range Organics	339	mg/Kg
Polynuclear Aromatics GC/MS			
	Benzo[g,h,i]perylene	32.4	ug/Kg
Client Sample ID: EP-2+10-2			
SGS Ref. #: 1121591012	Parameter	Result	Units
Semivolatile Organic Fuels Department	<u></u>		
<b>č</b> 1	Diesel Range Organics	366	mg/Kg
	Residual Range Organics	181	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	40.3	ug/Kg
	Fluoranthene	84.5	ug/Kg
	Pyrene	72.3	ug/Kg
	Chrysene	35.5	ug/Kg
	Benzo[b]Fluoranthene	69.2	ug/Kg
	Benzo[a]pyrene	33.5	ug/Kg



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Client Sample ID: EP-3+10-2			
SGS Ref. #: 1121591013	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	46.0	mg/Kg
	Residual Range Organics	94.3	mg/Kg
Client Sample ID: EP-3+60-2			
SGS Ref. #: 1121591014	Parameter	Result	Units
Semivolatile Organic Fuels Department		<u></u>	<u></u>
	Residual Range Organics	42.0	mg/Kg
Polynuclear Aromatics GC/MS			
2	Phenanthrene	44.2	ug/Kg
	Fluoranthene	52.0	ug/Kg
	Pyrene	46.8	ug/Kg
	Benzo[b]Fluoranthene	39.0	ug/Kg
	Benzo[a]pyrene	34.1	ug/Kg
Client Sample ID: EP-4+10-2			
SGS Ref. #: 1121591015	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	29.8	mg/Kg
	Residual Range Organics	40.5	mg/Kg
Client Sample ID: EP-4+10-4			
SGS Ref. #: 1121591016	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	178	mg/Kg
	Residual Range Organics	95.5	mg/Kg
Polynuclear Aromatics GC/MS			
2	Fluoranthene	37.4	ua/Ka
	Pyrene	33.5	ug/Kg
	Benzo(a)Anthracene	32.5	ug/Kg
	Chrysene	30.9	ug/Kg
	Benzo[b]Fluoranthene	49.3	ug/Kg
	Benzo[a]pyrene	31.6	ug/Kg
Client Sample ID: EP-4+60-2			
SGS Ref. #: 1121591017	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	31.0	mg/Kg
	Residual Range Organics	28.9	mg/Kg

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Client Sample ID: EP-4+60-4				
SGS Ref. #: 1121591018	Parameter	Result	<u>Units</u>	
Semivolatile Organic Fuels Departme	nt			
	Diesel Range Organics	1870	mg/Kg	
	Residual Range Organics	1790	mg/Kg	
Polynuclear Aromatics GC/MS				
	Fluoranthene	86.4	ug/Kg	
	Pyrene	232	ug/Kg	
	Benzo(a)Anthracene	71.3	ug/Kg	
	Chrysene	92.8	ug/Kg	
	Benzo[a]pyrene	141	ug/Kg	
	Benzo[g,h,i]perylene	68.0	ug/Kg	
Client Sample ID: EP-5+10-4				
SGS Ref. #: 1121591019	Parameter	Result	<u>Units</u>	
Semivolatile Organic Fuels Departme	nt			
	Diesel Range Organics	173	mg/Kg	
	Residual Range Organics	234	mg/Kg	
Polynuclear Aromatics GC/MS				
-	Fluoranthene	37.2	ug/Kg	
	Pyrene	41.4	ug/Kg	
	Chrysene	29.6	ug/Kg	
	Benzo[b]Fluoranthene	57.0	ug/Kg	
	Benzo[a]pyrene	46.6	ug/Kg	
	Indeno[1,2,3-c,d] pyrene	39.7	ug/Kg	



Client Sample ID: EP-5-10-4				
SGS Ref. #: 1121591020	Parameter_	<u>Result</u>	<u>Units</u>	
Volatile Fuels Department				
	Gasoline Range Organics	9.08	mg/Kg	
	o-Xylene	141	ug/Kg	
Semivolatile Organic Fuels Depa	artment			
	Diesel Range Organics	2080	mg/Kg	
	Residual Range Organics	2620	mg/Kg	
Polynuclear Aromatics GC/MS				
	Fluorene	403	ug/Kg	
	Phenanthrene	870	ug/Kg	
	Anthracene	200	ug/Kg	
	Fluoranthene	191	ug/Kg	
	Pyrene	960	ug/Kg	
	Benzo(a)Anthracene	260	ug/Kg	
	Chrysene	418	ug/Kg	
	Benzo[a]pyrene	165	ug/Kg	
	Benzo[g,h,i]perylene	75.5	ug/Kg	
Client Sample ID: EP-5+60-2				
SGS Ref. #: 1121591021	Parameter	<u>Result</u>	<u>Units</u>	
Semivolatile Organic Fuels Depa	artment			
	Diesel Range Organics	151	mg/Kg	
	Residual Range Organics	490	mg/Kg	
Polynuclear Aromatics GC/MS				
	Fluoranthene	31.6	ug/Kg	
	Pyrene	52.9	ug/Kg	
	Benzo[a]pyrene	39.3	ug/Kg	
	Benzo[g,h,i]perylene	48.3	ug/Kg	



Client Sample ID: <b>EP-5+60-4</b> SGS Ref. #: 1121591022	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	523	mg/Kg
	Residual Range Organics	311	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	50.3	ug/Kg
	Fluoranthene	80.9	ug/Kg
	Pyrene	87.9	ug/Kg
	Benzo(a)Anthracene	43.2	ug/Kg
	Chrysene	48.8	ug/Kg
	Benzo[a]pyrene	48.7	ug/Kg
	Benzo[g,h,i]perylene	38.5	ug/Kg



Analytical Prep

## Client Sample ID: **DW-0+00-4** SGS Ref. #: 1121591001 Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 50.8

## Collection Date/Time: 05/01/12 10:00 Receipt Date/Time: 05/09/12 16:15

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>
Benzene	71.1 U	71.1	ug/Kg	1	VFC10970	VXX2346	7
Ethylbenzene	142 U	142	ug/Kg	1	VFC10970	VXX2346	7
Gasoline Range Organics	14.2 U	14.2	mg/Kg	1	VFC10970	VXX2346	7
o-Xylene	142 U	142	ug/Kg	1	VFC10970	VXX2346	7
P & M -Xylene	284 U	284	ug/Kg	1	VFC10970	VXX2346	7
Toluene	142 U	142	ug/Kg	1	VFC10970	VXX2346	7
1,4-Difluorobenzene <surr></surr>	96.1	72-119	%	1	VFC10970	VXX2346	7
4-Bromofluorobenzene <surr></surr>	84.3	50-150	%	1	VFC10970	VXX2346	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX2346	57		Initial Prep Wt./Vol.: 26.31 g		
Analytical Method: AK101		Prep Method: SW503	5A		Prep Extract Vol.: 37.9575 mL		
Analysis Date/Time: 05/11/12 22:52		Prep Date/Time: 05/0	1/12 10:00		Container ID:1121591001-B		001-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX2346	57		Initial Prep	Wt./Vol.: 26	.31 g
Analytical Method: SW8021B		Prep Method: SW503	5A		Prep Extrac	t Vol.: 37.9	575 mL
Analysis Date/Time: 05/11/12 22:52		Prep Date/Time: 05/01/12 10:00			Container II	D:11215910	)01-B
Dilution Factor: 1					Analyst: NF	RB	



Analytical Prep

Client Sample ID: **DW-0+00-4** SGS Ref. #: 1121591001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 50.8

Collection Date/Time: 05/01/12 10:00 Receipt Date/Time: 05/09/12 16:15

#### Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>
Diesel Range Organics	39.0 U	39.0	mg/Kg	1	XFC10364	XXX26834	4
Residual Range Organics	54.8	39.0	mg/Kg	1	XFC10364	XXX26834	4
5a Androstane <surr></surr>	86	50-150	%	1	XFC10364	XXX26834	4
n-Triacontane-d62 <surr></surr>	75.5	50-150	%	1	XFC10364	XXX26834	4
Batch Information							
Analytical Batch: XFC10364		Prep Batch: XXX26	834		Initial Prep	Nt./Vol.: 30.	28 g
Analytical Method: AK102		Prep Method: SW3	550C		Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/14/12 23:20		Prep Date/Time: 05	/11/12 14:50		Container II	D:11215910	01-A
Dilution Factor: 1					Analyst: MCM		
Analytical Batch: XFC10364	)364 Prep Batch: XXX26834 Initial Prep Wt./Vol.: 30.28 g		28 g				
Analytical Method: AK103		Prep Method: SW3550C			Prep Extrac	t Vol.: 1 mL	
Analysis Date/Time: 05/14/12 23:20		Prep Date/Time: 05/11/12 14:50		Container II	D:11215910	01-A	
Dilution Factor: 1					Analyst: M	CM	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

### Client Sample ID: DW-0+00-4 SGS Ref. #: 1121591001

Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 50.8

Collection Date/Time: 05/01/12 10:00 Receipt Date/Time: 05/09/12 16:15

## **Polynuclear Aromatics GC/MS**

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Batch</u>	Batch	<u>Qualifiers</u>
1-Methylnaphthalene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	50.6	49.2	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	68.2	49.2	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	92.4	49.2	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	83.4	49.2	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	69.0	49.2	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	81.6	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	98.6	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26835			Initial Prep Wt./Vol.: 22.51 g		51 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 12:28		Prep Date/Time: 05/14/12 10:00		Container ID:1121591001-A			
Dilution Factor: 5					Analyst: R	rs	



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Prep

**Batch** 

**Qualifiers** 

<u>Analytical</u>

**Batch** 

Client Sample ID: <b>DW-0+00-4</b> SGS Ref. #: 1121591001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 50.8			Collection Date/Time: 05/01/12 10:00 Receipt Date/Time: 05/09/12 16:15
Solids			
Parameter	<u>Result</u>	LOQ/CL	<u>Units</u> <u>DF</u>

Total Solids	50.8	%	1	SPT8624
Batch Information				
Analytical Batch: SPT8624				Initial Prep Wt./Vol.: 1 mL
Analytical Method: SM21 2540G				
Analysis Date/Time: 05/11/12 16:55				Container ID:1121591001-A
Dilution Factor: 1				Analyst: CDE



Analytical Prep

## Client Sample ID: **DW-0+50-4** SGS Ref. #: 1121591002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 79.3

Collection Date/Time: 05/01/12 11:15 Receipt Date/Time: 05/09/12 16:15

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>	
Benzene	37.4 U	37.4	ug/Kg	1	VFC10970	VXX23467	7	
Ethylbenzene	74.9 U	74.9	ug/Kg	1	VFC10970	VXX23467	7	
Gasoline Range Organics	7.49 U	7.49	mg/Kg	1	VFC10970	VXX23467	7	
o-Xylene	74.9 U	74.9	ug/Kg	1	VFC10970	VXX23467	7	
P & M -Xylene	150 U	150	ug/Kg	1	VFC10970	VXX23467	7	
Toluene	74.9 U	74.9	ug/Kg	1	VFC10970	VXX23467	7	
1,4-Difluorobenzene <surr></surr>	96.4	72-119	%	1	VFC10970	VXX23467	7	
4-Bromofluorobenzene <surr></surr>	88.4	50-150	%	1	VFC10970	VXX23467	7	
Batch Information								
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 25.	466 g	
Analytical Method: AK101		Prep Method: SW503	35A		Prep Extrac	t Vol.: 30.26	33 mL	
Analysis Date/Time: 05/11/12 23:10		Prep Date/Time: 05/0	)1/12 11:15		Container I	D:11215910	02-B	
Dilution Factor: 1					Analyst: NF	RB		
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 25.	466 g	
Analytical Method: SW8021B Pre		Prep Method: SW503	Prep Method: SW5035A			Prep Extract Vol.: 30.2633 mL		
Analysis Date/Time: 05/11/12 23:10		Prep Date/Time: 05/0	)1/12 11:15		Container I	D:11215910	02-B	
Dilution Factor: 1					Analyst: NF	RB		



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Analytical Prep

Client Sample ID: **DW-0+50-4** SGS Ref. #: 1121591002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 79.3

Collection Date/Time: 05/01/12 11:15 Receipt Date/Time: 05/09/12 16:15

#### Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>	
Diesel Range Organics	24.9 U	24.9	mg/Kg	1	XFC10364	XXX2683	4	
Residual Range Organics	70.5	24.9	mg/Kg	1	XFC10364	XXX2683	4	
5a Androstane <surr></surr>	85.3	50-150	%	1	XFC10364	XXX2683	4	
n-Triacontane-d62 <surr></surr>	71.4	50-150	%	1	XFC10364	XXX2683	4	
Batch Information								
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep Wt./Vol.: 30.378 g			
Analytical Method: AK102		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 07:41		Prep Date/Time: 05/11/12 14:50			Container ID:1121591002-A			
Dilution Factor: 1					Analyst: M0	CM		
Analytical Batch: XFC10364		Prep Batch: XXX26834		Initial Prep Wt./Vol.: 30.378 g				
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/15/12 07:41		Prep Date/Time: 05/11/12 14:50			Container ID:1121591002-A			
Dilution Factor: 1					Analyst: M	CM		



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Analytical Prep

## Client Sample ID: **DW-0+50-4** SGS Ref. #: 1121591002 Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight) Percent Solids: 79.3 Collection Date/Time: 05/01/12 11:15 Receipt Date/Time: 05/09/12 16:15

## Polynuclear Aromatics GC/MS

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
1-Methylnaphthalene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	45.8	31.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	61.5	31.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	81.1	31.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	39.2	31.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	40.2	31.3	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	70.6	31.3	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	55.0	31.3	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	67.7	31.3	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	85.1	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	103	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26835		Initial Prep Wt./Vol.: 22.619 g		619 g	
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/15/12 12:48		Prep Date/Time: 05/14/12 10:00		Container ID:1121591002-A			
Dilution Factor: 5					Analyst: RTS		


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Container ID:1121591002-A

Analyst: CDE

**Qualifiers** 

Client Sample ID: <b>DW-0+50-4</b> SGS Ref. #: 1121591002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 79.3		Collection Date/Time: 05/01/12 11:15 Receipt Date/Time: 05/09/12 16:15							
Solids									
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>9</u>	
Total Solids	79.3			%	1	SPT8624			
Batch Information									
Analytical Batch: SPT8624						Initial Prep V	Vt./Vol.: 1 n	nL	

Analytical Batch: SPT8624 Analytical Method: SM21 2540G Analysis Date/Time: 05/11/12 16:55 Dilution Factor: 1



Analytical Prep

Client Sample ID: **DW-1+00-4** SGS Ref. #: 1121591003 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	29.2 U	29.2	ug/Kg	1	VFC10970	VXX23467	7
Ethylbenzene	58.5 U	58.5	ug/Kg	1	VFC10970	VXX23467	7
Gasoline Range Organics	5.85 U	5.85	mg/Kg	1	VFC10970	VXX23467	7
o-Xylene	58.5 U	58.5	ug/Kg	1	VFC10970	VXX23467	7
P & M -Xylene	117 U	117	ug/Kg	1	VFC10970	VXX23467	7
Toluene	58.5 U	58.5	ug/Kg	1	VFC10970	VXX23467	7
1,4-Difluorobenzene <surr></surr>	95.6	72-119	%	1	VFC10970	VXX23467	7
4-Bromofluorobenzene <surr></surr>	84.5	50-150	%	1	VFC10970	VXX23467	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	67	Initial Prep Wt./Vol.: 29.497 g			
Analytical Method: AK101		Prep Method: SW50	35A	Prep Extrac	t Vol.: 29.37	718 mL	
Analysis Date/Time: 05/11/12 23:28		Prep Date/Time: 05/0	01/12 10:20		Container II	D:11215910	03-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 29.	497 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.37	718 mL
Analysis Date/Time: 05/11/12 23:28		Prep Date/Time: 05/0	01/12 10:20		Container II	D:11215910	03-B
Dilution Factor: 1					Analyst: NF	RB	



Analytical Prep

Client Sample ID: **DW-1+00-4** SGS Ref. #: 1121591003 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	117 U	117	mg/Kg	5	XFC10364	XXX2683	4	
Residual Range Organics	142	117	mg/Kg	5	XFC10364	XXX2683	4	
5a Androstane <surr></surr>	88.8	50-150	%	5	XFC10364	XXX2683	4	
n-Triacontane-d62 <surr></surr>	81.4	50-150	%	5	XFC10364	XXX2683	4	
Batch Information								
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep Wt./Vol.: 30.178 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/15/12 09:40		Prep Date/Time: 05/11/12 14:50			Container ID:1121591003-A			
Dilution Factor: 5					Analyst: M	CM		
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep	Wt./Vol.: 30	.178 g	
Analytical Method: AK103	Prep Method: SW3550C			Prep Extract Vol.: 1 mL				
Analysis Date/Time: 05/15/12 09:40	Prep Date/Time: 05/11/12 14:50			Container ID:1121591003-A				
Dilution Factor: 5					Analyst: M	СМ		



Analytical Prep

Client Sample ID: **DW-1+00-4** SGS Ref. #: 1121591003 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	32.5	29.1	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	40.4	29.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Anthracene	182	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	599	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	736	291	ug/Kg	50	XMS6656	XXX26835	
Benzo[b]Fluoranthene	719	291	ug/Kg	50	XMS6656	XXX26835	
Benzo[g,h,i]perylene	542	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	190	29.1	ug/Kg	5	XMS6656	XXX26835	
Chrysene	412	29.1	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	127	29.1	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	640	29.1	ug/Kg	5	XMS6656	XXX26835	
Fluorene	42.9	29.1	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	462	29.1	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	71.6	29.1	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	565	29.1	ug/Kg	5	XMS6656	XXX26835	
Pyrene	783	291	ug/Kg	50	XMS6656	XXX26835	
2-Fluorobiphenyl <surr></surr>	90.5	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr></surr>	112	30-125	%	5	XMS6656	XXX26835	
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.7	714 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 13:08		Prep Date/Time: 05	5/14/12 10:00		Container I	D:112159100	)3-A
Dilution Factor: 5					Analyst: R	ГS	
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.7	714 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 18:07		Prep Date/Time: 05	5/14/12 10:00		Container I	D:112159100	)3-A
Dilution Factor: 50					Analyst: R	rs	



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Client Sample ID: DW-1+00-4	
SGS Ref. #: 1121591003	Collection Date/Time: 05/01/12 10:20
Project ID: Ilulaq Lake East Point Rd DW	Receipt Date/Time: 05/09/12 16:15
Matrix: Soil/Solid (dry weight)	
Percent Solids: 85.2	
Solids	

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	85.2		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624					Initial Prep W	/t./Vol.: 1 mL	-
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159100	3-A
Dilution Factor: 1					Analyst: CDI	=	



Analytical Prep

Client Sample ID: **DW-1+50-4** SGS Ref. #: 1121591004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.4

Collection Date/Time: 05/01/12 11:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>	
Benzene	30.6 U	30.6	ug/Kg	1	VFC10970	VXX23467	7	
Ethylbenzene	61.1 U	61.1	ug/Kg	1	VFC10970	VXX23467	7	
Gasoline Range Organics	6.11 U	6.11	mg/Kg	1	VFC10970	VXX23467	7	
o-Xylene	61.1 U	61.1	ug/Kg	1	VFC10970	VXX23467	7	
P & M -Xylene	122 U	122	ug/Kg	1	VFC10970	VXX23467	7	
Toluene	61.1 U	61.1	ug/Kg	1	VFC10970	VXX23467	7	
1,4-Difluorobenzene <surr></surr>	96.6	72-119	%	1	VFC10970	VXX23467	7	
4-Bromofluorobenzene <surr></surr>	86.6	50-150	%	1	VFC10970	VXX23467	7	
Batch Information								
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 28.	537 g	
Analytical Method: AK101		Prep Method: SW50	lethod: SW5035A			Prep Extract Vol.: 29.4514 mL		
Analysis Date/Time: 05/11/12 23:46		Prep Date/Time: 05/0	01/12 11:00		Container I	D:11215910	04-B	
Dilution Factor: 1					Analyst: NF	RB		
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 28.	537 g	
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.45	514 mL	
Analysis Date/Time: 05/11/12 23:46		Prep Date/Time: 05/0	01/12 11:00		Container I	D:11215910	04-B	
Dilution Factor: 1					Analyst: NF	RB		



Analytical Prep

Client Sample ID: **DW-1+50-4** SGS Ref. #: 1121591004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.4

Collection Date/Time: 05/01/12 11:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>
Diesel Range Organics	118 U	118	mg/Kg	5	XFC10364	XXX26834	1
Residual Range Organics	543	118	mg/Kg	5	XFC10364	XXX26834	1
5a Androstane <surr></surr>	92.1	50-150	%	5	XFC10364	XXX26834	1
n-Triacontane-d62 <surr></surr>	98.3	50-150	%	5	XFC10364	XXX26834	1
Batch Information							
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep Wt./Vol.: 30.015 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 10:01		Prep Date/Time: 05/11/12 14:50			Container ID:1121591004-A		
Dilution Factor: 5					Analyst: M	CM	
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep	Nt./Vol.: 30.	015 g
Analytical Method: AK103	Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/15/12 10:01	Prep Date/Time: 05/11/12 14:50			Container ID:1121591004-A			
Dilution Factor: 5					Analyst: M0	CM	



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Analytical Prep

Client Sample ID: **DW-1+50-4** SGS Ref. #: 1121591004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.4

Collection Date/Time: 05/01/12 11:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX2683	5
Acenaphthylene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	37.9	29.3	ug/Kg	5	XMS6656	XXX2683	5
Benzo[a]pyrene	47.3	29.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	31.0	29.3	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX2683	5
Chrysene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	46.1	29.3	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	47.1	29.3	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	42.8	* 45-105	%	5	XMS6656	XXX2683	5
Terphenyl-d14 <surr></surr>	60.8	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	755 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 13:28 Dilution Factor: 5		Prep Date/Time: 05	/14/12 10:00		Container I Analyst: R <sup>-</sup>	D:11215910 FS	04-A



Print Date: 5/29/2012 3:25 pm

Client Sample ID: <b>DW-1+50-4</b> SGS Ref. #: 1121591004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.4			Collection D Receipt Dat	0ate/Time: 05 e/Time: 05/0	5/01/12 11:0 9/12 16:15	0		
Solids								
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	84.4			%	1	SPT8624		
Batch Information								
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1 r	nL
Analysis Date/Time: 05/11/12 16:55						Container II	D:11215910	)04-A
Dilution Factor: 1						Analyst: CE	Ε	



Analytical Prep

Client Sample ID: **DW-2+00-4** SGS Ref. #: 1121591005 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	56.2 U	56.2	ug/Kg	1	VFC10970	VXX23467	7
Ethylbenzene	112 U	112	ug/Kg	1	VFC10970	VXX23467	7
Gasoline Range Organics	11.2 U	11.2	mg/Kg	1	VFC10970	VXX23467	7
o-Xylene	112 U	112	ug/Kg	1	VFC10970	VXX23467	7
P & M -Xylene	225 U	225	ug/Kg	1	VFC10970	VXX23467	7
Toluene	112 U	112	ug/Kg	1	VFC10970	VXX23467	7
1,4-Difluorobenzene <surr></surr>	96.3	72-119	%	1	VFC10970	VXX23467	7
4-Bromofluorobenzene <surr></surr>	90.7	50-150	%	1	VFC10970	VXX23467	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Nt./Vol.: 28.	236 g
Analytical Method: AK101		Prep Method: SW50	35A	Prep Extrac	t Vol.: 36.85	503 mL	
Analysis Date/Time: 05/12/12 00:04		Prep Date/Time: 05/	01/12 11:45		Container II	D:11215910	05-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Nt./Vol.: 28.	236 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 36.85	503 mL
Analysis Date/Time: 05/12/12 00:04		Prep Date/Time: 05/	01/12 11:45		Container II	D:11215910	05-B
Dilution Factor: 1					Analyst: NF	RB	



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Analytical Prep

Client Sample ID: **DW-2+00-4** SGS Ref. #: 1121591005 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>
Diesel Range Organics	34.0 U	34.0	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	69.6	34.0	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	80.9	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	75.4	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.382 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 02:27		Prep Date/Time: 05/14/12 15:00			Container ID:1121591005-A		
Dilution Factor: 1					Analyst: M0	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26	Prep Batch: XXX26837			Nt./Vol.: 30	.382 g
Analytical Method: AK103	Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 02:27		Prep Date/Time: 05/14/12 15:00			Container ID:1121591005-A		
Dilution Factor: 1					Analyst: M	CM	



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Analytical Prep

Client Sample ID: **DW-2+00-4** SGS Ref. #: 1121591005 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	Э
2-Methylnaphthalene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthylene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Anthracene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Benzo(a)Anthracene	51.5	42.5	ug/Kg	5	XMS6663	XXX26839	9
Benzo[a]pyrene	57.4	42.5	ug/Kg	5	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	73.8	42.5	ug/Kg	5	XMS6663	XXX26839	9
Benzo[g,h,i]perylene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Benzo[k]fluoranthene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Chrysene	51.6	42.5	ug/Kg	5	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Fluoranthene	93.4	42.5	ug/Kg	5	XMS6663	XXX26839	9
Fluorene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Naphthalene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	9
Phenanthrene	60.9	42.5	ug/Kg	5	XMS6663	XXX26839	9
Pyrene	87.8	42.5	ug/Kg	5	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	58.7	45-105	%	5	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	98.7	30-125	%	5	XMS6663	XXX26839	Ð
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	801 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 20:50		Prep Date/Time: 05	/14/12 15:00		Container I	D:11215910	05-A
Dilution Factor: 5					Analyst: R	rs	



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Client Sample ID: DW-2+00-4	
SGS Ref. #: 1121591005	Collection Date/Time: 05/01/12 11:45
Project ID: Ilulaq Lake East Point Rd DW	Receipt Date/Time: 05/09/12 16:15
Matrix: Soil/Solid (dry weight)	
Percent Solids: 58.0	
Solids	

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	58.0		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep V	Vt./Vol.: 1 m	IL
Analysis Date/Time: 05/11/12 16:55					Container ID	):112159100	05-A
Dilution Factor: 1					Analyst: CD	E	



Analytical Prep

Client Sample ID: **DW-2+50-4** SGS Ref. #: 1121591006 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	37.6 U	37.6	ug/Kg	1	VFC10970	VXX23467	7
Ethylbenzene	75.3 U	75.3	ug/Kg	1	VFC10970	VXX23467	7
Gasoline Range Organics	7.53 U	7.53	mg/Kg	1	VFC10970	VXX23467	7
o-Xylene	75.3 U	75.3	ug/Kg	1	VFC10970	VXX23467	7
P & M -Xylene	151 U	151	ug/Kg	1	VFC10970	VXX23467	7
Toluene	75.3 U	75.3	ug/Kg	1	VFC10970	VXX23467	7
1,4-Difluorobenzene <surr></surr>	96.4	72-119	%	1	VFC10970	VXX23467	7
4-Bromofluorobenzene <surr></surr>	92.6	50-150	%	1	VFC10970	VXX23467	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 29.	934 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 33.00	)67 mL
Analysis Date/Time: 05/12/12 00:22		Prep Date/Time: 05/	01/12 14:00		Container I	D:11215910	06-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 29.	934 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 33.00	)67 mL
Analysis Date/Time: 05/12/12 00:22		Prep Date/Time: 05/	01/12 14:00		Container I	D:11215910	06-B
Dilution Factor: 1					Analyst: NF	RB	



Analytical Prep

Client Sample ID: **DW-2+50-4** SGS Ref. #: 1121591006 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>
Diesel Range Organics	27.1 U	27.1	mg/Kg	1	XFC10364	XXX26834	
Residual Range Organics	80.4	27.1	mg/Kg	1	XFC10364	XXX26834	
5a Androstane <surr></surr>	86.1	50-150	%	1	XFC10364	XXX26834	
n-Triacontane-d62 <surr></surr>	78.3	50-150	%	1	XFC10364	XXX26834	
Batch Information							
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep Wt./Vol.: 30.225 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 08:16		Prep Date/Time: 05/11/12 14:50			Container ID:1121591006-A		
Dilution Factor: 1					Analyst: M0	CM	
Analytical Batch: XFC10364		Prep Batch: XXX26	834		Initial Prep	Nt./Vol.: 30.2	225 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 08:16		Prep Date/Time: 05/11/12 14:50			Container ID:1121591006-A		
Dilution Factor: 1					Analyst: M0	CM	



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Analytical Prep

Client Sample ID: **DW-2+50-4** SGS Ref. #: 1121591006 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
2-Methylnaphthalene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Acenaphthene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Acenaphthylene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Anthracene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Benzo(a)Anthracene	9.05	6.82	ug/Kg	1	XMS6656	XXX26835	5
Benzo[a]pyrene	15.1	6.82	ug/Kg	1	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	13.1	6.82	ug/Kg	1	XMS6656	XXX26835	5
Benzo[k]fluoranthene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Chrysene	8.38	6.82	ug/Kg	1	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Fluoranthene	15.8	6.82	ug/Kg	1	XMS6656	XXX26835	5
Fluorene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	8.58	6.82	ug/Kg	1	XMS6656	XXX26835	5
Naphthalene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	5
Phenanthrene	8.18	6.82	ug/Kg	1	XMS6656	XXX26835	5
Pyrene	18.6	6.82	ug/Kg	1	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	89.5	45-105	%	1	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	104	30-125	%	1	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	516 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 18:27		Prep Date/Time: 05/14/12 10:00		Container ID:1121591006-A			
Dilution Factor: 1					Analyst: R	rs	



Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

# Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Container ID:1121591006-A

Analyst: CDE

**Qualifiers** 

Client Sample ID: DW-2+50-4										
SGS Ref. #: 1121591006			Collection Date/Time: 05/01/12 14:00							
Project ID: Ilulaq Lake East Point Rd DV	V		Receipt Date/Time: 05/09/12 16:15							
Matrix: Soil/Solid (dry weight)										
Percent Solids: 73.3										
Solids										
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	DF	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> Batch	<u>(</u>		
Total Solids	73.3			%	1	SPT8624				
Batch Information										
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1	mL		

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Analytical Prep

Client Sample ID: **DW-3+00-4** SGS Ref. #: 1121591007 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.4

Collection Date/Time: 05/01/12 09:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	29.5 U	29.5	ug/Kg	1	VFC10970	VXX2346 <sup>-</sup>	7
Ethylbenzene	58.9 U	58.9	ug/Kg	1	VFC10970	VXX2346	7
Gasoline Range Organics	5.89 U	5.89	mg/Kg	1	VFC10970	VXX2346	7
o-Xylene	58.9 U	58.9	ug/Kg	1	VFC10970	VXX2346	7
P & M -Xylene	118 U	118	ug/Kg	1	VFC10970	VXX2346	7
Toluene	58.9 U	58.9	ug/Kg	1	VFC10970	VXX2346	7
1,4-Difluorobenzene <surr></surr>	96.2	72-119	%	1	VFC10970	VXX2346	7
4-Bromofluorobenzene <surr></surr>	79.1	50-150	%	1	VFC10970	VXX2346	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	167		Initial Prep	Nt./Vol.: 28.	295 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.83	344 mL
Analysis Date/Time: 05/12/12 00:40		Prep Date/Time: 05/	01/12 13:30		Container II	D:11215910	07-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Nt./Vol.: 28.	.295 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.83	344 mL
Analysis Date/Time: 05/12/12 00:40		Prep Date/Time: 05/	01/12 13:30		Container II	D:11215910	07-B
Dilution Factor: 1					Analyst: NF	RB	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **DW-3+00-4** SGS Ref. #: 1121591007 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.4

Collection Date/Time: 05/01/12 09:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	262	116	mg/Kg	5	XFC10364	XXX26834	4
Residual Range Organics	1370	116	mg/Kg	5	XFC10364	XXX26834	4
5a Androstane <surr></surr>	91.3	50-150	%	5	XFC10364	XXX26834	4
n-Triacontane-d62 <surr></surr>	100	50-150	%	5	XFC10364	XXX26834	4
Batch Information							
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep	Wt./Vol.: 30.	.017 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 10:22		Prep Date/Time: 05/11/12 14:50			Container ID:1121591007-A		
Dilution Factor: 5					Analyst: M	CM	
Analytical Batch: XFC10364		Prep Batch: XXX26	834		Initial Prep	Wt./Vol.: 30.	.017 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 10:22		Prep Date/Time: 05/11/12 14:50			Container ID:1121591007-A		
Dilution Factor: 5					Analyst: M	СМ	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **DW-3+00-4** SGS Ref. #: 1121591007 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.4

Collection Date/Time: 05/01/12 09:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
2-Methylnaphthalene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Acenaphthene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Acenaphthylene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Anthracene	60.9	57.7	ug/Kg	10	XMS6656	XXX26835	5
Benzo(a)Anthracene	205	57.7	ug/Kg	10	XMS6656	XXX26835	5
Benzo[a]pyrene	219	57.7	ug/Kg	10	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	277	57.7	ug/Kg	10	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	188	57.7	ug/Kg	10	XMS6656	XXX26835	5
Benzo[k]fluoranthene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Chrysene	143	57.7	ug/Kg	10	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Fluoranthene	311	57.7	ug/Kg	10	XMS6656	XXX26835	5
Fluorene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	118	57.7	ug/Kg	10	XMS6656	XXX26835	5
Naphthalene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	5
Phenanthrene	187	57.7	ug/Kg	10	XMS6656	XXX26835	5
Pyrene	317	57.7	ug/Kg	10	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	83.5	45-105	%	10	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	107	30-125	%	10	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	56 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 14:08 Dilution Factor: 10		Prep Date/Time: 05/14/12 10:00			Container ID:1121591007-A Analyst: RTS		07-A



Dilution Factor: 1

# Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Analyst: CDE

Client Sample ID: <b>DW-3+00-4</b> SGS Ref. #: 1121591007 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.4			Collection D Receipt Dat	pate/Time: 05 e/Time: 05/0	5/01/12 09:3 9/12 16:15	0		
Solids								
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	86.4			%	1	SPT8624		
Batch Information								
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1 n	nL
Analysis Date/Time: 05/11/12 16:55						Container II	D:11215910	07-A



Analytical Prep

Client Sample ID: **DW-3+50-4** SGS Ref. #: 1121591008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>
Benzene	51.7	30.1	ug/Kg	1	VFC10972	VXX2347	73
Ethylbenzene	60.1 U	60.1	ug/Kg	1	VFC10970	VXX2346	67
Gasoline Range Organics	6.01 U	6.01	mg/Kg	1	VFC10970	VXX2346	67
o-Xylene	60.1 U	60.1	ug/Kg	1	VFC10970	VXX2346	67
P & M -Xylene	120 U	120	ug/Kg	1	VFC10970	VXX2346	67
Toluene	100	60.1	ug/Kg	1	VFC10970	VXX2346	67
1,4-Difluorobenzene <surr></surr>	95.1	72-119	%	1	VFC10970	VXX2346	67
4-Bromofluorobenzene <surr></surr>	86.3	50-150	%	1	VFC10970	VXX2346	67
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX23	467		Initial Prep Wt./Vol.: 27.267 g		
Analytical Method: AK101		Prep Method: SW5	U35A		Prep Extract Vol.: 28.5322 mL		
Dilution Factor: 1		Prep Date/Time: 05	/08/12 13:30		Container ID:1121591008-B Analyst: NRB		
Analytical Batch: VFC10970		Prep Batch: VXX23	467		Initial Prep	Nt./Vol.: 27	7.267 g
Analytical Method: SW8021B		Prep Method: SW5	035A		Prep Extrac	t Vol.: 28.5	5322 mL
Analysis Date/Time: 05/12/12 00:58		Prep Date/Time: 05	5/08/12 13:30		Container II	D:1121591	008-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10972		Prep Batch: VXX23	473		Initial Prep	Nt./Vol.: 27	7.267 g
Analytical Method: SW8021B		Prep Method: SW5	035A		Prep Extrac	t Vol.: 28.5	5322 mL
Analysis Date/Time: 05/15/12 21:08		Prep Date/Time: 05	6/08/12 13:30		Container II	D:1121591	008-A
Dilution Factor: 1					Analyst: EA	B	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **DW-3+50-4** SGS Ref. #: 1121591008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>
Diesel Range Organics	158	114	mg/Kg	5	XFC10364	XXX2683	4
Residual Range Organics	877	114	mg/Kg	5	XFC10364	XXX2683	4
5a Androstane <surr></surr>	93.9	50-150	%	5	XFC10364	XXX2683	4
n-Triacontane-d62 <surr></surr>	95.1	50-150	%	5	XFC10364	XXX2683	4
Batch Information							
Analytical Batch: XFC10364		Prep Batch: XXX26834			Initial Prep Wt./Vol.: 30.293 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 11:25		Prep Date/Time: 05/11/12 14:50			Container ID:1121591008-A		
Dilution Factor: 5					Analyst: M0	CM	
Analytical Batch: XFC10364		Prep Batch: XXX26	Prep Batch: XXX26834			Nt./Vol.: 30	.293 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/15/12 11:25		Prep Date/Time: 05	/11/12 14:50		Container II	D:11215910	008-A
Dilution Factor: 5					Analyst: M	CM	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **DW-3+50-4** SGS Ref. #: 1121591008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	67.1	57.1	ua/Ka	10	XMS6656	XXX26835	5
2-Methylnaphthalene	113	57.1	ug/Kg	10	XMS6656	XXX26835	5
Acenaphthene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Acenaphthylene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Anthracene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Benzo(a)Anthracene	67.5	57.1	ug/Kg	10	XMS6656	XXX26835	5
Benzo[a]pyrene	93.3	57.1	ug/Kg	10	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	117	57.1	ug/Kg	10	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	109	57.1	ug/Kg	10	XMS6656	XXX26835	5
Benzo[k]fluoranthene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Chrysene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Fluoranthene	94.8	57.1	ug/Kg	10	XMS6656	XXX26835	5
Fluorene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	57.4	57.1	ug/Kg	10	XMS6656	XXX26835	5
Naphthalene	79.8	57.1	ug/Kg	10	XMS6656	XXX26835	5
Phenanthrene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	5
Pyrene	100	57.1	ug/Kg	10	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	77.6	45-105	%	10	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	102	30-125	%	10	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX268	335		Initial Prep	Wt./Vol.: 22.	617 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW35	50C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 14:28		Prep Date/Time: 05/	/14/12 10:00		Container ID:1121591008-A		
Dilution Factor: 10					Analyst: R	ſS	



Print Date: 5/29/2012 3:25 pm

Client Sample ID: DW-3+50-4	
SGS Ref. #: 1121591008	Collection Date/Time: 05/08/12 13:30
Project ID: Ilulaq Lake East Point Rd DW	Receipt Date/Time: 05/09/12 16:15
Matrix: Soil/Solid (dry weight)	
Percent Solids: 87.0	
Solids	

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	87.0		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep V	Vt./Vol.: 1 ml	L
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159100	8-A
Dilution Factor: 1					Analyst: CD	E	



Prep

Analytical

# Client Sample ID: **DW-4+00-4** SGS Ref. #: 1121591009 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.0

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	38.8 U	38.8	ug/Kg	1	VFC10970	VXX2346 <sup>.</sup>	7
Ethylbenzene	77.6 U	77.6	ug/Kg	1	VFC10970	VXX2346	7
Gasoline Range Organics	7.76 U	7.76	mg/Kg	1	VFC10970	VXX2346	7
o-Xylene	77.6 U	77.6	ug/Kg	1	VFC10970	VXX2346	7
P & M -Xylene	155 U	155	ug/Kg	1	VFC10970	VXX2346	7
Toluene	77.6 U	77.6	ug/Kg	1	VFC10970	VXX2346	7
1,4-Difluorobenzene <surr></surr>	96.2	72-119	%	1	VFC10970	VXX2346	7
4-Bromofluorobenzene <surr></surr>	83.6	50-150	%	1	VFC10970	VXX2346	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	467		Initial Prep	Wt./Vol.: 29.	891 g
Analytical Method: AK101		Prep Method: SW50	)35A		Prep Extrac	t Vol.: 33.38	815 mL
Analysis Date/Time: 05/12/12 01:52		Prep Date/Time: 05/	/08/12 11:30		Container II	D:11215910	09-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	467		Initial Prep	Wt./Vol.: 29.	891 g
Analytical Method: SW8021B		Prep Method: SW50	)35A		Prep Extrac	t Vol.: 33.38	315 mL
Analysis Date/Time: 05/12/12 01:52		Prep Date/Time: 05	/08/12 11:30		Container II	D:11215910	09-B
Dilution Factor: 1					Analyst: NF	RB	



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Analytical Prep

Client Sample ID: **DW-4+00-4** SGS Ref. #: 1121591009 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.0

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/09/12 16:15

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	137 U	137	mg/Kg	5	XFC10365	XXX2683	7	
Residual Range Organics	145	137	mg/Kg	5	XFC10365	XXX2683	57	
5a Androstane <surr></surr>	81.3	50-150	%	5	XFC10365	XXX2683	57	
n-Triacontane-d62 <surr></surr>	74.1	50-150	%	5	XFC10365	XXX2683	57	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep	Nt./Vol.: 30	.36 g	
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 02:48		Prep Date/Time: 05/14/12 15:00			Container ID:1121591009-A			
Dilution Factor: 5					Analyst: M	CM		
Analytical Batch: XFC10365		Prep Batch: XXX26	Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.36 g		
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 02:48		Prep Date/Time: 05/14/12 15:00			Container ID:1121591009-A			
Dilution Factor: 5					Analyst: M	CM		



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Analytical Prep

# Client Sample ID: DW-4+00-4 SGS Ref. #: 1121591009

Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.0

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
2-Methylnaphthalene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Acenaphthene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Acenaphthylene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Anthracene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo(a)Anthracene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[a]pyrene	41.0	34.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[b]Fluoranthene	55.6	34.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[g,h,i]perylene	36.0	34.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[k]fluoranthene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Chrysene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Dibenzo[a,h]anthracene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Fluoranthene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Fluorene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Indeno[1,2,3-c,d] pyrene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Naphthalene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Phenanthrene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
Pyrene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX2683	5
2-Fluorobiphenyl <surr></surr>	84	45-105	%	5	XMS6656	XXX2683	5
Terphenyl-d14 <surr></surr>	99.2	30-125	%	5	XMS6656	XXX2683	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	.828 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 14:48		Prep Date/Time: 05	/14/12 10:00		Container ID:1121591009-A		
Dilution Factor: 5					Analyst: R	ГS	



Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

# Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Container ID:1121591009-A

Analyst: CDE

**Qualifiers** 

Client Sample ID: <b>DW-4+00-4</b> SGS Ref. #: 1121591009 Project ID: Ilulaq Lake East Point Rd DV Matrix: Soil/Solid (dry weight) Percent Solids: 72.0	V	Collection Receipt D	Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/09/12 16:15						
Solids									
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	9	
Total Solids	72.0			%	1	SPT8624			
Batch Information									
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1 r	mL	

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sus North America me.	Environmental Division	200 westrotter Drive	Anchorage AK	99518 t(907)502.	2343 1(907)301 3301
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Prep

Analytical

# Client Sample ID: **DUP-01** SGS Ref. #: 1121591010 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	51.2 U	51.2	ug/Kg	1	VFC10970	VXX23467	7
Ethylbenzene	102 U	102	ug/Kg	1	VFC10970	VXX23467	7
Gasoline Range Organics	10.2 U	10.2	mg/Kg	1	VFC10970	VXX23467	7
o-Xylene	102 U	102	ug/Kg	1	VFC10970	VXX23467	7
P & M -Xylene	205 U	205	ug/Kg	1	VFC10970	VXX23467	7
Toluene	102 U	102	ug/Kg	1	VFC10970	VXX23467	7
1,4-Difluorobenzene <surr></surr>	96	72-119	%	1	VFC10970	VXX23467	7
4-Bromofluorobenzene <surr></surr>	111	50-150	%	1	VFC10970	VXX23467	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	467		Initial Prep	Wt./Vol.: 26.	329 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 34.48	881 mL
Analysis Date/Time: 05/12/12 02:10		Prep Date/Time: 05/	01/12 00:00		Container I	D:11215910	10-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	167		Initial Prep	Wt./Vol.: 26.	329 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 34.48	81 mL
Analysis Date/Time: 05/12/12 02:10		Prep Date/Time: 05/	01/12 00:00		Container I	D:11215910	10-B
Dilution Factor: 1					Analyst: NF	RB	



Analytical Prep

Client Sample ID: **DUP-01** SGS Ref. #: 1121591010 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	31.1 U	31.1	mg/Kg	1	XFC10365	XXX2683	7	
Residual Range Organics	104	31.1	mg/Kg	1	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	75.2	50-150	%	1	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	79.6	50-150	%	1	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.166 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 03:10		Prep Date/Time: 05	Prep Date/Time: 05/14/12 15:00			Container ID:1121591010-A		
Dilution Factor: 1					Analyst: M	CM		
Analytical Batch: XFC10365		Prep Batch: XXX26	Prep Batch: XXX26837			Wt./Vol.: 30	.166 g	
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 03:10	e: 05/16/12 03:10		Prep Date/Time: 05/14/12 15:00			Container ID:1121591010-A		
Dilution Factor: 1					Analyst: M	СМ		



Print Date: 5/29/2012 3:25 pm

Analytical Prep

# Client Sample ID: **DUP-01** SGS Ref. #: 1121591010 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Batch</u>	Batch	<u>Qualifiers</u>
1-Methylnaphthalene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	80.6	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	90	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	626 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 15:08		Prep Date/Time: 08	5/14/12 10:00		Container ID:1121591010-A		
Dilution Factor: 5					Analyst: R	rs	



Dilution Factor: 1

# Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Analyst: CDE

**Qualifiers** 

Client Sample ID: DUP-01										
SGS Ref. #: 1121591010			Collection Date/Time: 05/01/12 00:00							
Project ID: Ilulaq Lake East Point Rd DW			Receipt Date/Time: 05/09/12 16:15							
Matrix: Soil/Solid (dry weight)										
Percent Solids: 64.0										
Solids										
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qu</u>		
Total Solids	64.0			%	1	SPT8624				
Batch Information										
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep V	Vt./Vol.: 1 m	L		
Analysis Date/Time: 05/11/12 16:55						Container ID	):112159101	10-A		



Analytical Prep

Client Sample ID: **EP-1+60-2** SGS Ref. #: 1121591011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20 Receipt Date/Time: 05/09/12 16:15

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>	
Benzene	32.1 U	32.1	ug/Kg	1	VFC10970	VXX2346	67	
Ethylbenzene	64.2 U	64.2	ug/Kg	1	VFC10970	VXX2346	67	
Gasoline Range Organics	9.33	6.42	mg/Kg	1	VFC10970	VXX2346	67	
o-Xylene	64.2 U	64.2	ug/Kg	1	VFC10970	VXX2346	67	
P & M -Xylene	128 U	128	ug/Kg	1	VFC10970	VXX2346	67	
Toluene	64.2 U	64.2	ug/Kg	1	VFC10970	VXX2346	67	
1,4-Difluorobenzene <surr></surr>	97	72-119	%	1	VFC10970	VXX2346	67	
4-Bromofluorobenzene <surr></surr>	106	50-150	%	1	VFC10970	VXX2346	67	
Batch Information								
Analytical Batch: VFC10970	Prep Batch: VXX23467				Initial Prep Wt./Vol.: 29.568 g			
Analytical Method: AK101	Prep Method: SW5035A				Prep Extract Vol.: 30.6713 mL			
Analysis Date/Time: 05/12/12 02:28		Prep Date/Time: 05/03/12 09:20			Container ID:1121591011-B			
Dilution Factor: 1					Analyst: NF	RB		
Analytical Batch: VFC10970	n: VFC10970 Prep Batch: VXX23467		67		Initial Prep Wt./Vol.: 29.568 g			
Analytical Method: SW8021B		Prep Method: SW5035A			Prep Extract Vol.: 30.6713 mL			
Analysis Date/Time: 05/12/12 02:28		Prep Date/Time: 05/03/12 09:20			Container ID:1121591011-B			
Dilution Factor: 1					Analyst: NF	RB		



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **EP-1+60-2** SGS Ref. #: 1121591011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	893	122	mg/Kg	5	XFC10365	XXX2683	7	
Residual Range Organics	339	122	mg/Kg	5	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	82.5	50-150	%	5	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	85.3	50-150	%	5	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26	Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.433 g		
Analytical Method: AK102		Prep Method: SW3	550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 11:51		Prep Date/Time: 05/14/12 15:00			Container ID:1121591011-A			
Dilution Factor: 5					Analyst: M	СМ		
Analytical Batch: XFC10365		Prep Batch: XXX26837		Initial Prep Wt./Vol.: 30.433 g				
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 11:51		Prep Date/Time: 05/14/12 15:00			Container ID:1121591011-A			
Dilution Factor: 5					Analyst: M	СМ		



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Analytical Prep

Client Sample ID: EP-1+60-2 SGS Ref. #: 1121591011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	32.4	30.6	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	78.8	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	103	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26835		Initial Prep Wt./Vol.: 22.729 g			
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/15/12 15:28		Prep Date/Time: 05/14/12 10:00			Container ID:1121591011-A		
Dilution Factor: 5					Analyst: RTS		


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Client Sample ID: EP-1+60-2
SGS Ref. #: 1121591011
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20 Receipt Date/Time: 05/09/12 16:15

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	80.8		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159101	1-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Analytical Prep

Client Sample ID: **EP-2+10-2** SGS Ref. #: 1121591012 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45 Receipt Date/Time: 05/09/12 16:15

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>
Benzene	29.1 U	29.1	ug/Kg	1	VFC10970	VXX2346	67
Ethylbenzene	58.3 U	58.3	ug/Kg	1	VFC10970	VXX2346	67
Gasoline Range Organics	5.83 U	5.83	mg/Kg	1	VFC10970	VXX2346	67
o-Xylene	58.3 U	58.3	ug/Kg	1	VFC10970	VXX2346	67
P & M -Xylene	117 U	117	ug/Kg	1	VFC10970	VXX2346	67
Toluene	58.3 U	58.3	ug/Kg	1	VFC10970	VXX2346	67
1,4-Difluorobenzene <surr></surr>	96.1	72-119	%	1	VFC10970	VXX2346	67
4-Bromofluorobenzene <surr></surr>	84.5	50-150	%	1	VFC10970	VXX2346	67
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 28	3.832 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.9	75 mL
Analysis Date/Time: 05/12/12 02:46		Prep Date/Time: 05/0	03/12 09:45		Container II	D:1121591	012-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 28	3.832 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.9	975 mL
Analysis Date/Time: 05/12/12 02:46		Prep Date/Time: 05/0	03/12 09:45		Container II	D:1121591	012-B
Dilution Factor: 1					Analyst: NF	RB	



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Analytical Prep

Client Sample ID: **EP-2+10-2** SGS Ref. #: 1121591012 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>
Diesel Range Organics	366	23.1	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	181	23.1	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	91.3	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	79.2	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Nt./Vol.: 30.	191 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 03:52		Prep Date/Time: 05/14/12 15:00			Container ID:1121591012-A		
Dilution Factor: 1					Analyst: M	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Nt./Vol.: 30.	191 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 03:52		Prep Date/Time: 05/14/12 15:00			Container ID:1121591012-A		
Dilution Factor: 1					Analyst: M	CM	



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Analytical Prep

Client Sample ID: **EP-2+10-2** SGS Ref. #: 1121591012 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Anthracene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	33.5	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	69.2	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Chrysene	35.5	28.9	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	84.5	28.9	ug/Kg	5	XMS6656	XXX26835	
Fluorene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	40.3	28.9	ug/Kg	5	XMS6656	XXX26835	
Pyrene	72.3	28.9	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr></surr>	73.7	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr></surr>	92.8	30-125	%	5	XMS6656	XXX26835	
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.5	545 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 15:48		Prep Date/Time: 05	/14/12 10:00		Container I	D:112159101	2-A
Dilution Factor: 5					Analyst: R	rs	



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Client Sample ID: EP-2+10-2
SGS Ref. #: 1121591012
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 86.2
Solids

Collection Date/Time: 05/03/12 09:45 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>U</u>	<u>nits</u>	DF	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	86.2		9	%	1	SPT8624		
Batch Information								
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep \	Nt./Vol.: 1 r	nL
Analysis Date/Time: 05/11/12 16:55						Container II	D:11215910	)12-A
Dilution Factor: 1						Analyst: CD	ЭE	



Analytical Prep

Client Sample ID: **EP-3+10-2** SGS Ref. #: 1121591013 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	28.7 U	28.7	ug/Kg	1	VFC10970	VXX2346 <sup>-</sup>	7
Ethylbenzene	57.4 U	57.4	ug/Kg	1	VFC10970	VXX2346	7
Gasoline Range Organics	5.74 U	5.74	mg/Kg	1	VFC10970	VXX2346	7
o-Xylene	57.4 U	57.4	ug/Kg	1	VFC10970	VXX2346	7
P & M -Xylene	115 U	115	ug/Kg	1	VFC10970	VXX2346	7
Toluene	57.4 U	57.4	ug/Kg	1	VFC10970	VXX2346	7
1,4-Difluorobenzene <surr></surr>	97.8	72-119	%	1	VFC10970	VXX2346	7
4-Bromofluorobenzene <surr></surr>	84.5	50-150	%	1	VFC10970	VXX2346	7
Batch Information							
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 30.	149 g
Analytical Method: AK101		Prep Method: SW503	35A		Prep Extrac	t Vol.: 29.47	787 mL
Analysis Date/Time: 05/12/12 03:04		Prep Date/Time: 05/0	3/12 10:10		Container II	D:11215910	13-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970		Prep Batch: VXX234	67		Initial Prep	Wt./Vol.: 30.	149 g
Analytical Method: SW8021B		Prep Method: SW503	35A		Prep Extrac	t Vol.: 29.47	787 mL
Analysis Date/Time: 05/12/12 03:04		Prep Date/Time: 05/0	3/12 10:10		Container II	D:11215910	13-B
Dilution Factor: 1					Analyst: NF	RB	



Analytical Prep

Client Sample ID: **EP-3+10-2** SGS Ref. #: 1121591013 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	46.0	23.3	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	94.3	23.3	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	83.7	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	84.6	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Nt./Vol.: 30	.299 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 04:14		Prep Date/Time: 05/14/12 15:00			Container ID:1121591013-A		
Dilution Factor: 1					Analyst: M0	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Wt./Vol.: 30	.299 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 04:14		Prep Date/Time: 05/14/12 15:00			Container ID:1121591013-A		
Dilution Factor: 1					Analyst: M0	CM	



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Analytical Prep

Client Sample ID: **EP-3+10-2** SGS Ref. #: 1121591013 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	77.9	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	102	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.6	685 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 16:08		Prep Date/Time: 05	/14/12 10:00		Container I	D:11215910 <sup>,</sup>	13-A
Dilution Factor: 5					Analyst: R	ГS	



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Client Sample ID: EP-3+10-2
SGS Ref. #: 1121591013
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10 Receipt Date/Time: 05/09/12 16:15

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	85.1		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624					Initial Prep W	/t./Vol.: 1 ml	-
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159101	3-A
Dilution Factor: 1					Analyst: CDI	E	



Prep

Analytical

Client Sample ID: **EP-3+60-2** SGS Ref. #: 1121591014 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 76.9

Collection Date/Time: 05/03/12 10:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	34.4 U	34.4	ug/Kg	1	VFC10970		
Ethylbenzene	68.8 U	68.8	ug/Kg	1	VFC10970		
Gasoline Range Organics	6.88 U	6.88	mg/Kg	1	VFC10970		
o-Xylene	68.8 U	68.8	ug/Kg	1	VFC10970		
P & M -Xylene	138 U	138	ug/Kg	1	VFC10970		
Toluene	68.8 U	68.8	ug/Kg	1	VFC10970		
1,4-Difluorobenzene <surr></surr>	96	72-119	%	1	VFC10970		
4-Bromofluorobenzene <surr></surr>	87.3	50-150	%	1	VFC10970		
Batch Information							
Analytical Batch: VFC10970 Analytical Method: AK101					Initial Prep	Wt./Vol.: 30	).183 g
Analysis Date/Time: 05/12/12 03:22					Container I	D:1121591	014-B
Dilution Factor: 1					Analyst: NF	RB	
Analytical Batch: VFC10970					Initial Prep	Wt./Vol.: 30	).183 g
Analytical Method: SW8021B							
Analysis Date/Time: 05/12/12 03:22					Container I	D:1121591	014-B
Dilution Factor: 1					Analyst: N	RB	



Analytical Prep

Client Sample ID: **EP-3+60-2** SGS Ref. #: 1121591014 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 76.9

Collection Date/Time: 05/03/12 10:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>	
Diesel Range Organics	26.0 U	26.0	mg/Kg	1	XFC10365	XXX2683	7	
Residual Range Organics	42.0	26.0	mg/Kg	1	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	83.1	50-150	%	1	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	78.1	50-150	%	1	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.041 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 04:35		Prep Date/Time: 05/14/12 15:00			Container ID:1121591014-A			
Dilution Factor: 1					Analyst: M0	CM		
Analytical Batch: XFC10365		Prep Batch: XXX26	Prep Batch: XXX26837			Nt./Vol.: 30.	041 g	
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 04:35	lysis Date/Time: 05/16/12 04:35		Prep Date/Time: 05/14/12 15:00			Container ID:1121591014-A		
Dilution Factor: 1					Analyst: M	CM		



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Analytical Prep

Client Sample ID: EP-3+60-2 SGS Ref. #: 1121591014 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 76.9

Collection Date/Time: 05/03/12 10:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	34.1	32.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	39.0	32.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	52.0	32.1	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	44.2	32.1	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	46.8	32.1	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	69.4	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	82.1	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep Wt./Vol.: 22.786 g		786 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 16:28		Prep Date/Time: 05	/14/12 10:00		Container ID:1121591014-A		
Dilution Factor: 5					Analyst: R	ſS	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: EP-3+60-2								
SGS Ref. #: 1121591014			Collection Date/Time: 05/03/12 10:30					
Project ID: Ilulaq Lake East Point Rd DW			Receipt Date/Time: 05/09/12 16:15					
Matrix: Soil/Solid (dry weight)								
Percent Solids: 76.9								
Solids								
Parameter	<u>Result</u>	LOQ/CL	<u>Units</u> DF					

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>
Total Solids	76.9		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624					Initial Prep	Wt./Vol.: 1	mL
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/11/12 16:55					Container	ID:1121591	014-A
Dilution Factor: 1					Analyst: 0	DE	



Analytical Prep

## Client Sample ID: **EP-4+10-2** SGS Ref. #: 1121591015 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	29.0 U	29.0	ug/Kg	1	VFC10972	VXX23473	3
Ethylbenzene	57.9 U	57.9	ug/Kg	1	VFC10972	VXX23473	3
Gasoline Range Organics	5.79 U	5.79	mg/Kg	1	VFC10972	VXX23473	3
o-Xylene	57.9 U	57.9	ug/Kg	1	VFC10972	VXX23473	3
P & M -Xylene	116 U	116	ug/Kg	1	VFC10972	VXX23473	3
Toluene	57.9 U	57.9	ug/Kg	1	VFC10972	VXX23473	3
1,4-Difluorobenzene <surr></surr>	95.7	72-119	%	1	VFC10972	VXX23473	3
4-Bromofluorobenzene <surr></surr>	108	50-150	%	1	VFC10972	VXX23473	3
Batch Information							
Analytical Batch: VFC10972		Prep Batch: VXX23	3473		Initial Prep Wt./Vol.: 27.411 g		
Analytical Method: AK101		Prep Method: SW50	Prep Method: SW5035A			t Vol.: 28.13	48 mL
Analysis Date/Time: 05/15/12 18:23		Prep Date/Time: 05	/03/12 11:30		Container I	D:11215910	15-B
Dilution Factor: 1					Analyst: EA	Ъ	
Analytical Batch: VFC10972		Prep Batch: VXX23	473		Initial Prep	Wt./Vol.: 27.	411 g
Analytical Method: SW8021B Prep N		Prep Method: SW50	Prep Method: SW5035A		Prep Extract Vol.: 28.1348 mL		
Analysis Date/Time: 05/15/12 18:23		Prep Date/Time: 05	/03/12 11:30		Container I	D:11215910	15-B
Dilution Factor: 1					Analyst: EA	B	



Analytical Prep

Client Sample ID: **EP-4+10-2** SGS Ref. #: 1121591015 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	29.8	22.4	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	40.5	22.4	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	77	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	70.7	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.27 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 04:57		Prep Date/Time: 05	6/14/12 15:00		Container II	D:11215910	)15-A
Dilution Factor: 1					Analyst: M0	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26	ep Batch: XXX26837		Initial Prep	Wt./Vol.: 30	.27 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 04:57		Prep Date/Time: 05/14/12 15:00			Container ID:1121591015-A		
Dilution Factor: 1					Analyst: M	CM	



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Analytical Prep

## Client Sample ID: EP-4+10-2 SGS Ref. #: 1121591015 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Batch</u>	Batch	<u>Qualifiers</u>
1-Methylnaphthalene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX2683	5
Benzo[a]pyrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX2683	5
Benzo[g,h,i]perylene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX2683	5
Fluoranthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	74.4	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	93.4	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep Wt./Vol.: 22.73 g		73 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 16:48		Prep Date/Time: 05	5/14/12 10:00		Container ID:1121591015-A		
Dilution Factor: 5					Analyst: R	rs	



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Client Sample ID: EP-4+10-2	
SGS Ref. #: 1121591015	Collection Date/Time: 05/03/12 11:00
Project ID: Ilulaq Lake East Point Rd DW	Receipt Date/Time: 05/09/12 16:15
Matrix: Soil/Solid (dry weight)	
Percent Solids: 88.6	
Solids	

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	88.6		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 ml	-
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159101	5-A
Dilution Factor: 1					Analyst: CDI	E	



Prep

Analytical

## Client Sample ID: **EP-4+10-4** SGS Ref. #: 1121591016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.9

Collection Date/Time: 05/03/12 11:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	34.6 U	34.6	ug/Kg	1	VFC10972	VXX23473	3
Ethylbenzene	69.3 U	69.3	ug/Kg	1	VFC10972	VXX23473	3
Gasoline Range Organics	6.93 U	6.93	mg/Kg	1	VFC10972	VXX23473	3
o-Xylene	69.3 U	69.3	ug/Kg	1	VFC10972	VXX23473	3
P & M -Xylene	139 U	139	ug/Kg	1	VFC10972	VXX23473	3
Toluene	69.3 U	69.3	ug/Kg	1	VFC10972	VXX23473	3
1,4-Difluorobenzene <surr></surr>	95.4	72-119	%	1	VFC10972	VXX23473	3
4-Bromofluorobenzene <surr></surr>	108	50-150	%	1	VFC10972	VXX23473	3
Batch Information							
Analytical Batch: VFC10972		Prep Batch: VXX234	473		Initial Prep Wt./Vol.: 24.966 g		
Analytical Method: AK101		Prep Method: SW50	Prep Method: SW5035A			t Vol.: 29.02	244 mL
Analysis Date/Time: 05/15/12 18:41		Prep Date/Time: 05/	03/12 11:30		Container I	D:11215910	16-B
Dilution Factor: 1					Analyst: EA	B	
Analytical Batch: VFC10972		Prep Batch: VXX234	73		Initial Prep	Wt./Vol.: 24.	966 g
Analytical Method: SW8021B	nalytical Method: SW8021B Prep Method: SW503		35A		Prep Extract Vol.: 29.0244 mL		
Analysis Date/Time: 05/15/12 18:41		Prep Date/Time: 05/	03/12 11:30		Container I	D:11215910	16-B
Dilution Factor: 1					Analyst: EA	ΔB	



Analytical Prep

Client Sample ID: **EP-4+10-4** SGS Ref. #: 1121591016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.9

Collection Date/Time: 05/03/12 11:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>
Diesel Range Organics	178	23.5	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	95.5	23.5	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	78	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	68.5	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.381 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 05:18		Prep Date/Time: 05/14/12 15:00			Container ID:1121591016-A		
Dilution Factor: 1					Analyst: M0	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep	Nt./Vol.: 30	.381 g
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 05:18		Prep Date/Time: 05/14/12 15:00			Container ID:1121591016-A		
Dilution Factor: 1					Analyst: M0	CM	



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Analytical Prep

## Client Sample ID: EP-4+10-4 SGS Ref. #: 1121591016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Percent Solids: 83.9

# Collection Date/Time: 05/03/12 11:30 Receipt Date/Time: 05/09/12 16:15

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
2-Methylnaphthalene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Acenaphthene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Acenaphthylene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Anthracene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo(a)Anthracene	32.5	29.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[a]pyrene	31.6	29.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[b]Fluoranthene	49.3	29.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[g,h,i]perylene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Benzo[k]fluoranthene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Chrysene	30.9	29.2	ug/Kg	5	XMS6656	XXX2683	5
Dibenzo[a,h]anthracene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Fluoranthene	37.4	29.2	ug/Kg	5	XMS6656	XXX2683	5
Fluorene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Indeno[1,2,3-c,d] pyrene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Naphthalene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Phenanthrene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX2683	5
Pyrene	33.5	29.2	ug/Kg	5	XMS6656	XXX2683	5
2-Fluorobiphenyl <surr></surr>	78.6	45-105	%	5	XMS6656	XXX2683	5
Terphenyl-d14 <surr></surr>	95.5	30-125	%	5	XMS6656	XXX2683	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	.966 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 17:08		Prep Date/Time: 05	6/14/12 10:00		Container I	D:11215910	16-A
Dilution Factor: 5					Analyst: R	ГS	



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Client Sample ID: EP-4+10-4
SGS Ref. #: 1121591016
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 83.9
Solids

Collection Date/Time: 05/03/12 11:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	83.9		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624					Initial Prep W	/t./Vol.: 1 mL	
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159101	6-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Prep

Analytical

## Client Sample ID: **EP-4+60-2** SGS Ref. #: 1121591017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	27.9 U	27.9	ug/Kg	1	VFC10972	VXX23473	3
Ethylbenzene	55.8 U	55.8	ug/Kg	1	VFC10972	VXX23473	3
Gasoline Range Organics	5.58 U	5.58	mg/Kg	1	VFC10972	VXX23473	3
o-Xylene	55.8 U	55.8	ug/Kg	1	VFC10972	VXX23473	3
P & M -Xylene	112 U	112	ug/Kg	1	VFC10972	VXX23473	3
Toluene	55.8 U	55.8	ug/Kg	1	VFC10972	VXX23473	3
1,4-Difluorobenzene <surr></surr>	95.3	72-119	%	1	VFC10972	VXX23473	3
4-Bromofluorobenzene <surr></surr>	106	50-150	%	1	VFC10972	VXX23473	3
Batch Information							
Analytical Batch: VFC10972		Prep Batch: VXX234	173		Initial Prep	Wt./Vol.: 28.	611 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.26	645 mL
Analysis Date/Time: 05/15/12 19:00		Prep Date/Time: 05/	03/12 14:10		Container I	D:11215910	17-B
Dilution Factor: 1					Analyst: EA	B	
Analytical Batch: VFC10972		Prep Batch: VXX234	173		Initial Prep	Wt./Vol.: 28.	611 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.26	345 mL
Analysis Date/Time: 05/15/12 19:00		Prep Date/Time: 05/	03/12 14:10		Container I	D:11215910	17-B
Dilution Factor: 1					Analyst: EA	ΔB	



Analytical Prep

Client Sample ID: **EP-4+60-2** SGS Ref. #: 1121591017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>
Diesel Range Organics	31.0	22.3	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	28.9	22.3	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	91.4	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	85.7	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Nt./Vol.: 30.	.398 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 05:39		Prep Date/Time: 05/14/12 15:00			Container ID:1121591017-A		
Dilution Factor: 1					Analyst: M	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Nt./Vol.: 30.	.398 g
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL	
Analysis Date/Time: 05/16/12 05:39		Prep Date/Time: 05	6/14/12 15:00		Container II	D:11215910	17-A
Dilution Factor: 1					Analyst: M0	СМ	



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Analytical Prep

## Client Sample ID: EP-4+60-2 SGS Ref. #: 1121591017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
2-Methylnaphthalene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Acenaphthylene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Anthracene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Benzo(a)Anthracene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Benzo[a]pyrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Benzo[b]Fluoranthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Benzo[g,h,i]perylene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Benzo[k]fluoranthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Chrysene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Dibenzo[a,h]anthracene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Fluoranthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Fluorene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Indeno[1,2,3-c,d] pyrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Naphthalene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Phenanthrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
Pyrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	5
2-Fluorobiphenyl <surr></surr>	76.8	45-105	%	5	XMS6656	XXX26835	5
Terphenyl-d14 <surr></surr>	103	30-125	%	5	XMS6656	XXX26835	5
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	835		Initial Prep	Wt./Vol.: 22.	649 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 17:28		Prep Date/Time: 05	5/14/12 10:00		Container I	D:11215910	17-A
Dilution Factor: 5		•			Analyst: R	ГS	



Print Date: 5/29/2012 3:25 pm

Client Sample ID: EP-4+60-2
SGS Ref. #: 1121591017
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10 Receipt Date/Time: 05/09/12 16:15

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	88.6		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159101	7-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Analytical Prep

# Client Sample ID: **EP-4+60-4** SGS Ref. #: 1121591018 Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.3

## Collection Date/Time: 05/03/12 14:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>
Benzene	31.0 U	31.0	ug/Kg	1	VFC10972	VXX2347	3
Ethylbenzene	62.0 U	62.0	ug/Kg	1	VFC10972	VXX2347	3
Gasoline Range Organics	6.20 U	6.20	mg/Kg	1	VFC10972	VXX2347	3
o-Xylene	62.0 U	62.0	ug/Kg	1	VFC10972	VXX2347	3
P & M -Xylene	124 U	124	ug/Kg	1	VFC10972	VXX2347	3
Toluene	62.0 U	62.0	ug/Kg	1	VFC10972	VXX2347	3
1,4-Difluorobenzene <surr></surr>	96.1	72-119	%	1	VFC10972	VXX2347	3
4-Bromofluorobenzene <surr></surr>	99.4	50-150	%	1	VFC10972	VXX2347	3
Batch Information							
Analytical Batch: VFC10972		Prep Batch: VXX234	73		Initial Prep	Wt./Vol.: 27.	.444 g
Analytical Method: AK101		Prep Method: SW5035A			Prep Extract Vol.: 29.0331 mL		
Analysis Date/Time: 05/15/12 19:18		Prep Date/Time: 05/03/12 15:30			Container ID:1121591018-B		
Dilution Factor: 1					Analyst: EA	B	
Analytical Batch: VFC10972		Prep Batch: VXX234	73		Initial Prep	Wt./Vol.: 27.	.444 g
Analytical Method: SW8021B		Prep Method: SW503	5A		Prep Extrac	t Vol.: 29.03	331 mL
Analysis Date/Time: 05/15/12 19:18		Prep Date/Time: 05/0	3/12 15:30		Container II	D:11215910	18-B
Dilution Factor: 1					Analyst: EA	Ъ	



Analytical Prep

Client Sample ID: **EP-4+60-4** SGS Ref. #: 1121591018 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.3

Collection Date/Time: 05/03/12 14:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	1870	116	mg/Kg	5	XFC10365	XXX2683	7
Residual Range Organics	1790	116	mg/Kg	5	XFC10365	XXX2683	7
5a Androstane <surr></surr>	74.4	50-150	%	5	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	121	50-150	%	5	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Wt./Vol.: 30	.193 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 06:01		Prep Date/Time: 05/14/12 15:00			Container ID:1121591018-A		
Dilution Factor: 5					Analyst: M	СМ	
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Wt./Vol.: 30	.193 g
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL	-
Analysis Date/Time: 05/16/12 06:01		Prep Date/Time: 05	5/14/12 15:00		Container I	D:11215910	)18-A
Dilution Factor: 5					Analyst: M	СМ	



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Analytical Prep

# Client Sample ID: EP-4+60-4 SGS Ref. #: 1121591018

Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.3

Collection Date/Time: 05/03/12 14:00 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	Э
2-Methylnaphthalene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Acenaphthene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Acenaphthylene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	Э
Anthracene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	Э
Benzo(a)Anthracene	71.3	58.3	ug/Kg	10	XMS6656	XXX26839	Э
Benzo[a]pyrene	141	58.3	ug/Kg	10	XMS6656	XXX26839	9
Benzo[b]Fluoranthene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	Э
Benzo[g,h,i]perylene	68.0	58.3	ug/Kg	10	XMS6656	XXX26839	9
Benzo[k]fluoranthene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	Э
Chrysene	92.8	58.3	ug/Kg	10	XMS6656	XXX26839	9
Dibenzo[a,h]anthracene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Fluoranthene	86.4	58.3	ug/Kg	10	XMS6656	XXX26839	9
Fluorene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Indeno[1,2,3-c,d] pyrene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Naphthalene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Phenanthrene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	9
Pyrene	232	58.3	ug/Kg	10	XMS6656	XXX26839	9
2-Fluorobiphenyl <surr></surr>	79.3	45-105	%	10	XMS6656	XXX26839	9
Terphenyl-d14 <surr></surr>	120	30-125	%	10	XMS6656	XXX26839	Ð
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	605 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 19:27		Prep Date/Time: 05	5/14/12 15:00		Container I	D:11215910	18-A
Dilution Factor: 10					Analyst: R	rs	



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Client Sample ID: EP-4+60-4	
SGS Ref. #: 1121591018	
Project ID: Ilulaq Lake East Point Rd DW	
Matrix: Soil/Solid (dry weight)	
Percent Solids: 85.3	

Collection Date/Time: 05/03/12 14:00 Receipt Date/Time: 05/09/12 16:15

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	85.3		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep Wt./Vol.: 1 mL		
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159101	8-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Prep

Analytical

## Client Sample ID: **EP-5+10-4** SGS Ref. #: 1121591019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	34.1 U	34.1	ug/Kg	1	VFC10972	VXX2347	3
Ethylbenzene	68.2 U	68.2	ug/Kg	1	VFC10972	VXX23473	3
Gasoline Range Organics	6.82 U	6.82	mg/Kg	1	VFC10972	VXX23473	3
o-Xylene	68.2 U	68.2	ug/Kg	1	VFC10972	VXX23473	3
P & M -Xylene	136 U	136	ug/Kg	1	VFC10972	VXX23473	3
Toluene	68.2 U	68.2	ug/Kg	1	VFC10972	VXX23473	3
1,4-Difluorobenzene <surr></surr>	95.1	72-119	%	1	VFC10972	VXX23473	3
4-Bromofluorobenzene <surr></surr>	111	50-150	%	1	VFC10972	VXX23473	3
Batch Information							
Analytical Batch: VFC10972		Prep Batch: VXX234	73		Initial Prep	Wt./Vol.: 24.	82 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extract Vol.: 28.7491 mL		
Analysis Date/Time: 05/15/12 19:36		Prep Date/Time: 05/	03/12 15:30	15:30 Container ID:1121591			19-B
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10972		Prep Batch: VXX234	73		Initial Prep	Wt./Vol.: 24.	82 g
Analytical Method: SW8021B Prep Method: SW5035A			35A	Prep Extract Vol.: 28.7491 m			l91 mL
Analysis Date/Time: 05/15/12 19:36	Analysis Date/Time: 05/15/12 19:36 Prep Date/Time: 05/03/12			Container ID:1121591019-B			
Dilution Factor: 1					Analyst: EA	λB	



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Analytical Prep

Client Sample ID: **EP-5+10-4** SGS Ref. #: 1121591019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	173	117	mg/Kg	5	XFC10365	XXX2683	7	
Residual Range Organics	234	117	mg/Kg	5	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	89.8	50-150	%	5	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	77.4	50-150	%	5	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365	Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.224 g				
Analytical Method: AK102		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 06:22		Prep Date/Time: 05	6/14/12 15:00		Container ID:1121591019-A			
Dilution Factor: 5					Analyst: M	CM		
Analytical Batch: XFC10365	ch: XFC10365 Prep Batch: XXX26837		837		Initial Prep Wt./Vol.: 30.224 g			
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 06:22		Prep Date/Time: 05/14/12 15:00			Container ID:1121591019-A			
Dilution Factor: 5					Analyst: M	СМ		



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Analytical Prep

## Client Sample ID: **EP-5+10-4** SGS Ref. #: 1121591019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>		
1-Methylnaphthalene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
2-Methylnaphthalene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Acenaphthene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Acenaphthylene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Anthracene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Benzo(a)Anthracene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Benzo[a]pyrene	46.6	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Benzo[b]Fluoranthene	57.0	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Benzo[g,h,i]perylene	56.3	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Benzo[k]fluoranthene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Chrysene	29.6	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Dibenzo[a,h]anthracene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Fluoranthene	37.2	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Fluorene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Indeno[1,2,3-c,d] pyrene	39.7	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Naphthalene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Phenanthrene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX2683	9		
Pyrene	41.4	29.4	ug/Kg	5	XMS6663	XXX2683	9		
2-Fluorobiphenyl <surr></surr>	68.6	45-105	%	5	XMS6663	XXX2683	9		
Terphenyl-d14 <surr></surr>	111	30-125	%	5	XMS6663	XXX2683	9		
Batch Information									
Analytical Batch: XMS6663		Prep Batch: XXX26839			Initial Prep	Wt./Vol.: 22.	.548 g		
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C			Prep Extra	ct Vol.: 1 mL			
Analysis Date/Time: 05/16/12 19:30		Prep Date/Time: 05	5/14/12 15:00		Container ID:1121591019-A				
Dilution Factor: 5						Analyst: RTS			



Dilution Factor: 1

## Unalaska City-Public Works

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Analyst: CDE

**Qualifiers** 

Client Sample ID: EP-5+10-4								
SGS Ref. #: 1121591019			Collection D	Date/Time: 0	5/03/12 15:	30		
Project ID: Ilulaq Lake East Point Rd DW			Receipt Dat	e/Time: 05/0	09/12 16:15	5		
Matrix: Soil/Solid (dry weight)								
Percent Solids: 84.9								
Solids								
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	Qu
Total Solids	84.9			%	1	SPT8624		
Batch Information								
Analytical Batch: SPT8624 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1	mL
Analysis Date/Time: 05/11/12 16:55						Container I	D:1121591	019-A



Analytical Prep

Client Sample ID: **EP-5-10-4** SGS Ref. #: 1121591020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20 Receipt Date/Time: 05/09/12 16:15

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>	
Benzene	36.1 U	36.1	ug/Kg	1	VFC10972	VXX2347	73	
Ethylbenzene	72.1 U	72.1	ug/Kg	1	VFC10972	VXX2347	'3	
Gasoline Range Organics	9.08	7.21	mg/Kg	1	VFC10972	VXX2347	'3	
o-Xylene	141	72.1	ug/Kg	1	VFC10972	VXX2347	73	
P & M -Xylene	144 U	144	ug/Kg	1	VFC10972	VXX2347	73	
Toluene	72.1 U	72.1	ug/Kg	1	VFC10972	VXX2347	73	
1,4-Difluorobenzene <surr></surr>	96.5	72-119	%	1	VFC10972	VXX2347	73	
4-Bromofluorobenzene <surr></surr>	119	50-150	%	1	VFC10972	VXX2347	73	
Batch Information								
Analytical Batch: VFC10972		Prep Batch: VXX23	473		Initial Prep Wt./Vol.: 29.54 g			
Analytical Method: AK101		Prep Method: SW50	)35A	Prep Extract Vol.: 32.2107 mL			107 mL	
Analysis Date/Time: 05/15/12 19:54		Prep Date/Time: 05	/03/12 15:20		Container ID:1121591020-B			
Dilution Factor: 1					Analyst: EA	B		
Analytical Batch: VFC10972 Prep Batch: VZ		Prep Batch: VXX23	473		Initial Prep	Wt./Vol.: 29	).54 g	
Analytical Method: SW8021B Prep Method: SW503			)35A	Prep Extract Vol.: 32.2107 mL				
Analysis Date/Time: 05/15/12 19:54 Prep Date/Time: 05/03/12 15:			/03/12 15:20		Container ID:1121591020-B			
Dilution Factor: 1					Analyst: EA	B		



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Analytical Prep

Client Sample ID: **EP-5-10-4** SGS Ref. #: 1121591020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20 Receipt Date/Time: 05/09/12 16:15

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	2080	132	mg/Kg	5	XFC10365	XXX2683	7	
Residual Range Organics	2620	132	mg/Kg	5	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	110	50-150	%	5	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	117	50-150	%	5	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26	Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.072 g		
Analytical Method: AK102		Prep Method: SW3	550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 06:44		Prep Date/Time: 05	5/14/12 15:00		Container ID:1121591020-A			
Dilution Factor: 5					Analyst: M	CM		
Analytical Batch: XFC10365	lytical Batch: XFC10365 Prep Batch: XXX26837		837		Initial Prep	Wt./Vol.: 30.	.072 g	
Analytical Method: AK103		Prep Method: SW3	rep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 06:44		Prep Date/Time: 05/14/12 15:00			Container ID:1121591020-A			
Dilution Factor: 5					Analyst: M	СМ		



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Analytical Prep

Client Sample ID: **EP-5-10-4** SGS Ref. #: 1121591020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20 Receipt Date/Time: 05/09/12 16:15

<u>Parameter</u>	<u>Result</u>		LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
2-Methylnaphthalene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Acenaphthene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Acenaphthylene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Anthracene	200		65.6	ug/Kg	10	XMS6663	XXX26839	9
Benzo(a)Anthracene	260		65.6	ug/Kg	10	XMS6663	XXX26839	9
Benzo[a]pyrene	165		65.6	ug/Kg	10	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Benzo[g,h,i]perylene	75.5		65.6	ug/Kg	10	XMS6663	XXX26839	9
Benzo[k]fluoranthene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Chrysene	418		65.6	ug/Kg	10	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Fluoranthene	191		65.6	ug/Kg	10	XMS6663	XXX26839	9
Fluorene	403		65.6	ug/Kg	10	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Naphthalene	65.6 U		65.6	ug/Kg	10	XMS6663	XXX26839	9
Phenanthrene	870		65.6	ug/Kg	10	XMS6663	XXX26839	9
Pyrene	960		65.6	ug/Kg	10	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	148	*	45-105	%	10	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	165	*	30-125	%	10	XMS6663	XXX26839	9
Batch Information								
Analytical Batch: XMS6663	Prep Batch: XXX26839			Initial Prep	Wt./Vol.: 22.	692 g		
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 19:50 Dilution Factor: 10		Prep Date/Time: 05/14/12 15:00				Container ID:1121591020-A Analyst: RTS		


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Prep

**Batch** 

**Qualifiers** 

<u>Analytical</u>

**Batch** 

Client Sample ID: <b>EP-5-10-4</b> SGS Ref. #: 1121591020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 75.6			Collection E Receipt Dat	Date/Time: 09 te/Time: 05/0	5/03/12 15:20 09/12 16:15
Solids					
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	DF
Total Solids	75.6			%	1

Total Solids	75.6	%	1	SPT8624
Batch Information				
Analytical Batch: SPT8624				Initial Prep Wt./Vol.: 1 mL
Analytical Method: SM21 2540G				
Analysis Date/Time: 05/11/12 16:55				Container ID:1121591020-A
Dilution Factor: 1				Analyst: CDE



Prep

Analytical

# Client Sample ID: **EP-5+60-2** SGS Ref. #: 1121591021 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40 Receipt Date/Time: 05/09/12 16:15

# Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	30.2 U	30.2	ug/Kg	1	VFC10972	VXX23473	3
Ethylbenzene	60.3 U	60.3	ug/Kg	1	VFC10972	VXX23473	3
Gasoline Range Organics	6.03 U	6.03	mg/Kg	1	VFC10972	VXX23473	3
o-Xylene	60.3 U	60.3	ug/Kg	1	VFC10972	VXX23473	3
P & M -Xylene	121 U	121	ug/Kg	1	VFC10972	VXX23473	3
Toluene	60.3 U	60.3	ug/Kg	1	VFC10972	VXX23473	3
1,4-Difluorobenzene <surr></surr>	95.2	72-119	%	1	VFC10972	VXX23473	3
4-Bromofluorobenzene <surr></surr>	101	50-150	%	1	VFC10972	VXX23473	3
Batch Information							
Analytical Batch: VFC10972		Prep Batch: VXX234	173		Initial Prep	Nt./Vol.: 26.	682 g
Analytical Method: AK101		Prep Method: SW5035A			Prep Extract Vol.: 28.2645 mL		
Analysis Date/Time: 05/15/12 20:13		Prep Date/Time: 05/	03/12 16:40		Container II	D:11215910	21-B
Dilution Factor: 1					Analyst: EA	B	
Analytical Batch: VFC10972		Prep Batch: VXX234	173		Initial Prep	Nt./Vol.: 26.	682 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.26	45 mL
Analysis Date/Time: 05/15/12 20:13		Prep Date/Time: 05/	03/12 16:40		Container II	D:11215910	21-B
Dilution Factor: 1					Analyst: EA	B	



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **EP-5+60-2** SGS Ref. #: 1121591021 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40 Receipt Date/Time: 05/09/12 16:15

### Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	151	113	mg/Kg	5	XFC10365	XXX2683	7	
Residual Range Organics	490	113	mg/Kg	5	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	89.7	50-150	%	5	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	83.4	50-150	%	5	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26	837 Initial Prep Wt./Vol.: 30.37			.374 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 07:05		Prep Date/Time: 05/14/12 15:00			Container ID:1121591021-A			
Dilution Factor: 5					Analyst: M	СМ		
Analytical Batch: XFC10365		Prep Batch: XXX26	6837 Initial Prep Wt./Vol.: 30.374			.374 g		
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 07:05		Prep Date/Time: 05/14/12 15:00			Container ID:1121591021-A			
Dilution Factor: 5					Analyst: M	СМ		



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **EP-5+60-2** SGS Ref. #: 1121591021 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40 Receipt Date/Time: 05/09/12 16:15

## Polynuclear Aromatics GC/MS

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	Э
2-Methylnaphthalene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthylene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Anthracene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Benzo(a)Anthracene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	Э
Benzo[a]pyrene	39.3	28.3	ug/Kg	5	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Benzo[g,h,i]perylene	48.3	28.3	ug/Kg	5	XMS6663	XXX26839	9
Benzo[k]fluoranthene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Chrysene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Fluoranthene	31.6	28.3	ug/Kg	5	XMS6663	XXX26839	9
Fluorene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Naphthalene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Phenanthrene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	9
Pyrene	52.9	28.3	ug/Kg	5	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	85.9	45-105	%	5	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	120	30-125	%	5	XMS6663	XXX26839	Э
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	637 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 20:10		Prep Date/Time: 05	/14/12 15:00		Container I	D:11215910	21-A
Dilution Factor: 5					Analyst: R	ГS	



Print Date: 5/29/2012 3:25 pm

Client Sample ID: EP-5+60-2
SGS Ref. #: 1121591021
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40 Receipt Date/Time: 05/09/12 16:15

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	87.8		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624					Initial Prep W	/t./Vol.: 1 mL	
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159102	1-A
Dilution Factor: 1					Analyst: CDE	Ξ	



Analytical Prep

# Client Sample ID: **EP-5+60-4** SGS Ref. #: 1121591022 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 69.5

Collection Date/Time: 05/03/12 16:30 Receipt Date/Time: 05/09/12 16:15

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>	
Benzene	42.7 U	42.7	ug/Kg	1	VFC10972	VXX2347	3	
Ethylbenzene	85.4 U	85.4	ug/Kg	1	VFC10972	VXX2347	3	
Gasoline Range Organics	8.54 U	8.54	mg/Kg	1	VFC10972	VXX2347	3	
o-Xylene	85.4 U	85.4	ug/Kg	1	VFC10972	VXX2347	3	
P & M -Xylene	171 U	171	ug/Kg	1	VFC10972	VXX2347	3	
Toluene	85.4 U	85.4	ug/Kg	1	VFC10972	VXX2347	3	
1,4-Difluorobenzene <surr></surr>	95.5	72-119	%	1	VFC10972	VXX2347	3	
4-Bromofluorobenzene <surr></surr>	116	50-150	%	1	VFC10972	VXX2347	3	
Batch Information								
Analytical Batch: VFC10972		Prep Batch: VXX234	Prep Batch: VXX23473 Initial			ep Wt./Vol.: 28.333 g		
Analytical Method: AK101		Prep Method: SW5035A			Prep Extrac	Prep Extract Vol.: 33.6447 mL		
Analysis Date/Time: 05/15/12 20:31		Prep Date/Time: 05/0	)3/12 16:30		Container I	D:11215910	22-B	
Dilution Factor: 1					Analyst: EA	AB		
Analytical Batch: VFC10972		Prep Batch: VXX234	73		Initial Prep	Wt./Vol.: 28.	.333 g	
Analytical Method: SW8021B		Prep Method: SW503	35A		Prep Extrac	t Vol.: 33.64	447 mL	
Analysis Date/Time: 05/15/12 20:31		Prep Date/Time: 05/0	)3/12 16:30		Container I	D:11215910	22-B	
Dilution Factor: 1					Analyst: EA	AB		



Print Date: 5/29/2012 3:25 pm

Analytical Prep

Client Sample ID: **EP-5+60-4** SGS Ref. #: 1121591022 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 69.5

Collection Date/Time: 05/03/12 16:30 Receipt Date/Time: 05/09/12 16:15

#### Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	523	144	mg/Kg	5	XFC10365	XXX2683	7	
Residual Range Organics	311	144	mg/Kg	5	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	88.4	50-150	%	5	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	77.1	50-150	%	5	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep Wt./Vol.: 30.022 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 07:30		Prep Date/Time: 05/14/12 15:00			Container ID:1121591022-A			
Dilution Factor: 5					Analyst: M	СМ		
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.022 g			
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 07:30		Prep Date/Time: 05/14/12 15:00			Container ID:1121591022-A			
Dilution Factor: 5					Analyst: M	СМ		



Print Date: 5/29/2012 3:25 pm

Analytical Prep

# Client Sample ID: EP-5+60-4 SGS Ref. #: 1121591022 Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 69.5

# Collection Date/Time: 05/03/12 16:30 Receipt Date/Time: 05/09/12 16:15

## **Polynuclear Aromatics GC/MS**

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	Э
2-Methylnaphthalene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthylene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Anthracene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Benzo(a)Anthracene	43.2	35.7	ug/Kg	5	XMS6663	XXX26839	9
Benzo[a]pyrene	48.7	35.7	ug/Kg	5	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Benzo[g,h,i]perylene	38.5	35.7	ug/Kg	5	XMS6663	XXX26839	9
Benzo[k]fluoranthene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Chrysene	48.8	35.7	ug/Kg	5	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Fluoranthene	80.9	35.7	ug/Kg	5	XMS6663	XXX26839	9
Fluorene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Naphthalene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	9
Phenanthrene	50.3	35.7	ug/Kg	5	XMS6663	XXX26839	9
Pyrene	87.9	35.7	ug/Kg	5	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	74.6	45-105	%	5	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	125	30-125	%	5	XMS6663	XXX26839	9
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	657 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	-
Analysis Date/Time: 05/16/12 20:30		Prep Date/Time: 05	/14/12 15:00		Container I	D:11215910	22-A
Dilution Factor: 5					Analyst: R	ГS	



Print Date: 5/29/2012 3:25 pm

Client Sample ID: EP-5+60-4	
SGS Ref. #: 1121591022	
Project ID: Ilulaq Lake East Point Rd DW	
Matrix: Soil/Solid (dry weight)	
Percent Solids: 69.5	

Collection Date/Time: 05/03/12 16:30 Receipt Date/Time: 05/09/12 16:15

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	69.5		%	1	SPT8624		
Batch Information							
Analytical Batch: SPT8624 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/11/12 16:55					Container ID	:112159102	2-A
Dilution Factor: 1					Analyst: CDI	=	



Analytical Prep

Client Sample ID: **TB-01** SGS Ref. #: 1121591023 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/01/12 00:00 Receipt Date/Time: 05/09/12 16:15

## **Volatile Fuels Department**

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Benzene	12.4 U	12.4	ug/Kg	1	VFC10970	VXX2346	67	
Ethylbenzene	24.8 U	24.8	ug/Kg	1	VFC10970	VXX2346	67	
Gasoline Range Organics	2.48 U	2.48	mg/Kg	1	VFC10970	VXX2346	67	
o-Xylene	24.8 U	24.8	ug/Kg	1	VFC10970	VXX2346	67	
P & M -Xylene	49.6 U	49.6	ug/Kg	1	VFC10970	VXX2346	67	
Toluene	24.8 U	24.8	ug/Kg	1	VFC10970	VXX2346	67	
1,4-Difluorobenzene <surr></surr>	96	72-119	%	1	VFC10970	VXX2346	67	
4-Bromofluorobenzene <surr></surr>	82.5	50-150	%	1	VFC10970	VXX2346	67	
Batch Information								
Analytical Batch: VFC10970		Prep Batch: VXX234	Prep Batch: VXX23467			Initial Prep Wt./Vol.: 50.429 g		
Analytical Method: AK101		Prep Method: SW50	)35A		Prep Extrac	t Vol.: 25 n	nL	
Analysis Date/Time: 05/12/12 03:40		Prep Date/Time: 05	/01/12 00:00		Container II	D:1121591	023-A	
Dilution Factor: 1					Analyst: NF	RB		
Analytical Batch: VFC10970		Prep Batch: VXX234	467		Initial Prep	Wt./Vol.: 50	).429 g	
Analytical Method: SW8021B		Prep Method: SW50	Prep Method: SW5035A			Prep Extract Vol.: 25 mL		
Analysis Date/Time: 05/12/12 03:40	Prep Date/Time: 05	Prep Date/Time: 05/01/12 00:00			Container ID:1121591023-A			
Dilution Factor: 1					Analyst: NF	RB		



SGS Ref.#	1085999	Method Blank	Printed Da	ate/Time	05/29/2012	15:25
Client Name	Unalaska City-P	ublic Works	Prep	Batch	XXX26834	
Project Name/#	Ilulaq Lake East	Point Rd DW		Method	SW3550C	
Matrix	Soil/Solid (dry w	veight)		Date	05/11/2012	

## 1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008

Parameter			Results	LOQ/CL	DL	Units	Analysis Date
Semivolatile	Organic Fu	els Depart	ment				
Diesel Range Organics		8.27J	20.0	6.20	mg/Kg	05/14/12	
Surrogates							
5a Androstane <s< th=""><th>urr&gt;</th><th></th><th>85.6</th><th>60-120</th><th></th><th>%</th><th>05/14/12</th></s<>	urr>		85.6	60-120		%	05/14/12
Batch Method	XFC10364 AK102						
Instrument	HP 7890A	FID SV E R					
Residual Range C	organics		12.4 U	20.0	6.20	mg/Kg	05/14/12
Surrogates							
n-Triacontane-d62	2 <surr></surr>		83.2	60-120		%	05/14/12
Batch	XFC10364						
Method	AK103						
Instrument	HP 7890A	FID SV E R					



SGS Ref.# Client Name Project Name/# Matrix	1086047 Unalaska City-I Ilulaq Lake Eas Soil/Solid (dry	Method Blank Public Works t Point Rd DW weight)			Printed Date Prep B M D:	/Time 05/29/2012 15:25 atch Iethod ate				
QC results affect the following production samples: 1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022 Analysis										
Parameter		Results	LOQ/CL	DL	Units	Analysis Date				
Solids										
Total Solids		100			%	05/11/12				
Batch	SPT8624									
Method Instrument	SM21 2540G									



SGS Ref.#	1086049	Method Blank	Printee	d Date/Time	05/29/2012	15:25
Client Name	Unalaska City-Pu	ublic Works	Prep	Batch	XXX26835	
Project Name/#	Ilulaq Lake East	Point Rd DW		Method	SW3550C	
Matrix	Soil/Solid (drv w	veight)		Date	05/14/2012	

1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017

Parameter		Results	LOQ/CL	DL	Units	Analysis Date
Polynuclear	Aromatics GC/MS					
rorynaerear	niomatics 60/hb					
1-Methylnaphtha	alene	3.00 U	5.00	1.50	ug/Kg	05/15/12
2-Methylnaphth	alene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Acenaphthene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Acenaphthylene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Anthracene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo(a)Anthra	cene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[a]pyrene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[b]Fluoranthene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[g,h,i]pery	ylene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[k]fluoran	thene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Chrysene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Dibenzo[a,h]ant	hracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Fluoranthene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Fluorene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Indeno[1,2,3-c,d	l] pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Naphthalene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Phenanthrene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Pyrene		3.00 U	5.00	1.50	ug/Kg	05/15/12
Surrogates						
2-Fluorobipheny	/l <surr></surr>	79.3	45-105		%	05/15/12
Terphenyl-d14 <	<surr></surr>	109	30-125		%	05/15/12
Batch	XMS6656					
Method	8270D SIMS (PAH)					

Instrument HP 6890/5973 MS SVQA



SGS Ref.#	1086093	Method Blank	Printed	Date/Time	05/29/2012	15:25
Client Name	Unalaska City-Pu	ublic Works	Prep	Batch	VXX23467	
Project Name/#	Ilulaq Lake East	Point Rd DW		Method	SW5035A	
Matrix	Soil/Solid (dry w	veight)		Date	05/11/2012	

# 1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter		Results	LOQ/CL	DL	Units	Analysis Date
Volatile Fuel	s Department					
Gasoline Range Or	rganics	1.50 U	2.50	0.750	mg/Kg	05/11/12
Surrogates						
4-Bromofluorobenzene <surr></surr>		92.6	50-150		%	05/11/12
Batch	VFC10970					
Method Instrument	AK101 Agilent 7890 PID/FID					
Benzene		8.00 U	12.5	4.00	ug/Kg	05/11/12
Ethylbenzene		15.6 U	25.0	7.80	ug/Kg	05/11/12
o-Xylene		15.6 U	25.0	7.80	ug/Kg	05/11/12
P & M -Xylene		30.0 U	50.0	15.0	ug/Kg	05/11/12
Toluene		15.6 U	25.0	7.80	ug/Kg	05/11/12
Surrogates						
1,4-Difluorobenzer Batch Method Instrument	ne <surr> VFC10970 SW8021B Agilent 7890 PID/FID</surr>	95.7	72-119		%	05/11/12



SGS Ref.#	1086143	Method Blank	Printee	l Date/Time	05/29/2012	15:25
Client Name	Unalaska City-P	ublic Works	Prep	Batch	XXX26837	
Project Name/#	Ilulaq Lake East	Point Rd DW		Method	SW3550C	
Matrix	Soil/Solid (dry w	weight)		Date	05/14/2012	

# 1121591005, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter			Results	LOQ/CL	DL	Units	Analysis Date
Semivolatile	Organic Fu	els Depart	ment				
Diesel Range Org	ganics		12.4 U	20.0	6.20	mg/Kg	05/16/12
Surrogates							
5a Androstane <s< th=""><th>surr&gt;</th><th></th><th>75.3</th><th>60-120</th><th></th><th>%</th><th>05/16/12</th></s<>	surr>		75.3	60-120		%	05/16/12
Batch Method Instrument	XFC10365 AK102 HP 7890A	FID SV E R					
Residual Range C	Organics		12.4 U	20.0	6.20	mg/Kg	05/16/12
Surrogates							
n-Triacontane-d6 Batch Method Instrument	2 <surr> XFC10365 AK103 HP 7890A</surr>	FID SV E R	77.4	60-120		%	05/16/12



SGS Ref.#	1086244 Me	thod Blank			Printed	Date/Time	05/29/2012 15:25	
Client Name	Unalaska City-Public	e Works			Prep	Batch Method	XXX26839 SW3550C	
Matrix	Soil/Solid (dry weigh	nt Ku D w			Date		05/14/2012	
QC results affect the	following production samples:							
1121591005, 1	121591018, 1121591019, 1	121591020, 1	121591021, 112	21591022				
Parameter		Results	LOQ/CL	DL	Units		Analysis Date	
Polynuclear A	Aromatics GC/MS							
1-Methylnaphthal	ene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
2-Methylnaphthal	ene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Acenaphthene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Acenaphthylene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Anthracene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Benzo(a)Anthrace	ene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Benzo[a]pyrene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Benzo[b]Fluorant	hene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Benzo[g,h,i]peryle	ene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Benzo[k]fluoranth	nene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Chrysene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Dibenzo[a,h]anthr	racene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Fluoranthene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Fluorene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Indeno[1,2,3-c,d]	pyrene	3.00 U	5.00	1.50	ug/Kg		05/15/12	
Naphthalene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Phenanthrene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Pyrene		3.00 U	5.00	1.50	ug/Kg		05/15/12	
Surrogates								
2-Fluorobiphenyl	<surr></surr>	79.7	45-105		%		05/15/12	
Terphenyl-d14 <s< td=""><td>urr&gt;</td><td>113</td><td>30-125</td><td></td><td>%</td><td></td><td>05/15/12</td><td></td></s<>	urr>	113	30-125		%		05/15/12	
Batch	XMS6656							
Method	8270D SIMS (PAH)							
Instrument	HP 6890/5973 MS SVQA							



SGS Ref.#	1086434	Method Blank	Printed	Date/Time	05/29/2012	15:25
Client Name	Unalaska City-Pu	ublic Works	Prep	Batch	VXX23473	
Project Name/#	Ilulaq Lake East	Point Rd DW		Method	SW5035A	
Matrix	Soil/Solid (dry w	/eight)		Date	05/15/2012	

# 1121591008, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022, 112159102

Parameter		Results	LOQ/CL	DL	Units	Analysis Date
Volatile Fue	ls Department					
Gasoline Range C	Organics	1.50 U	2.50	0.750	mg/Kg	05/15/12
Surrogates						
4-Bromofluorobe	nzene <surr></surr>	98.8	50-150		%	05/15/12
Batch	VFC10972					
Method Instrument	AK101 Agilent 7890 PID/FID					
	rightent (0) 01 iD/1 iD					
Benzene		8.00 U	12.5	4.00	ug/Kg	05/15/12
Ethylbenzene		15.6 U	25.0	7.80	ug/Kg	05/15/12
o-Xylene		15.6 U	25.0	7.80	ug/Kg	05/15/12
P & M -Xylene		30.0 U	50.0	15.0	ug/Kg	05/15/12
Toluene		9.75J	25.0	7.80	ug/Kg	05/15/12
Surrogates						
1,4-Difluorobenze	ene <surr></surr>	95.7	72-119		%	05/15/12
Batch	VFC10972					
Method	SW8021B					
Instrument	Agilent 7890 PID/FID					



SGS Ref.#	1086048	Duplicate	Printed Da	te/Time	05/29/2012	15:25
Client Name	Unalaska City-Publi	c Works	Prep	Batch		
Project Name/#	Ilulaq Lake East Poi	nt Rd DW		Method		
Original	1121617001			Date		
Matrix	Soil/Solid (dry weight	ht)				

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter		Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
Solids							
Total Solids		97.8	97.8	%	0	(< 15)	05/11/2012
Batch Method Instrument	SPT8624 SM21 2540G						



SGS Ref.#	1086000 Lab Control Sample	Printed Date/Time 05/29/2012			15:25				
	1086001 Lab Control Sample Duplicate	Prep	Batch	XXX26834					
Client Name	Unalaska City-Public Works		Method	SW3550C					
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/11/2012					
Matrix	tatrix Soil/Solid (dry weight)								
QC results affect the following production samples:									

1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008

Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile	Organic Fue	els Departm	ent						
Diesel Range Org	anics	LCS	161	96	(75-125)			167 mg/Kg	05/14/2012
		LCSD	156	94		3	(< 20)	167 mg/Kg	05/14/2012
Surrogates									
5a Androstane <su< td=""><td>urr&gt;</td><td>LCS</td><td></td><td>97</td><td>(60-120)</td><td></td><td></td><td></td><td>05/14/2012</td></su<>	urr>	LCS		97	(60-120)				05/14/2012
		LCSD		95		1			05/14/2012
Batch Method Instrument	XFC10364 AK102 HP 7890A	FID SV E R	1						
Residual Range O	rganics	LCS	178	107	(60-120)			167 mg/Kg	05/14/2012
		LCSD	173	104		3	(< 20)	167 mg/Kg	05/14/2012
Surrogates									
n-Triacontane-d62	2 <surr></surr>	LCS		94	(60-120)				05/14/2012
		LCSD		91		2			05/14/2012
Batch Method Instrument	XFC10364 AK103 HP 7890A	FID SV E R	L						



SGS Ref.#	1086050 Lab Control Sample	Printed Da	te/Time	05/29/2012	15:25			
		Prep	Batch	XXX26835				
Client Name	Unalaska City-Public Works		Method	SW3550C				
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/14/2012				
Matrix	Soil/Solid (dry weight)							
QC results affect the follo	wing production samples:							
1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011,								
1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017								

	,	/	,	,	,					
				OC	Pct	LCS/LCSD		RPD	Spiked	Analysis
Parameter			1	Results	Recov	Limits	RPD	Limits	Amount	Date

## Polynuclear Aromatics GC/MS



SGS Ref.#	1086050 Lal	b Control	Sample			Printed Prep	Date/Time Batch	05/29/2012 XXX26835	15:25
Client Name Project Name/# Matrix	Unalaska City- Ilulaq Lake Ea Soil/Solid (dry	Public W st Point R weight)	orks d DW			·	Method Date	SW3550C 05/14/2012	
Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Arom	atics GC/MS								
1-Methylnaphthalene		LCS	18.5	84	(44-107)			22.2 ug/Kg	05/15/2012
2-Methylnaphthalene		LCS	17.5	79	(45-105)			22.2 ug/Kg	05/15/2012
Acenaphthene		LCS	19.3	87	(45-110)			22.2 ug/Kg	05/15/2012
Acenaphthylene		LCS	17.8	80	(45-105)			22.2 ug/Kg	05/15/2012
Anthracene		LCS	16.3	73	(55-105)			22.2 ug/Kg	05/15/2012
Benzo(a)Anthracene		LCS	20.7	93	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[a]pyrene		LCS	16.2	73	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[b]Fluoranthene		LCS	21.7	98	(45-115)			22.2 ug/Kg	05/15/2012
Benzo[g,h,i]perylene		LCS	20.8	94	(40-125)			22.2 ug/Kg	05/15/2012
Benzo[k]fluoranthene		LCS	21.0	94	(45-125)			22.2 ug/Kg	05/15/2012
Chrysene		LCS	19.8	89	(55-110)			22.2 ug/Kg	05/15/2012
Dibenzo[a,h]anthracen	e	LCS	19.2	86	(40-125)			22.2 ug/Kg	05/15/2012
Fluoranthene		LCS	20.0	90	(55-115)			22.2 ug/Kg	05/15/2012
Fluorene		LCS	19.3	87	(50-110)			22.2 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyrer	ne	LCS	20.3	91	(40-120)			22.2 ug/Kg	05/15/2012
Naphthalene		LCS	16.9	76	(40-105)			22.2 ug/Kg	05/15/2012
Phenanthrene		LCS	20.6	93	(50-110)			22.2 ug/Kg	05/15/2012
Pyrene		LCS	19.1	86	(45-125)			22.2 ug/Kg	05/15/2012
Surrogates									
2-Fluorobiphenyl <surr< td=""><td>&gt;</td><td>LCS</td><td></td><td>94</td><td>(45-105)</td><td></td><td></td><td></td><td>05/15/2012</td></surr<>	>	LCS		94	(45-105)				05/15/2012
Terphenyl-d14 <surr></surr>		LCS		102	(30-125)				05/15/2012



SGS Ref.#	1086050 Lab Control S	Sample			Printed I Prep	Date/Time Batch	05/29/2012 XXX26835	15:25
Client Name Project Name/# Matrix	Unalaska City-Public Wo Ilulaq Lake East Point Ro Soil/Solid (dry weight)	orks 1 DW				Method Date	SW3550C 05/14/2012	
Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

## Polynuclear Aromatics GC/MS

 Batch
 XMS6656

 Method
 8270D SIMS (PAH)

 Instrument
 HP 6890/5973 MS SVQA



SGS Ref.#	1086094 Lab Control Sample	Printed D	ate/Time	05/29/2012	15:25
	1086095 Lab Control Sample Duplicate	Prep	Batch	VXX23467	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/11/2012	
Matrix	Soil/Solid (dry weight)				

1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1510	120	(75-125)			1250 ug/Kg	05/11/2012
	LCSD	1580	126 *		5	(< 20)	1250 ug/Kg	05/11/2012
Ethylbenzene	LCS	1370	110	(75-125)			1250 ug/Kg	05/11/2012
5	LCSD	1440	116		5	(< 20)	1250 ug/Kg	05/11/2012
o-Xvlene	LCS	1280	103	(75-125)			1250 ug/Kg	05/11/2012
	LCSD	1350	108	( / 0 120 )	5	(<20)	1250 ug/Kg	05/11/2012
P & M -Xylene	LCS	2670	107	(80-125)			2500 ug/Kg	05/11/2012
	LCSD	2810	113	(00 125)	5	(<20)	2500 ug/Kg 2500 ug/Kg	05/11/2012
Taluene	LCS	1/10	113	(70-125)			1250 ug/Vg	05/11/2012
Tolucite	LCSD	1490	119	(70-125)	5	(<20)	1250 ug/Kg 1250 ug/Kg	05/11/2012
Sumagatas								
Surrogates								
1,4-Difluorobenzene <surr></surr>	LCS		100	(72-119)				05/11/2012
	LCSD		100		0			05/11/2012

Batch	VFC10970
Method	SW8021B
Instrument	Agilant 7800 DID/EIF

Agilent 7890 PID/FID strumen



SGS Ref.#	1086096 Lab Control Sample	<b>Printed Da</b>	te/Time	05/29/2012	15:25
	1086097 Lab Control Sample Duplicate	Prep	Batch	VXX23467	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW Date				
Matrix	Soil/Solid (dry weight)				

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	9.54	95	(60-120)			10.0 mg/Kg	05/11/2012
	LCSD	9.58	96		0	(< 20)	10.0 mg/Kg	05/11/2012
Surrogates								
4-Bromofluorobenzene <surr></surr>	LCS		90	(50-150)				05/11/2012
	LCSD		85		5			05/11/2012

Batch	VFC10970
Method	AK101
Instrument	Agilent 7890 PID/FID



SGS Ref.#	1086144 Lab Control Sample	Printed Da	ate/Time	05/29/2012	15:25
	1086145 Lab Control Sample Duplicate	Prep	Batch	XXX26837	
Client Name	Unalaska City-Public Works		Method	SW3550C	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/14/2012	
Matrix	Soil/Solid (dry weight)				

1121591005, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile	Organic Fue	els Departm	ent						
Diesel Range Org	anics	LCS	130	78	(75-125)			167 mg/Kg	05/16/2012
		LCSD	139	84		7	(< 20)	167 mg/Kg	05/16/2012
Surrogates									
5a Androstane <s< td=""><td>urr&gt;</td><td>LCS</td><td></td><td>81</td><td>(60-120)</td><td></td><td></td><td></td><td>05/16/2012</td></s<>	urr>	LCS		81	(60-120)				05/16/2012
		LCSD		87		7			05/16/2012
Batch Method Instrument	XFC10365 AK102 HP 7890A	FID SV E R							
Residual Range O	Organics	LCS	143	86	(60-120)			167 mg/Kg	05/16/2012
	-8	LCSD	159	96	(******)	11	(<20)	167 mg/Kg	05/16/2012
Surrogates									
n-Triacontane-d62	2 <surr></surr>	LCS		76	(60-120)				05/16/2012
		LCSD		87		14			05/16/2012
Batch	XFC10365								

Method AK103 Instrument HP 7890A FID SV E R



SGS Ref.#	1086245 Lab Contr	ol Sample			Printee	l Date/Time	05/29/2012	15:25
Client Name Project Name/# Matrix	PrepBatchUnalaska City-Public WorksMethodIlulaq Lake East Point Rd DWDateSoil/Solid (dry weight)Date							
QC results affect the	QC results affect the following production samples:							
1121591005, 112	21591018, 1121591019, 11	21591020, 112	21591021, 112	21591022				
Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

Polynuclear Aromatics GC/MS



SGS Ref.#	1086245 La	ab Control	Sample			Printed Prep	Date/Time Batch	05/29/2012 XXX26839	15:25
Client Name Project Name/# Matrix	Unalaska City Ilulaq Lake E Soil/Solid (dr	<ul> <li>Public W ast Point I</li> <li>weight)</li> </ul>	Vorks Rd DW				Method Date	SW3550C 05/14/2012	
Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aron	matics GC/MS	<u>5</u>							
1-Methylnaphthalene		LCS	12.2	55	(44-107)			22.2 ug/Kg	05/15/2012
2-Methylnaphthalene		LCS	12.0	54	(45-105)			22.2 ug/Kg	05/15/2012
Acenaphthene		LCS	13.3	60	(45-110)			22.2 ug/Kg	05/15/2012
Acenaphthylene		LCS	12.8	57	(45-105)			22.2 ug/Kg	05/15/2012
Anthracene		LCS	13.3	60	(55-105)			22.2 ug/Kg	05/15/2012
Benzo(a)Anthracene		LCS	24.4	110	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[a]pyrene		LCS	20.7	93	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[b]Fluoranthene		LCS	23.9	108	(45-115)			22.2 ug/Kg	05/15/2012
Benzo[g,h,i]perylene		LCS	19.0	85	(40-125)			22.2 ug/Kg	05/15/2012
Benzo[k]fluoranthene		LCS	24.7	111	(45-125)			22.2 ug/Kg	05/15/2012
Chrysene		LCS	20.5	92	(55-110)			22.2 ug/Kg	05/15/2012
Dibenzo[a,h]anthracen	e	LCS	20.9	94	(40-125)			22.2 ug/Kg	05/15/2012
Fluoranthene		LCS	19.4	87	(55-115)			22.2 ug/Kg	05/15/2012
Fluorene		LCS	13.4	60	(50-110)			22.2 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyre	ne	LCS	21.3	96	(40-120)			22.2 ug/Kg	05/15/2012
Naphthalene		LCS	11.8	53	(40-105)			22.2 ug/Kg	05/15/2012
Phenanthrene		LCS	15.8	71	(50-110)			22.2 ug/Kg	05/15/2012
Pyrene		LCS	18.7	84	(45-125)			22.2 ug/Kg	05/15/2012
Surrogates									
2-Fluorobiphenyl <sur< td=""><td>r&gt;</td><td>LCS</td><td></td><td>64</td><td>(45-105)</td><td></td><td></td><td></td><td>05/15/2012</td></sur<>	r>	LCS		64	(45-105)				05/15/2012
Terphenyl-d14 <surr></surr>		LCS		117	(30-125)				05/15/2012



SGS Ref.#	1086245 Lab Control S	Sample			Printed I Prep	Date/Time Batch	05/29/2012 XXX26839	15:25
Client Name Project Name/# Matrix	Unalaska City-Public Wo Ilulaq Lake East Point Ro Soil/Solid (dry weight)	orks d DW			Ĩ	Method Date	SW3550C 05/14/2012	
Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

# Polynuclear Aromatics GC/MS

 Batch
 XMS6656

 Method
 8270D SIMS (PAH)

 Instrument
 HP 6890/5973 MS SVQA



SGS Ref.#	1086435 Lab Control Sample	Printed Da	te/Time	05/29/2012	15:25
	1086436 Lab Control Sample Duplicate	Prep	Batch	VXX23473	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW	Date	05/15/2012		
Matrix	Soil/Solid (dry weight)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1310	105	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	105		1	(< 20)	1250 ug/Kg	05/15/2012
Ethylbenzene	LCS	1310	105	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	106		1	(< 20)	1250 ug/Kg	05/15/2012
o-Xylene	LCS	1280	102	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1300	104		2	(< 20)	1250 ug/Kg	05/15/2012
P & M -Xylene	LCS	2600	104	(80-125)			2500 ug/Kg	05/15/2012
	LCSD	2630	105		1	(<20)	2500 ug/Kg	05/15/2012
Toluene	LCS	1310	105	(70-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	105		1	(<20)	1250 ug/Kg	05/15/2012
Surrogates								
1,4-Difluorobenzene <surr></surr>	LCS		100	(72-119)				05/15/2012
	LCSD		100		0			05/15/2012

Batch	VFC10972
Method	SW8021B
Instrument	Agilent 7890 PID/FID



SGS Ref.#	1086437 Lab Control Sample	<b>Printed Da</b>	te/Time	05/29/2012	15:25
	1086438 Lab Control Sample Duplicate	Prep	Batch	VXX23473	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/15/2012	
Matrix	Soil/Solid (dry weight)				

1121591008, 1121591015, 1121591016,	, 1121591017, 1121591018,	1121591019, 1121591020,	, 1121591021, 1121591022
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Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	10.6	106	(60-120)			10.0 mg/Kg	05/15/2012
	LCSD	11.3	113		6	(<20)	10.0 mg/Kg	05/15/2012
Surrogates								
4-Bromofluorobenzene <surr></surr>	LCS		106	(50-150)				05/15/2012
	LCSD		105		1			05/15/2012

Batch	VFC10972
Method	AK101
Instrument	Agilent 7890 PID/FID



1086051

1086052

Matrix Spike

Matrix Spike Duplicate

SGS Ref.#

							Method Date	Sonica: 05/14/2	tion Extraction Soil 8270 2012
Original	1121529001								
Matrix	Soil/Solid (dry v	veight)							
QC results affect the follo	owing production sat	mples:							
1121591001, 112159	1002, 112159100	3, 11215910	04, 1121591	1006, 1121591	1007, 1121591	1008, 1121	591009, 112159	1010,	
1121591011, 112159	01012, 112159101	3, 11215910	14, 1121591	1015, 1121591	1016, 1121591	1017			
Parameter	Qualifiers	Original	QC Bogult	Pct	MS/MSD	RPD	RPD Limits	Spiked	Analysis
T drameter	Quanners	Result	Kesuit	Recov	Linits	IU D	Linits	Amount	Date
Polynuclear Aroma	atics GC/MS								
1-Methylnaphthalene	MS	27.9	42.5	58	(44-107)			25.3	ıg/Kg 05/15/2012
	MSD		39.4	46		7	(< 30)	25.4 u	ıg/Kg 05/15/2012
2-Methylnaphthalene	MS	50.6	70.6	79	(45-105)			25.3 u	ıg/Kg 05/15/2012
	MSD		64.2	53		10	(< 30)	25.4 u	ıg/Kg 05/15/2012
Acenaphthene	MS	(3.46) U	20.4	81	(45-110)			25.3 u	ıg/Kg 05/15/2012
	MSD		12.6	50		47 *	· (< 30 )	25.4 u	ıg/Kg 05/15/2012
Acenaphthylene	MS	(3.46) U	22.5	89	(45-105)			25.3 u	ıg/Kg 05/15/2012
	MSD		21.5	85		5	(< 30)	25.4 u	ıg/Kg 05/15/2012
Anthracene	MS	(3.46) U	19.3	77	(55-105)			25.3 u	ıg/Kg 05/15/2012
	MSD		17.6	70		9	(< 30)	25.4 u	ıg/Kg 05/15/2012
Benzo(a)Anthracene	MS	(3.46) U	29.1	115*	(50-110)			25.3 u	ıg/Kg 05/15/2012
	MSD		27.7	109		5	(< 30)	25.4 u	ıg/Kg 05/15/2012
Benzo[a]pyrene	MS	(3.46) U	44.2	175*	(50-110)			25.3 u	1g/Kg 05/15/2012
	MSD		42.9	169*		3	(< 30)	25.4 u	ıg/Kg 05/15/2012
Benzo[b]Fluoranthene	MS	(3.46) U	27.7	110	(45-115)			25.3 u	ıg/Kg 05/15/2012
	MSD		28.7	113		3	(< 30)	25.4 u	ıg/Kg 05/15/2012
Benzo[g,h,i]perylene	MS	(3.46) U	26.8	106	(40-125)			25.3 u	1g/Kg 05/15/2012
	MSD		26.8	105		0	(< 30)	25.4 u	ıg/Kg 05/15/2012
Benzo[k]fluoranthene	MS	(3.46) U	30.0	119	(45-125)			25.3 u	1g/Kg 05/15/2012
	MSD		28.0	110		7	(< 30)	25.4 u	ıg/Kg 05/15/2012
Chrysene	MS	(3.46) U	20.9	83	(55-110)			25.3 u	1g/Kg 05/15/2012
	MSD		20.6	81		1	(< 30)	25.4 u	ıg/Kg 05/15/2012
Dibenzo[a,h]anthracene	MS	(3.46) U	26.5	105	(40-125)			25.3 u	ug/Kg 05/15/2012
	MSD		26.0	102		2	(< 30)	25.4 u	ıg/Kg 05/15/2012
Fluoranthene	MS	2.27J	22.7	81	(55-115)			25.3 u	ug/Kg 05/15/2012
	MSD		21.9	78		4	(< 30)	25.4 u	ıg/Kg 05/15/2012
Fluorene	MS	(3.46) U	25.4	100	(50-110)			25.3 u	ug/Kg 05/15/2012
	MSD		24.7	97		3	(< 30)	25.4 u	ıg/Kg 05/15/2012
Indeno[1,2,3-c,d] pyren	e MS	(3.46) U	27.6	109	(40-120)			25.3 u	ug/Kg 05/15/2012
	MSD		27.0	107		2	(< 30)	25.4 u	ıg/Kg 05/15/2012
Naphthalene	MS	(3.46) U	0.00	0*	(40-105)			25.3 u	ug/Kg 05/15/2012
	MSD		0.00	0*		0	(< 30)	25.4 u	ıg/Kg 05/15/2012
Phenanthrene	MS	(3.46) U	23.4	93	(50-110)			25.3 u	ug/Kg 05/15/2012
	MSD		27.7	109		17	(< 30)	25.4 u	ıg/Kg 05/15/2012
Pyrene	MS	4.63J	24.4	78	(45-125)			25.3 u	ıg/Kg 05/15/2012
	MSD		23.5	74		4	(< 30)	25.4 u	ıg/Kg 05/15/2012

**Printed Date/Time** 

Batch

Prep

05/29/2012 15:25

XXX26835



SGS Ref.#	1086	051	Matrix S	Spike			Printe	ed Date/Time	05/29/2012 15:25		
	1086	052	Matrix Spike Duplicate					Batch Method Date	Sonication Extraction Soil 8270 05/14/2012		
Original	1121	529001									
Matrix	Soil/S	Solid (dry v	veight)								
Parameter	Qual	ifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	
Polynuclear Surrogates	Aromatics	GC/MS									
2-Fluorobipheny	/l <surr></surr>	MS		18.1	72	(45-105)				05/15/2012	
		MSD		16.2	64		11			05/15/2012	
Terphenyl-d14 <	<surr></surr>	MS		24.1	96	(30-125)				05/15/2012	
		MSD		24.1	95		0			05/15/2012	
Batch Method	XMS6656 8270D SIN	MS (PAH)									

Instrument HP 6890/5973 MS SVQA



SGS Ref.#	1086102	Matrix Spike	Printed I	<b>Printed Date/Time</b>		
	1086103	Matrix Spike Duplicate	Prep	Batch	VXX23467	
				Method	AK101 Extraction (S)	
				Date	05/11/2012	
Original	1121529001					
Matrix	Soil/Solid (drv	weight)				

 $1121591010,\,1121591011,\,1121591012,\,1121591013,\,1121591014,\,1121591023$ 

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels	Department								
Benzene	MS	6.32J	1879	119	(75-125)			1578 ug/l	Kg 05/11/2012
	MSD		1937	122		3	(< 20)	1578 ug/l	Kg 05/11/2012
Ethylbenzene	MS	96.7	1775	106	(75-125)			1578 ug/l	Kg 05/11/2012
	MSD		1833	110		3	(< 20)	1578 ug/l	Kg 05/11/2012
o-Xylene	MS	104	1937	116	(75-125)			1578 ug/l	Kg 05/11/2012
	MSD		1984	120		3	(< 20)	1578 ug/l	Kg 05/11/2012
P & M -Xylene	MS	178	3550	107	(80-125)			3155 ug/l	Kg 05/11/2012
	MSD		3666	111		3	(< 20)	3155 ug/l	Kg 05/11/2012
Toluene	MS	46.2	1821	112	(70-125)			1578 ug/l	Kg 05/11/2012
	MSD		1879	117		4	(< 20)	1578 ug/l	Kg 05/11/2012
Surrogates									
1,4-Difluorobenzene	<surr> MS</surr>		1543	98	(72-119)				05/11/2012
	MSD		1543	98		0			05/11/2012
Batch \	VFC10970								

Method SW8021B

Instrument Agilent 7890 PID/FID



SGS Ref.#	f.# 1086246 Matrix Spike					Printed I	Date/Time	05/29/2012	15:25
	1086247	Matrix S	, pike Duplica	ate		Prep	Batch	XXX26839	
							Method	Sonication I	Extraction Soil 8270
							Date	05/14/2012	
Original	1121591018								
Matrix	Soil/Solid (dry	weight)							
QC results affect the 1121591005, 11	e following production 21591018, 11215910	samples: )19, 112159102	20, 1121591	021, 112159	1022				
		Original	00	Pet	MS/MSD		RPD	Sniked	Analysis
	0 1.0	Original	QC	100	100/1000		ICI D	opiked	Allalysis

Limits

Recov

Result

Result

RPD

Limits

Amount

Date

## Polynuclear Aromatics GC/MS

Qualifiers

Parameter

	-	
100		

SGS Ref.#	1086246 1086247	Matrix Spike Matrix Spike Duplicate					Prep Batch Method Date		05/29/2012 15:25 XXX26839 Sonication Extraction Soil 8270 05/14/2012		
Original	1121591018							00/11/2			
Matrix	Soil/Solid (dry v	veight)									
Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date		
Polynuclear Aroma	atics GC/MS										
1 Mathylpophthalana	MS	(58.2) 11	22.0	80	(44-107)			25.0	$w_{\alpha}/V_{\alpha} = 0.5/1.5/20.12$		
1-Methymaphthalene	MSD	(38.3) 0	22.9	89	(44-107)	1	(< 30)	25.8	ug/Kg = 05/15/2012		
2 Mathulnanhthalana	MSD	(58.3) []	25.0	07	(45-105)	1	(< 30 )	25.9	ug/Kg = 05/15/2012		
2-Methymaphthalene	MSD	(38.3) 0	20.0	97 115*	(45-105)	18	(< 30)	25.8	ug/Kg = 05/15/2012		
Aganaphthana	MSD	(58.2) []	29.9	00	(45-110)	10	(< 50)	25.9	ug/Kg = 05/15/2012		
Acenaphthene	MSD	(38.3) 0	22.0	00 106	(45-110)	10	(< 30)	25.8	ug/Kg = 05/15/2012		
Accompthyland	MSD	(59.2) 11	27.4	220*	(45, 105)	19	(< 30 )	25.9	ug/Kg = 05/15/2012		
Acenaphtnylene	MSD	(38.5) U	39.2 (2.2	230.	(45-105)	7	(< 20)	25.8	ug/Kg = 05/15/2012		
A	MSD	(50.2) 11	03.2 20.0	243*	(55,105)	/	(< 30)	25.9	ug/Kg = 05/15/2012		
Anthracene	MS MSD	(38.3) U	39.9	155*	( 55-105 )	5	(< 20)	25.8	ug/Kg = 05/15/2012		
Danaa (a) A atlana an a	MSD	71.2	38.0	14/*	(50, 110)	3	(< 30)	25.9 1	ug/Kg = 05/15/2012		
Benzo(a)Anthracene	MS MSD	/1.5	/8.4	28*	( 30-110 )	6	(< 20)	25.8	ug/Kg = 05/15/2012		
D	MSD	1.4.1	/3./	9*	(50, 110)	0	(< 30)	25.9 1	ug/Kg = 05/15/2012		
Benzolajpyrene	MS MSD	141	141	0* 25*	(30-110)	E	(< 20)	25.8	ug/Kg 05/15/2012		
ן ותנוז ת	MSD	(50.2) 11	148	23*	(AE 11E)	5	(< 30)	25.9 1	ug/Kg 05/15/2012		
Benzo[b]Fluoranthene	MS	(58.3) U	0.00	0*	(43-115)	0	(	25.8 1	ug/Kg 05/15/2012		
D [ 1 ] 1	MSD	(0.0	0.00	0*	(40,125)	0	(< 30)	25.9 1	ug/Kg 05/15/2012		
Benzo[g,h,1]perylene	MS	68.0	87.8	121+	(40-125)	1.5	( - 20 )	25.8	ug/Kg 05/15/2012		
D []][] 4	MSD	(50.0) 11	102	131*	(45.125)	15	(< 30)	25.9 i	ug/Kg 05/15/2012		
Benzo[k]fluoranthene	MS	(58.3) U	0.00	0*	(45-125)	0	( . 20 )	25.8	ug/Kg 05/15/2012		
<b>C1</b>	MSD		0.00	0*	(55.110)	0	(< 30)	25.9 1	ug/Kg 05/15/2012		
Chrysene	MS	92.8	92.8	0*	(55-110)			25.8	ug/Kg 05/15/2012		
	MSD		103	38*	( (0, (0, -))	10	(< 30)	25.9 1	ug/Kg 05/15/2012		
Dibenzo[a,h]anthracene	MS	(58.3) U	36.1	140*	(40-125)			25.8	ug/Kg 05/15/2012		
	MSD		43.3	167*		18	(< 30)	25.9 ı	ug/Kg 05/15/2012		
Fluoranthene	MS	86.4	69.1	-67*	(55-115)			25.8	ug/Kg 05/15/2012		
	MSD		60.3	-101*		14	(< 30)	25.9 1	ug/Kg 05/15/2012		
Fluorene	MS	(58.3) U	36.5	142*	(50-110)			25.8	ug/Kg 05/15/2012		
	MSD		35.5	137*		3	(< 30)	25.9 1	ug/Kg 05/15/2012		
Indeno[1,2,3-c,d] pyrene	e MS	(58.3) U	67.5	262*	(40-120)			25.8	ug/Kg 05/15/2012		
	MSD		66.9	258*		1	(< 30)	25.9 1	ug/Kg 05/15/2012		
Naphthalene	MS	(58.3) U	19.2	75	(40-105)			25.8	ug/Kg 05/15/2012		
	MSD		20.3	78		6	(< 30)	25.9 1	ug/Kg 05/15/2012		
Phenanthrene	MS	(58.3) U	85.3	331*	(50-110)			25.8	ug/Kg 05/15/2012		
	MSD		77.0	297*		10	(< 30)	25.9 u	ug/Kg 05/15/2012		
Pyrene	MS	232	193	-152*	(45-125)			25.8	ug/Kg 05/15/2012		
	MSD		213	-71*		10	(< 30)	25.9 u	ug/Kg 05/15/2012		
Surrogates											
2-Fluorobiphenyl <surr></surr>	> MS		22.4	87	(45-105)				05/15/2012		
	MSD		21.5	83		4			05/15/2012		
Terphenyl-d14 <surr></surr>	MS		39.2	152*	(30-125)				05/15/2012		



SGS Ref.#	1086246	Matrix Spike				Printec	l Date/Time	05/29/2012 15:25		
	1086247	Matrix S	Spike Duplica	ate		Prep	Batch	XXX2683	9	
						Method	Sonication	Extraction Soil 8270		
							Date	05/14/201	2	
Original	1121591018									
Matrix	Soil/Solid (dry w	eight)								
Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	
Polynuclear	Aromatics GC/MS MSD		38.0	146*	e	3			05/15/2012	
Batch Method Instrument	XMS6656 8270D SIMS (PAH) HP 6890/5973 MS SV	QA								


SGS Ref.#	1086439	Matrix Spike	Printed I	Date/Time	05/29/2012 15:25
	1086440	Matrix Spike Duplicate	Prep	Batch	VXX23473
				Method	AK101 Extraction (S)
				Date	05/15/2012
Original	1121617002				
Matrix	Soil/Solid (dry	y weight)			
		1			

QC results affect the following production samples:

# 1121591008, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter Qualifiers		Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spik Amou	ed Analysis int Date
Volatile Fuels Department									
Benzene	ЛS	(5.72) U	910	109	(75-125)			833	ug/Kg 05/15/2012
Υ	ИSD		919	110		1	(< 20)	833	ug/Kg 05/15/2012
Ethylbenzene N	ЛS	7.86J	920	109	(75-125)			833	ug/Kg 05/15/2012
ſ	ИSD		952	113		3	(< 20)	833	ug/Kg 05/15/2012
o-Xylene N	ЛS	14.8J	904	107	(75-125)			833	ug/Kg 05/15/2012
ſ	ИSD		949	112		5	(< 20)	833	ug/Kg 05/15/2012
P & M -Xylene N	ЛS	32.0J	1832	108	(80-125)			1668	ug/Kg 05/15/2012
ſ	ИSD		1924	114		5	(< 20)	1668	ug/Kg 05/15/2012
Foluene N	ЛS	22.3	921	108	(70-125)			833	ug/Kg 05/15/2012
Ν	ASD		946	111		3	(<20)	833	ug/Kg 05/15/2012
Surrogates									
I,4-Difluorobenzene <surr></surr>	ЛS		828	99	(72-119)				05/15/2012
l D	ASD		822	99		1			05/15/2012

BatchVFC10972MethodSW8021BInstrumentAgilent 7890 PID/FID

Cuent.     City of Undick Brite     Best Action     Sisterent Action	7		υ	HAIN	DF CU	TOD	Y RE	CORD			<ul> <li>Alaska</li> <li>New Jersey</li> <li>North Carolina</li> <li>West Virginia</li> </ul>		
Exolating Lack Exp Rupering     Exolating     Ex	CLIENT: C	ity of Unaleska	PORT OF DU	tch H	arbor	SGS	Referenc	;# Ð	16			bage	1 of 3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PROJECT A	Vag Lake/East Bint	RoJECT/ WSID/ ERMIT# :	1-195	YOU	# (	SAMPLE TYPE	Preservatives Used Analveis	MGOH A	IR NA			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	REPORTS TO	Robert Lund =	MAIL: rlundo	ci. uncle	ckacku	DOZH	Comp G=	Required	2120	1018	///	//	///
RESErved         Swort         Research         <	invoice to:	t to	иоте #. <b>10/9</b>	k		- < - z 1	GRAB MI= Multi	X3/EI	14 000	15-5-41	//	//	//
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	RESERVED for lab use	SAMPLE IDENTIFICATION	I DATE	TIME	MATRIX/ MATRIX CODE	ш ec o	Incremental Samples	and a	Toto	SHY	//	//	/ / REMAR
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	DA-6	th-ooto-ma	050/12	0001	2	N	v	27	X				1001
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	2A-0	DU-0450-4	211050	1115	3	3	0	X	X				2 0
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	3- 4 C	DW-1+00-4	050/12	10201	5	N	9	X	X				200
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	9-P	DW-1+50-4	05011	0011	S	a	0	××	×				50
$M \cdot B$ $DU - 3t + 50 - 4$ $SO(1)$ $WO$ $S$ $2$ $C$ $X$ $X$ $X$ $M \cdot B$ $DU - 3t + 50 - 4$ $SO(1)$ $1330$ $S$ $2$ $C$ $X$ $X$ $X$ $M \cdot B$ $DU - 3t + 50 - 4$ $SO(1)$ $1330$ $S$ $2$ $C$ $X$ $X$ $X$ $M \cdot B$ $DU - 4t + 00 - 4$ $SO(1)$ $1330$ $S$ $2$ $C$ $X$ $X$ $X$ $M \cdot B$ $DU - 7 - 01$ $SO(1)$ $Dg B$ $Received B_1$ $Z$ $C$ $X$ $X$ $X$ $Z$ $OolectedRelinquished B_1(1)$ $Dg B$ $Bg P$ $Z$ $C$ $X$ $X$ $X$ $X$ $Z$ $D$ $OolectedRelinquished B_1(1)$ $Dg B$ $Received B_1$ $Z$ $C$ $X$ $X$ $X$ $X$ $Z$ $D$ </td <td>9-4C</td> <td>DW-2400-4</td> <td>050/12</td> <td>1145</td> <td>5</td> <td>N</td> <td>10</td> <td>×</td> <td>×</td> <td></td> <td></td> <td>F</td> <td></td>	9-4C	DW-2400-4	050/12	1145	5	N	10	×	×			F	
M+B       UU - 3+00 - 4 $650/12$ $0720$ $5$ $2$ $\infty$ $x$	8-H	DW-2450-4	020112	1400	5	Ч	0	X					sc
M-B       DU - 3450-4       OSO(12)       1330       5       2       6       X       X       X       N         M-B       DU - 4+00-4       050812       1/30       5       2       6       X       X       X       N         M-B       DU - 01       050112       -       5       2       6       X       X       X       N         Ollocted/Relinquished By:(1)       Date       Time       Received By: $2a_{12} - 5$ 2       6       X       X       X       N	DA-8	VW-3+00-4	050112	0230	S	N	0	X	X				i e
A-6 $DU-T+DO-4$ $OSOBILI/3OS2CXXXA-8DUP-OIOSOPIL2CSOPIL2CSXXXXCollected/Relinquished By:(1)OSOP1L2OSOPIL2CSZCXXXCollected/Relinquished By:(2)OSOP1L2OSOP1L2CSZCXXXCollected/Relinquished By:(2)DateIimeReceived By:ZCZXXDateAfsSRach2 BsCelinquished By:(2)DateIimeReceived By:ZCZXXXZDateAfsSRach2 BsCelinquished By:(3)DateIimeReceived By:ZZZ$	8-V	DW-3+50-4	211050	1330	5	N	0	×					4.0
Det DUP-OI $\Im OUP-OI$ $\Im OUP-OI$ $\Im OUP-OI$ $\Im OII$ Time       Received By: $Z_{add}$ $Z$	A-8	DW-4+00-4	218050	1130	5	2	0	X					0.0
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Requested By: (2)     Date     Time     Received By:       Relinquished By: (3)     Date     Time     Received By:       Relinquished By: (3)     Date     Time     Received By:       Relinquished By: (4)     Date     Time     Received By:       Relinquished By: (4)     Date     Time     Received By:       Relinquished By: (4)     Date     Time     Received By:	Robein	rquished By:(1) Date	112 Time	Received I	BY. Peru	1-V	Carl C	DOD Projec Cooler ID	t? YES	2	Data De A/SS	sliverable Requir	DF KMK
Relinquished By: (3)     Date     Time     Received By:       Relinquished By: (4)     Date     Time     Received By:       Relinquished By: (4)     Date     Time     Received Portaborg	Relinquished	3y: (2) Date	time	Received (	By:	11		Requested	Turnarou	nd Time an	1-or Special Instru	uctions:	4.4
telinquished By: (4) Date Time Received Pol Laboratory By: (4) Temperature Blank °C: 0. 5°#// Chain o	Relinquished E	ly: (3) Date	Time	Received E	3y:	$ \rangle$	1	570	1×1	Sam	hydroca	rbong (a	sed)
DI9/12 1615 LAN 1/ Caracter Briter 1 (See attracted Sample Print 1 (NTACT	Relinquished E	y: (4) Date	12 1615	Referred	D Laborato	D		Temperatur	re Blank °	c: 0.6	11	Chain of Cust	ody Seal: (Circle)

CUENT: City of Uncleska Pertof     Sof Reference       CUENT: City of Uncleska Pertof     FIONE NO: GPT-581-/240       SONTACT: Robbert Lund     FIONE NO: GPT-581-/240       ENDERIT Lund     FIONE NO: GPT-581-/240       REPOLIT Lund     FIONE NO: GPT-581-/240       NAME EST Rund State Lund     FIONE NO: GPT-581-/240       NOUCE TO: CITY Colspan="2">NOUCE NO: GPT-581-/240       CITY Colspan="2">NOUCE NO: GPT-581-/240       NOUCE TO: CITY Colspan="2">NOUCE NO: GPT-581-/240       CITY Colspan= TIME FORMANCE       NOUCE TO: CITY Colspan="2">NOUTE #: INTGO S       NOUTE #: INTGO S       ANAPLE IDENTIFICATION       DATE       ANAPLE IDENTIFICATION       NAPLE IDENTIFICATION       NAPLE IDENTIFICATION       ANAPLE IDENTIFICATION       ANAPLE IDENTIFICATION       ANAPLE IDENTIFICATION       ANAPLE IDENTIFICATION       ANAPLE IDENTIFICATION       ANAPLE ED-24LO-2       ANAPLE ED-24LO-2 </th <th>M</th> <th>ia WW.US.I</th>	M	ia WW.US.I
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lindwished By: (4) Date Time Received By: (4)	Temperature Blank "C. O. C" #//	Chain of Custody Seal: (Circle)
Stalic lois the all	0.0 Mubient ] (See attached Sample Receipt Form)	CINTACH / BROKEN ABSENT

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# SGS North America Inc. CHAIN OF CUSTODY RECORD

Locations Nat • Alaska • New Jersey • North Carolina • West Virginia



CLIENT: C	ity of Unales	Ka BUNEN	tof Dur	tch Ha	rbor	SGS Refe	erence #:	page	e 3
PROJECT Z	HODERI HUND	CinferoJec	-12	- 1/2	00	# (	WPLE Used NGOH NA NA NA		
REPORTS TO:	Robert Lund	EMAIL:	rlundoc	. uncles	ka. c.k.us	o ~ e	C Required 0 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	///	//
INVOICE TO:	t	QUOTE: P.O.#.	66101 #	*		A-ZH	Me Addition of the Addition of	1///	_
RESERVED for lab use	SAMPLE IDENTIFIC	CATION	DATE	TIME	MATRIX/ MATRIX CODE	N N Sar	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	///	REMARKS/ LOC ID
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Relinquished	(By: (2)	Date	Time	Received E	3y:		Requested Turnaround Time and-or Specia	al Instructions:	the last
Relinquished	By: (3)	Date	Time	Received B	iy:	$ \land$	Std TAT. Samples a	The soil w/ P	eliopeum
(							Temperature Blank °C: A, O *# //	Chain of Circlade	Scol (Cimic)
Rehapulshed	By: (4)	Date 5/a/12	Time 1615	Repeived	or Aborato	Aller	or Ambient [ ] (See attached Sample Receipt Form)	(INTACT) 15.1 (See attached Sarr	Ken ABSENT
D 200 W. Potter Dr 5500 Business D	rive Anchorage, AK 99518 Tel: Drive Wilmington, NC 28405 Tel	(907) 562-234: 1: (910) 350-19	3 Fax: (907) 561 03 Fax: (910) 35	50/1557	1		http://www.sqs.com/terms and conditions.htm		White - Retained by I Pink - Retained by Cli
		1. 1. 1. 2. C. 8. 2. J. 1.							

요건





# SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken
Were custody seals intact? Note # & location, if applicable	Ves No N/A	IE IN Both
COC accompanied samples?	Ves No N/A	in the bond
Temperature blank compliant* (i.e. 0-6°C after correction factor)?	Wed No N/A	
* Note: Exemption permitted for chilled samples collected less than 8 hours and		
Cooler ID: 1 @ A.S <sup>e</sup> w/ Therm ID: 11		
Cooler ID: $2$ @ $2$ $0$ w/ Therm ID: $1/$		
Cooler ID:		
Cooler ID: @ w/ Therm ID:		
Cooler ID:		6
Note: If non-compliant, use form FS-0029 to document affected samples/analyses		
If samples are received without a temperature blank, the "cooler	K .	
temperature" will be documented in lieu of the temperature blank &		
"COOLER TEMP" will be noted to the right. In cases where neither a		
temp blank nor cooler temp can be obtained, note "ambient" or "chilled."	0	
If temperature(s) <0°C, were all sample containers ice free?	Yes No NA	
Delivery method (specify all that apply): Client	Note ABN/	
USPS Alert Courier Road Runner AK Air	tracking #	
Lynden Carlile ERA FenAid		
FedEx UPS NAC Other:	Gee Attached	
$\rightarrow$ For WO# with airbills, was the WO# & airbill	or N/A	
info recorded in the Front Counter eLog?	Yes No N/A	
$\rightarrow$ For samples received with payment, note amount (\$) and c	ash / check / CC (	circle one) or note:
→ For samples received in FBKS. ANCH staff will verify all criteria	are reviewed	SRE Initiated by:
Were samples received within hold time?	Ne N/A	
Note: Refer to form F-083 "Sample Guide" for hold time information.		
Do samples match COC* (i.e., sample IDs, dates/times collected)?	Yes No N/A	
* Note: Exemption permitted if times differ <1 hr; in which case, use times on COC.	No.	
Were analyses requested unambiguous?	(Yes) No N/A	
Were samples in good condition (no leaks/cracks/breakage)?	(es) No N/A	
Packing material used (specify all that apply) Bubble Wrap	100.0	
Separate plastic bags Vermiculite Other:	the second state	· · · · · · · · · · · · · · · · · · ·
Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)?	Yes No (NA)	
Were all soil VOAs field extracted with MeOH+BFB?	Tes No N/A	The state of the s
Were proper containers (type/mass/volume/preservative*) used?	Yes No N/A	Trip Blank was transported in coolar #1
* Note: Exemption permitted for waters to be analyzed for metals.		with samples 001-010, no trip blank was
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes (No) N/A	transported in cooler #2 with samples 011-022
For special handling (e.g., "MI" or foreign soils, lab filter, limited	Yes No NA	
volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?		
For preserved waters (other than VOA vials, LL-Mercury or	Yes No (NA)	
microbiological analyses), was pH verified and compliant?		
If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No MA	
For RUSH/SHORT Hold Time or site-specific OC (e.g.,	Yes No NA	
BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g.,		1
stickers) accordingly? For RUSH/SHORT HT, was email sent?		and the second
For any question answered "No." has the PM been notified and the	Yes No N/A	SRF Completed by
problem resolved (or paperwork put in their bin)?	THE TOTAL	PM =
Was PEER REVIEW of sample numbering/labeling completed?	Yes No NA	Peer Reviewed by
Additional notes (if applicable):		

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.

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NSIGNEE'S NAME AND ADDRESS	CONSIGNEE'S A	CCOUNT NUMBER	country of departure, governs and in most to cargo. Agreed stopp	the Warsaw Convention cases limits the liability o	may be applicable f carriers in respe-	and the Convention of loss or damage laces of departure and
SGS LAB	5		destination) shown under as scheduled stopping p SEE CONDITIONS ON	ar requested routing and/or places for the route. Addres REVERSE HEREOF.	those places shown s of first carrier is t	n in carriers' timetables he airport of departure
			Received in good condition a	(LOCATION)	on	Date/Time
ANTHERM	r.E		Please print your name Sionature	11045	~	
PRIORITY X	ECONOMY	DATE TIME	PHONE PERSC	11215	91	S TO CARRIER
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and with code	1000011 NO.		Domestic Liability:	If no value declared I	PEN AIR liabilit	y will not ex-
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TAX	7	C.	S R.F.C.	OTHER CHARGES AND DES	CRIPTION	
4.03		(AMOUNT TO BE ENT	ERED BY SHIPPER)			
		according to the a	(hazardous materials) such pa applicable government regular gerous Goods Regulations	art is properly described by na tions and, for international shi is agreed that the goods describ	me and is in proper of pments, the current	ine consignment contail ondition for carriage by a International Air Transpo ted in apparent coord ord
TOTAL OTHER CHARGE		and condition (exc THE SHIPPER'S may increase such	pept as noted) for carriage. SUI ATTENTION IS DRAWN OF T In limitation of liability by decla	BJECT TO THE CONDITIONS HE NOTICE CONCERNING C ring a higher value for carriage	OF CONTRACT ON ARRIERS LIMITATION and pay a supplem	THE REVERSE HEREO ON OF LIABILITY, Shipp ental charge if required
		PRINTED NAME		SIGNATURE OF SHIPPER OR HIS	AGENT AND INITIAL A	PPROPRIATE BOX BELOW
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OR CARRIERS USE ONLY AT DESTINATION	CHARGES AT DESTINATION	TOTAL COLLEC	T CHARGES			
IN DESTINATION CURRENCY)	Sec. Contraction		1. 200	0	249 4	450

FORM AC-17U UNIVERSAL UNIFORM AIRBILL PRINTED IN U.S.A. REV 07/10

No 6 CONSIGNEE MEMO

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

Project: Client: SGS Work Order: Ilulaq Lake East Point Rd DW Unalaska City-Public Works 1121608

Released by:

#### Contents:

Cover Page Case Narrative Final Report Pages Quality Control Summary Forms Chain of Custody/Sample Receipt Forms



Client Name: Unalaska City-Public Works Project Name: Ilulaq Lake East Point Rd DW Workorder No.: 1121608

# Sample Comments

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

Lab Sample ID	Sample Type	Client Sample ID
1121608003	PS	EP-6+60-4
	AK102/103 - Unknown	hydrocarbon with several peaks is present.
1121608004	PS	EP-7+10-4
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608005	PS	EP-7+60-4
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.
1121608006	PS	EP-8+10-4
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.
1121608007	PS	EP-8+60-4
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.
1121608008	PS	DUP-02
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608009	PS	DUP-03
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.
1121608010	PS	DUP-04
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.
1121608011	PS	EP-9+10-2
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608012	PS	EP-9+10-4
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608013	PS	EP-9+60-4
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608014	PS	EP-10+10-4
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.
1121608015	PS	EP-10+60-2
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608016	PS	EP-10+60-4
	AK102 - The pattern is AK103 - Unknown hyd	consistent with a weathered middle distillate. rocarbon with several peaks is present.

1121608017	PS	EP-11+10-4
	AK103 - Unknown hyd	rocarbon with several peaks is present.
1121608018	PS	EP-11+60-4
	AK102/103 - Unknown	hydrocarbon with several peaks is present.
1121608019	PS	EP-12+10-4
	AK102/103 - Unknown	hydrocarbon with several peaks is present.
1121608020	PS	EP-12+60-4
	AK102 - The pattern is AK103 - Unknown hyd	s consistent with a weathered middle distillate. Irocarbon with several peaks is present.
1121608021	PS	EP-12+97-4
	AK102 - The pattern is AK103 - Unknown hyd	s consistent with a weathered middle distillate. Irocarbon with several peaks is present.
1086246	* MS	1121591018MS
	8270D SIM - MS/MSD	recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086247	* MSD	1121591018MSD
	8270D SIM - MS/MSD	recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

\* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.



#### **Report of Manual Integrations**

Print Date: 5/29/2012 3:26 pm

Laboratory ID	Client Sample ID	Analytical Batch	<u>Method</u>	<u>Analyte</u>	Reason
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	PNF
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Chrysene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Acenaphthene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Chrysene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Phenanthrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Chrvsene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Dibenzo[a.h]anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Indeno[1 2 3-c d] pyrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591018	LABREFOC	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591018	LABREFOC	XMS6656	8270D SIMS (F	Benzolalovrene	BLC
1121591018	LABREFOC	XMS6656	8270D SIMS (F	Benzola h ilpervlene	RP
1121501018	LABREFOC	XMS6656	8270D SIMS (F	Chrysene	RP
1121608001	EP-6+10-2	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608001	EP-6+10-2	XMS6656	8270D SIMS (F	Benzolalovrene	BLC
1121608002	EP-6+10-2	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	
1121600002	ER 6+10.4	XMS6656		Benzolalovrono	
1121608002	EP 6+10 4	XMS6656	8270D SIMS (F	Benzo[b]Eluoranthono	SD SD
1121608002	EP 6+10 4	XMS6656			
1121608002	EP 6+10 4	XMS6656		Chrysono	
1121000002	EF-0+10-4	XINGOODO		Nanhthalana	
1121608002	EP-0+10-4	XIVIS0000	0270D SIMS (F		or DD
1121000003	EP-0+00-4	XIVISODOS	6270D SIMS (F	Benzo(a)Antinacene	
1121608003	EP-0+60-4	XIVIS0003	8270D SIMS (F	BenzolbjFluorantnene	52
1121608003	EP-6+60-4	XMS6663	8270D SIMS (F	Phenanthrene	RP
1121608004	EP-7+10-4	XIVIS0000	8270D SIMS (F	Benzolajpyrene	RP
1121608004	EP-7+10-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121608004	EP-7+10-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121608005	EP-7+60-4	XIVIS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	BenzolbjFluoranthene	SP
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	Chrysene	BLC
1121608006	EP-8+10-4	XMS6664	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608006	EP-8+10-4	XMS6664	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608006	EP-8+10-4	XMS6664	8270D SIMS (F	Chrysene	RP
1121608008	DUP-02	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608008	DUP-02	XMS6663	8270D SIMS (F	Naphthalene	SP
1121608008	DUP-02	XMS6663	8270D SIMS (F	Phenanthrene	RP
1121608009	DUP-03	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608009	DUP-03	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	BLC
1121608009	DUP-03	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608009	DUP-03	XMS6663	8270D SIMS (F	Chrysene	BLC

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Laboratory ID	Client Sample ID	Analytical Batch	<u>Method</u>	Analyte	Reason
1121608010	DUP-04	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608010	DUP-04	XMS6665	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608011	EP-9+10-2	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608012	EP-9+10-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121608014	EP-10+10-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608014	EP-10+10-4	XMS6665	8270D SIMS (F	Phenanthrene	RP
1121608016	EP-10+60-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608016	EP-10+60-4	XMS6665	8270D SIMS (F	Benzo[k]fluoranthene	SP
1121608016	EP-10+60-4	XMS6665	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121608017	EP-11+10-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608017	EP-11+10-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608017	EP-11+10-4	XMS6663	8270D SIMS (F	Naphthalene	SP, BLC
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Chrysene	BLC
1121608019	EP-12+10-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608019	EP-12+10-4	XMS6663	8270D SIMS (F	Chrysene	BLC
1121608019	EP-12+10-4	XMS6663	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121608020	EP-12+60-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608020	EP-12+60-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608021	EP-12+97-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608021	EP-12+97-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608021	EP-12+97-4	XMS6663	8270D SIMS (F	Chrysene	BLC

Manual Integration Reason Code Descriptions

Code Description 0 Original Chromatogram Modified Chromatogram М Skimmed surrogate SS BLG Closed baseline gap RP Reassign peak name PIR Pattern integration required Included tail IT Split peak SP RSP Removed split peak

- FPS Forced peak start/stop
- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.



# Laboratory Analytical Report

Client: Unalaska City-Public Works P.O. Box 610 Unalaska, AK 99685

> Attn: Robert Lund T: 907-581-1260 F: rlund@ci.unalaska.ak.us

Project: Ilulag Lake East Point Rd DW

Workorder No.: 1121608

#### Certification:

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

Forest Taylor

Forest.Taylor@sgs.com Project Manager

#### Contents (Bookmarked in PDF):

Cover Page Glossary Sample Summary Forms Case Narrative Sample Results Forms Batch Summary Forms (by method) Quality Control Summary Forms (by method) Chain of Custody/Sample Receipt Forms Attachments (if applicable)





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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the

provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

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

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



# SAMPLE SUMMARY

Print Date: 5/29/2012 3:2f pm

Client Name: Unalaska City-Public Works Project Name: Ilulaq Lake East Point Rd DW Workorder No.: 1121608

# Analytical Methods

Method Description	Analytical Method
8270 PAH SIM Semi-Volatiles GC/MS	8270D SIMS (PAH)
AK101/8021 Combo. (S)	AK101
AK101/8021 Combo. (S)	SW8021B
Diesel/Residual Range Organics	AK102
Diesel/Residual Range Organics	AK103
Percent Solids SM2540G	SM21 2540G

# Sample ID Cross Reterence

Lab Sample ID	Client Sample ID
1121f 08001	EP-f 610-2
1121f 08002	EP-f 610-4
1121f 08003	EP-f 6f 0-4
1121f 08004	EP-7610-4
1121f 08005	EP-76f 0-4
1121f 0800f	EP-8610-4
1121f 08007	EP-86f 0-4
1121f 08008	DUP-02
1121f 08009	DUP-03
1121f 08010	DUP-04
1121f 08011	EP-9610-2
1121f 08012	EP-9610-4
1121f 08013	EP-96f 0-4
1121f 08014	EP-10610-4
1121f 08015	EP-106f 0-2
1121f 0801f	EP-106f 0-4
1121f 08017	EP-11610-4
1121f 08018	EP-116f 0-4
1121f 08019	EP-12610-4
1121f 08020	EP-126f 0-4
1121f 08021	EP-12697-4
1121f 08022	TB-02



Client Sample ID: EP-6+10-4			
SGS Ref. #: 1121608002	Parameter	Result	<u>Units</u>
Polynuclear Aromatics GC/MS			
	Naphthalene	11.9	ug/Kg
	2-Methylnaphthalene	10.3	ug/Kg
	1-Methylnaphthalene	26.7	ug/Kg
	Phenanthrene	13.7	ug/Kg
	Fluoranthene	14.7	ug/Kg
	Pyrene	11.0	ug/Kg
	Benzo[b]Fluoranthene	8.29	ug/Kg
Client Sample ID: EP-6+60-4			
SGS Ref. #: 1121608003	Parameter	Result	Units
Semivolatile Organic Fuels Dep	partment	Hoodit	<u>onico</u>
	Diesel Range Organics	26.0	ma/Ka
	Residual Range Organics	105	mg/Kg
Polynuclear Aromatics GC/MS			
	Fluoranthene	49.9	ug/Kg
	Pyrene	52.7	ug/Kg
	Benzo(a)Anthracene	38.4	ug/Kg
	Chrysene	38.0	ug/Kg
	Benzo[b]Fluoranthene	58.7	ug/Kg
	Benzo[a]pyrene	42.2	ug/Kg
	Benzo[g,h,i]perylene	39.2	ug/Kg
Client Sample ID: EP-7+10-4			
SGS Ref. #: 1121608004	Parameter	Result	Units
Semivolatile Organic Fuels Dep	partment	<u></u>	<u></u>
	Residual Range Organics	38.2	mg/Kg



Client Sample ID: EP-7+60-4			
SGS Ref. #: 1121608005	Parameter_	Result	<u>Units</u>
Semivolatile Organic Fuels Departn	nent		
	Diesel Range Organics	29.0	mg/Kg
	Residual Range Organics	96.7	mg/Kg
Polynuclear Aromatics GC/MS			
	2-Methylnanhthalene	8 94	ua/Ka
	1-Methylnaphthalene	6.77	ua/Ka
	Phenanthrene	36.9	ug/Kg
	Anthracene	6 68	ua/Ka
	Fluoranthene	40.3	ua/Ka
	Pyrene	37.3	ua/Ka
	Benzo(a)Anthracene	23.3	ua/Ka
	Chrysene	18.3	ug/Kg
	Benzo[b]Fluoranthene	29.6	ug/Kg
	Benzo[k]fluoranthene	6.47	ug/Kg
	Benzo[a]pyrene	21.5	ug/Kg
	Indeno[1,2,3-c,d] pyrene	11.1	ug/Kg
	Benzo[g,h,i]perylene	12.7	ug/Kg
Client Sample ID: <b>FP.8+10-4</b>			
SGS Ref #: 1121608006	Parameter	Popult	Unite
Semivolatile Organic Fuels Departm	nent	Kesuit	onns
	Diesel Range Organics	20.4	ma/Ka
	Residual Range Organics	130	mg/Kg
	Residual Range Organios	100	iiig/ikg
Polynuclear Aromatics GC/MS			
	Fluoranthene	27.4	ug/Kg
	Pyrene	27.5	ug/Kg
	Benzo[g,h,i]perylene	29.9	ug/Kg
Client Sample ID: EP-8+60-4			
SGS Ref. #: 1121608007	Parameter	Result	Units
Semivolatile Organic Fuels Departn	nent	<u></u>	<u></u>
C III	Diesel Range Organics	171	ma/Ka
	Residual Range Organics	68.8	mg/Kg
	5 0		0 0



Client Sample ID: DUP-02			
SGS Ref. #: 1121608008	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Residual Range Organics	51.6	mg/Kg
Polynuclear Aromatics GC/MS			
	Naphthalene	14.2	ug/Kg
	2-Methylnaphthalene	11.3	ug/Kg
	1-Methylnaphthalene	31.7	ug/Kg
Client Sample ID: DUP-03			
SGS Ref. #: 1121608009	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	26.7	mg/Kg
	Residual Range Organics	100	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	12.8	ug/Kg
	Fluoranthene	34.3	ug/Kg
	Pyrene	30.8	ug/Kg
	Benzo(a)Anthracene	26.7	ug/Kg
	Chrysene	20.3	ug/Kg
	Benzo[b]Fluoranthene	39.7	ug/Kg
	Benzo[k]fluoranthene	10.9	ug/Kg
	Benzo[a]pyrene	25.6	ug/Kg
	Indeno[1,2,3-c,d] pyrene	14.6	ug/Kg
	Benzo[g,h,i]perylene	16.1	ug/Kg



Client Sample ID: DUP-04			
SGS Ref. #: 1121608010	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	32.7	mg/Kg
	Residual Range Organics	103	mg/Kg
Polynuclear Aromatics GC/MS			
	Acenaphthene	8.73	ug/Kg
	Fluorene	8.70	ug/Kg
	Phenanthrene	94.6	ug/Kg
	Anthracene	28.6	ug/Kg
	Fluoranthene	209	ug/Kg
	Pyrene	165	ug/Kg
	Benzo(a)Anthracene	90.9	ug/Kg
	Chrysene	79.8	ug/Kg
	Benzo[b]Fluoranthene	115	ug/Kg
	Benzo[k]fluoranthene	31.3	ug/Kg
	Benzo[a]pyrene	75.7	ug/Kg
	Indeno[1,2,3-c,d] pyrene	46.0	ug/Kg
	Dibenzo[a,h]anthracene	12.2	ug/Kg
	Benzo[g,h,i]perylene	47.4	ug/Kg
Client Sample ID: EP-9+10-2			
SGS Ref. #: 1121608011	Parameter	Result	Units
Semivolatile Organic Fuels Department	<u>r drameter</u>	Hooun	
	Residual Range Organics	57.1	mg/Kg
Client Sample ID: EP-9+10-4			
SGS Ref. #: 1121608012	Parameter	Result	Units
Semivolatile Organic Fuels Department			
	Residual Range Organics	48.7	mg/Kg



Client Sample ID: EP-9+60-4			
SGS Ref. #: 1121608013	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Residual Range Organics	58.8	mg/Kg
Polynuclear Aromatics GC/MS			
	Fluoranthene	12.0	ug/Kg
	Pyrene	11.7	ug/Kg
	Benzo(a)Anthracene	6.10	ug/Kg
	Chrysene	6.61	ug/Kg
	Benzo[b]Fluoranthene	9.79	ug/Kg
	Benzo[a]pyrene	8.47	ug/Kg
	Benzo[g,h,i]perylene	7.41	ug/Kg
Client Sample ID: EP-10+10-4			
SGS Ref. #: 1121608014	Parameter	Result	Units
Semivolatile Organic Fuels Department			
	Diesel Range Organics	42.3	mg/Kg
	Residual Range Organics	87.1	mg/Kg
Polynuclear Aromatics GC/MS			
	Fluoranthene	6.35	ug/Kg
	Pyrene	6.11	ug/Kg
Client Sample ID: EP-10+60-2			
SGS Ref. #: 1121608015	Parameter	Result	Units
Semivolatile Organic Fuels Department	<u>· · · · · · · · · · · · · · · · · · · </u>		<u></u>
	Residual Range Organics	57.1	mg/Kg



Client Sample ID: EP-10+60-4			
SGS Ref. #: 1121608016	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	101	mg/Kg
	Residual Range Organics	148	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	9.27	ug/Kg
	Fluoranthene	30.7	ug/Kg
	Pyrene	28.5	ug/Kg
	Benzo(a)Anthracene	20.2	ug/Kg
	Chrysene	19.2	ug/Kg
	Benzo[b]Fluoranthene	25.2	ug/Kg
	Benzo[k]fluoranthene	6.98	ug/Kg
	Benzo[a]pyrene	16.9	ug/Kg
	Indeno[1,2,3-c,d] pyrene	10.3	ug/Kg
	Benzo[g,h,i]perylene	13.4	ug/Kg
Client Sample ID: ED-11+10-4			
SGS Dof #: 1121608017	Devenueter	Desult	11-14-
Somivolatilo Organic Euole Department	Parameter	Result	Units
Semivolatile Organic i dels Department	Desidual Dance Ormanice	20.4	
	Residual Range Organics	30.1	ilig/kg
Client Sample ID: EP-11+60-4			
SGS Ref. #: 1121608018	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department	:		
	Diesel Range Organics	26.2	mg/Kg
	Residual Range Organics	91.1	mg/Kg
Polynuclear Aromatics CC/MS			
r olyndelear Aromatics Comio	Phenanthrene	18.0	ua/Ka
	Anthracono	6.07	ug/Kg
	Flueranthana	0.07 54 4	ug/Kg
	Purcho	04.4 40.1	ug/Kg
		40.1	ug/Kg
	Benzo(a)Anthracene	45.0	ug/Kg
		31.8	ug/Kg
		58.1	ug/Kg
	Benzolkilinovantuene	12.9	ug/Kg
	Benzola]bhrene	37.2	ug/Kg
	Indeno[1,2,3-c,d] pyrene	20.0	ug/Kg
	Dibenzo[a,h]anthracene	6.25	ug/Kg
	Benzo[g,h,i]perylene	20.9	ug/Kg



Client Sample ID: EP-12+10-4			
SGS Ref. #: 1121608019	Parameter	Result	<u>Units</u>
Semivolatile Organic Fuels Depart	ment		
	Diesel Range Organics	44.1	mg/Kg
	Residual Range Organics	236	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	16.4	ug/Kg
	Fluoranthene	20.9	ug/Kg
	Pyrene	18.7	ug/Kg
	Benzo(a)Anthracene	16.3	ug/Kg
	Chrysene	15.9	ug/Kg
	Benzo[b]Fluoranthene	24.9	ug/Kg
	Benzo[a]pyrene	16.8	ug/Kg
	Indeno[1,2,3-c,d] pyrene	8.65	ug/Kg
	Benzo[g,h,i]perylene	10.5	ug/Kg
Client Sample ID: EP-12+60-4			
SGS Ref. #: 1121608020	Parameter_	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Depart	ment		
	Diesel Range Organics	34.9	mg/Kg
	Residual Range Organics	97.3	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	15.4	ua/Ka
	Fluoranthene	33.8	ug/Kg
		20.0	ug/Kg
	Benzo(a)Anthracene	29.9	ug/Kg
		10.2	ug/Kg
	Bonzo[h]Eluoranthono	19.2	ug/Kg
	Benzo[k]fluoranthene	91.2 8.05	ug/Kg
		0.00	ug/Kg
	Indeno[1,2,3-c,d] pyropo	20.0	ug/Kg
	Benzola h ilnervleno	14.0	ug/Kg
	Benzolg,n,ijperviene	15.6	ug/Kg



Client Sample ID: EP-12+97-4			
SGS Ref. #: 1121608021	Parameter	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	33.0	mg/Kg
	Residual Range Organics	113	mg/Kg
Polynuclear Aromatics GC/MS			
	Acenaphthene	7.61	ug/Kg
	Fluorene	8.78	ug/Kg
	Phenanthrene	114	ug/Kg
	Anthracene	35.0	ug/Kg
	Fluoranthene	233	ug/Kg
	Pyrene	140	ug/Kg
	Benzo(a)Anthracene	119	ug/Kg
	Chrysene	97.1	ug/Kg
	Benzo[b]Fluoranthene	132	ug/Kg
	Benzo[k]fluoranthene	35.7	ug/Kg
	Benzo[a]pyrene	86.2	ug/Kg
	Indeno[1,2,3-c,d] pyrene	44.2	ug/Kg
	Dibenzo[a,h]anthracene	11.8	ug/Kg
	Benzo[g,h,i]perylene	47.1	ug/Kg



Prep

Analytical

Client Sample ID: **EP-6+10-2** SGS Ref. #: 1121608001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40 Receipt Date/Time: 05/10/12 16:20

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	61.9 U	61.9	ug/Kg	1	VFC10974	VXX23479	9
Ethylbenzene	124 U	124	ug/Kg	1	VFC10974	VXX23479	9
Gasoline Range Organics	12.4 U	12.4	mg/Kg	1	VFC10974	VXX23479	9
o-Xylene	124 U	124	ug/Kg	1	VFC10974	VXX23479	9
P & M -Xylene	248 U	248	ug/Kg	1	VFC10974	VXX23479	9
Toluene	124 U	124	ug/Kg	1	VFC10974	VXX23479	9
1,4-Difluorobenzene <surr></surr>	97.9	72-119	%	1	VFC10974	VXX23479	9
4-Bromofluorobenzene <surr></surr>	95.9	50-150	%	1	VFC10974	VXX23479	9
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 26.	.633 g
Analytical Method: AK101		Prep Method: SW503	35A		Prep Extrac	t Vol.: 36.78	323 mL
Analysis Date/Time: 05/15/12 18:21		Prep Date/Time: 05/0	04/12 09:40		Container ID:1121608001-B		
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 26.	.633 g
Analytical Method: SW8021B		Prep Method: SW503	35A		Prep Extrac	t Vol.: 36.78	323 mL
Analysis Date/Time: 05/15/12 18:21		Prep Date/Time: 05/0	04/12 09:40		Container I	D:11216080	01-B
Dilution Factor: 1					Analyst: EA	B	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-6+10-2** SGS Ref. #: 1121608001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40 Receipt Date/Time: 05/10/12 16:20

#### Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	35.8 U	35.8	mg/Kg	1	XFC10365	XXX2683	7
Residual Range Organics	35.8 U	35.8	mg/Kg	1	XFC10365	XXX2683	7
5a Androstane <surr></surr>	69.7	50-150	%	1	XFC10365	XXX2683	7
n-Triacontane-d62 <surr></surr>	64.7	50-150	%	1	XFC10365	XXX2683	7
Batch Information							
Analytical Batch: XFC10365	Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.045 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 09:21		Prep Date/Time: 05/14/12 15:00			Container ID:1121608001-A		
Dilution Factor: 1					Analyst: M	CM	
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep Wt./Vol.: 30.045 g		
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 09:21		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608001-A		
Dilution Factor: 1					Analyst: M	СМ	



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Analytical Prep

Client Sample ID: **EP-6+10-2** SGS Ref. #: 1121608001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40 Receipt Date/Time: 05/10/12 16:20

# Polynuclear Aromatics GC/MS

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
2-Methylnaphthalene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Acenaphthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Acenaphthylene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Anthracene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Benzo(a)Anthracene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Benzo[a]pyrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[b]Fluoranthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Benzo[g,h,i]perylene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[k]fluoranthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Chrysene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Dibenzo[a,h]anthracene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Fluoranthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Fluorene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Indeno[1,2,3-c,d] pyrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Naphthalene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Phenanthrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
Pyrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	)
2-Fluorobiphenyl <surr></surr>	79.9	45-105	%	1	XMS6656	XXX26839	)
Terphenyl-d14 <surr></surr>	110	30-125	%	1	XMS6656	XXX26839	)
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.8	322 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 20:27		Prep Date/Time: 05	/14/12 15:00		Container I	D:112160800	01-A
Dilution Factor: 1					Analyst: R	rs	



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Client Sample ID: EP-6+10-2
SGS Ref. #: 1121608001
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40 Receipt Date/Time: 05/10/12 16:20

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	55.8		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160800	1-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Analytical Prep

Client Sample ID: **EP-6+10-4** SGS Ref. #: 1121608002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30 Receipt Date/Time: 05/10/12 16:20

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	52.9 U	52.9	ug/Kg	1	VFC10974	VXX23479	9
Ethylbenzene	106 U	106	ug/Kg	1	VFC10974	VXX23479	9
Gasoline Range Organics	10.6 U	10.6	mg/Kg	1	VFC10974	VXX23479	9
o-Xylene	106 U	106	ug/Kg	1	VFC10974	VXX23479	9
P & M -Xylene	212 U	212	ug/Kg	1	VFC10974	VXX23479	9
Toluene	106 U	106	ug/Kg	1	VFC10974	VXX23479	9
1,4-Difluorobenzene <surr></surr>	98	72-119	%	1	VFC10974	VXX23479	9
4-Bromofluorobenzene <surr></surr>	109	50-150	%	1	VFC10974	VXX23479	9
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	479		Initial Prep	Wt./Vol.: 26.	.164 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extract Vol.: 34.7436 mL		
Analysis Date/Time: 05/15/12 17:26		Prep Date/Time: 05/	04/12 09:30		Container I	D:11216080	02-B
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10974		Prep Batch: VXX234	179		Initial Prep	Wt./Vol.: 26.	.164 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 34.74	136 mL
Analysis Date/Time: 05/15/12 17:26		Prep Date/Time: 05/	04/12 09:30		Container I	D:11216080	02-B
Dilution Factor: 1					Analyst: EA	λB	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-6+10-4** SGS Ref. #: 1121608002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30 Receipt Date/Time: 05/10/12 16:20

## Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	31.7 U	31.7	mg/Kg	1	XFC10365	XXX2683	7	
Residual Range Organics	31.7 U	31.7	mg/Kg	1	XFC10365	XXX2683	7	
5a Androstane <surr></surr>	82.5	50-150	%	1	XFC10365	XXX2683	7	
n-Triacontane-d62 <surr></surr>	79	50-150	%	1	XFC10365	XXX2683	7	
Batch Information								
Analytical Batch: XFC10365		Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.113 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 07:52		Prep Date/Time: 05/14/12 15:00			Container ID:1121608002-A			
Dilution Factor: 1					Analyst: MCM			
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Nt./Vol.: 30.	113 g	
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 07:52		Prep Date/Time: 05	5/14/12 15:00		Container ID:1121608002-A			
Dilution Factor: 1					Analyst: M	CM		



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Analytical Prep

Client Sample ID: **EP-6+10-4** SGS Ref. #: 1121608002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30 Receipt Date/Time: 05/10/12 16:20

## Polynuclear Aromatics GC/MS

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>	
1-Methylnaphthalene	26.7	7.84	ug/Kg	1	XMS6656	XXX26839	)	
2-Methylnaphthalene	10.3	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Acenaphthene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	)	
Acenaphthylene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	)	
Anthracene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Benzo(a)Anthracene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	)	
Benzo[a]pyrene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Benzo[b]Fluoranthene	8.29	7.84	ug/Kg	1	XMS6656	XXX26839	)	
Benzo[g,h,i]perylene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Benzo[k]fluoranthene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Chrysene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Dibenzo[a,h]anthracene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Fluoranthene	14.7	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Fluorene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Indeno[1,2,3-c,d] pyrene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Naphthalene	11.9	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Phenanthrene	13.7	7.84	ug/Kg	1	XMS6656	XXX26839	9	
Pyrene	11.0	7.84	ug/Kg	1	XMS6656	XXX26839	9	
2-Fluorobiphenyl <surr></surr>	72.8	45-105	%	1	XMS6656	XXX26839	9	
Terphenyl-d14 <surr></surr>	103	30-125	%	1	XMS6656	XXX26839	9	
Batch Information								
Analytical Batch: XMS6656		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	863 g	
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL		
Analysis Date/Time: 05/15/12 20:46		Prep Date/Time: 05	/14/12 15:00		Container I	Container ID:1121608002-A		
Dilution Factor: 1					Analyst: R	rs		



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Client Sample ID: EP-6+10-4
SGS Ref. #: 1121608002
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30 Receipt Date/Time: 05/10/12 16:20

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	62.8		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160800	2-A
Dilution Factor: 1					Analyst: CDI	=	



Prep

Analytical

# Client Sample ID: **EP-6+60-4** SGS Ref. #: 1121608003 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.8

Collection Date/Time: 05/04/12 10:00 Receipt Date/Time: 05/10/12 16:20

# Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>	
Benzene	31.6 U	31.6	ug/Kg	1	VFC10974	VXX23479	)	
Ethylbenzene	63.2 U	63.2	ug/Kg	1	VFC10974	VXX23479	)	
Gasoline Range Organics	6.32 U	6.32	mg/Kg	1	VFC10974	VXX23479	)	
o-Xylene	63.2 U	63.2	ug/Kg	1	VFC10974	VXX23479	)	
P & M -Xylene	126 U	126	ug/Kg	1	VFC10974	VXX23479	)	
Toluene	63.2 U	63.2	ug/Kg	1	VFC10974	VXX23479	)	
1,4-Difluorobenzene <surr></surr>	97.6	72-119	%	1	VFC10974	VXX23479	)	
4-Bromofluorobenzene <surr></surr>	96.1	50-150	%	1	VFC10974	VXX23479	)	
Batch Information								
Analytical Batch: VFC10974		Prep Batch: VXX234	479		Initial Prep	Wt./Vol.: 26.	52 g	
Analytical Method: AK101		Prep Method: SW50	)35A		Prep Extrac	Prep Extract Vol.: 28.7586 mL		
Analysis Date/Time: 05/15/12 18:39		Prep Date/Time: 05/	/04/12 10:00		Container ID:1121608003-B			
Dilution Factor: 1					Analyst: EA	٨B		
Analytical Batch: VFC10974		Prep Batch: VXX234	479		Initial Prep	Wt./Vol.: 26.	52 g	
Analytical Method: SW8021B		Prep Method: SW50	)35A		Prep Extrac	ct Vol.: 28.75	86 mL	
Analysis Date/Time: 05/15/12 18:39		Prep Date/Time: 05/	/04/12 10:00		Container I	D:112160800	03-В	
Dilution Factor: 1					Analyst: EA	٨B		



Analytical Prep

Client Sample ID: **EP-6+60-4** SGS Ref. #: 1121608003 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.8

Collection Date/Time: 05/04/12 10:00 Receipt Date/Time: 05/10/12 16:20

#### Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>		
Diesel Range Organics	26.0	23.0	mg/Kg	1	XFC10365	XXX26837	7		
Residual Range Organics	105	23.0	mg/Kg	1	XFC10365	XXX26837	7		
5a Androstane <surr></surr>	82.3	50-150	%	1	XFC10365	XXX26837	7		
n-Triacontane-d62 <surr></surr>	81.8	50-150	%	1	XFC10365	XXX26837	7		
Batch Information									
Analytical Batch: XFC10365	Prep Batch: XXX26837			Initial Prep Wt./Vol.: 30.349 g					
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL				
Analysis Date/Time: 05/16/12 08:13		Prep Date/Time: 05/14/12 15:00			Container ID:1121608003-A				
Dilution Factor: 1					Analyst: MCM				
Analytical Batch: XFC10365		Prep Batch: XXX26	837		Initial Prep	Wt./Vol.: 30.	349 g		
Analytical Method: AK103	nalytical Method: AK103			Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 08:13	alysis Date/Time: 05/16/12 08:13		Prep Date/Time: 05/14/12 15:00			Container ID:1121608003-A			
Dilution Factor: 1					Analyst: M0	CM			



Print Date: 5/29/2012 3:26 pm

Analytical Prep

# Client Sample ID: EP-6+60-4 SGS Ref. #: 1121608003 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Percent Solids: 85.8

# Collection Date/Time: 05/04/12 10:00 Receipt Date/Time: 05/10/12 16:20

# **Polynuclear Aromatics GC/MS**

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
2-Methylnaphthalene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Acenaphthylene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Anthracene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Benzo(a)Anthracene	38.4	28.4	ug/Kg	5	XMS6663	XXX26839	9
Benzo[a]pyrene	42.2	28.4	ug/Kg	5	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	58.7	28.4	ug/Kg	5	XMS6663	XXX26839	9
Benzo[g,h,i]perylene	39.2	28.4	ug/Kg	5	XMS6663	XXX26839	9
Benzo[k]fluoranthene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Chrysene	38.0	28.4	ug/Kg	5	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Fluoranthene	49.9	28.4	ug/Kg	5	XMS6663	XXX26839	9
Fluorene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Naphthalene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Phenanthrene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	9
Pyrene	52.7	28.4	ug/Kg	5	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	78.8	45-105	%	5	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	116	30-125	%	5	XMS6663	XXX26839	Э
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26839		Initial Prep Wt./Vol.: 23.097 g			
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 21:10		Prep Date/Time: 05/14/12 15:00		Container ID:1121608003-A			
Dilution Factor: 5					Analyst: R	rs	



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<u>Prep</u>

Analytical

Client Sample ID: EP-6+60-4			
SGS Ref. #: 1121608003			Collection Date/Time: 05/04/12 10:00
Project ID: Ilulaq Lake East Point Rd DW			Receipt Date/Time: 05/10/12 16:20
Matrix: Soil/Solid (dry weight)			
Percent Solids: 85.8			
Solids			
Parameter	<u>Result</u>	LOQ/CL	<u>Units</u> DF

Parameter_	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	Batch	<u>Qualifiers</u>
Total Solids	85.8		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625					Initial Prep	Wt./Vol.: 1	mL
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/14/12 17:00					Container	ID:1121608	003-A
Dilution Factor: 1					Analyst: C	DE	

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Analytical Prep

Client Sample ID: **EP-7+10-4** SGS Ref. #: 1121608004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30 Receipt Date/Time: 05/10/12 16:20

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	44.5 U	44.5	ug/Kg	1	VFC10974	VXX23479	9
Ethylbenzene	88.9 U	88.9	ug/Kg	1	VFC10974	VXX23479	9
Gasoline Range Organics	8.89 U	8.89	mg/Kg	1	VFC10974	VXX23479	9
o-Xylene	88.9 U	88.9	ug/Kg	1	VFC10974	VXX23479	9
P & M -Xylene	178 U	178	ug/Kg	1	VFC10974	VXX23479	9
Toluene	88.9 U	88.9	ug/Kg	1	VFC10974	VXX23479	9
1,4-Difluorobenzene <surr></surr>	98.9	72-119	%	1	VFC10974	VXX2347	9
4-Bromofluorobenzene <surr></surr>	99.5	50-150	%	1	VFC10974	VXX23479	9
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 26.	061 g
Analytical Method: AK101		Prep Batch: VXX23479 Prep Method: SW5035A		Prep Extract Vol.: 32.6841 mL			
Analysis Date/Time: 05/15/12 18:57		Prep Date/Time: 05/04/12 13:30		Container ID:1121608004-B			
Dilution Factor: 1					Analyst: EA	Ъ	
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 26.	061 g
Analytical Method: SW8021B		Prep Method: SW5035A F		Prep Extrac	Prep Extract Vol.: 32.6841 mL		
Analysis Date/Time: 05/15/12 18:57		Prep Date/Time: 05/04/12 13:30 Container		D:11216080	04-B		
Dilution Factor: 1					Analyst: EA	λB	


Analytical Prep

Client Sample ID: **EP-7+10-4** SGS Ref. #: 1121608004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	27.9 U	27.9	mg/Kg	1	XFC10371	XXX2685	2	
Residual Range Organics	38.2	27.9	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	67.2	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	75.5	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.45 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 21:22		Prep Date/Time: 05	/16/12 15:15		Container ID:1121608004-A			
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30.	45 g	
Analytical Method: AK103		Prep Method: SW38	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 21:22		Prep Date/Time: 05/16/12 15:15			Container ID:1121608004-A			
Dilution Factor: 1					Analyst: LC	E		



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Analytical Prep

Client Sample ID: **EP-7+10-4** SGS Ref. #: 1121608004 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	Batch	<u>Qualifiers</u>
1-Methylnaphthalene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
2-Methylnaphthalene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Acenaphthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Acenaphthylene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Anthracene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Benzo(a)Anthracene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Benzo[a]pyrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Benzo[b]Fluoranthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Benzo[g,h,i]perylene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Benzo[k]fluoranthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Chrysene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Dibenzo[a,h]anthracene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Fluoranthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Fluorene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Indeno[1,2,3-c,d] pyrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Naphthalene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Phenanthrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
Pyrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	)
2-Fluorobiphenyl <surr></surr>	91.2	45-105	%	1	XMS6656	XXX26839	)
Terphenyl-d14 <surr></surr>	110	30-125	%	1	XMS6656	XXX26839	)
Batch Information							
Analytical Batch: XMS6656		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 23.0	087 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/15/12 21:06		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608004-A		
Dilution Factor: 1					Analyst: R	ſS	



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Client Sample ID: EP-7+10-4
SGS Ref. #: 1121608004
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30 Receipt Date/Time: 05/10/12 16:20

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	70.5		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160800	4-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Analytical Prep

Client Sample ID: **EP-7+60-4** SGS Ref. #: 1121608005 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>	
Benzene	34.0 U	34.0	ug/Kg	1	VFC10974	VXX23479	9	
Ethylbenzene	68.0 U	68.0	ug/Kg	1	VFC10974	VXX23479	9	
Gasoline Range Organics	6.80 U	6.80	mg/Kg	1	VFC10974	VXX23479	9	
o-Xylene	68.0 U	68.0	ug/Kg	1	VFC10974	VXX23479	9	
P & M -Xylene	136 U	136	ug/Kg	1	VFC10974	VXX23479	9	
Toluene	68.0 U	68.0	ug/Kg	1	VFC10974	VXX23479	9	
1,4-Difluorobenzene <surr></surr>	98	72-119	%	1	VFC10974	VXX23479	9	
4-Bromofluorobenzene <surr></surr>	108	50-150	%	1	VFC10974	VXX23479	9	
Batch Information								
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep Wt./Vol.: 28.181 g			
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 30.65	mL	
Analysis Date/Time: 05/15/12 19:15		Prep Date/Time: 05/	04/12 14:00	14:00		D:11216080	05-B	
Dilution Factor: 1					Analyst: EA	B		
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 28.	181 g	
Analytical Method: SW8021B	V8021B Prep Method: SW5035A		35A	<b>Α</b>		Prep Extract Vol.: 30.65 mL		
Analysis Date/Time: 05/15/12 19:15		Prep Date/Time: 05/	04/12 14:00		Container I	D:11216080	05-B	
Dilution Factor: 1					Analyst: EA	B		



Analytical Prep

Client Sample ID: **EP-7+60-4** SGS Ref. #: 1121608005 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	29.0	25.0	mg/Kg	1	XFC10371	XXX2685	2	
Residual Range Organics	96.7	25.0	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	81	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	75.4	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371	Prep Batch: XXX26852			Initial Prep	Wt./Vol.: 30	.032 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 21:32		Prep Date/Time: 05	6/16/12 15:15		Container ID:1121608005-A			
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep	Wt./Vol.: 30	.032 g	
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 21:32		Prep Date/Time: 05/16/12 15:15			Container ID:1121608005-A			
Dilution Factor: 1					Analyst: LC	E		



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Analytical Prep

# Client Sample ID: **EP-7+60-4** SGS Ref. #: 1121608005 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.77	6.21	ug/Kg	1	XMS6663	XXX2683	9
2-Methylnaphthalene	8.94	6.21	ug/Kg	1	XMS6663	XXX2683	9
Acenaphthene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX2683	9
Acenaphthylene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX2683	9
Anthracene	6.68	6.21	ug/Kg	1	XMS6663	XXX2683	9
Benzo(a)Anthracene	23.3	6.21	ug/Kg	1	XMS6663	XXX2683	9
Benzo[a]pyrene	21.5	6.21	ug/Kg	1	XMS6663	XXX2683	9
Benzo[b]Fluoranthene	29.6	6.21	ug/Kg	1	XMS6663	XXX2683	9
Benzo[g,h,i]perylene	12.7	6.21	ug/Kg	1	XMS6663	XXX2683	9
Benzo[k]fluoranthene	6.47	6.21	ug/Kg	1	XMS6663	XXX2683	9
Chrysene	18.3	6.21	ug/Kg	1	XMS6663	XXX2683	9
Dibenzo[a,h]anthracene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX2683	9
Fluoranthene	40.3	6.21	ug/Kg	1	XMS6663	XXX2683	9
Fluorene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX2683	9
Indeno[1,2,3-c,d] pyrene	11.1	6.21	ug/Kg	1	XMS6663	XXX2683	9
Naphthalene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX2683	9
Phenanthrene	36.9	6.21	ug/Kg	1	XMS6663	XXX2683	9
Pyrene	37.3	6.21	ug/Kg	1	XMS6663	XXX2683	9
2-Fluorobiphenyl <surr></surr>	83.7	45-105	%	1	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	103	30-125	%	1	XMS6663	XXX26839	9
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	643 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 17:50		Prep Date/Time: 05	5/14/12 15:00		Container ID:1121608005-A		
					Analyst: R	13	



Dilution Factor: 1

# Unalaska City-Public Works

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Analyst: CDE

**Qualifiers** 

Client Sample ID: EP-7+60-4								
SGS Ref. #: 1121608005			Collection	Date/Time: 0	)5/04/12 14	:00		
Project ID: Ilulaq Lake East Point Rd DW			Receipt D	ate/Time: 05/	10/12 16:2	0		
Matrix: Soil/Solid (dry weight)								
Percent Solids: 80.0								
Solids								
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> Batch	Qu
Total Solids	80.0			%	1	SPT8625		
Batch Information								
Analytical Batch: SPT8625						Initial Prep	Wt./Vol.: 1	mL
Analytical Method: SM21 2540G								
Analysis Date/Time: 05/14/12 17:00						Container I	D:1121608	005-A



Analytical Prep

Client Sample ID: **EP-8+10-4** SGS Ref. #: 1121608006 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00 Receipt Date/Time: 05/10/12 16:20

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>	
Benzene	28.5 U	28.5	ug/Kg	1	VFC10974	VXX2347	79	
Ethylbenzene	57.0 U	57.0	ug/Kg	1	VFC10974	VXX2347	<b>'</b> 9	
Gasoline Range Organics	5.70 U	5.70	mg/Kg	1	VFC10974	VXX2347	<b>'</b> 9	
o-Xylene	57.0 U	57.0	ug/Kg	1	VFC10974	VXX2347	79	
P & M -Xylene	114 U	114	ug/Kg	1	VFC10974	VXX2347	79	
Toluene	57.0 U	57.0	ug/Kg	1	VFC10974	VXX2347	<b>'</b> 9	
1,4-Difluorobenzene <surr></surr>	97.4	72-119	%	1	VFC10974	VXX2347	79	
4-Bromofluorobenzene <surr></surr>	103	50-150	%	1	VFC10974	VXX2347	79	
Batch Information								
Analytical Batch: VFC10974		Prep Batch: VXX234	479		Initial Prep Wt./Vol.: 25.483 g			
Analytical Method: AK101		Prep Method: SW50	)35A		Prep Extrac	t Vol.: 26.8	848 mL	
Analysis Date/Time: 05/15/12 19:34		Prep Date/Time: 05/	/04/12 15:00		Container I	D:1121608	006-B	
Dilution Factor: 1					Analyst: EA	AB		
Analytical Batch: VFC10974		Prep Batch: VXX234	479		Initial Prep	Wt./Vol.: 25	5.483 g	
Analytical Method: SW8021B		Prep Method: SW50	)35A	iΑ		Prep Extract Vol.: 26.8848 mL		
Analysis Date/Time: 05/15/12 19:34		Prep Date/Time: 05/	/04/12 15:00	4/12 15:00 Containe			ID:1121608006-B	
Dilution Factor: 1					Analyst: EA	ΑB		



Analytical Prep

Client Sample ID: **EP-8+10-4** SGS Ref. #: 1121608006 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>
Diesel Range Organics	29.4	21.3	mg/Kg	1	XFC10371	XXX26852	2
Residual Range Organics	130	21.3	mg/Kg	1	XFC10371	XXX26852	2
5a Androstane <surr></surr>	93.1	50-150	%	1	XFC10371	XXX26852	2
n-Triacontane-d62 <surr></surr>	88.7	50-150	%	1	XFC10371	XXX26852	2
Batch Information							
Analytical Batch: XFC10371	Prep Batch: XXX26852			Initial Prep	Nt./Vol.: 30.	481 g	
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/17/12 00:44		Prep Date/Time: 05	/16/12 15:15		Container ID:1121608006-A		
Dilution Factor: 1					Analyst: LC	E	
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Nt./Vol.: 30.	481 g
Analytical Method: AK103	Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/17/12 00:44	Prep Date/Time: 05/16/12 15:15			Container ID:1121608006-A			
Dilution Factor: 1					Analyst: LC	E	



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Analytical Prep

Client Sample ID: **EP-8+10-4** SGS Ref. #: 1121608006 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	Э
2-Methylnaphthalene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Acenaphthene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Acenaphthylene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Anthracene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Benzo(a)Anthracene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	Э
Benzo[a]pyrene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	Э
Benzo[b]Fluoranthene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	Э
Benzo[g,h,i]perylene	29.9	26.9	ug/Kg	5	XMS6664	XXX26839	9
Benzo[k]fluoranthene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	Э
Chrysene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Dibenzo[a,h]anthracene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Fluoranthene	27.4	26.9	ug/Kg	5	XMS6664	XXX26839	9
Fluorene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Indeno[1,2,3-c,d] pyrene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Naphthalene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Phenanthrene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	9
Pyrene	27.5	26.9	ug/Kg	5	XMS6664	XXX26839	9
2-Fluorobiphenyl <surr></surr>	96.2	45-105	%	5	XMS6664	XXX26839	9
Terphenyl-d14 <surr></surr>	115	30-125	%	5	XMS6664	XXX26839	Э
Batch Information							
Analytical Batch: XMS6664		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	579 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/18/12 14:18		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608006-A		
Dilution Factor: 5					Analyst: R	TS	



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**Batch** 

Initial Prep Wt./Vol.: 1 mL

Analyst: CDE

Container ID:1121608006-A

**Qualifiers** 

Client Sample ID: EP-8+10-4												
SGS Ref. #: 1121608006	GS Ref. #: 1121608006				Collection Date/Time: 05/04/12 15:00							
Project ID: Ilulaq Lake East Point Rd DW	Receipt Date/Time: 05/10/12 16:20											
Matrix: Soil/Solid (dry weight)												
Percent Solids: 92.6												
Solids												
Parameter	<u>Result</u>	LOQ/CL	U	<u> Inits</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch					
Total Solids	92.6			%	1	SPT8625						
Batch Information												

Analytical Batch: SPT8625 Analytical Method: SM21 2540G Analysis Date/Time: 05/14/12 17:00 Dilution Factor: 1

SGS North America Inc.	Environmental Division 200 West Potter Drive Anchorage	e AK 99518 t(907)562.2343 f(907)561.5301
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Prep

Analytical

# Client Sample ID: **EP-8+60-4** SGS Ref. #: 1121608007 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/04/12 15:45 Receipt Date/Time: 05/10/12 16:20

## Volatile Fuels Department

Percent Solids: 87.8

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	31.2 U	31.2	ug/Kg	1	VFC10974	VXX23479	)
Ethylbenzene	62.4 U	62.4	ug/Kg	1	VFC10974	VXX23479	)
Gasoline Range Organics	6.24 U	6.24	mg/Kg	1	VFC10974	VXX23479	)
o-Xylene	62.4 U	62.4	ug/Kg	1	VFC10974	VXX23479	)
P & M -Xylene	125 U	125	ug/Kg	1	VFC10974	VXX23479	)
Toluene	62.4 U	62.4	ug/Kg	1	VFC10974	VXX23479	)
1,4-Difluorobenzene <surr></surr>	97.4	72-119	%	1	VFC10974	VXX23479	)
4-Bromofluorobenzene <surr></surr>	99	50-150	%	1	VFC10974	VXX23479	)
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 25.6	683 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.14	54 mL
Analysis Date/Time: 05/15/12 19:52		Prep Date/Time: 05/	04/12 15:45		Container I	D:112160800	)7-B
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 25.6	683 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.14	54 mL
Analysis Date/Time: 05/15/12 19:52		Prep Date/Time: 05/	04/12 15:45		Container I	D:112160800	)7-B
Dilution Factor: 1					Analyst: EA	AB	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-8+60-4** SGS Ref. #: 1121608007 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.8

Collection Date/Time: 05/04/12 15:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	Batch	<u>Qualifiers</u>	
Diesel Range Organics	171	22.6	mg/Kg	1	XFC10371	XXX26852	2	
Residual Range Organics	68.8	22.6	mg/Kg	1	XFC10371	XXX26852	2	
5a Androstane <surr></surr>	82.8	50-150	%	1	XFC10371	XXX26852	2	
n-Triacontane-d62 <surr></surr>	71.8	50-150	%	1	XFC10371	XXX26852	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.217 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 21:41		Prep Date/Time: 05	Prep Date/Time: 05/16/12 15:15			Container ID:1121608007-A		
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep Wt./Vol.: 30.217 g			
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 21:41		Prep Date/Time: 05/16/12 15:15			Container ID:1121608007-A			
Dilution Factor: 1					Analyst: LC	E		



Print Date: 5/29/2012 3:26 pm

Analytical Prep

# Client Sample ID: **EP-8+60-4** SGS Ref. #: 1121608007 Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

# Collection Date/Time: 05/04/12 15:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	9
2-Methylnaphthalene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	9
Acenaphthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthylene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Anthracene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Benzo(a)Anthracene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Benzo[a]pyrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Benzo[g,h,i]perylene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Benzo[k]fluoranthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Chrysene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Dibenzo[a,h]anthracene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Fluoranthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	9
Fluorene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Indeno[1,2,3-c,d] pyrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	9
Naphthalene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Phenanthrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
Pyrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	)
2-Fluorobiphenyl <surr></surr>	88.9	45-105	%	1	XMS6663	XXX26839	)
Terphenyl-d14 <surr></surr>	116	30-125	%	1	XMS6663	XXX26839	9
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	836 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 16:29		Prep Date/Time: 05	6/14/12 15:00		Container ID:1121608007-A		
Dilution Factor: 1					Analyst: R	rs	



Print Date: 5/29/2012 3:26 pm

Client Sample ID: EP-8+60-4
SGS Ref. #: 1121608007
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.8

Collection Date/Time: 05/04/12 15:45 Receipt Date/Time: 05/10/12 16:20

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	87.8		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160800	7-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Analytical Prep

Client Sample ID: **DUP-02** SGS Ref. #: 1121608008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	51.1 U	51.1	ug/Kg	1	VFC10974	VXX2347	9
Ethylbenzene	102 U	102	ug/Kg	1	VFC10974	VXX2347	9
Gasoline Range Organics	10.2 U	10.2	mg/Kg	1	VFC10974	VXX2347	9
o-Xylene	102 U	102	ug/Kg	1	VFC10974	VXX2347	9
P & M -Xylene	205 U	205	ug/Kg	1	VFC10974	VXX2347	9
Toluene	102 U	102	ug/Kg	1	VFC10974	VXX2347	9
1,4-Difluorobenzene <surr></surr>	99.3	72-119	%	1	VFC10974	VXX2347	9
4-Bromofluorobenzene <surr></surr>	106	50-150	%	1	VFC10974	VXX2347	9
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	479		Initial Prep	Wt./Vol.: 25	.426 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 33.8	685 mL
Analysis Date/Time: 05/15/12 20:10		Prep Date/Time: 05/	/04/12 00:00		Container I	D:11216080	008-B
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10974		Prep Batch: VXX234	179		Initial Prep	Wt./Vol.: 25	.426 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 33.8	685 mL
Analysis Date/Time: 05/15/12 20:10		Prep Date/Time: 05/	04/12 00:00		Container I	D:11216080	008-B
Dilution Factor: 1					Analyst: EA	ΑB	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **DUP-02** SGS Ref. #: 1121608008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>	
Diesel Range Organics	30.3 U	30.3	mg/Kg	1	XFC10371	XXX26852	2	
Residual Range Organics	51.6	30.3	mg/Kg	1	XFC10371	XXX26852	2	
5a Androstane <surr></surr>	77.3	50-150	%	1	XFC10371	XXX26852	2	
n-Triacontane-d62 <surr></surr>	78.2	50-150	%	1	XFC10371	XXX26852	2	
Batch Information								
Analytical Batch: XFC10371	Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.367 g				
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 21:51		Prep Date/Time: 05	Prep Date/Time: 05/16/12 15:15			Container ID:1121608008-A		
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep	Wt./Vol.: 30.3	367 g	
Analytical Method: AK103	Prep Method: SW3550C			Prep Extract Vol.: 1 mL				
Analysis Date/Time: 05/16/12 21:51		Prep Date/Time: 05	6/16/12 15:15		Container II	D:112160800	08-A	
Dilution Factor: 1					Analyst: LC	E		



Print Date: 5/29/2012 3:26 pm

Analytical Prep

# Client Sample ID: **DUP-02** SGS Ref. #: 1121608008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	31.7	7.52	ug/Kg	1	XMS6663	XXX26839	9
2-Methylnaphthalene	11.3	7.52	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthylene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Anthracene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Benzo(a)Anthracene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Benzo[a]pyrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Benzo[b]Fluoranthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Benzo[g,h,i]perylene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
Benzo[k]fluoranthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Chrysene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	)
Fluoranthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
Fluorene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
Naphthalene	14.2	7.52	ug/Kg	1	XMS6663	XXX26839	9
Phenanthrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
Pyrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	90.5	45-105	%	1	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	108	30-125	%	1	XMS6663	XXX26839	9
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	961 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 16:49		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608008-A		
Dilution Factor: 1					Analyst: R	ГS	



Print Date: 5/29/2012 3:26 pm

Client Sample ID: <b>DUP-02</b> SGS Ref. #: 1121608008 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 65.1	Collection E Receipt Dat	Collection Date/Time: 05/04/12 00:00 Receipt Date/Time: 05/10/12 16:20							
Solids									
Parameter_	<u>Result</u>	LOQ/CL		<u>Units</u>	DF	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> Batch	<u>Qualifiers</u>	
Total Solids	65.1			%	1	SPT8625			
Batch Information									
Analytical Batch: SPT8625 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1	mL	
Analysis Date/Time: 05/14/12 17:00 Dilution Factor: 1						Container II Analyst: CE	D:1121608 DE	008-A	



Analytical Prep

Client Sample ID: **DUP-03** SGS Ref. #: 1121608009 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	29.3 U	29.3	ug/Kg	1	VFC10974	VXX23479	9
Ethylbenzene	58.6 U	58.6	ug/Kg	1	VFC10974	VXX23479	9
Gasoline Range Organics	5.86 U	5.86	mg/Kg	1	VFC10974	VXX23479	9
o-Xylene	58.6 U	58.6	ug/Kg	1	VFC10974	VXX23479	9
P & M -Xylene	117 U	117	ug/Kg	1	VFC10974	VXX23479	9
Toluene	58.6 U	58.6	ug/Kg	1	VFC10974	VXX23479	9
1,4-Difluorobenzene <surr></surr>	97.7	72-119	%	1	VFC10974	VXX23479	9
4-Bromofluorobenzene <surr></surr>	105	50-150	%	1	VFC10974	VXX23479	9
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 28.	766 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.01	171 mL
Analysis Date/Time: 05/15/12 20:29		Prep Date/Time: 05/	04/12 00:00		Container II	D:11216080	09-B
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10974		Prep Batch: VXX234	79		Initial Prep	Wt./Vol.: 28.	766 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.01	171 mL
Analysis Date/Time: 05/15/12 20:29		Prep Date/Time: 05/	04/12 00:00		Container II	D:11216080	09-B
Dilution Factor: 1					Analyst: EA	λB	



Analytical Prep

Client Sample ID: **DUP-03** SGS Ref. #: 1121608009 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	26.7	23.2	mg/Kg	1	XFC10371	XXX2685	2
Residual Range Organics	100	23.2	mg/Kg	1	XFC10371	XXX2685	2
5a Androstane <surr></surr>	89.7	50-150	%	1	XFC10371	XXX2685	2
n-Triacontane-d62 <surr></surr>	88.9	50-150	%	1	XFC10371	XXX2685	2
Batch Information							
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.068 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 22:00		Prep Date/Time: 05/16/12 15:15			Container ID:1121608009-A		
Dilution Factor: 1					Analyst: LCE		
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep	Wt./Vol.: 30	.068 g
Analytical Method: AK103	Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 22:00	Prep Date/Time: 05/16/12 15:15			Container ID:1121608009-A			
Dilution Factor: 1					Analyst: LC	E	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

# Client Sample ID: **DUP-03** SGS Ref. #: 1121608009 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
2-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Acenaphthene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Acenaphthylene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Anthracene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Benzo(a)Anthracene	26.7	5.69	ug/Kg	1	XMS6663	XXX2683	9
Benzo[a]pyrene	25.6	5.69	ug/Kg	1	XMS6663	XXX2683	9
Benzo[b]Fluoranthene	39.7	5.69	ug/Kg	1	XMS6663	XXX2683	9
Benzo[g,h,i]perylene	16.1	5.69	ug/Kg	1	XMS6663	XXX2683	9
Benzo[k]fluoranthene	10.9	5.69	ug/Kg	1	XMS6663	XXX2683	9
Chrysene	20.3	5.69	ug/Kg	1	XMS6663	XXX2683	9
Dibenzo[a,h]anthracene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Fluoranthene	34.3	5.69	ug/Kg	1	XMS6663	XXX2683	9
Fluorene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Indeno[1,2,3-c,d] pyrene	14.6	5.69	ug/Kg	1	XMS6663	XXX2683	9
Naphthalene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX2683	9
Phenanthrene	12.8	5.69	ug/Kg	1	XMS6663	XXX2683	9
Pyrene	30.8	5.69	ug/Kg	1	XMS6663	XXX2683	9
2-Fluorobiphenyl <surr></surr>	93.4	45-105	%	1	XMS6663	XXX2683	9
Terphenyl-d14 <surr></surr>	113	30-125	%	1	XMS6663	XXX2683	9
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	.971 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 17:09		Prep Date/Time: 05	/14/12 15:00		Container I	D:11216080	09-A
Dilution Factor: 1					Analyst: R	15	



Print Date: 5/29/2012 3:26 pm

Client Sample ID: <b>DUP-03</b> SGS Ref. #: 1121608009 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 86.0			Collection E Receipt Dat	Date/Time: 05/1 te/Time: 05/1	5/07/12 00:( 0/12 16:20	00		
Solids								
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	86.0			%	1	SPT8625		
Batch Information								
Analytical Batch: SPT8625 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1	mL
Analysis Date/Time: 05/14/12 17:00						Container I	D:1121608	009-A
Dilution Factor: 1						Analyst: C[	DE	



Analytical Prep

# Client Sample ID: **DUP-04** SGS Ref. #: 1121608010 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	32.7 U	32.7	ug/Kg	1	VFC10974	VXX23479	9
Ethylbenzene	65.5 U	65.5	ug/Kg	1	VFC10974	VXX23479	9
Gasoline Range Organics	6.55 U	6.55	mg/Kg	1	VFC10974	VXX23479	9
o-Xylene	65.5 U	65.5	ug/Kg	1	VFC10974	VXX23479	9
P & M -Xylene	131 U	131	ug/Kg	1	VFC10974	VXX23479	9
Toluene	65.5 U	65.5	ug/Kg	1	VFC10974	VXX23479	9
1,4-Difluorobenzene <surr></surr>	95.6	72-119	%	1	VFC10974	VXX23479	9
4-Bromofluorobenzene <surr></surr>	106	50-150	%	1	VFC10974	VXX23479	9
Batch Information							
Analytical Batch: VFC10974		Prep Batch: VXX234	179		Initial Prep	Wt./Vol.: 27.	227 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.61	49 mL
Analysis Date/Time: 05/15/12 20:47		Prep Date/Time: 05/	04/12 00:00		Container I	D:11216080	10-B
Dilution Factor: 1					Analyst: EA	Ъ	
Analytical Batch: VFC10974		Prep Batch: VXX234	179		Initial Prep	Wt./Vol.: 27.	227 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.61	49 mL
Analysis Date/Time: 05/15/12 20:47		Prep Date/Time: 05/	04/12 00:00		Container I	D:11216080	10-B
Dilution Factor: 1					Analyst: EA	Ъ	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **DUP-04** SGS Ref. #: 1121608010 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	32.7	23.8	mg/Kg	1	XFC10371	XXX26852	2
Residual Range Organics	103	23.8	mg/Kg	1	XFC10371	XXX26852	2
5a Androstane <surr></surr>	88.4	50-150	%	1	XFC10371	XXX26852	2
n-Triacontane-d62 <surr></surr>	75.7	50-150	%	1	XFC10371	XXX26852	2
Batch Information							
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30.	298 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 22:10		Prep Date/Time: 05/16/12 15:15			Container ID:1121608010-A		
Dilution Factor: 1					Analyst: LC	E	
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30.	298 g
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL	
Analysis Date/Time: 05/16/12 22:10		Prep Date/Time: 05	5/16/12 15:15		Container II	D:11216080	10-A
Dilution Factor: 1					Analyst: LC	E	



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Analytical Prep

# Client Sample ID: **DUP-04** SGS Ref. #: 1121608010 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	8.73	6.00	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
Anthracene	28.6	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	90.9	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	75.7	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	115	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	47.4	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	31.3	6.00	ug/Kg	1	XMS6665	XXX26865	
Chrysene	79.8	6.00	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	12.2	6.00	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	209	60.0	ug/Kg	10	XMS6665	XXX26865	
Fluorene	8.70	6.00	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	46.0	6.00	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	94.6	6.00	ug/Kg	1	XMS6665	XXX26865	
Pyrene	165	60.0	ug/Kg	10	XMS6665	XXX26865	
2-Fluorobiphenyl <surr></surr>	67.4	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr></surr>	101	30-125	%	1	XMS6665	XXX26865	
Batch Information							
Analytical Batch: XMS6665		Prep Batch: XXX26	6865		Initial Prep	Wt./Vol.: 22.5	59 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	3550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/21/12 16:45		Prep Date/Time: 0	5/18/12 15:00		Container I	D:112160801	0-A
Dilution Factor: 1					Analyst: R	ſS	
Analytical Batch: XMS6665		Prep Batch: XXX26	6865		Initial Prep	Wt./Vol.: 22.5	59 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	8550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/21/12 19:27		Prep Date/Time: 0	5/18/12 15:00		Container I	D:112160801	0-A
Dilution Factor: 10					Analyst: R	ſS	



Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

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Container ID:1121608010-A

Analyst: CDE

**Qualifiers** 

Client Sample ID: DUP-04										
SGS Ref. #: 1121608010			Collection	Collection Date/Time: 05/08/12 00:00						
Project ID: Ilulaq Lake East Point Rd DW			Receipt D	ate/Time: 05/	/10/12 16:2	0				
Matrix: Soil/Solid (dry weight)										
Percent Solids: 83.1										
Solids										
Parameter	<u>Result</u>	LOQ/CL		<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> Batch	9		
Total Solids	83.1			%	1	SPT8625				
Batch Information										
Analytical Batch: SPT8625 Analytical Method: SM21 2540G						Initial Prep	Wt./Vol.: 1 r	mL		

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Analytical Prep

Client Sample ID: **EP-9+10-2** SGS Ref. #: 1121608011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	27.5 U	27.5	ug/Kg	1	VFC10977	VXX2348	3
Ethylbenzene	55.1 U	55.1	ug/Kg	1	VFC10977	VXX2348	3
Gasoline Range Organics	5.51 U	5.51	mg/Kg	1	VFC10977	VXX2348	3
o-Xylene	55.1 U	55.1	ug/Kg	1	VFC10977	VXX2348	3
P & M -Xylene	110 U	110	ug/Kg	1	VFC10977	VXX2348	3
Toluene	55.1 U	55.1	ug/Kg	1	VFC10977	VXX2348	3
1,4-Difluorobenzene <surr></surr>	97.8	72-119	%	1	VFC10977	VXX2348	3
4-Bromofluorobenzene <surr></surr>	100	50-150	%	1	VFC10977	VXX2348	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Nt./Vol.: 25.	.768 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 26.6	111 mL
Analysis Date/Time: 05/16/12 16:01		Prep Date/Time: 05/	07/12 09:45		Container II	D:11216080	11-B
Dilution Factor: 1					Analyst: EA	B	
Analytical Batch: VFC10977		Prep Batch: VXX234	.83		Initial Prep	Nt./Vol.: 25.	.768 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 26.6	111 mL
Analysis Date/Time: 05/16/12 16:01		Prep Date/Time: 05/	07/12 09:45		Container II	D:11216080	11-B
Dilution Factor: 1					Analyst: EA	B	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-9+10-2** SGS Ref. #: 1121608011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	21.2 U	21.2	mg/Kg	1	XFC10371	XXX2685	2
Residual Range Organics	57.1	21.2	mg/Kg	1	XFC10371	XXX2685	2
5a Androstane <surr></surr>	95.1	50-150	%	1	XFC10371	XXX2685	2
n-Triacontane-d62 <surr></surr>	93.3	50-150	%	1	XFC10371	XXX2685	2
Batch Information							
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	158 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 22:20		Prep Date/Time: 05/16/12 15:15			Container ID:1121608011-A		
Dilution Factor: 1					Analyst: LC	E	
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	158 g
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL	
Analysis Date/Time: 05/16/12 22:20		Prep Date/Time: 05	5/16/12 15:15		Container I	D:11216080	11-A
Dilution Factor: 1					Analyst: LC	E	



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Analytical Prep

Client Sample ID: **EP-9+10-2** SGS Ref. #: 1121608011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
2-Methylnaphthalene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Acenaphthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Acenaphthylene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Anthracene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Benzo(a)Anthracene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Benzo[a]pyrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Benzo[b]Fluoranthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Benzo[g,h,i]perylene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Benzo[k]fluoranthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Chrysene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Dibenzo[a,h]anthracene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Fluoranthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Fluorene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Indeno[1,2,3-c,d] pyrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Naphthalene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Phenanthrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
Pyrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	5
2-Fluorobiphenyl <surr></surr>	63.5	45-105	%	1	XMS6665	XXX26865	5
Terphenyl-d14 <surr></surr>	94.5	30-125	%	1	XMS6665	XXX26865	5
Batch Information							
Analytical Batch: XMS6665		Prep Batch: XXX26	865		Initial Prep	Wt./Vol.: 22.	685 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/21/12 15:44		Prep Date/Time: 05	5/18/12 15:00		Container I	D:11216080	11-A
Dilution Factor: 1					Analyst: R	rs	



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Client Sample ID: **EP-9+10-2** SGS Ref. #: 1121608011 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45 Receipt Date/Time: 05/10/12 16:20

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	93.7		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	1-A
Dilution Factor: 1					Analyst: CDI	=	



Analytical Prep

# Client Sample ID: **EP-9+10-4** SGS Ref. #: 1121608012 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	30.5 U	30.5	ug/Kg	1	VFC10977	VXX2348	3
Ethylbenzene	61.0 U	61.0	ug/Kg	1	VFC10977	VXX2348	3
Gasoline Range Organics	6.10 U	6.10	mg/Kg	1	VFC10977	VXX2348	3
o-Xylene	61.0 U	61.0	ug/Kg	1	VFC10977	VXX2348	3
P & M -Xylene	122 U	122	ug/Kg	1	VFC10977	VXX2348	3
Toluene	61.0 U	61.0	ug/Kg	1	VFC10977	VXX2348	3
1,4-Difluorobenzene <surr></surr>	97.9	72-119	%	1	VFC10977	VXX2348	3
4-Bromofluorobenzene <surr></surr>	104	50-150	%	1	VFC10977	VXX2348	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 26	.448 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	ct Vol.: 28.27	76 mL
Analysis Date/Time: 05/16/12 18:10		Prep Date/Time: 05/	07/12 09:30		Container I	D:11216080	)12-B
Dilution Factor: 1					Analyst: EA	٨B	
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 26	.448 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	ct Vol.: 28.27	76 mL
Analysis Date/Time: 05/16/12 18:10		Prep Date/Time: 05/	07/12 09:30		Container I	D:11216080	)12-B
Dilution Factor: 1					Analyst: EA	٨B	



Analytical Prep

Client Sample ID: **EP-9+10-4** SGS Ref. #: 1121608012 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	22.7 U	22.7	mg/Kg	1	XFC10371	XXX2685	2
Residual Range Organics	48.7	22.7	mg/Kg	1	XFC10371	XXX2685	2
5a Androstane <surr></surr>	75.3	50-150	%	1	XFC10371	XXX2685	2
n-Triacontane-d62 <surr></surr>	82.6	50-150	%	1	XFC10371	XXX2685	2
Batch Information							
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.149 g
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 22:29		Prep Date/Time: 05/16/12 15:15			Container ID:1121608012-A		
Dilution Factor: 1					Analyst: LC	E	
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.149 g
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL	-
Analysis Date/Time: 05/16/12 22:29		Prep Date/Time: 05	/16/12 15:15		Container II	D:11216080	)12-A
Dilution Factor: 1					Analyst: LC	E	



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Analytical Prep

# Client Sample ID: **EP-9+10-4** SGS Ref. #: 1121608012 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
2-Methylnaphthalene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Acenaphthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Acenaphthylene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Anthracene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Benzo(a)Anthracene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Benzo[a]pyrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Benzo[b]Fluoranthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Benzo[g,h,i]perylene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Benzo[k]fluoranthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Chrysene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Dibenzo[a,h]anthracene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Fluoranthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Fluorene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Indeno[1,2,3-c,d] pyrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Naphthalene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Phenanthrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
Pyrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	5
2-Fluorobiphenyl <surr></surr>	70.5	45-105	%	1	XMS6665	XXX26865	5
Terphenyl-d14 <surr></surr>	101	30-125	%	1	XMS6665	XXX26865	5
Batch Information							
Analytical Batch: XMS6665		Prep Batch: XXX26865		Initial Prep Wt./Vol.: 22.509 g			
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/21/12 16:05		Prep Date/Time: 05/18/12 15:00		Container ID:1121608012-A			
Dilution Factor: 1					Analyst: RTS		



Print Date: 5/29/2012 3:26 pm

Client Sample ID: EP-9+10-4
SGS Ref. #: 1121608012
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30 Receipt Date/Time: 05/10/12 16:20

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	87.6		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00				Container ID	iner ID:1121608012-A		
Dilution Factor: 1					Analyst: CDI	Ξ	



Prep

Analytical

# Client Sample ID: **EP-9+60-4** SGS Ref. #: 1121608013 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>	
Benzene	28.3 U	28.3	ug/Kg	1	VFC10977	VXX2348	3	
Ethylbenzene	56.7 U	56.7	ug/Kg	1	VFC10977	VXX2348	3	
Gasoline Range Organics	5.67 U	5.67	mg/Kg	1	VFC10977	VXX2348	3	
o-Xylene	56.7 U	56.7	ug/Kg	1	VFC10977	VXX2348	3	
P & M -Xylene	113 U	113	ug/Kg	1	VFC10977	VXX2348	3	
Toluene	56.7 U	56.7	ug/Kg	1	VFC10977	VXX2348	3	
1,4-Difluorobenzene <surr></surr>	97.8	72-119	%	1	VFC10977	VXX2348	3	
4-Bromofluorobenzene <surr></surr>	104	50-150	%	1	VFC10977	VXX2348	3	
Batch Information								
Analytical Batch: VFC10977	Prep Batch: VXX23483				Initial Prep Wt./Vol.: 29.14 g			
Analytical Method: AK101		Prep Method: SW5035A			Prep Extract Vol.: 28.7597 mL			
Analysis Date/Time: 05/16/12 18:28		Prep Date/Time: 05/07/12 10:30		Container ID:1121608013-B				
Dilution Factor: 1					Analyst: EA	٨B		
Analytical Batch: VFC10977	Prep Batch: VXX23483			Initial Prep Wt./Vol.: 29.14 g				
Analytical Method: SW8021B		Prep Method: SW5035A			Prep Extract Vol.: 28.7597 mL			
Analysis Date/Time: 05/16/12 18:28		Prep Date/Time: 05/07/12 10:30			Container ID:1121608013-B			
Dilution Factor: 1					Analyst: EA	٨B		


Analytical Prep

Client Sample ID: **EP-9+60-4** SGS Ref. #: 1121608013 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	22.7 U	22.7	mg/Kg	1	XFC10371	XXX2685	52	
Residual Range Organics	58.8	22.7	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	85.3	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	95.2	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.297 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 22:39		Prep Date/Time: 05/16/12 15:15			Container ID:1121608013-A			
Dilution Factor: 1					Analyst: LCE			
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.297 g	
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 22:39	sis Date/Time: 05/16/12 22:39		Prep Date/Time: 05/16/12 15:15			Container ID:1121608013-A		
Dilution Factor: 1					Analyst: LC	E		



Print Date: 5/29/2012 3:26 pm

Analytical Prep

## Client Sample ID: EP-9+60-4 SGS Ref. #: 1121608013 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Percent Solids: 87.1

# Collection Date/Time: 05/07/12 10:30 Receipt Date/Time: 05/10/12 16:20

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
2-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Acenaphthene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Acenaphthylene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Anthracene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Benzo(a)Anthracene	6.10	5.69	ug/Kg	1	XMS6665	XXX2686	5
Benzo[a]pyrene	8.47	5.69	ug/Kg	1	XMS6665	XXX2686	5
Benzo[b]Fluoranthene	9.79	5.69	ug/Kg	1	XMS6665	XXX2686	5
Benzo[g,h,i]perylene	7.41	5.69	ug/Kg	1	XMS6665	XXX2686	5
Benzo[k]fluoranthene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Chrysene	6.61	5.69	ug/Kg	1	XMS6665	XXX2686	5
Dibenzo[a,h]anthracene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Fluoranthene	12.0	5.69	ug/Kg	1	XMS6665	XXX2686	5
Fluorene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Indeno[1,2,3-c,d] pyrene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Naphthalene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Phenanthrene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX2686	5
Pyrene	11.7	5.69	ug/Kg	1	XMS6665	XXX2686	5
2-Fluorobiphenyl <surr></surr>	81.5	45-105	%	1	XMS6665	XXX2686	5
Terphenyl-d14 <surr></surr>	95.9	30-125	%	1	XMS6665	XXX2686	5
Batch Information							
Analytical Batch: XMS6665		Prep Batch: XXX26	865		Initial Prep	Wt./Vol.: 22.	711 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/21/12 17:05 Dilution Factor: 1		Prep Date/Time: 05	/18/12 15:00		Container I Analyst: R <sup>-</sup>	D:11216080 ГS	13-A



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Client Sample ID: EP-9+60-4
SGS Ref. #: 1121608013
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	87.1		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625					Initial Prep W	/t./Vol.: 1 mL	-
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	3-A
Dilution Factor: 1					Analyst: CDE	Ξ	



Prep

Analytical

Client Sample ID: **EP-10+10-4** SGS Ref. #: 1121608014 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 89.7

Collection Date/Time: 05/07/12 11:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	28.0 U	28.0	ug/Kg	1	VFC10977	VXX2348	3
Ethylbenzene	55.9 U	55.9	ug/Kg	1	VFC10977	VXX2348	3
Gasoline Range Organics	5.59 U	5.59	mg/Kg	1	VFC10977	VXX2348	3
o-Xylene	55.9 U	55.9	ug/Kg	1	VFC10977	VXX2348	3
P & M -Xylene	112 U	112	ug/Kg	1	VFC10977	VXX2348	3
Toluene	55.9 U	55.9	ug/Kg	1	VFC10977	VXX2348	3
1,4-Difluorobenzene <surr></surr>	96.4	72-119	%	1	VFC10977	VXX2348	3
4-Bromofluorobenzene <surr></surr>	104	50-150	%	1	VFC10977	VXX2348	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX23	483		Initial Prep	Wt./Vol.: 27.	.79 g
Analytical Method: AK101		Prep Method: SW50	035A		Prep Extrac	t Vol.: 27.86	663 mL
Analysis Date/Time: 05/16/12 18:47		Prep Date/Time: 05	/07/12 11:00		Container I	D:11216080	14-B
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10977		Prep Batch: VXX23	483		Initial Prep	Wt./Vol.: 27.	.79 g
Analytical Method: SW8021B		Prep Method: SW50	035A		Prep Extrac	ct Vol.: 27.86	663 mL
Analysis Date/Time: 05/16/12 18:47		Prep Date/Time: 05	/07/12 11:00		Container I	D:11216080	14-B
Dilution Factor: 1					Analyst: EA	ΑB	



Analytical Prep

Client Sample ID: **EP-10+10-4** SGS Ref. #: 1121608014 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 89.7

Collection Date/Time: 05/07/12 11:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>	
Diesel Range Organics	42.3	22.2	mg/Kg	1	XFC10371	XXX2685	2	
Residual Range Organics	87.1	22.2	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	98.9	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	96.2	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.092 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 22:48		Prep Date/Time: 05/16/12 15:15			Container ID:1121608014-A			
Dilution Factor: 1					Analyst: LCE			
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Nt./Vol.: 30.	.092 g	
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL		
Analysis Date/Time: 05/16/12 22:48	alysis Date/Time: 05/16/12 22:48		Prep Date/Time: 05/16/12 15:15			Container ID:1121608014-A		
Dilution Factor: 1					Analyst: LC	E		



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Analytical Prep

# Client Sample ID: EP-10+10-4 SGS Ref. #: 1121608014 Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 89.7

# Collection Date/Time: 05/07/12 11:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
1-Methylnaphthalene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
2-Methylnaphthalene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Acenaphthene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Acenaphthylene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Anthracene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Benzo(a)Anthracene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[a]pyrene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[b]Fluoranthene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[g,h,i]perylene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[k]fluoranthene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Chrysene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Dibenzo[a,h]anthracene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Fluoranthene	6.35	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Fluorene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Indeno[1,2,3-c,d] pyrene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Naphthalene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Phenanthrene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	5	
Pyrene	6.11	5.53	ug/Kg	1	XMS6665	XXX26865	5	
2-Fluorobiphenyl <surr></surr>	70.4	45-105	%	1	XMS6665	XXX26865	5	
Terphenyl-d14 <surr></surr>	101	30-125	%	1	XMS6665	XXX26865	5	
Batch Information								
Analytical Batch: XMS6665		Prep Batch: XXX26	865		Initial Prep	Wt./Vol.: 22.	68 g	
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL		
Analysis Date/Time: 05/21/12 17:25 Dilution Factor: 1		Prep Date/Time: 05	/18/12 15:00		Container I Analyst: R <sup>-</sup>	ainer ID:1121608014-A vst: RTS		



Print Date: 5/29/2012 3:26 pm

Client Sample ID: EP-10+10-4
SGS Ref. #: 1121608014
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.7

Collection Date/Time: 05/07/12 11:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	89.7		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep V	Vt./Vol.: 1 ml	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	4-A
Dilution Factor: 1					Analyst: CD	E	



Prep

Analytical

Client Sample ID: **EP-10+60-2** SGS Ref. #: 1121608015 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	24.8 U	24.8	ug/Kg	1	VFC10977	VXX23483	3
Ethylbenzene	49.6 U	49.6	ug/Kg	1	VFC10977	VXX23483	3
Gasoline Range Organics	4.96 U	4.96	mg/Kg	1	VFC10977	VXX23483	3
o-Xylene	49.6 U	49.6	ug/Kg	1	VFC10977	VXX23483	3
P & M -Xylene	99.2 U	99.2	ug/Kg	1	VFC10977	VXX23483	3
Toluene	49.6 U	49.6	ug/Kg	1	VFC10977	VXX23483	3
1,4-Difluorobenzene <surr></surr>	98.7	72-119	%	1	VFC10977	VXX23483	3
4-Bromofluorobenzene <surr></surr>	100	50-150	%	1	VFC10977	VXX23483	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 28.	987 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 26.87	'95 mL
Analysis Date/Time: 05/16/12 19:05		Prep Date/Time: 05/	07/12 13:45		Container I	D:11216080	15-B
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 28.	987 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 26.87	'95 mL
Analysis Date/Time: 05/16/12 19:05		Prep Date/Time: 05/	07/12 13:45		Container I	D:11216080	15-B
Dilution Factor: 1					Analyst: EA	ΔB	



Analytical Prep

Client Sample ID: **EP-10+60-2** SGS Ref. #: 1121608015 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	21.3 U	21.3	mg/Kg	1	XFC10371	XXX2685	2	
Residual Range Organics	57.1	21.3	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	99.8	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	98.3	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.152 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 22:58		Prep Date/Time: 05/16/12 15:15			Container ID:1121608015-A			
Dilution Factor: 1					Analyst: LCE			
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.152 g	
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 22:58		Prep Date/Time: 05/16/12 15:15			Container ID:1121608015-A			
Dilution Factor: 1					Analyst: LC	E		



Print Date: 5/29/2012 3:26 pm

Analytical Prep

## Client Sample ID: EP-10+60-2 SGS Ref. #: 1121608015 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	Batch	<u>Qualifiers</u>	
1-Methylnaphthalene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
2-Methylnaphthalene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Acenaphthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Acenaphthylene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Anthracene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Benzo(a)Anthracene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[a]pyrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[b]Fluoranthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[g,h,i]perylene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Benzo[k]fluoranthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Chrysene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Dibenzo[a,h]anthracene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Fluoranthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Fluorene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Indeno[1,2,3-c,d] pyrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Naphthalene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Phenanthrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
Pyrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	5	
2-Fluorobiphenyl <surr></surr>	68.3	45-105	%	1	XMS6665	XXX26865	5	
Terphenyl-d14 <surr></surr>	96.1	30-125	%	1	XMS6665	XXX26865	5	
Batch Information								
Analytical Batch: XMS6665		Prep Batch: XXX26	865		Initial Prep	Wt./Vol.: 22.	554 g	
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL		
Analysis Date/Time: 05/21/12 17:45		Prep Date/Time: 05	5/18/12 15:00		Container I	Container ID:1121608015-A		
Dilution Factor: 1					Analyst: R	rs		



Print Date: 5/29/2012 3:26 pm

Client Sample ID: EP-10+60-2
SGS Ref. #: 1121608015
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	93.5		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625					Initial Prep W	/t./Vol.: 1 mL	-
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	5-A
Dilution Factor: 1					Analyst: CDI	=	



Analytical Prep

## Client Sample ID: **EP-10+60-4** SGS Ref. #: 1121608016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	28.9 U	28.9	ug/Kg	1	VFC10977	VXX23483	3
Ethylbenzene	57.8 U	57.8	ug/Kg	1	VFC10977	VXX23483	3
Gasoline Range Organics	5.78 U	5.78	mg/Kg	1	VFC10977	VXX23483	3
o-Xylene	57.8 U	57.8	ug/Kg	1	VFC10977	VXX23483	3
P & M -Xylene	116 U	116	ug/Kg	1	VFC10977	VXX23483	3
Toluene	57.8 U	57.8	ug/Kg	1	VFC10977	VXX23483	3
1,4-Difluorobenzene <surr></surr>	98	72-119	%	1	VFC10977	VXX23483	3
4-Bromofluorobenzene <surr></surr>	104	50-150	%	1	VFC10977	VXX23483	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX234	183		Initial Prep Wt./Vol.: 28.527 g		527 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extract Vol.: 28.7089 ml		
Analysis Date/Time: 05/16/12 19:23		Prep Date/Time: 05/	07/12 13:30	13:30 Container ID:		D:11216080	16-B
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10977		Prep Batch: VXX234	183		Initial Prep	Wt./Vol.: 28.	527 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 28.70	)89 mL
Analysis Date/Time: 05/16/12 19:23		Prep Date/Time: 05/	07/12 13:30		Container I	D:11216080	16-B
Dilution Factor: 1					Analyst: EA	ΑB	



Analytical Prep

Client Sample ID: **EP-10+60-4** SGS Ref. #: 1121608016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	101	22.7	mg/Kg	1	XFC10371	XXX2685	2	
Residual Range Organics	148	22.7	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	102	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	95.1	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.372 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 23:07		Prep Date/Time: 05	Prep Date/Time: 05/16/12 15:15			Container ID:1121608016-A		
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.372 g	
Analytical Method: AK103		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 23:07		Prep Date/Time: 05	6/16/12 15:15		Container II	D:11216080	)16-A	
Dilution Factor: 1					Analyst: LC	E		



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-10+60-4** SGS Ref. #: 1121608016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	20.2	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	16.9	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	25.2	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	13.4	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	6.98	5.65	ug/Kg	1	XMS6665	XXX26865	
Chrysene	19.2	5.65	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	30.7	5.65	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	10.3	5.65	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	9.27	5.65	ug/Kg	1	XMS6665	XXX26865	
Pyrene	28.5	5.65	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr></surr>	81.9	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr></surr>	115	30-125	%	1	XMS6665	XXX26865	
Batch Information							
Analytical Batch: XMS6665		Prep Batch: XXX26	865		Initial Prep	Wt./Vol.: 22.8	386 g
Analytical Method: 8270D SIMS (PAH)	)	Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/21/12 18:46 Dilution Factor: 1		Prep Date/Time: 05/18/12 15:00			Container ID:1121608016-A Analyst: RTS		



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Client Sample ID: **EP-10+60-4** SGS Ref. #: 1121608016 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	87.0		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	6-A
Dilution Factor: 1					Analyst: CDI	E	



Analytical Prep

Client Sample ID: **EP-11+10-4** SGS Ref. #: 1121608017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	27.2 U	27.2	ug/Kg	1	VFC10977	VXX2348	3
Ethylbenzene	54.5 U	54.5	ug/Kg	1	VFC10977	VXX2348	3
Gasoline Range Organics	5.45 U	5.45	mg/Kg	1	VFC10977	VXX2348	3
o-Xylene	54.5 U	54.5	ug/Kg	1	VFC10977	VXX2348	3
P & M -Xylene	109 U	109	ug/Kg	1	VFC10977	VXX2348	3
Toluene	54.5 U	54.5	ug/Kg	1	VFC10977	VXX2348	3
1,4-Difluorobenzene <surr></surr>	97.4	72-119	%	1	VFC10977	VXX2348	3
4-Bromofluorobenzene <surr></surr>	99.8	50-150	%	1	VFC10977	VXX2348	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX2348	33		Initial Prep Wt./Vol.: 26.666 g		
Analytical Method: AK101		Prep Method: SW503	5A		Prep Extrac	t Vol.: 26.93	356 mL
Analysis Date/Time: 05/16/12 19:42		Prep Date/Time: 05/0	7/12 14:45		Container ID:1121608017-B		17-B
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10977		Prep Batch: VXX2348	33		Initial Prep	Wt./Vol.: 26.	.666 g
Analytical Method: SW8021B		Prep Method: SW503	5A		Prep Extrac	t Vol.: 26.93	356 mL
Analysis Date/Time: 05/16/12 19:42		Prep Date/Time: 05/0	7/12 14:45		Container II	D:11216080	17-B
Dilution Factor: 1					Analyst: EA	λB	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-11+10-4** SGS Ref. #: 1121608017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>	
Diesel Range Organics	21.4 U	21.4	mg/Kg	1	XFC10371	XXX26852	2	
Residual Range Organics	36.1	21.4	mg/Kg	1	XFC10371	XXX26852	2	
5a Androstane <surr></surr>	89.8	50-150	%	1	XFC10371	XXX26852	2	
n-Triacontane-d62 <surr></surr>	89.3	50-150	%	1	XFC10371	XXX26852	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.183 g			
Analytical Method: AK102		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 23:17		Prep Date/Time: 05	6/16/12 15:15		Container ID:1121608017-A			
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30.	183 g	
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL		
Analysis Date/Time: 05/16/12 23:17		Prep Date/Time: 05/16/12 15:15			Container ID:1121608017-A		17-A	
Dilution Factor: 1					Analyst: LC	E		



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Analytical Prep

Client Sample ID: EP-11+10-4 SGS Ref. #: 1121608017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
2-Methylnaphthalene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Acenaphthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Acenaphthylene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Anthracene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Benzo(a)Anthracene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Benzo[a]pyrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Benzo[b]Fluoranthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Benzo[g,h,i]perylene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Benzo[k]fluoranthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Chrysene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Dibenzo[a,h]anthracene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Fluoranthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Fluorene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Indeno[1,2,3-c,d] pyrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Naphthalene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Phenanthrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
Pyrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	9
2-Fluorobiphenyl <surr></surr>	98.1	45-105	%	1	XMS6663	XXX26839	9
Terphenyl-d14 <surr></surr>	114	30-125	%	1	XMS6663	XXX26839	9
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.	652 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 17:30		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608017-A		
Dilution Factor: 1					Analyst: R	rs	



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Client Sample ID: **EP-11+10-4** SGS Ref. #: 1121608017 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	92.7		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625					Initial Prep W	/t./Vol.: 1 mL	-
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	7-A
Dilution Factor: 1					Analyst: CDE	Ξ	



Analytical Prep

Client Sample ID: **EP-11+60-4** SGS Ref. #: 1121608018 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	32.5 U	32.5	ug/Kg	1	VFC10977	VXX23483	3
Ethylbenzene	64.9 U	64.9	ug/Kg	1	VFC10977	VXX23483	3
Gasoline Range Organics	6.49 U	6.49	mg/Kg	1	VFC10977	VXX23483	3
o-Xylene	64.9 U	64.9	ug/Kg	1	VFC10977	VXX23483	3
P & M -Xylene	130 U	130	ug/Kg	1	VFC10977	VXX23483	3
Toluene	64.9 U	64.9	ug/Kg	1	VFC10977	VXX23483	3
1,4-Difluorobenzene <surr></surr>	100	72-119	%	1	VFC10977	VXX23483	3
4-Bromofluorobenzene <surr></surr>	103	50-150	%	1	VFC10977	VXX23483	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 26.	67 g
Analytical Method: AK101		Prep Method: SW503	35A		Prep Extrac	t Vol.: 29.18	358 mL
Analysis Date/Time: 05/16/12 20:18		Prep Date/Time: 05/0	07/12 15:00		Container ID:1121608018-B		18-B
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 26.	67 g
Analytical Method: SW8021B		Prep Method: SW503	35A		Prep Extrac	t Vol.: 29.18	358 mL
Analysis Date/Time: 05/16/12 20:18		Prep Date/Time: 05/0	07/12 15:00		Container I	D:11216080	18-B
Dilution Factor: 1					Analyst: EA	ΔB	



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Analytical Prep

Client Sample ID: **EP-11+60-4** SGS Ref. #: 1121608018 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	26.2	23.5	mg/Kg	1	XFC10371	XXX2685	52	
Residual Range Organics	91.1	23.5	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	84	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	80.3	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.231 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 23:27		Prep Date/Time: 05	/16/12 15:15	/12 15:15		Container ID:1121608018-A		
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.231 g	
Analytical Method: AK103		Prep Method: SW3	550C		Prep Extrac	t Vol.: 1 mL	-	
Analysis Date/Time: 05/16/12 23:27		Prep Date/Time: 05/16/12 15:15			Container ID:1121608018-A		018-A	
Dilution Factor: 1					Analyst: LC	E		



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Analytical Prep

Client Sample ID: **EP-11+60-4** SGS Ref. #: 1121608018 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	)
2-Methylnaphthalene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthylene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	)
Anthracene	6.07	5.81	ug/Kg	1	XMS6663	XXX26839	)
Benzo(a)Anthracene	45.0	5.81	ug/Kg	1	XMS6663	XXX26839	)
Benzo[a]pyrene	37.2	5.81	ug/Kg	1	XMS6663	XXX26839	)
Benzo[b]Fluoranthene	58.1	5.81	ug/Kg	1	XMS6663	XXX26839	)
Benzo[g,h,i]perylene	20.9	5.81	ug/Kg	1	XMS6663	XXX26839	)
Benzo[k]fluoranthene	12.9	5.81	ug/Kg	1	XMS6663	XXX26839	)
Chrysene	31.8	5.81	ug/Kg	1	XMS6663	XXX26839	)
Dibenzo[a,h]anthracene	6.25	5.81	ug/Kg	1	XMS6663	XXX26839	)
Fluoranthene	54.4	5.81	ug/Kg	1	XMS6663	XXX26839	)
Fluorene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	)
Indeno[1,2,3-c,d] pyrene	20.0	5.81	ug/Kg	1	XMS6663	XXX26839	)
Naphthalene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	)
Phenanthrene	18.9	5.81	ug/Kg	1	XMS6663	XXX26839	)
Pyrene	48.1	5.81	ug/Kg	1	XMS6663	XXX26839	)
2-Fluorobiphenyl <surr></surr>	72.5	45-105	%	1	XMS6663	XXX26839	)
Terphenyl-d14 <surr></surr>	96	30-125	%	1	XMS6663	XXX26839	)
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 22.9	985 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extra	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 18:10		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608018-A		
Dilution Factor: 1					Analyst: R	ſS	



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Client Sample ID: **EP-11+60-4** SGS Ref. #: 1121608018 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	84.3		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep W	/t./Vol.: 1 mL	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	8-A
Dilution Factor: 1					Analyst: CDI	Ξ	



Analytical Prep

Client Sample ID: **EP-12+10-4** SGS Ref. #: 1121608019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	41.7 U	41.7	ug/Kg	1	VFC10977	VXX2348	3
Ethylbenzene	83.4 U	83.4	ug/Kg	1	VFC10977	VXX2348	3
Gasoline Range Organics	8.34 U	8.34	mg/Kg	1	VFC10977	VXX2348	3
o-Xylene	83.4 U	83.4	ug/Kg	1	VFC10977	VXX2348	3
P & M -Xylene	167 U	167	ug/Kg	1	VFC10977	VXX2348	3
Toluene	83.4 U	83.4	ug/Kg	1	VFC10977	VXX2348	3
1,4-Difluorobenzene <surr></surr>	98.9	72-119	%	1	VFC10977	VXX2348	3
4-Bromofluorobenzene <surr></surr>	90.1	50-150	%	1	VFC10977	VXX2348	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX2348	3		Initial Prep Wt./Vol.: 26.681 g		
Analytical Method: AK101		Prep Method: SW503	5A	Prep Extract Vol.: 3			)78 mL
Analysis Date/Time: 05/16/12 20:37		Prep Date/Time: 05/0	7/12 15:30		Container I	D:11216080	19-B
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10977		Prep Batch: VXX2348	3		Initial Prep	Wt./Vol.: 26.	.681 g
Analytical Method: SW8021B		Prep Method: SW5035A			Prep Extract Vol.: 32.3078 m		)78 mL
Analysis Date/Time: 05/16/12 20:37		Prep Date/Time: 05/07/12 15			Container I	D:11216080	19-B
Dilution Factor: 1					Analyst: EA	AB	



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Analytical Prep

Client Sample ID: **EP-12+10-4** SGS Ref. #: 1121608019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	44.1	27.5	mg/Kg	1	XFC10371	XXX2685	2	
Residual Range Organics	236	27.5	mg/Kg	1	XFC10371	XXX2685	2	
5a Androstane <surr></surr>	93.4	50-150	%	1	XFC10371	XXX2685	2	
n-Triacontane-d62 <surr></surr>	90.4	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep	Wt./Vol.: 30	.058 g	
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/16/12 23:56		Prep Date/Time: 05/16/12 15:15			Container ID:1121608019-A			
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30	.058 g	
Analytical Method: AK103	3 I		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 23:56		Prep Date/Time: 05/16/12			Container II	D:11216080	)19-A	
Dilution Factor: 1					Analyst: LC	E		



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Analytical Prep

Client Sample ID: **EP-12+10-4** SGS Ref. #: 1121608019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Anthracene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	16.3	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	16.8	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	24.9	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	10.5	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Chrysene	15.9	7.54	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	20.9	7.54	ug/Kg	1	XMS6663	XXX26839	
Fluorene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	8.65	7.54	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	16.4	7.54	ug/Kg	1	XMS6663	XXX26839	
Pyrene	18.7	7.54	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr></surr>	73.7	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr></surr>	97.1	30-125	%	1	XMS6663	XXX26839	
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX268	339		Initial Prep	Wt./Vol.: 20.5	52 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW35	50C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 18:30		Prep Date/Time: 05/	/14/12 15:00		Container ID:1121608019-A		
Dilution Factor: 1					Analyst: R	rs	



Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+10-4** SGS Ref. #: 1121608019 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	72.6		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625 Analytical Method: SM21 2540G					Initial Prep V	/t./Vol.: 1 ml	-
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160801	9-A
Dilution Factor: 1					Analyst: CD	E	



Prep

Analytical

Client Sample ID: EP-12+60-4 SGS Ref. #: 1121608020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.9

Collection Date/Time: 05/08/12 10:00 Receipt Date/Time: 05/10/12 16:20

### **Volatile Fuels Department**

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	Batch	<u>Qualifiers</u>
Benzene	28.9 U	28.9	ug/Kg	1	VFC10977		
Ethylbenzene	57.8 U	57.8	ug/Kg	1	VFC10977		
Gasoline Range Organics	5.78 U	5.78	mg/Kg	1	VFC10977		
o-Xylene	57.8 U	57.8	ug/Kg	1	VFC10977		
P & M -Xylene	116 U	116	ug/Kg	1	VFC10977		
Toluene	57.8 U	57.8	ug/Kg	1	VFC10977		
1,4-Difluorobenzene <surr></surr>	96.6	72-119	%	1	VFC10977		
4-Bromofluorobenzene <surr></surr>	104	50-150	%	1	VFC10977		
Batch Information							
Analytical Batch: VFC10977 Analytical Method: AK101					Initial Prep	Wt./Vol.: 29	9.326 g
Analysis Date/Time: 05/16/12 20:55					Container I	D:1121608	020-B
Dilution Factor: 1					Analyst: EA	٨B	
Analytical Batch: VFC10977					Initial Prep	Wt./Vol.: 29	9.326 g
Analytical Method: SW8021B							
Analysis Date/Time: 05/16/12 20:55					Container I	D:1121608	020-В
Dilution Factor: 1					Analyst: EA	٨B	



Analytical Prep

Client Sample ID: **EP-12+60-4** SGS Ref. #: 1121608020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.9

Collection Date/Time: 05/08/12 10:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	Batch	<u>Qualifiers</u>	
Diesel Range Organics	34.9	22.9	mg/Kg	1	XFC10371	XXX26852	2	
Residual Range Organics	97.3	22.9	mg/Kg	1	XFC10371	XXX26852	2	
5a Androstane <surr></surr>	88.4	50-150	%	1	XFC10371	XXX26852	2	
n-Triacontane-d62 <surr></surr>	86.1	50-150	%	1	XFC10371	XXX26852	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.476 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/17/12 00:05		Prep Date/Time: 05/16/12 15:15			Container ID:1121608020-A			
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26	852		Initial Prep	Wt./Vol.: 30.	476 g	
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/17/12 00:05		Prep Date/Time: 05/16/12 15:15			Container ID:1121608020-A			
Dilution Factor: 1					Analyst: LC	E		



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-12+60-4** SGS Ref. #: 1121608020 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 85.9

Collection Date/Time: 05/08/12 10:00 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
2-Methylnaphthalene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Acenaphthylene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Anthracene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Benzo(a)Anthracene	26.2	6.25	ug/Kg	1	XMS6663	XXX26839	)
Benzo[a]pyrene	25.6	6.25	ug/Kg	1	XMS6663	XXX26839	)
Benzo[b]Fluoranthene	41.2	6.25	ug/Kg	1	XMS6663	XXX26839	)
Benzo[g,h,i]perylene	15.6	6.25	ug/Kg	1	XMS6663	XXX26839	)
Benzo[k]fluoranthene	8.05	6.25	ug/Kg	1	XMS6663	XXX26839	)
Chrysene	19.2	6.25	ug/Kg	1	XMS6663	XXX26839	)
Dibenzo[a,h]anthracene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Fluoranthene	33.8	6.25	ug/Kg	1	XMS6663	XXX26839	)
Fluorene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Indeno[1,2,3-c,d] pyrene	14.0	6.25	ug/Kg	1	XMS6663	XXX26839	)
Naphthalene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	)
Phenanthrene	15.4	6.25	ug/Kg	1	XMS6663	XXX26839	)
Pyrene	29.9	6.25	ug/Kg	1	XMS6663	XXX26839	)
2-Fluorobiphenyl <surr></surr>	76.7	45-105	%	1	XMS6663	XXX26839	)
Terphenyl-d14 <surr></surr>	98.6	30-125	%	1	XMS6663	XXX26839	)
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	839		Initial Prep	Wt./Vol.: 20.9	941 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	550C		Prep Extrac	ct Vol.: 1 mL	
Analysis Date/Time: 05/16/12 18:50		Prep Date/Time: 05	/14/12 15:00		Container ID:1121608020-A		
Dilution Factor: 1					Analyst: R	ſS	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: EP-12+60-4						
SGS Ref. #: 1121608020	SGS Ref. #: 1121608020					
Project ID: Ilulaq Lake East Point Ro	DW		Receipt Date/Time: 05/10/12 16:20			
Matrix: Soil/Solid (dry weight)						
Percent Solids: 85.9						
Solids						
Parameter	Result	LOQ/CL	Units DF			

Parameter_	<u>Result</u>	LOQ/CL	Units	DF	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>
Total Solids	85.9		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625					Initial Prep	wt./Vol.: 1	mL
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/14/12 17:00					Container	ID:1121608	8020-A
Dilution Factor: 1					Analyst: (	DE	



Prep

Analytical

Client Sample ID: **EP-12+97-4** SGS Ref. #: 1121608021 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	32.5 U	32.5	ug/Kg	1	VFC10977	VXX23483	3
Ethylbenzene	65.1 U	65.1	ug/Kg	1	VFC10977	VXX23483	3
Gasoline Range Organics	6.51 U	6.51	mg/Kg	1	VFC10977	VXX23483	3
o-Xylene	65.1 U	65.1	ug/Kg	1	VFC10977	VXX23483	3
P & M -Xylene	130 U	130	ug/Kg	1	VFC10977	VXX23483	3
Toluene	65.1 U	65.1	ug/Kg	1	VFC10977	VXX23483	3
1,4-Difluorobenzene <surr></surr>	98.1	72-119	%	1	VFC10977	VXX23483	3
4-Bromofluorobenzene <surr></surr>	101	50-150	%	1	VFC10977	VXX23483	3
Batch Information							
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 27.	105 g
Analytical Method: AK101		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.46	612 mL
Analysis Date/Time: 05/16/12 21:13		Prep Date/Time: 05/	08/12 11:30		Container I	D:11216080	21-B
Dilution Factor: 1					Analyst: EA	В	
Analytical Batch: VFC10977		Prep Batch: VXX234	83		Initial Prep	Wt./Vol.: 27.	105 g
Analytical Method: SW8021B		Prep Method: SW50	35A		Prep Extrac	t Vol.: 29.46	612 mL
Analysis Date/Time: 05/16/12 21:13		Prep Date/Time: 05/	08/12 11:30		Container ID:1121608021-B		
Dilution Factor: 1					Analyst: EA	Ъ	



Print Date: 5/29/2012 3:26 pm

Analytical Prep

Client Sample ID: **EP-12+97-4** SGS Ref. #: 1121608021 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Diesel Range Organics	33.0	23.8	mg/Kg	1	XFC10371	XXX2685	52	
Residual Range Organics	113	23.8	mg/Kg	1	XFC10371	XXX26852		
5a Androstane <surr></surr>	86	50-150	%	1	XFC10371	XXX26852		
n-Triacontane-d62 <surr></surr>	84	50-150	%	1	XFC10371	XXX2685	2	
Batch Information								
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.229 g			
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/17/12 00:15		Prep Date/Time: 05/16/12 15:15			Container ID:1121608021-A			
Dilution Factor: 1					Analyst: LC	E		
Analytical Batch: XFC10371		Prep Batch: XXX26852			Initial Prep Wt./Vol.: 30.229 g			
Analytical Method: AK103		Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/17/12 00:15		Prep Date/Time: 05/16/12 15:15			Container ID:1121608021-A			
Dilution Factor: 1						Analyst: LCE		



Analytical Prep

Client Sample ID: **EP-12+97-4** SGS Ref. #: 1121608021 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<b>Batch</b>	<u>Qualifiers</u>
1-Methylnaphthalene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	7.61	6.51	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
Anthracene	35.0	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	119	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	86.2	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	132	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	47.1	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	35.7	6.51	ug/Kg	1	XMS6663	XXX26839	
Chrysene	97.1	6.51	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	11.8	6.51	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	233	65.1	ug/Kg	10	XMS6665	XXX26839	
Fluorene	8.78	6.51	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	44.2	6.51	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	114	6.51	ug/Kg	1	XMS6663	XXX26839	
Pyrene	140	6.51	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr></surr>	62.6	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr></surr>	101	30-125	%	1	XMS6663	XXX26839	
Batch Information							
Analytical Batch: XMS6663		Prep Batch: XXX26	6839		Initial Prep	Wt./Vol.: 20.7	701 g
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/16/12 19:10	is Date/Time: 05/16/12 19:10 Prep Date/Time: 05/14/12 1		5/14/12 15:00		Container ID:1121608021-A		
Dilution Factor: 1			Analyst: RTS				
Analytical Batch: XMS6665	Prep Batch: XXX26839			Initial Prep Wt./Vol.: 20.701 g		701 g	
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3550C		Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/21/12 14:03		Prep Date/Time: 05/14/12 15:00			Container ID:1121608021-A		
Dilution Factor: 10					Analyst: RTS		



Print Date: 5/29/2012 3:26 pm

Client Sample ID: EP-12+97-4
SGS Ref. #: 1121608021
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30 Receipt Date/Time: 05/10/12 16:20

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	83.5		%	1	SPT8625		
Batch Information							
Analytical Batch: SPT8625					Initial Prep W	/t./Vol.: 1 mL	-
Analytical Method: SM21 2540G							
Analysis Date/Time: 05/14/12 17:00					Container ID	:112160802	1-A
Dilution Factor: 1					Analyst: CDI	=	



Analytical Prep

Client Sample ID: **TB-02** SGS Ref. #: 1121608022 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/04/12 00:00 Receipt Date/Time: 05/10/12 16:20

<u>Parameter</u>	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Batch	<u>Batch</u>	<u>Qualifiers</u>	
Benzene	12.4 U	12.4	ug/Kg	1	VFC10974	VXX234	79	
Ethylbenzene	24.9 U	24.9	ug/Kg	1	VFC10974	VXX2347	79	
Gasoline Range Organics	2.49 U	2.49	mg/Kg	1	VFC10974	VXX2347	79	
o-Xylene	24.9 U	24.9	ug/Kg	1	VFC10974	VXX2347	79	
P & M -Xylene	49.7 U	49.7	ug/Kg	1	VFC10974	VXX2347	79	
Toluene	24.9 U	24.9	ug/Kg	1	VFC10974	VXX2347	79	
1,4-Difluorobenzene <surr></surr>	96.7	72-119	%	1	VFC10974	VXX234	79	
4-Bromofluorobenzene <surr></surr>	100	50-150	%	1	VFC10974	VXX2347	79	
Batch Information								
Analytical Batch: VFC10974		Prep Batch: VXX23479			Initial Prep Wt./Vol.: 50.275 g			
Analytical Method: AK101		Prep Method: SW5035A			Prep Extract Vol.: 25 mL			
Analysis Date/Time: 05/15/12 21:24 Pr		Prep Date/Time: 05/	Prep Date/Time: 05/04/12 00:00			Container ID:1121608022-A		
Dilution Factor: 1					Analyst: EA	Ъ		
Analytical Batch: VFC10974		Prep Batch: VXX23479			Initial Prep Wt./Vol.: 50.275 g			
Analytical Method: SW8021B		Prep Method: SW5035A			Prep Extract Vol.: 25 mL			
Analysis Date/Time: 05/15/12 21:24		Prep Date/Time: 05/04/12 00:00			Container ID:1121608022-A			
Dilution Factor: 1					Analyst: EA	B		


SGS Ref.# Client Name Project Name/# Matrix	10M&1et hov isUkLiyCUa⊦RubcWrkH HXWkLRaDUCoaSUjdacBRs gBH∕gBkHa)ILuaXoK	d BlanklisC aq BLCy da(lawq d3			Printed Prep	Date/Time Batch Method Date	05/29/2012 15:28 4 4 4 28 <b>M</b> Q gq t 550- 05/1e/2012	
f - aloyWkdyaUppoIdad oapl 112180M0017a112	B&BXB:6an1B1 WidBsayU, mkoy: 2180M0027a112180M00t							
cUU, odbL		( oyWkdy	DOf /- D	wD	isRby		As UuyPy wLib	
Semivolatile (	Organic Fuels Depar	tment						
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Surrogates								
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Surrogates								
s bVIRI Bs d.š obl 82a Batch Method Instrument	KyWL< 4% 10t85 AJ 10t FcaQM90AaaaaatAa⊽a5wagHaSa(	QQe	806120		>		05/18/12	



SGS Ref.#	10M82ee	h od BlankL&C	Printe	d Date/Time	05/29/2012	15:28
Client Name	i sUkUyOU& Rubc	Wikhaq BLCy	Prep	Batch	44428M19	
Project Name/#	HAWALRADUCoaS Uyo	tc BBs da(1 awq		Method	gq t 550-	
Matrix	gBBk/gBkPta)l LuaΣ	XoK B		Date	05/1e/2012	

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Polynuclear	Aromatics GC/MS					
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2bh od uks Um d	Ulos o	t .00ai	5.00	1.50	W6/J 6	05/15/12
AI os Um dos o		t.00ai	5.00	1.50	<b>W6/J</b> 6	05/15/12
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n os TBC67 7P2moLu	ukos o	t.00ai	5.00	1.50	<b>W6/J</b> 6	05/15/12
n os TBCEzpkWBLLs	d os o	t.00ai	5.00	1.50	W6/J 6	05/15/12
- Luyos o		t .00ai	5.00	1.50	<b>W6/J</b> 6	05/15/12
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c os Us d Los o		t .00ai	5.00	1.50	<b>V6</b> /J 6	05/15/12
c uLøs o		t .00ai	5.00	1.50	W6/J 6	05/15/12
Surrogates						
2b%kWBIBrPmosu	ıkaKy₩L≤	Q9.Q	e5b105		>	05/15/12
VoIm os ukbl 1 eak	Ky₩I≤	11t	t 0b125		>	05/15/12
Batch	4 h g8858					
Method	M2Q0wagHh ga)cAF3					

Instrument F c a8M90/59Q ah gagHf A



SGS Ref.# Client Name Project Name/# Matrix	10M&t1M isUkLyCLå⊧RubcV HXWkLRaDUCoaSUyda gBN/gBk4Pa)ILuaX	hod BlankUsC Wikhaq BLCy cBRsde(lawq oKod8			Printed Date/Ti Prep Bate Met Date	ime 05/29/2012 15:28 ch thod			
f - aloyWidyal.jpp0ldal oqpBkH8XB6an1Bl WidtBsayU mkoy. 112180M0017al 12180M0027al 12180M00t7al 12180M00e7al 12180M0057al 12180M0087al 12180M00Q7al 12180M00M7al 12180M0097a 112180M0107al 12180M0117al 12180M0127al 12180M01t7al 12180M01e7al 12180M0157al 12180M0187al 12180M01Q7al 12180M01M7a 112180M0197al 12180M0207al 12180M021 AstkuvBy									
cUII odbL		( oyWkdy	DOf /- D	wD	isRy	As Uayfy wLib			
Solids VBLkgBkP y Batch g Method g Instrument	ge VM825 gh 21æ25e0]	100			>	05/1e/12			



SGS Ref.#	10 <b>M</b> 8858	h od BlankL&C	Printed 1	Date/Time	05/29/2012	15:28
Client Name	i sUUyCUa Rube	WrkHaq BLCy	Prep	Batch	H4 4 2t eQ9	
Project Name/#	HKWKLRaDUCoaS Uyd	bcBRsda(1awq		Method	gq 50t 5A	
Matrix	gBR√gBkPta)l Lua≯	Kolfo B		Date	05/15/2012	

f - alwyWkdyaLippoI dad oapBkkBXRs 6amLBI WidtBs ayU\_ mkoy:

112180M0017a112180M0027a112180M00t7a112180M00e7a112180M0057a112180M0087a112180M00Q7a112180M00M7a112180M0097a

 $112180 \text{M} 107 \text{al}\, 12180 \text{M} 22$ 

сЩ офL		( oyWkdy	DOf /- D	wD	i sRly	As UaryPy wLib
Volatile Fue	ls Department					
] LýBkB oa( Lis 60aO16Lis H y		1.50ai	2.50	0.Q50	, 6/J 6	05/15/12
Surrogates						
ebn IB, BpkWBIBro	os Tos oaKy₩L≲	108	50b150		>	05/15/12
Batch	H% 109Qe					
Method	AJ 101					
Instrument	A6BosdQM90AæEv/%Ev					
n os Tos o		M00ai	12.5	e.00	W6/J 6	05/15/12
Sd ukr os Tos o		15.8ai	25.0	QMO	W6/J 6	05/15/12
Bb4 ukos o		15.8ai	25.0	QMO	W6/J 6	05/15/12
caNahab4ukoso		t 0.0ai	50.0	15.0	W6/J 6	05/15/12
VBkWøs o		15.8ai	25.0	QM	W6/J 6	05/15/12
Surrogates						
17ebwPpkWBLBrosT	fos oaKy₩1≲	9Q8	Q2bl 19		>	05/15/12
Batch	H% 109Qe					
Method	gq M021n					
Instrument	A6 Bros ddQM90 Aac Ew/% Ew					



SGS Ref.#	10 <b>M8</b> 8M	h od Blankl&C	Printed D	ate/Time	05/29/2012	15:28
Client Name	i sUkUyCU& Rtube	Wikhan BLCy	Prep	Batch	4 4 4 28M52	
Project Name/#	HKWKLRaDUCoaS Uyo	bc BBs da(1 awq		Method	gq t 550-	
Matrix	gBR√gBkPta)l Lua∛	КоЮ В		Date	05/18/2012	

f - aLoyWidyaLippoI dad oapBikBXRs 6 amIBI WidtBs ayU, mkoy:

112180M00e7al 12180M0057al 12180M0087al 12180M00Q7al 12180M00M7al 12180M0097al 12180M0107al 12180M0117al 12180M0127a 112180M01t7al 12180M01e7al 12180M0157al 12180M0187al 12180M01Q7al 12180M01M7al 12180M0197al 12180M0207al 12180M02

cUU, odoL		( oyWkdy	DOf /- D	wD	i sRly	As Uayły wUb
Semivolatile	Organic Fuels Depar	tment				
wRoyoka(Us 60aO16Us H y		12.eai	20.0	8.20	, 6/J 6	05/18/12
Surrogates						
5UaAs1 IBydUs oaKy	/WII<	M.e	80bl 20		>	05/18/12
Batch	4 % 10t Ql					
Method	AJ 102					
Instrument	Fca8M90agoIRoyaHat/aEwagHawa	e(				
(oyił) Wika(Us6oad	DI6UsHy	12.eai	20.0	8.20	, 6/J 6	05/18/12
Surrogates						
s bVIRU Bs dLs obl 8	2aKy₩I≲	<b>M2</b> .5	80bl 20		>	05/18/12
Batch	4 % 10t Ql					
Method	AJ 10t					
Instrument	Fca8M90agoIRoyaHa2/a5wagHawa	a(				



SGS Ref.#	10M8Me0	h od Blanklik C	Printed I	Date/Time	05/29/2012	15:28
Client Name	i sUkUyCU& Rube	WikH aq BLCy	Prep	Batch	H4 4 2t eM	
Project Name/#	HKWAL RaDUCoas Uyd	te: BPs da(1 awq		Method	gq 50t 5A	
Matrix	g BR√g BkPta)l Luaλ	ХоЮ В		Date	05/18/2012	

f - alwyWkdyaLippoI dad oapBkkBXRs 6amLBI WidtBs ayU\_ mkoy:

112180M0117al 12180M0127al 12180M01t7al 12180M01e7al 12180M0157al 12180M0187al 12180M01Q7al 12180M01M7al 12180M0197a 112180M0207al 12180M021

cUU odbL		( oyWkdy	DOf /- D	wD	isRby	As Unyły wlib
Volatile Fue	ls Department					
] LyBkB oa( Lis 60aOL6Lis H y		1.50ai	2.50	0.Q50	, 6/J 6	05/18/12
Surrogates						
ebn IB, BpkWBIBro	os Tos oaKy₩1≤	1t 9	50b150		>	05/18/12
Batch	H% 109QQ					
Method	AJ 101					
Instrument	A6Bos dQM90Aac Ev/%Ew					
n os Tos o		M00ai	12.5	e.00	W6/J 6	05/18/12
Sd ukr os Tos o		15.8ai	25.0	QM0	W6/J 6	05/18/12
Bb4 ukos o		15.8ai	25.0	QM0	W6/J 6	05/18/12
caNahab4ukoso		t 0.0ai	50.0	15.0	W6/J 6	05/18/12
VBkWøs o		9.50&	25.0	QM0	W6/J 6	05/18/12
Surrogates						
17ebwPpkWBLBrosT	os oaKy₩1≲	99.8	Q2b119		>	05/18/12
Batch	H% 109QQ					
Method	gq M021n					
Instrument	A6BosdQM90AacEv/%Ew					



SGS Ref.#	10MQ0M0 h	od Bl an kUs C			Printed	Date/Time	05/29/2012 15:28	
Client Name	i sUkUyCUa-Rhube Wrk	flaq BLCy			Prep	Batch	4 4 4 28 <b>N\$</b> 5	
Project Name/#	HKWKL RaDU Coas Uydac B	Bsda(lawq				Method	gq t 550-	
Matrix	gBR√gBkPta)l LuaXoR	5 B				Date	05/1M2012	
f – aløyVkdyal.ppoldad oapBk	kBXB:6an1Bl WidBs ayU mkoy	Γ.						
112180M0107a1121	180M0117a112180M0127a1	12180M01t 7al	12180M01e7a112	180 <b>M0</b> 157al12	180 <b>M</b> 018			
		(		P	. DI		As UkuyPy	
cUU, odbL		( oyVkdy	DOI /- D	WD	1 SHOLY		wlab	
Polynuclear Arc	omatics GC/MS							
1bh od uksUm d Ukoso	0	t.00ai	5.00	1.50	W6/J 6		05/21/12	
2bh od uks Um d Ukos o	0	t .00ai	5.00	1.50	W6/J 6		05/21/12	
AI os Um d os o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
AI os Um d ukos o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
Asd III oso		t .00ai	5.00	1.50	W6/J 6		05/21/12	
n os TB)U3As d ILI os o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
n os TBCizmuLos o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
n os TBGrz%kWBLLsd os	30	t .00ai	5.00	1.50	W6/J 6		05/21/12	
n os TBC67 7P2moLukos c	)	t .00ai	5.00	1.50	W6/J 6		05/21/12	
n os TBCCzpkWBLLs d os	0	t .00ai	5.00	1.50	W6/J 6		05/21/12	
- Luyos o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
wPr os TBCt7 zUs d ILL	OS O	t .00ai	5.00	1.50	W6/J 6		05/21/12	
%kWBILsd oso		t .00ai	5.00	1.50	W6/J 6		05/21/12	
%kWBLos o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
Eslos BCI 727t bl71 zamu	Løs o	t .00ai	5.00	1.50	W6/J 6		05/21/12	
[UmdUkoso		t .00ai	5.00	1.50	W6/J 6		05/21/12	
c osUsd Loso		t .00ai	5.00	1.50	W6/J 6		05/21/12	
c uLos o		t .00ai	5.00	1.50	W6/J 6		05/21/12	
Surrogates								
2b%kWBLBrPm osukaKy	WI.<	82.5	e5b105		>		05/21/12	
VoIm os ukbl 1 eaKyWI	5	92.M	t 0b125		>		05/21/12	
Batch	4 h g8885							
Method	M2Q0wagHh ga)cAF3							

Instrument F c a8M90/59Q ah g agHf A



SGS Ref.#	106U419 p b8stWyE	Printed Date/Time		05/29/2012	15:2U
Client Name	nalslk IC ty-RubestW6 rI k	Prep	Batch		
Project Name/#	opbsl LCe 1 ECRI kycur tayca DCp o		Method		
Original	1121006002		Date		
Matrix	Srts/SrstD(DI-GvHghy)				

7 i CEkbsykC QQEVJGhBQQ ssr wtag (8 Ir DbVytr a Ckl f 8 sEk:

1121U06001rG1121U06002rG1121U06004rG1121U0600, rG1121U06005rG1121U0600UrG1121U06003rG1121U06006rG1121U06009rG1121U06010rG 1121U06011rG1121U06012rG1121U06014rG1121U0601, rG1121U06015rG1121U0601UrG1121U06013rG1121U06016rG1121U06019rG1121U06020rG 1121U06021

ulllf EyEl		OItgtal s d Bøsy	7 i d Ekbsy	n atyk	dup	dup etf tyk	Aals-ktk plyE
Solids							
Tr yl sØsr stDk		U2.6	U5.1	%	Ç	(<050)	05/1, /2012
Batch Method Instrument	SuT6U25 SM21Q5, 0G						



SGS Ref.#	1086144	Lab Control	Sample			Printed	Date/Time	05/29/2012	15:26
Client Name Project Name/# Matrix	1086145 Unalaska Ilulaq La Soil/Solio	Lab Control City-Public W ke East Point R l (dry weight)	Sample Duj orks d DW	plicate		Prep	Batch Method Date	XXX26837 SW3550C 05/14/2012	
QC results affect th	ne following produ	ction samples:							
1121608001, 1	1121608002, 112	1608003							
Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile	Organic Fue	els Departm	ent						
Diesel Range Orga	anics	LCS	130	78	(75-125)			167 mg/Kg	05/16/2012
		LCSD	139	84		7	(< 20)	167 mg/Kg	05/16/2012
Surrogates									
5a Androstane <su< td=""><td>urr&gt;</td><td>LCS</td><td></td><td>81</td><td>(60-120)</td><td></td><td></td><td></td><td>05/16/2012</td></su<>	urr>	LCS		81	(60-120)				05/16/2012
		LCSD		87		7			05/16/2012
Batch Method Instrument	XFC10365 AK102 HP 7890A	FID SV E R	l						
Residual Range O	rganics	LCS	143	86	(60-120)			167 mg/Kg	05/16/2012
		LCSD	159	96		11	(< 20)	167 mg/Kg	05/16/2012
Surrogates									
n-Triacontane-d62	2 <surr></surr>	LCS		76	(60-120)				05/16/2012
		LCSD		87		14			05/16/2012
Batch Method Instrument	XFC10365 AK103 HP 7890A	FID SV E R	1						



SGS Ref.#	1086245 Lab Control Sample	<b>Printed Date/Time</b> 05/29/2012 1:				
		Prep	Batch	XXX26839		
Client Name	Unalaska City-Public Works		Method	SW3550C		
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/14/2012		
Matrix	Soil/Solid (dry weight)					
QC results affect the follo	owing production samples:					
1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021						
,						

	QC	Pct	LCS/LCSD		RPD	Spiked	Analysis
Parameter	Results	Recov	Limits	RPD	Limits	Amount	Date

# Polynuclear Aromatics GC/MS



SGS Ref.#	1086245 I	Lab Control	Sample			Printed Prep	Date/Time Batch	05/29/2012 XXX26839	15:26
Client Name Project Name/# Matrix	Unalaska Ci Ilulaq Lake Soil/Solid (d	ty-Public W East Point I lry weight)	Vorks Rd DW				Method Date	SW3550C 05/14/2012	
Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Arom	matics GC/M	15							
1-Methylnaphthalene		LCS	12.2	55	(44-107)			22.2 ug/Kg	05/15/2012
2-Methylnaphthalene		LCS	12.0	54	(45-105)			22.2 ug/Kg	05/15/2012
Acenaphthene		LCS	13.3	60	(45-110)			22.2 ug/Kg	05/15/2012
Acenaphthylene		LCS	12.8	57	(45-105)			22.2 ug/Kg	05/15/2012
Anthracene		LCS	13.3	60	(55-105)			22.2 ug/Kg	05/15/2012
Benzo(a)Anthracene		LCS	24.4	110	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[a]pyrene		LCS	20.7	93	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[b]Fluoranthene		LCS	23.9	108	(45-115)			22.2 ug/Kg	05/15/2012
Benzo[g,h,i]perylene		LCS	19.0	85	(40-125)			22.2 ug/Kg	05/15/2012
Benzo[k]fluoranthene		LCS	24.7	111	(45-125)			22.2 ug/Kg	05/15/2012
Chrysene		LCS	20.5	92	(55-110)			22.2 ug/Kg	05/15/2012
Dibenzo[a,h]anthracen	e	LCS	20.9	94	(40-125)			22.2 ug/Kg	05/15/2012
Fluoranthene		LCS	19.4	87	(55-115)			22.2 ug/Kg	05/15/2012
Fluorene		LCS	13.4	60	(50-110)			22.2 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyrei	ne	LCS	21.3	96	(40-120)			22.2 ug/Kg	05/15/2012
Naphthalene		LCS	11.8	53	(40-105)			22.2 ug/Kg	05/15/2012
Phenanthrene		LCS	15.8	71	(50-110)			22.2 ug/Kg	05/15/2012
Pyrene		LCS	18.7	84	(45-125)			22.2 ug/Kg	05/15/2012
Surrogates									
2-Fluorobiphenyl <sur< td=""><td>r&gt;</td><td>LCS</td><td></td><td>64</td><td>(45-105)</td><td></td><td></td><td></td><td>05/15/2012</td></sur<>	r>	LCS		64	(45-105)				05/15/2012
Terphenyl-d14 <surr></surr>		LCS		117	(30-125)				05/15/2012



SGS Ref.#	1086245 Lab Control S		Printed I Pren	Date/Time Batch	05/29/2012 XXX26839	15:26		
Client Name Project Name/# Matrix	Unalaska City-Public Wo Ilulaq Lake East Point Ro Soil/Solid (dry weight)	orks d DW				Method Date	SW3550C 05/14/2012	
Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

# Polynuclear Aromatics GC/MS

 Batch
 XMS6656

 Method
 8270D SIMS (PAH)

 Instrument
 HP 6890/5973 MS SVQA



SGS Ref.#	1086657 Lab Control Sample	Printed Date/Ti	me 05/29/2012	15:26
	1086658 Lab Control Sample Duplicate	Prep Bat	ch VXX23479	
Client Name	Unalaska City-Public Works	Met	hod SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW	Dat	e 05/15/2012	
Matrix	Soil/Solid (dry weight)			

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608007, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608010, 1121608007, 1121608008, 1121608009, 1121608010, 1121608009, 1121608009, 1121608009, 1121608009, 1121608010, 1121608009, 1121608010, 1121608009, 1121608010, 1121608009, 1121608010, 1121608009, 1121608010, 1121608009, 1121608010, 1121608009, 1121608010, 1121608009, 11216080009, 1121608009, 1121608009, 1121608009, 1121608009, 1121121608022

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1260	101	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1280	103		2	(< 20)	1250 ug/Kg	05/15/2012
Ethylbenzene	LCS	1350	108	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	105	· · · · ·	2	(< 20)	1250 ug/Kg	05/15/2012
o-Xvlene	LCS	1320	106	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	106	(	0	(< 20)	1250 ug/Kg	05/15/2012
P & M -Xvlene	LCS	2670	107	(80-125)			2500 ug/Kg	05/15/2012
	LCSD	2670	107	(*******)	0	(< 20)	2500 ug/Kg 2500 ug/Kg	05/15/2012
Toluene	LCS	1330	106	(70-125)			1250 µg/Kg	05/15/2012
Totache	LCSD	1290	100	(70 125)	2	(<20)	1250 ug/Kg 1250 ug/Kg	05/15/2012
S								
Surrogates								
1,4-Difluorobenzene <surr></surr>	LCS		98	(72-119)				05/15/2012
	LCSD		100		3			05/15/2012

Batch	VFC10974
Method	SW8021B
Instrument	Agilent 7800A PID/FIF

Agilent 7890A PID/FID



SGS Ref.#	1086659 Lab Control Sample	Printed	Date/Time	05/29/2012	15:26
	1086660 Lab Control Sample Duplicate	Prep	Batch	VXX23479	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/15/2012	
Matrix	Soil/Solid (dry weight)				

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608010, 1121608022

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	
Volatile Fuels Department									
Gasoline Range Organics	LCS	10.5	105	(60-120)			10.0 mg/Kg	05/15/2012	
	LCSD	10.4	104		1	(< 20)	10.0 mg/Kg	05/15/2012	
Surrogates									
4-Bromofluorobenzene <surr></surr>	LCS		111	(50-150)				05/15/2012	
	LCSD		110		1			05/15/2012	
Ratch VEC10074									

Batch	VFC10974
Method	AK101
Instrument	Agilent 7890A PID/FID



SGS Ref.#	1086682 Lab Control Sample	<b>Printed Da</b>	te/Time	05/29/2012	15:26
	1086683 Lab Control Sample Duplicate	Prep	Batch	XXX26852	
Client Name	Unalaska City-Public Works		Method	SW3550C	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/16/2012	
Matrix	Soil/Solid (dry weight)				

1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608010, 1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile	Organic Fue	els Departm	ent						
Diesel Range Org	anics	LCS	150	90	(75-125)			167 mg/Kg	05/16/2012
		LCSD	144	87		4	(< 20)	167 mg/Kg	05/16/2012
Surrogates									
5a Androstane <s< td=""><td>urr&gt;</td><td>LCS</td><td></td><td>90</td><td>(60-120)</td><td></td><td></td><td></td><td>05/16/2012</td></s<>	urr>	LCS		90	(60-120)				05/16/2012
		LCSD		98		8			05/16/2012
Batch Method Instrument	XFC10371 AK102 HP 6890 Seri	es II FID SV D	R						
Residual Range C	Organics	LCS	157	94	(60-120)			167 mg/Kg	05/16/2012
		LCSD	173	104		10	(< 20)	167 mg/Kg	05/16/2012
Surrogates									
n-Triacontane-d62	2 <surr></surr>	LCS		90	(60-120)				05/16/2012
		LCSD		96		7			05/16/2012

BatchXFC10371MethodAK103InstrumentHP 6890 Series II FID SV D R



SGS Ref.#	1086841 Lab Control Sample	Printed D	ate/Time	05/29/2012	15:26
	1086842 Lab Control Sample Duplicate	Prep	Batch	VXX23483	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/16/2012	
Matrix	Soil/Solid (dry weight)				

1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1310	105	(75-125)			1250 ug/Kg	05/16/2012
	LCSD	1270	102		3	(< 20)	1250 ug/Kg	05/16/2012
Ethylbenzene	LCS	1370	109	(75-125)			1250 ug/Kg	05/16/2012
	LCSD	1360	108	· · · ·	1	(< 20)	1250 ug/Kg	05/16/2012
o-Xvlene	LCS	1350	108	(75-125)			1250 ug/Kg	05/16/2012
	LCSD	1330	106	( ) = === )	1	(< 20)	1250 ug/Kg	05/16/2012
P & M -Xvlene	LCS	2730	109	(80-125)			2500 11g/Kg	05/16/2012
	LCSD	2700	108	(00 120)	1	(< 20)	2500 ug/Kg 2500 ug/Kg	05/16/2012
Toluene	LCS	1350	108	(70-125)			1250 ug/Kg	05/16/2012
Totuche	LCSD	1340	107	(70 125)	0	(< 20)	1250 ug/Kg 1250 ug/Kg	05/16/2012
Surrogates								
1,4-Difluorobenzene <surr></surr>	LCS		100	(72-119)				05/16/2012
	LCSD		98		2			05/16/2012

Batch	VFC10977
Method	SW8021B
Instrument	Agilent 7890A PID/FID



SGS Ref.#	1086843 Lab Control Sample	Printed D	ate/Time	05/29/2012	15:26
	1086844 Lab Control Sample Duplicate	Prep	Batch	VXX23483	
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/16/2012	
Matrix	Soil/Solid (dry weight)				

1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	
Volatile Fuels Department									
Gasoline Range Organics	LCS	10.3	103	(60-120)			10.0 mg/Kg	05/16/2012	
	LCSD	10.2	102		1	(< 20)	10.0 mg/Kg	05/16/2012	
Surrogates									
4-Bromofluorobenzene <surr></surr>	LCS		140	(50-150)				05/16/2012	
	LCSD		139		1			05/16/2012	
Batch VEC10977									

Batch	VFC10977
Method	AK101
Instrument	Agilent 7890A PID/FID



SGS Ref.# 1087081 Lab Contro			mple I			Printed	Date/Time	05/29/2012	15:26
						Prep	Batch	XXX26865	
Client Name	Unalaska Cit	y-Public Wor	Method	SW3550C					
Project Name/#	Ilulaq Lake E	ast Point Rd	DW			Date	05/18/2012		
Matrix	Soil/Solid (dr	ry weight)							
QC results affect the foll	owing production	samples:							
1121608010, 11216	08011, 112160	8012, 112160	08013, 11216	508014, 112	1608015, 11216080	16			
			QC	Pct	LCS/LCSD		RPD	Spiked	Analysis
Parameter			Results	Recov	Limits	RPD	Limits	Amount	Date

Polynuclear Aromatics GC/MS



SGS Ref.#	1087081 I	Lab Control	l Sample			Printed D Prep	Date/Time Batch	05/29/2012 XXX26865	15:26
Client Name Project Name/# Matrix	Unalaska Ci Ilulaq Lake Soil/Solid (d	ty-Public W East Point I Iry weight)	Vorks Rd DW				Method Date	SW3550C 05/18/2012	
Parameter			QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aron	matics GC/M	IS							
1-Methylnaphthalene		LCS	15.2	68	(44-107)			22.2 ug/Kg	05/23/2012
2-Methylnaphthalene		LCS	13.5	61	(45-105)			22.2 ug/Kg	05/23/2012
Acenaphthene		LCS	15.3	69	(45-110)			22.2 ug/Kg	05/23/2012
Acenaphthylene		LCS	15.2	68	(45-105)			22.2 ug/Kg	05/23/2012
Anthracene		LCS	16.8	76	(55-105)			22.2 ug/Kg	05/23/2012
Benzo(a)Anthracene		LCS	19.1	86	(50-110)			22.2 ug/Kg	05/23/2012
Benzo[a]pyrene		LCS	18.6	84	(50-110)			22.2 ug/Kg	05/23/2012
Benzo[b]Fluoranthene		LCS	18.6	84	(45-115)			22.2 ug/Kg	05/23/2012
Benzo[g,h,i]perylene		LCS	22.3	100	(40-125)			22.2 ug/Kg	05/23/2012
Benzo[k]fluoranthene		LCS	22.6	102	(45-125)			22.2 ug/Kg	05/23/2012
Chrysene		LCS	19.7	89	(55-110)			22.2 ug/Kg	05/23/2012
Dibenzo[a,h]anthracen	e	LCS	22.0	99	(40-125)			22.2 ug/Kg	05/23/2012
Fluoranthene		LCS	18.3	83	(55-115)			22.2 ug/Kg	05/23/2012
Fluorene		LCS	15.2	68	(50-110)			22.2 ug/Kg	05/23/2012
Indeno[1,2,3-c,d] pyre	ne	LCS	22.8	103	(40-120)			22.2 ug/Kg	05/23/2012
Naphthalene		LCS	14.2	64	(40-105)			22.2 ug/Kg	05/23/2012
Phenanthrene		LCS	16.3	74	(50-110)			22.2 ug/Kg	05/23/2012
Pyrene		LCS	17.5	79	(45-125)			22.2 ug/Kg	05/23/2012
Surrogates									
2-Fluorobiphenyl <sur< td=""><td>r&gt;</td><td>LCS</td><td></td><td>71</td><td>(45-105)</td><td></td><td></td><td></td><td>05/23/2012</td></sur<>	r>	LCS		71	(45-105)				05/23/2012
Terphenyl-d14 <surr></surr>		LCS		99	(30-125)				05/23/2012



SGS Ref.#	1087081 Lab Control	Sample			Printed I Prep	Date/Time Batch	05/29/2012 XXX26865	15:26
Client Name Project Name/# Matrix	Unalaska City-Public Wo Ilulaq Lake East Point Ro Soil/Solid (dry weight)			Method Date	SW3550C 05/18/2012			
Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

# Polynuclear Aromatics GC/MS

 Batch
 XMS6672

 Method
 8270D SIMS (PAH)

 Instrument
 HP 6890/5973 MS SVQA



SGS Ref.#	1086246	Matrix Spike	<b>Printed Date/Time</b>		05/29/2012 15:26
	1086247	Matrix Spike Duplicate	Prep	Batch	XXX26839
				Method	Sonication Extraction Soil 8270
				Date	05/14/2012
Original	1121591018				
Matrix	Soil/Solid (dry we	ight)			

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 11216080009, 1121608009, 1121608009, 1121608009, 1121608009, 112

1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spike Amou	ed int	Analysis Date
Polynuclear Aroma	tics GC/MS									
1-Methylnaphthalene	MS	(58.3) U	22.9	89	(44-107)			25.8	ug/K	g 05/15/2012
<b>J</b>	MSD		23.0	89		1	(< 30)	25.9	ug/K	g 05/15/2012
2-Methylnaphthalene	MS	(58.3) U	25.0	97	(45-105)			25.8	ug/K	g 05/15/2012
	MSD		29.9	115*		18	(< 30)	25.9	ug/K	g 05/15/2012
Acenaphthene	MS	(58.3) U	22.6	88	(45-110)			25.8	ug/K	g 05/15/2012
	MSD		27.4	106		19	(< 30)	25.9	ug/K	g 05/15/2012
Acenaphthylene	MS	(58.3) U	59.2	230*	(45-105)			25.8	ug/K	g 05/15/2012
	MSD		63.2	243*		7	(< 30)	25.9	ug/K	g 05/15/2012
Anthracene	MS	(58.3) U	39.9	155*	(55-105)			25.8	ug/K	g 05/15/2012
	MSD		38.0	147*		5	(< 30)	25.9	ug/K	g 05/15/2012
Benzo(a)Anthracene	MS	71.3	78.4	28*	(50-110)			25.8	ug/K	g 05/15/2012
	MSD		73.7	9*		6	(< 30)	25.9	ug/K	g 05/15/2012
Benzo[a]pyrene	MS	141	141	0*	(50-110)			25.8	ug/K	g 05/15/2012
	MSD		148	25*		5	(< 30)	25.9	ug/K	g 05/15/2012
Benzo[b]Fluoranthene	MS	(58.3) U	0.00	0*	(45-115)			25.8	ug/K	g 05/15/2012
	MSD		0.00	0*		0	(< 30)	25.9	ug/K	g 05/15/2012
Benzo[g,h,i]perylene	MS	68.0	87.8	77	(40-125)			25.8	ug/K	g 05/15/2012
	MSD		102	131*		15	(< 30)	25.9	ug/K	g 05/15/2012
Benzo[k]fluoranthene	MS	(58.3) U	0.00	0*	(45-125)			25.8	ug/K	g 05/15/2012
	MSD		0.00	0*		0	(< 30)	25.9	ug/K	g 05/15/2012
Chrysene	MS	92.8	92.8	0*	(55-110)			25.8	ug/K	g 05/15/2012
	MSD		103	38*		10	(< 30)	25.9	ug/K	g 05/15/2012
Dibenzo[a,h]anthracene	MS	(58.3) U	36.1	140*	(40-125)			25.8	ug/K	g 05/15/2012
	MSD		43.3	167*		18	(< 30)	25.9	ug/K	g 05/15/2012
Fluoranthene	MS	86.4	69.1	-67*	(55-115)			25.8	ug/K	g 05/15/2012
	MSD		60.3	-101*		14	(< 30)	25.9	ug/K	g 05/15/2012
Fluorene	MS	(58.3) U	36.5	142*	(50-110)			25.8	ug/K	g 05/15/2012
	MSD		35.5	137*		3	(< 30)	25.9	ug/K	g 05/15/2012
Indeno[1,2,3-c,d] pyrene	e MS	(58.3) U	67.5	262*	(40-120)			25.8	ug/K	g 05/15/2012
	MSD		66.9	258*		1	(< 30)	25.9	ug/K	g 05/15/2012
Naphthalene	MS	(58.3) U	19.2	75	(40-105)			25.8	ug/K	g 05/15/2012
	MSD		20.3	78		6	(< 30)	25.9	ug/K	g 05/15/2012
Phenanthrene	MS	(58.3) U	85.3	331*	(50-110)			25.8	ug/K	g 05/15/2012
	MSD		77.0	297*		10	(< 30)	25.9	ug/K	g 05/15/2012
Pyrene	MS	232	193	-152*	(45-125)			25.8	ug/K	g 05/15/2012
	MSD		213	-71*		10	(< 30)	25.9	ug/K	g 05/15/2012



SGS Ref.# 1086 1086	10862	46 47	Matrix S	Matrix Spike Matrix Spike Duplicate				ed Date/Time Batch	05/29/2012 15:26 XXX26839		
	10802	- /	IVIAU IX S	spike Dupile	ate		T	Method Date	Sonication 05/14/201	Extraction Soil 8270	
Original	11215	91018									
Matrix	Soil/S	olid (dry v	veight)								
Parameter	Qualif	iers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date	
Polynuclear .	Aromatics	GC/MS									
2-Fluorobiphenyl	<surr></surr>	MS		22.4	87	(45-105)				05/15/2012	
		MSD		21.5	83		4			05/15/2012	
Terphenyl-d14 <s< td=""><td>surr&gt;</td><td>MS</td><td></td><td>39.2</td><td>152*</td><td>(30-125)</td><td></td><td></td><td></td><td>05/15/2012</td></s<>	surr>	MS		39.2	152*	(30-125)				05/15/2012	
		MSD		38.0	146*		3			05/15/2012	
Batch Method	XMS6656 8270D SIM	S (PAH)									

Instrument HP 6890/5973 MS SVQA



SGS Ref.#	1086661	Matrix Spike	Printed Dat	te/Time	05/29/2012 15:26
	1086662	Matrix Spike Duplicate	Prep	Batch	VXX23479
				Method	AK101 Extraction (S)
				Date	05/15/2012
Original	1121608002				
Matrix	Soil/Solid (dry we	ight)			

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009,

1121608010, 1121608022

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels De	partment								
Benzene	MS	(52.9) U	3854	101	(75-125)			3806 ug/Kg	05/15/2012
	MSD		3965	104		3	(< 20)	3806 ug/Kg	05/15/2012
Ethylbenzene	MS	(106) U	4029	106	(75-125)			3806 ug/Kg	05/15/2012
	MSD		4156	109		3	(< 20)	3806 ug/Kg	05/15/2012
o-Xylene	MS	(106) U	3997	105	(75-125)			3806 ug/Kg	05/15/2012
	MSD		4140	109		3	(< 20)	3806 ug/Kg	05/15/2012
P & M -Xylene	MS	(212) U	8057	106	(80-125)			7611 ug/Kg	05/15/2012
	MSD		8312	109		3	(< 20)	7611 ug/Kg	05/15/2012
Toluene	MS	(106) U	3965	104	(70-125)			3806 ug/Kg	05/15/2012
	MSD		4092	107		3	(< 20)	3806 ug/Kg	05/15/2012
Surrogates									
1,4-Difluorobenzene <su< td=""><td>urr&gt; MS</td><td></td><td>3790</td><td>100</td><td>(72-119)</td><td></td><td></td><td></td><td>05/15/2012</td></su<>	urr> MS		3790	100	(72-119)				05/15/2012
	MSD		3806	100		0			05/15/2012
Batch VFC	210974								

Method SW8021B

Instrument Agilent 7890A PID/FID



SGS Ref.#	1086845	Matrix Spike	Printed Da	ate/Time	05/29/2012 15:26
	1086846	Matrix Spike Duplicate	Prep	Batch	VXX23483
				Method	AK101 Extraction (S)
				Date	05/16/2012
Original	1121608011				
Matrix	Soil/Solid (dry wei	ight)			

1121608020, 1121608021

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Dep	partment								
Benzene	MS	(27.5) U	2572	99	(75-125)			2593 ug/	Kg 05/16/2012
	MSD		2636	102		2	(< 20)	2593 ug/	Kg 05/16/2012
Ethylbenzene	MS	(55.1) U	2711	105	(75-125)			2593 ug/	Kg 05/16/2012
	MSD		2721	105		0	(< 20)	2593 ug/	Kg 05/16/2012
o-Xylene	MS	(55.1) U	2668	103	(75-125)			2593 ug/	Kg 05/16/2012
	MSD		2711	105		1	(< 20)	2593 ug/	Kg 05/16/2012
P & M -Xylene	MS	(110) U	5432	105	(80-125)			5176 ug/	Kg 05/16/2012
	MSD		5496	106		1	(< 20)	5176 ug/	Kg 05/16/2012
Toluene	MS	(55.1) U	2679	103	(70-125)			2593 ug/	Kg 05/16/2012
	MSD		2668	103		0	(< 20)	2593 ug/	Kg 05/16/2012
Surrogates									
1,4-Difluorobenzene <su< td=""><td>rr&gt; MS</td><td></td><td>2572</td><td>99</td><td>(72-119)</td><td></td><td></td><td></td><td>05/16/2012</td></su<>	rr> MS		2572	99	(72-119)				05/16/2012
	MSD		2583	100		1			05/16/2012
Batch VFC	10977								

Method SW8021B

Instrument Agilent 7890A PID/FID



SGS Ref.#	1087082	Matrix Spike	Printed I	Date/Time	05/29/2012 15:26
	1087083	Matrix Spike Duplicate	Prep	Batch	XXX26865
				Method	Sonication Extraction Soil 8270
				Date	05/18/2012
Original	1121608015				
Matrix	Soil/Solid (dry w	eight)			
QC results affect the follo 1121608010, 112160	owing production sam 08011, 1121608012	nples: , 1121608013, 1121608014, 1121608015, 1121608016	j		

		Original	QC	Pct	MS/MSD		RPD	Spiked	Analysis
Parameter	Qualifiers	Result	Result	Recov	Limits	RPD	Limits	Amount	Date

Polynuclear Aromatics GC/MS

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GGS Ref.# 1087082 Matrix Spike 1087083 Matrix Spike Du		spike Spike Duplica	te		Prin Preț	Printed Date/Time Prep Batch Method Date		012 15:26 5865 ion Extraction Soil 8270 2012	
Matrix	Soil/Solid (dry v	veight)							
Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aroma	atics GC/MS								
1-Methylnaphthalene	MS	(5.33) U	15.9	69	(44-107)			233 u	g/Kg 05/21/2012
5 1	MSD		16.6	70		4	(< 30)	23.7 u	g/Kg 05/21/2012
2-Methylnaphthalene	MS	(5.33) U	14.3	61	(45-105)			23.3 u	g/Kg 05/21/2012
	MSD		14.5	61		2	(< 30)	23.7 u	g/Kg 05/21/2012
Acenaphthene	MS	(5.33) U	16.3	70	(45-110)			23.3 u	g/Kg 05/21/2012
	MSD		16.9	71		4	(< 30)	23.7 u	g/Kg 05/21/2012
Acenaphthylene	MS	(5.33) U	16.5	71	(45-105)			23.3 u	g/Kg 05/21/2012
	MSD		16.9	71		2	(< 30)	23.7 u	g/Kg 05/21/2012
Anthracene	MS	(5.33) U	17.4	75	(55-105)			23.3 u	g/Kg 05/21/2012
	MSD		18.1	76		4	(< 30)	23.7 u	g/Kg 05/21/2012
Benzo(a)Anthracene	MS	(5.33) U	20.6	89	(50-110)			23.3 u	g/Kg 05/21/2012
	MSD		21.1	89		2	(< 30)	23.7 u	g/Kg 05/21/2012
Benzo[a]pyrene	MS	(5.33) U	17.4	75	(50-110)			23.3 u	g/Kg 05/21/2012
	MSD		18.6	78		6	(< 30)	23.7 u	g/Kg 05/21/2012
Benzo[b]Fluoranthene	MS	(5.33) U	19.6	84	(45-115)			23.3 u	g/Kg 05/21/2012
	MSD		20.0	84		2	(< 30)	23.7 u	g/Kg 05/21/2012
Benzo[g,h,i]perylene	MS	(5.33) U	15.5	67	(40-125)			23.3 u	g/Kg 05/21/2012
	MSD		16.5	69		6	(< 30)	23.7 u	g/Kg 05/21/2012
Benzo[k]fluoranthene	MS	(5.33) U	17.3	74	(45-125)			23.3 u	g/Kg 05/21/2012
	MSD		18.0	76		3	(< 30)	23.7 u	g/Kg 05/21/2012
Chrysene	MS	(5.33) U	19.5	83	(55-110)			23.3 u	g/Kg 05/21/2012
	MSD		19.0	80		2	(< 30)	23.7 u	g/Kg 05/21/2012
Dibenzo[a,h]anthracene	MS	(5.33) U	14.7	63	(40-125)			23.3 u	g/Kg 05/21/2012
	MSD		16.0	68		9	(< 30)	23.7 u	g/Kg 05/21/2012
Fluoranthene	MS	(5.33) U	24.2	103	(55-115)			23.3 u	g/Kg 05/21/2012
	MSD		24.1	101		0	(< 30)	23.7 u	g/Kg 05/21/2012
Fluorene	MS	(5.33) U	16.7	72	(50-110)			23.3 u	g/Kg 05/21/2012
	MSD		17.2	72		3	(< 30)	23.7 u	g/Kg 05/21/2012
Indeno[1,2,3-c,d] pyren	e MS	(5.33) U	16.3	70	(40-120)			23.3 u	g/Kg 05/21/2012
	MSD		17.1	72		5	(< 30)	23.7 u	g/Kg 05/21/2012
Naphthalene	MS	(5.33) U	14.3	62	(40-105)			23.3 u	lg/Kg 05/21/2012
	MSD		14.2	60		1	(< 30)	23.7 u	g/Kg 05/21/2012
Phenanthrene	MS	(5.33) U	17.6	76	(50-110)			23.3 u	lg/Kg 05/21/2012
	MSD		19.0	80	/ <b>/ -</b> / \	8	(< 30)	23.7 u	g/Kg 05/21/2012
Pyrene	MS	(5.33) U	23.5	101	(45-125)	-		23.3 u	g/Kg 05/21/2012
	MSD		23.0	97		2	(< 30)	23.7 u	g/Kg 05/21/2012
Surrogates									
2-Fluorobiphenyl <surr< td=""><td>&gt; MS</td><td></td><td>16.7</td><td>72</td><td>(45-105)</td><td></td><td></td><td></td><td>05/21/2012</td></surr<>	> MS		16.7	72	(45-105)				05/21/2012
	MSD		17.3	73		4			05/21/2012
Terphenyl-d14 <surr></surr>	MS		22.9	98	(30-125)				05/21/2012



SGS Ref.#	1087082	Matrix S	Spike			Printed	Date/Time	05/29/2012	2 15:26
	1087083	Matrix S	Spike Duplica	ate		Prep	Batch	XXX26865	5
							Method	Sonication	Extraction Soil 8270
							Date	05/18/2012	2
Original	1121608015								
Matrix	Soil/Solid (dry we	eight)							
Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear	Aromatics GC/MS MSD		23.1	97		1			05/21/2012
Batch Method Instrument	XMS6665 8270D SIMS (PAH) HP 6890/5973 MS SV(	QA							

S North	Harbor
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S	of Unalaska R
	City
	CLIENT

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SGS Reference

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REMARKS/ LOC ID

http://www.sgs.com/terms and conditions.htm

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab Pink - Retained by Client

(Ske attached Sample Receipt Form)

(See attached Sample Receipt Form)

or Ambient [ ]

Temperature Blank "C: -U, S JS

Received For Laboratory By:

Time

Date

Relinquished By: (4)

2011/10/5

INTACK BROKEN ABSENT Chain of Custody Seal: (Circle)

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Keiinquistied by: (4) Date Ime Received Fort-aboratory By: or Ambient [ ] (INTACY BROKEN				2				Temperatu	ure Blank	"c: 103-1	2	Chain of Custody	/ Seal: (Circle)
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# CHAIN OF CUSTODY RECORD SGS North America Inc.



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page

MAN

SGS Reference #:

CLIENT City of Unaleska Portof Dutch Harbor

PHONE NO: 907-581-1260

LUND

Robert

CONTACT:

□ 200 W. Potter Drive **Anchorage**, **AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301 □ 5500 Business Drive **Wilmington**, **NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

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http://www.sgs.com/terms and conditions.htm

(See attached Sample Receipt Form)

White - Retained by Lab Pink - Retained by Client

(See attached Sample Receipt Form)





# SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Commente/Action Takan
Were custody seals intact? Note # & location, if applicable.	No N/A	Comments/Action Taken:
COC accompanied samples?	Ves No N/A	(+-
Temperature blank compliant* (i.e., 0-6°C after correction factor)?	Ves N/A	
* Note: Exemption permitted for chilled samples collected less than 8 hours aga	() INA	Enve term haus
Cooler ID: $[a, -b] \neq w/$ Therm. ID: $[3]$		inder in the time
Cooler ID: @ w/ Therm ID:		
Cooler ID: @ w/ Therm ID:		
Cooler ID: @ w/ Therm ID:		
Cooler ID: @ w/ Therm ID:		
Note: If non-compliant, use form FS-0029 to document affected samples/analyses.		
If samples are received without a temperature blank, the "cooler		
temperature" will be documented in lieu of the temperature blank &		
<b>COULER TEMP</b> " will be noted to the right. In cases where neither a		
If tamparature (a) color temp can be obtained, note "ambient" or "chilled."		
Delivery and a discrete the sample containers ice free?	Yes No AA	
Light Alexandrian Security all that apply): Client	Note ABN/	
USPS Alert Courien Road Runner AK Air	tracking #	
Lynden Carnie EKA PenAir	See Attached	
Fedex UPS NAC Other:	DEN/A)	
For WOH with airbuils, was the WOH & airbuil		
injo recoraea in the Front Counter eLog?	Yes No N/A	
$\rightarrow$ For samples received with payment, note amount (\$) and c	ash / check / CC (	circle one) or note:
→ For samples received in FBKS, ANCH staff will verify all criteria	are reviewed.	SRF Initiated by: () N/A
Were samples received within hold time?	Yes/No N/A	Anipero Lilali
Note: Refer to form F-083 "Sample Guide" for hold time information.		missing Later Luber on
* Note: Exemption permitted if times differ < They in which case ups times on COC	Yes NON/A	SIA OD Attack I 10 ALEDONAL
Were analyses requested unambiguous?	Dr. m	MIA . 110 MILA & SCHPOILCY
Were samples in good condition (no leaks/amaka/hanalama)?	Yes No N/A	on other bottles, by default made
Packing material used (specify all that apply): Bubble Wrap	Yes No N/A	- AIG
Separate tastic hade Vermiculite Other		
Were all VOA vials free of headspace (i.e. hubbles <6 mm)?	Ver Nr. NIA	
Were all soil VOAs field extracted with MeOH+BEB?	Yes No NA	
Were proper containers (type/mass/volume/preservative*) used?	Tes No NA	
* Note: Exemption permitted for waters to be analyzed for metals.	Tes INO IN/A	the second se
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Var NIA	
For special handling (e.g. "MI" or foreign soils lab filter limited	Ves No NA	
volume Ref Lah) were hottles/paperwork flagged (e.g. sticker)?	I CS INO INTA	
For preserved waters (other than VOA vials II Mercury of	Vos No ATA	
microbiological analyses) was nH verified and compliant?	Tes NO ALAS	
If nH was adjusted were bottles flagged (i.e. stickers)?	Vac No NIR	
For RUSH/SHORT Hold Time or site specific OC (a c	Ves No NA	
BMS/BMSD/BDIP) samples were the COC & hottles flagged (a a	I US INO 1075	~
stickers) accordingly? For RUSH/SHORT HT was amail sont?	A	
For any question answered "No." has the PM been notified and the	NO INTO MUA	SPE Completed hun il
problem resolved (or paperwork put in their hin)?	I CS INO IN/A	PM-
Was PEER REVIEW of sample numbering/abeling completed?	Vac No ATA	Prose Postimut V M N/A
the second	ICS INO IN/A	reci reviewed by ANA
Additional notes (if applicable):		

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.

339 DUT 0 249 4402 339 DUT 0 249 4402 SHIPPER'S ACCOUNT NUMBER AME AND ADDRESS = AIR WAYBILL AIR CONSIGNMENT NOTE) 10 DEKON Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity. If the carriage involves an ultimate destination or stop in a country other than the country of departure, the Warsaw Convention may be applicable and the Convention governs and in most cases limits the liability of carriers in respect of loss or damage to cargo. Agreed stopping places are those places (other than the places of departure and destination) shown under requested routing and/or those places shown in carriers' timetables as scheduled stopping places for the route. Address of first carrier is the airport of departure. SEE CONDITIONS ON REVERSE USENCOF CONSIGNEE'S NAME AND ADDRESS CONSIGNEE'S ACCOUNT NUMBER (LOCATION Date/Time Please print your name Signature PRIORI ONOMY DATE TIME PHONE PERSON CONTACTED BY INSTRUCTIONS TO CARRIER TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER UNLESS SHIPPER GIVES OTHER INSTRUCTIONS HEREON. AGENTS JATA CODE ACCOUNT NO. Domestic Liability: If no value declared PEN AIR liability will not exceed \$ .50 per lb. plus transportation costs. See rule G32B5 A.T.P. AIRPORT OF DEPARTURE (ADDR OF FIRST CARRIER) AND REQUESTED ROUTING BY FIRST CARRIER DECLARED VALUE FOR CARRIAGE DECLARED VALUE FOR CUSTOMS CURRENCY TO A BY TO BY 1195 JUTT FOR CARRIER USE ONL AIRPORT OF DESTINATION FLIGHT/DATE FLIGHT/DATE HANDLING INFORMATIO 907 35 3264 (] m NO. OF. PIECES RCP GROSS CHARGEABLE NATURE AND CUANTITY OF GOODS (INCL. DIMENSIONS OR VOLUME) BATE/GLASS RATE 10/10/200 TOTAL OMMODIT WEIGHT WEIGHT CHARGE 1 1121608 PICKUP CHARGES ORIGIN ADVANCE CHARGES DESCRIPTION OF ORIGIN ADVANCE PREPAID WEIGHT CHARGE COLLECT P-UP PREPAID DEL DELIVERY CHARGES VALUATION CHARGE DEST. ADVANCE CHARGES DESCRIPTION OF DEST. ADVANCE ITEMS D OTHER CHARGES AND DESCRIPTION SHIPPER'S R.F.C. AMOUNT TO BE ENTERED BY SHIPPER TA) 8 2 2 Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods (hazardous materiale) such part is properly described by name and is in proper condition for carriage by air according to the applicable government regulations and, for international shipments, the current International Air Transport Association's Dangerous Goods Regulations. It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage. SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, THE SHIPPER'S ATTENTION IS DRAWN OF THE NOTICE CONCERNING CARRIERS LUINTATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and pay a supplemental charge if required. TOTAL OTHER CHARGES DUE AGENT TOTAL OTHER CHARGES DUE CARRIER ÷ SIGNATURE OF SHIPPER OR HIS AGENT AND INITIAL APPROPRIATE BOX BELOW BINTED NAME CURRENC COD TOTAL PREPAID TOTAL COLLECT This shipment does NOT contain This shipment DOES contain Dangerous Goods. Dangerous Goods. EXECUTED ON CURRENCY CONVERSION RATES TOTAL COLLECT IN DESTINATION CURRENCY DUTF 2,4 SIGNATURE OF ISSUING CARRIER OR ITS AGENT (Date) (Time) (Place) CHARGES AT DESTINATION TOTAL COLLECT CHARGES FOR CARRIERS USE ONLY AT DESTINATION (ALL COLLECT CHARGES 0 2495 4402 IN DESTINATION CURRENCY) No & CONSIGNEE M FORM AC-17U UNIVERSAL UNIFORM AIRBILL PRINTED IN U.S.A. REV 07/10





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

Project: Client: SGS Work Order: Ilulaq Lake East Point Rd DW Unalaska City-Public Works 1121774

Released by:

#### Contents:

Cover Page Case Narrative Final Report Pages Quality Control Summary Forms Chain of Custody/Sample Receipt Forms



Client Name: Unalaska City-Public Works Project Name: Ilulaq Lake East Point Rd DW Workorder No.: 1121774

# Sample Comments

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

Lab Sample ID	Sample Type	Client Sample ID			
1121774001	PS	EP-13+39-4			
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - The pattern is consistent with a lube oil.				
1087781	* MS	1121741007MS			
	8270D SIM - MS/M	SD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.			
1087782	* MSD	1121741007MSD			
	8270D SIM - MS/M	SD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.			

\* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.



### **Report of Manual Integrations**

Print Date: 5/30/2012 9:02 am

Laboratory ID	Client Sample ID	Analytical Batch	<u>Method</u>	Analyte	Reason
1087781	1121741007MS	XMS6672	8270D SIMS (F	Benzo[k]fluoranthene	RP
1087781	1121741007MS	XMS6672	8270D SIMS (F	Fluorene	SP
1087781	1121741007MS	XMS6672	8270D SIMS (F	Naphthalene	SP
1087782	1121741007MSD	XMS6672	8270D SIMS (F	Benzo[k]fluoranthene	RP
1087782	1121741007MSD	XMS6672	8270D SIMS (F	Fluorene	SP
1087782	1121741007MSD	XMS6672	8270D SIMS (F	Naphthalene	SP
1121741007	LABREFQC	XMS6672	8270D SIMS (F	Naphthalene	SP
1121774001	EP-13+39-4	XMS6675	8270D SIMS (F	Benzo[k]fluoranthene	PNF

Manual Integration Reason Code Descriptions

CodeDescriptionOOriginal ChromatogramMModified Chromatogram

- SS Skimmed surrogate
- BLG Closed baseline gap
- RP Reassign peak name
- PIR Pattern integration required
- IT Included tail
- SP Split peak
- RSP Removed split peak

FPS Forced peak start/stop

- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.


# Laboratory Analytical Report

Client: Unalaska City-Public Works P.O. Box 610 Unalaska, AK 99685

> Attn: Robert Lund T: 907-581-1260 F: rlund@ci.unalaska.ak.us

Project: Ilulag Lake East Point Rd DW

Workorder No.: 1121774

#### Certification:

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

Forest Taylor

Forest.Taylor@sgs.com Project Manager

#### Contents (Bookmarked in PDF):

Cover Page Glossary Sample Summary Forms Case Narrative Sample Results Forms Batch Summary Forms (by method) Quality Control Summary Forms (by method) Chain of Custody/Sample Receipt Forms Attachments (if applicable)





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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the

provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

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

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



## SAMPLE SUMMARY

Print Date: 5/30/2012 9:02 am

Client Name: Unalaska City-Public Works Project Name: Ilulaq Lake East Point Rd DW Workorder No.: 1121774

## Analytical Methods

Method Description	Analytical Method
8270 PAH SIM Semi-Volatiles GC/MS	8270D SIMS (PAH)
AK101/8021 Combo. (S)	AK101
AK101/8021 Combo. (S)	SW8021B
Diesel/Residual Range Organics	AK102
Diesel/Residual Range Organics	AK103
Percent Solids SM2540G	SM21 2540G

## Sample ID Cross Reference

Lab Sample ID	Client Sample ID
1121774001	EP-13+39-4
1121774002	TB-03



## **Detectable Results Summary**

Print Date: 5/30/2012 9:02 am

Client Sample ID: EP-13+39-4			
SGS Ref. #: 1121774001	Parameter_	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels Department			
	Diesel Range Organics	254	mg/Kg
	Residual Range Organics	609	mg/Kg
Polynuclear Aromatics GC/MS			
	Phenanthrene	206	ug/Kg
	Anthracene	93.1	ug/Kg
	Fluoranthene	326	ug/Kg
	Pyrene	267	ug/Kg
	Benzo(a)Anthracene	137	ug/Kg
	Chrysene	158	ug/Kg
	Benzo[b]Fluoranthene	225	ug/Kg
	Benzo[a]pyrene	143	ug/Kg
	Indeno[1,2,3-c,d] pyrene	124	ug/Kg
	Benzo[g,h,i]perylene	171	ug/Kg



Prep

Analytical

Client Sample ID: **EP-13+39-4** SGS Ref. #: 1121774001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30 Receipt Date/Time: 05/22/12 16:10

## Volatile Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	Batch	<u>Qualifiers</u>
Benzene	38.9 U	38.9	ug/Kg	1	VFC10989	VXX23513	3
Ethylbenzene	77.9 U	77.9	ug/Kg	1	VFC10989	VXX23513	3
Gasoline Range Organics	7.79 U	7.79	mg/Kg	1	VFC10989	VXX23513	}
o-Xylene	77.9 U	77.9	ug/Kg	1	VFC10989	VXX23513	3
P & M -Xylene	156 U	156	ug/Kg	1	VFC10989	VXX23513	3
Toluene	77.9 U	77.9	ug/Kg	1	VFC10989	VXX23513	3
1,4-Difluorobenzene <surr></surr>	95.7	72-119	%	1	VFC10989	VXX23513	3
4-Bromofluorobenzene <surr></surr>	105	50-150	%	1	VFC10989	VXX23513	}
Batch Information							
Analytical Batch: VFC10989		Prep Batch: VXX23	513		Initial Prep	Wt./Vol.: 25.	645 g
Analytical Method: AK101		Prep Method: SW5035A			Prep Extract Vol.: 30.8438 mL		
Analysis Date/Time: 05/24/12 12:41		Prep Date/Time: 05/11/12 16:30			Container ID:1121774001-B		
Dilution Factor: 1					Analyst: EA	AB	
Analytical Batch: VFC10989		Prep Batch: VXX23	513		Initial Prep	Wt./Vol.: 25.	645 g
Analytical Method: SW8021B	Prep Method: SW5035A			Prep Extract Vol.: 30.8438 mL			
Analysis Date/Time: 05/24/12 12:41	Prep Date/Time: 05/11/12 16:30			Container ID:1121774001-B			
Dilution Factor: 1					Analyst: EA	AB	



Print Date: 5/30/2012 9:02 am

Analytical Prep

Client Sample ID: **EP-13+39-4** SGS Ref. #: 1121774001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30 Receipt Date/Time: 05/22/12 16:10

#### Semivolatile Organic Fuels Department

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	<b>Batch</b>	<u>Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	254	129	mg/Kg	5	XFC10381	XXX2689	6
Residual Range Organics	609	129	mg/Kg	5	XFC10381	XXX2689	6
5a Androstane <surr></surr>	89	50-150	%	5	XFC10381	XXX2689	6
n-Triacontane-d62 <surr></surr>	83	50-150	%	5	XFC10381	XXX2689	6
Batch Information							
Analytical Batch: XFC10381		Prep Batch: XXX26896			Initial Prep Wt./Vol.: 30.003 g		
Analytical Method: AK102		Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/25/12 17:46		Prep Date/Time: 05/22/12 18:00			Container ID:1121774001-A		
Dilution Factor: 5					Analyst: ME	EM	
Analytical Batch: XFC10381		Prep Batch: XXX26896			Initial Prep Wt./Vol.: 30.003 g		
Analytical Method: AK103	Prep Method: SW3550C			Prep Extract Vol.: 1 mL			
Analysis Date/Time: 05/25/12 17:46		Prep Date/Time: 05/22/12 18:00			Container ID:1121774001-A		
Dilution Factor: 5					Analyst: ME	EM	



Print Date: 5/30/2012 9:02 am

Analytical Prep

Client Sample ID: **EP-13+39-4** SGS Ref. #: 1121774001 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight) Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30 Receipt Date/Time: 05/22/12 16:10

### Polynuclear Aromatics GC/MS

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	DF	Batch	<u>Batch</u>	<u>Qualifiers</u>	
1-Methylnaphthalene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
2-Methylnaphthalene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Acenaphthene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Acenaphthylene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Anthracene	93.1	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Benzo(a)Anthracene	137	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Benzo[a]pyrene	143	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Benzo[b]Fluoranthene	225	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Benzo[g,h,i]perylene	171	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Benzo[k]fluoranthene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Chrysene	158	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Dibenzo[a,h]anthracene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Fluoranthene	326	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Fluorene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Indeno[1,2,3-c,d] pyrene	124	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Naphthalene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Phenanthrene	206	63.9	ug/Kg	10	XMS6675	XXX2689	5	
Pyrene	267	63.9	ug/Kg	10	XMS6675	XXX2689	5	
2-Fluorobiphenyl <surr></surr>	97.2	45-105	%	10	XMS6675	XXX2689	5	
Terphenyl-d14 <surr></surr>	124	30-125	%	10	XMS6675	XXX2689	5	
Batch Information								
Analytical Batch: XMS6675		Prep Batch: XXX26	895		Initial Prep	Wt./Vol.: 22.	786 g	
Analytical Method: 8270D SIMS (PAH)		Prep Method: SW3	Prep Method: SW3550C			Prep Extract Vol.: 1 mL		
Analysis Date/Time: 05/24/12 21:14		Prep Date/Time: 05/23/12 15:00			Container ID:1121774001-A			
Dilution Factor: 10					Analyst: R	IS		



Print Date: 5/30/2012 9:02 am

Client Sample ID: EP-13+39-4
SGS Ref. #: 1121774001
Project ID: Ilulaq Lake East Point Rd DW
Matrix: Soil/Solid (dry weight)
Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30 Receipt Date/Time: 05/22/12 16:10

#### Solids

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Analytical</u> Batch	<u>Prep</u> Batch	<u>Qualifiers</u>
Total Solids	77.2		%	1	SPT8632		
Batch Information							
Analytical Batch: SPT8632 Analytical Method: SM21 2540G					Initial Prep V	Vt./Vol.: 1 m	L
Analysis Date/Time: 05/23/12 17:08					Container ID	):112177400	1-A
Dilution Factor: 1					Analyst: JSł	<	



Print Date: 5/30/2012 9:02 am

Analytical Prep

Client Sample ID: **TB-03** SGS Ref. #: 1121774002 Project ID: Ilulaq Lake East Point Rd DW Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/11/12 16:30 Receipt Date/Time: 05/22/12 16:10

## **Volatile Fuels Department**

Parameter	<u>Result</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	<u>Batch</u>	<u>Batch</u>	<u>Qualifiers</u>
Benzene	12.6 U	12.6	ug/Kg	1	VFC10989		
Ethylbenzene	25.2 U	25.2	ug/Kg	1	VFC10989		
Gasoline Range Organics	2.52 U	2.52	mg/Kg	1	VFC10989		
o-Xylene	25.2 U	25.2	ug/Kg	1	VFC10989		
P & M -Xylene	50.3 U	50.3	ug/Kg	1	VFC10989		
Toluene	25.2 U	25.2	ug/Kg	1	VFC10989		
1,4-Difluorobenzene <surr></surr>	94.9	72-119	%	1	VFC10989		
4-Bromofluorobenzene <surr></surr>	103	50-150	%	1	VFC10989		
Batch Information							
Analytical Batch: VFC10989 Analytical Method: AK101					Initial Prep	Wt./Vol.: 49	9.696 g
Analysis Date/Time: 05/24/12 17:06					Container	D:1121774	002-A
Dilution Factor: 1					Analyst: E	AB	
Analytical Batch: VFC10989					Initial Prep	Wt./Vol.: 49	9.696 g
Analytical Method: SW8021B							
Analysis Date/Time: 05/24/12 17:06					Container	D:1121774	002-A
Dilution Factor: 1					Analyst: E	AB	



SGS Ref.#	1087779 Me	ethod Blank			Printed Date/T	ime 05/30/2012 9:02
Client Name	Unalaska City-Publi	c Works			Prep Bat	ch XXX26895
Project Name/#	Ilulaq Lake East Poi	nt Rd DW			Me	thod SW3550C
Matrix	Soil/Solid (dry weig	ht)			Date	e 05/23/2012
QC results affect the	following production samples:					
1121774001						
_		<b>D</b> 1	100/01	DI	<b>T</b> T :	Analysis
Parameter		Results	LUQ/CL	DL	Units	Date
Polynuclear A	Aromatics GC/MS					
1-Methylnaphthal	ene	3.00 U	5.00	1.50	ug/Kg	05/23/12
2-Methylnaphthal	ene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Acenaphthene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Acenaphthylene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Anthracene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo(a)Anthrace	ene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[a]pyrene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[b]Fluorant	hene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[g,h,i]peryle	ene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[k]fluoranth	nene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Chrysene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Dibenzo[a,h]anthr	racene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Fluoranthene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Fluorene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Indeno[1,2,3-c,d]	pyrene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Naphthalene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Phenanthrene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Pyrene		3.00 U	5.00	1.50	ug/Kg	05/23/12
Surrogates						
2-Fluorobiphenyl	<surr></surr>	63.1	45-105		%	05/23/12
Terphenyl-d14 <s< td=""><td>urr&gt;</td><td>94.9</td><td>30-125</td><td></td><td>%</td><td>05/23/12</td></s<>	urr>	94.9	30-125		%	05/23/12
Batch	XMS6672					
Method	8270D SIMS (PAH)					
Instrument	HP 6890/5973 MS SVQA					



SGS Ref.# Client Name Project Name/# Matrix	1087807 Unalaska Ilulaq La Soil/Soli	Meth City-Public V ke East Point d (dry weight)	od Blank Vorks Rd DW			Printed Prep	Date/Time Batch Method Date	05/30/2012 9:02 XXX26896 SW3550C 05/22/2012	
QC results affect the for 1121774001	ollowing product	ion samples:							
Parameter			Results	LOQ/CL	DL	Units		Analysis Date	
Semivolatile (	Organic Fue	els Depart	ment						
Diesel Range Organics		12.4 U	20.0	6.20	mg/Kg		05/24/12		
Surrogates									
5a Androstane <sur Batch Method Instrument</sur 	r> XFC10379 AK102 HP 7890A	FID SV E R	92.3	60-120		%		05/24/12	
Residual Range Org	ganics		12.4 U	20.0	6.20	mg/Kg		05/24/12	
Surrogates									
n-Triacontane-d62 · Batch Method Instrument	<surr> XFC10379 AK103 HP 7890A</surr>	FID SV E R	96.6	60-120		%		05/24/12	



SGS Ref.# Client Name Project Name/# Matrix	1087886 Unalaska City- Ilulaq Lake Eas Soil/Solid (dry	Method Blank Public Works at Point Rd DW weight)			Printed Prep	Date/Time Batch Method Date	05/30/2012 9:02
QC results affect the 1121774001	following production sar	nples:					
Parameter		Results	LOQ/CL	DL	Units		Analysis Date
Solids							
Total Solids		99.8			%		05/23/12
Batch	SPT8632						
Method Instrument	SM21 2540G						



SGS Ref.#	1088266 N	Iethod Blank			Printed	Date/Time	05/30/2012 9:02	
Client Name	Unalaska City-Pub	lic Works			Prep	Batch	VXX23513	
Project Name/#	Ilulaq Lake East Po	oint Rd DW				Method	SW5035A	
Matrix	Soil/Solid (dry wei	ght)				Date	05/24/2012	
QC results affect the 1121774001, 1	following production sample 121774002	s:						
Parameter		Results	LOQ/CL	DL	Units		Analysis Date	
Volatile Fue	ls Department							
Gasoline Range C	Organics	1.50 U	2.50	0.750	mg/Kg		05/24/12	
Surrogates								
4-Bromofluorobe	nzene <surr></surr>	99.6	50-150		%		05/24/12	
Batch	VFC10989							
Method	AK101							
Instrument	Agilent 7890 PID/FID							
Benzene		8.00 U	12.5	4.00	ug/Kg		05/24/12	
Ethylbenzene		15.6 U	25.0	7.80	ug/Kg		05/24/12	
o-Xylene		15.6 U	25.0	7.80	ug/Kg		05/24/12	
P & M -Xylene		30.0 U	50.0	15.0	ug/Kg		05/24/12	
Toluene		15.6 U	25.0	7.80	ug/Kg		05/24/12	
Surrogates								
1,4-Difluorobenze	ene <surr></surr>	94.8	72-119		%		05/24/12	
Batch	VFC10989							
Method	SW8021B							
Instrument	Agilent 7890 PID/FID							



SGS Ref.# Client Name Project Name/# Original	1087887 Duplica Unalaska City-Public Works Ilulaq Lake East Point Rd DV 1121784017	te V			Printed   Prep	Date/Time Batch Method Date	05/30/2012	9:02
Matrix	Soil/Solid (dry weight)							
QC results affect the 1121774001	following production samples:							
Parameter		Original Result	QC Result	Units	RPD	RPD Limits		Analysis Date
Solids								
Total Solids		79.7	80.9	%	2	(< 15 )		05/23/2012
Batch Method Instrument	SPT8632 SM21 2540G							



SGS Ref.#	104LL40 ab :Contro	l:Sbmple			Printed Prep	Date/Time Batch	05/20/9019 XXX93465	:6809
Client Name Project Name/# Matrix	Dnblbui b:CctUsky le-:F WylbI :a bi e:q but:kocnt: Sod/SolcR:(RrUwecght)	Poriu ER:d P				Method Date	SP 2550C 05/92/9019	
7 C:reuyltu:b@-t:the:@llo 1191LLf001	owang:proRy-tcon:ubmpleu8							
kbrbmeter		7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a cmctu	Ekd	Ekd a cmctu	Spci eR v moynt:	v nblUœı d bte
Polynuclear Arom	atics GC/MS							
1sA ethUnbphthblene	aCS	1302	:L2	(:ffs10L:)			99 <b>0</b> yg/Kg	05/92/9019
9sA ethUnbphthblene	aCS	150	:34	(:f5s105:)			99 <b>0</b> yg/Kg	05/92/9019
v - enbphthene	aCS	13 <b>G</b>	:Lf	(:f5s110:)			99 <b>0</b> yg/Kg	05/92/9019
v - enbphthUene	a CS	150	:L1	(:f5s105:)			99 <b>0</b> yg/Kg	05/92/9019
v nthrb-ene	a CS	1509	:34	(:55s105:)			99 <b>0</b> yg/Kg	05/92/9019
<en>o(b)v nthrb-ene</en>	aCS	13 <b>G</b>	:Lf	(:50s110:)			99 <b>0</b> yg/Kg	05/92/9019
<en>oHbpUtene</en>	a CS	19 <b>0</b>	:5L	(:50s110:)			99 <b>0</b> yg/Kg	05/92/9019
<en>oF HMyorbnthene</en>	aCS	1302	:Lf	(:f5s115:)			99 <b>0</b> yg/Kg	05/92/9019
<en>oFgThTepperUene</en>	aCS	13 <b>Ø</b>	:Lf	(:f0s195:)			99 <b>0</b> yg/Kg	05/92/9019
<en>oH ₩yorbnthene</en>	a CS	16 <b>O</b>	:44	(:f5s195:)			99 <b>0</b> yg/Kg	05/92/9019
ChrUæne	a CS	16 <b>O</b>	:44	(:55s110:)			99 <b>0</b> yg/Kg	05/92/9019
d c en>oHoThHonthrb-ene	a CS	1302	:L2	(:f0s195:)			99 <b>0</b> yg/Kg	05/92/9019
Vlyorbnthene	aCS	90 <b>Q</b>	:60	(:55s115:)			99 <b>0</b> yg/Kg	05/92/9019
Vlyorene	aCS	13 <b>D</b>	:L5	(:50s110:)			99 <b>0</b> yg/Kg	05/92/9019
WRenoFl 1912s- TRHpUren	e a CS	1L <b>Q</b>	:L4	(:f0s190:)			99 <b>0</b> yg/Kg	05/92/9019
Mbphthblene	a CS	15 <b>0</b>	:36	(:f0s105:)			99 <b>0</b> yg/Kg	05/92/9019
khenbnthrene	a CS	1L <b>0</b>	:LL	(:50s110:)			99 <b>0</b> yg/Kg	05/92/9019
kUrene	aCS	16 <b>G</b>	:44	(:f5s195:)			99 <b>0</b> yg/Kg	05/92/9019
Surrogates								
9sVlyoro qhenU:. uyrr	B a CS		:L6	(:f5s105:)				05/92/9019



SGS Ref.#	104LL40 ab	:Control:Sbmple	05/20/9019 XXX93465	:6809				
Client Name Project Name/# Matrix	Dnblbui b:CctU WylbI :a bi e:q b Sod/SolcR:(RrU	sky le :P ori u ut:koent:ER:d P Iweeght)			·	Method Date	SP 2550C 05/92/9019	
kbrbmeter		7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a cmctu	Ekd	Ekd a cmctu	Spci eR v moynt:	v nblUxu d bte
Polynuclear Arc	matics GC/MS	a CS	:101	(:20s195:)				05/92/9019
Batch	XA S33L9							

 Method
 49L0d :SWA S:(kv [ )

 Instrument
 [ k:3460/5612:A S:S] 7 v



SGS Ref.#	104L404	ab :Control	:Sbmple		Printed	Date/Time	05/20/9019	:6809	
Client Name Project Name/# Matrix	104L406 Dnblbui b:C WylbI :a bi e Sod/SoldR:(	ab:Control CotUskylc:P e:qbut:koont:E (RrU:weoght)	Sbmple:d yp ori u R:d P	ole bte		Prep	Batch Method Date	XXX93463 SP 2550C 05/99/9019	
7 C:reuyltu:b@-t:the:	@lloweng:proRy-te	con:ubmpleu8							
1191LLf001									
brbmeter			7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a cmctu	Ekd	Ekd a cmctu	Spci eR v moynt:	v nblUxu d bte
emivolatile C	rganic Fuel	s Departm	ent						
lœuel:Ebnge:Nrgbn	с-u	a CS	159	:61	(:L5s195:)			13L mg/Kg	05/9f/9019
		a CSd	150	:60		:1	(. :90:)	13L mg/Kg	05/9f/9019
Surrogates									
5b:v nRroutbne:. uyrrB	B	a CS		:45	(:30s190:)				05/9f/9019
		a CSd		:43		:1			05/9f/9019
Batch Method	XVC102L6 v K109								
Instrument	[ k:L460v ::::::	:::VW\$[:S] :q:H	3						
EeucRybl:Ebnge:Nrg	bno-u	aCS	15L	:6f	(:30s190:)			13L mg/Kg	05/9f/9019
		a CSd	15f	:69		:9	(. :90:)	13L mg/Kg	05/9f/9019
Surrogates									
nsz rcb- ontbnesR39:.	uyrrB	a CS		:45	(:30s190:)				05/9f/9019
		a CSd		:42		:2			05/9f/9019
Batch Method	XVC102L6 v K102								

**Instrument** [ k:L460v ::::::VW:S] :q:E



SGS Ref.#	104493L at 1044934 at	Control: Control:	:Sbmple :Sbmple:d yr	ole bte		Printed Prep	Date/Time Batch	05/20/9019 ] XX92512	:6809
Client Name Project Name/# Matrix	Dnblbui b:CctU WylbI :a bi e:ql Sod/SolcR:(Rr	kky le-:P but:koent:E Uweeght)	ori u ER:d P				Method Date	SP 5025v 05/9f/9019	
7 C:reuyltu:b@-t:the:@llo 1191LLf001T1191Ll	wang:proRy-taon: £1009	ubmpleu8							
kbrbmeter			7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a cmctu	Ekd	Ekd a cmctu	Spci eR v moynt:	v nblUæu d bte
Volatile Fuels De	epartment								
<en>ene</en>		a CS	19L0	:109	(:L5s195:)			1950 yg/Kg	05/9f/9019
		a CSd	1200	:10f		:9	(. :90:)	1950 yg/Kg	05/9f/9019
qthU en>ene		a CS	1930	:101	(:L5s195:)			1950 yg/Kg	05/9f/9019
		a CSd	1960	:102		:9	(. :90:)	1950 yg/Kg	05/9f/9019
osXUene		a CS	1900	:63	(:L5s195:)			1950 yg/Kg	05/9f/9019
		a CSd	1920	:66		:2	(. :90:)	1950 yg/Kg	05/9f/9019
k:&:A:sXUene		a CS	9fL0	:66	(:40s195:)			9500 yg/Kg	05/9f/9019
		a CSd	9520	:101		:9	(. :90:)	9500 yg/Kg	05/9f/9019
z olyene		a CS	1930	:101	(:L0s195:)			1950 yg/Kg	05/9f/9019
		a CSd	1940	:102		:9	(. :90:)	1950 yg/Kg	05/9f/9019
Surrogates									
1 If sd Qyoro en>ene:. u	/rrB	a CS		:66	(:L9s116:)				05/9f/9019
		a CSd		:66		:0			05/9f/9019

Batch	] VC10646
Method	SP 4091<
Instrument	v gdent:L460:kW//VW



SGS Ref.#	1044936	ab :Control	:Sbmple			Printed	l Date/Time	05/20/9019	:6809
	10449L0	ab :Control	:Sbmple:d y	ole-bte		Prep	Batch	] XX92512	
Client Name	Dnblbui b:C	CaUsky lo:P	ori u				Method	SP 5025v	
Project Name/#	WylbI :a bi e	e:qbut:koant:E	R:d P				Date	05/9f/9019	
Matrix	Sod/SolcR:(	(RrUwecght)							
7 C:reuyltu:b@-t:the:@llow	ang:proRy-to	xon:ubmpleu8							
1191LLf001T1191LLf	009								
kbrbmeter			7 C Feavltu	k-t Fe o	a CS/a CSd	Ekd	Ekd	Spci eR	v nblUxu d bte
			y	,				5	
Volatile Fuels Dep	partment								
Gbuolane:Ebnge:Nrgbno-u	l	aCS	6 <b>0</b> 4	:62	(:30s190:)			10 <b>0</b> mg/Kg	05/9f/9019
		a CSd	60L	:6L		:f	(. :90:)	100 mg/Kg	05/9f/9019
Surrogates									
fs <romoqyoro en="">ene:.</romoqyoro>	uyrrB	a CS		:64	(:50s150:)				05/9f/9019
		a CSd		:64		:0			05/9f/9019
	10646								

 Batch
 ] VC10646

 Method
 v K101

Instrument v gdent:L460:k W /VW



SGS Ref.#	10MaaM 10MaaM9	trixS:j trixS:j	pk eD pk eDu l kcoriD			Prin Prep	ted Date/Time Batch Method	05/20/9019 n n n 9EM85 p(7 ori (7:1	:8609 PSixroi (7:р( сМ <b>9</b> а0
Original	1191ad100a						Date	05/92/9019	
Matrix	p(qp(cv;wxg))	n D) Xi3							
OCupl dour ffDivi VDf( of 1	7) dry(vil oi (7)ar	mlraDr6							
1191aad001	1 /).kx(yi oi ( /.si	IIIKCLSO							
ArxrmDDx	:QlrcfDss	Lx)7rc .Duloi	QC , Daloi	Aoi , Do(R	t p/t pu v m is	, Au	, Au v m is	pk eDy Hm(17i:	H7rœs s u riD
Polynuclear Aroma	tics GC/MS								
10) DiXgc7rkXiXrcD7D	tp	9d20	9E0E	:a15-	wddQ0a:3			92.5 1)/K	05/9d/9019
-	t pu		9118	0∕250-		:91	wU:20:3	92.d 1)/K	05/9d/9019
90) DiXgc7rkXiXrcD7D	tр	9E50	9a8a	:E99-	wd5Q05:3			92.5 1)/K	05/9d/9019
	t pu		99aM	0,≤E0-		:90	wt/:20:3	92.d 1)/K)	05/9d/9019
HoD7rkXiXD7D	t p	w21.E3:*	0.00	:0-	wd5Q10:3			92.5 1)/K)	05/92/9019
	t pu		0.00	:0-		:0	wU:20:3	92.d 1)/K)	05/92/9019
HoD7rkXiXgdD7D	t p	w21.E3:*	0.00	:0-	wd5Q05:3			92.5 1)/K)	05/92/9019
	t pu		0.00	:0-		:0	wU:20:3	92.d 1)/K)	05/92/9019
H7iXxroD7D	t p	w21.E3:*	9a.9	:11E-	w55Q05:3			92.5 1)/K)	05/92/9019
	t pu		92.5	:100		:15	wU:20:3	92.d 1)/K)	05/92/9019
BD7z(wr3H7iXxroD7D	t p	w21.E3:*	0.00	:0-	w50Q10:3			92.5 1)/K)	05/92/9019
	t pu		1E.2	:a0		:0	wU:20:3	92.d 1)/K)	05/92/9019
BD7z([r]kgxD7D	t p	w21.E3:*	1 Mid	:a8	w50Q10:3			92.5 1)/K)	05/92/9019
	t pu		1 Mid	:a8		:0	wU:20:3	92.d 1)/K)	05/92/9019
BD7z([b]Fd(xr7iXD7D	t p	w21.E3:*	1E.1	:E8	wd5Q15:3			92.5 1)/K)	05/92/9019
	t pu		1a.2	:ad		:a	wU:20:3	92.d 1)/K)	05/92/9019
BD7z([)≪]kDxgd77D	t p	w21.E3:*	0.00	:0-	wd00195:3			92.5 1)/K)	05/92/9019
	t pu		0.00	:0-		:0	wU:20:3	92.d 1)/K)	05/92/9019
BD/z([e]fd(xr7iXD/D	t p	w21.E3:*	9d.a	:105	wd50195:3			92.5 1)/K)	05/92/9019
	t pu		9d.a	:105		:0	wU:20:3	92.d 1)/K)	05/92/9019
CXxgsD7D	t p	w21.E3:*	9d.0	:109	w55Q10:3			92.5 1)/K)	05/92/9019
	t pu		99.0	:8d		:8	wU:20:3	92.d 1)/K)	05/92/9019
u bD7z([r≪X]r7iXxroD7D	t p	w21.E3:*	0.00	:0-	wd0Q95:3			92.5 1)/K)	05/92/9019
	t pu		15.8	:EM		:0	wU:20:3	92.d 1)/K)	05/92/9019
Fd (xr7iXD7D	t p	w21.E3:*	9Md	:191-	w55Q15:3			92.5 1)/K)	05/92/9019
	t pu		9d.9	:102		:1E	wU:20:3	92.d 1)/K)	05/92/9019
Fd (xD7D	t p	w21.E3:*	2M1	:1E9 <b>-</b>	w50Q10:3			92.5 1)/K)	05/92/9019
	t pu		2d.5	:1 <b>d</b> M		:10	wU:20:3	92.d 1)/K)	05/92/9019
47yD7([1-9-200-y]:kgxD7[	D tp	w21.E3:*	0.00	:0-	wd00190:3			92.5 1)/K)	05/92/9019
	t pu		0.00	:0-		:0	wU:20:3	92.d 1)/K)	05/92/9019
JrkXiXrcD7D	tp	2E1	2dd	Q1-	wd0005:3			92.5 1)/K)	05/92/9019
	t pu		215	<b>(9</b> 00-		:8	wU:20:3	92.d 1)/K)	05/92/9019
AXD7r7iXxD7D	t p	da.0N	Ea.d	:Mat	w50Q10:3			92.5 1)/K)	05/92/9019
	t pu		E8.9	:85		:2	wU:20:3	92.d 1)/K)	05/92/9019
AgxD7D	t p	w21.E3:*	21.9	:122-	wd50195:3	-		92.5 1)/K)	05/92/9019
	t pu		9Ma	:199		:8	wt/:20:3	92.d 1)/K)	05/92/9019
Surrogates									



SGS Ref.#	10MaaM	t rixS:p	ok eD			Printe	ed Date/Time	Date/Time         05/20/9019         :8609           Batch         n n n 9EM\$5           Method         p(7 ori (7 PSixroi (7 p( cM9a)))		
	10MaaM9	t rixS:p	ok eDu l kc or	iD		Prep	Batch Method			
							Date	05/92/901	)	
Original	1191ad100a									
Matrix	p(dp(cy:wyx	g:h D) Xi3								
ArxrmDDx	:QlrcfDs	Lx)7rc .Dsloi	QC ,Dsloi	Aoi , Do(R	t p/t pu v m is	, Au	, Au vmis	pkeDy Hm(17i:	H7rœs s u riD	
Polynuclear A	romatics GC/MS	<u>s</u>								
90Fd (x(b kXD7gcU	klxx> tp		18.a	:Ma	wd5Q05:3				05/92/9019	
	t p	u	18.2	:M9		:9			05/92/9019	
TDxkXD7gcOy1d:Us1	xx≥ tp		9E.1	:111	w20Q95:3				05/92/9019	
	t p	u	92.M	:109		:8			05/92/9019	
Batch	nt pEEa9									
Method	M9a0u:p4t p:wAHI	3								
Instrument	I A:EM80/58a2:t p	рVQH								



SGS Ref.#	10MM9a1 10MM9a9	t rix S:p t rix S:p	ık eD ık eDu l kcor	iD		Print Prep	ted Date/Time Batch Method Date	05/20/9019 :8609 Vn n 92512 HK101:PSixroi ( 7:vp3 05/9d/9019		
Original	1191aad001									
Matrix	p(dp(cy:wyx	g:h D) Xi3								
QC:xDsl cis:r ffDoi:iXl 1191aad001<11	Df( cc( h 7) :kx( yl oi ( 7 91aad009	:srmkd2s6								
ArxrmDDx	:QlrcfDs	Lx)7rc .Dsloi	QC , Dsloi	Aoi , Do(R	t p/t pu v m is	, Au	, Au vmis	pk eDy Hm(17i:	H7rœs s u riD	
Volatile Fuel	s Department									
BD7zD7D	t p	w2M83:*	2188	:101	wa5Q95:3			21E1 1)/K)	05/9d/9019	
	t p	u	9852	:8d		:M	wt/:90:3	21E1 1)/K)	05/9d/9019	
PiXgcbD7zD7D	t p	waa.83:*	2108	:88	wa5095:3			21E1 1)/K)	05/9d/9019	
	t p	u	9MaE	:81		:M	wU:90:3	21E1 1)/K)	05/9d/9019	
(0n.gdD7D	t p	vaa.83:*	201M	:8E	wa5095:3			21E1 1)/K)	05/9d/9019	
	t p	u	9a <b>M</b> 5	:MM		:M	wU:90:3	21E1 1)/K)	05/9d/9019	
A:&:t :01 gdD7D	t p	wt5E3:*	Elld	:8a	wM0095:3			E20M 1)/K)	05/9d/9019	
	t p	u	5E25	:M8		:M	wU:90:3	E20M 1)/K)	05/9d/9019	
T( d D7D	t p	vaa.83:*	21dM	:100	wa0Q95:3			21E1 1)/K)	05/9d/9019	
	t p	u	9809	:89		:M	wb:90:3	21E1 1)/K)	05/9d/9019	
Surrogates										
1≪dQa fd (x(bD7zD7	′DUslxx> tp		2199	:88	wa9Q18:3				05/9d/9019	
	t p	u	2199	:88		:0			05/9d/9019	
Batch	VFC108M8									

 Batch
 VFC108M8

 Method
 pWM091B

 Instrument
 H) dD/i:aM80:A4u /F4u

-
1

# SGS North America Inc. CHAIN OF CUSTODY RECORD

Locations Nationwide • Alaska • Maryland • New Jersey • New York • North Carolina • Indiana • West Virginia • Kentucky



a,

# SAMPLE RECEIPT FORM



Review Criteria:	Condition:	Comments/Action Taken-
Were custody seals intact? Note # & location, if applicable.	Yes No WA	
COC accompanied samples?	Ne N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)?	(Yes) No N/A	
* Note: Exemption permitted for chilled samples collected less than 8 hours ago.	-	
Cooler ID: 1 @ 3.8 w/ Therm.ID: 203		
Cooler ID: @ w/ Therm.ID:		
Cooler ID: @ w/ Therm.ID:		
Cooler ID: @ w/ Therm.ID:		
Cooler ID: @ w/ Therm.ID:		
Note: If non-compliant, use form FS-0029 to document affected samples/analyses.		
If samples are received without a temperature blank, the "cooler		
"COOLEP TEMP" will be noted to the right. In correct where we will be		
temp blank nor cooler temp can be obtained note "ambient" or "chilled "		
If temperature(s) $< 0^{\circ}$ C, were all sample containers ice free?	Ves No WA	
Delivery method (energify all that apply): Client	Note APN/	
USPS Alert Course Road Runner AK Air	tracking #	
Lynden Carlile FRA PenAir	tracking #	
FedEx LIPS NAC Other	See Attached	
$\rightarrow$ For WO# with airhills was the WO# & airhill	or N/A	
info recorded in the Front Counter el og?	West Mr. MIA	
> E	Yes NO N/A	
For samples received with payment, note amount (5 ) and c	asn / check / CC (c	circle one) or note:
-7 For samples received in FBKS, ANCH start will verify all criteria	are reviewed.	SRF Initiated by: DWB N/A
Note: Palar to form E 083 "Sample Guide" for hold time information	Ves No N/A	
Do samples match COC* (i.e. sample IDs dates/times collected)?	Ved No N/A	
* Note: Exemption permitted if times differ <1 hr; in which case, use times on COC.	Ind Ho Hin	
Were analyses requested unambiguous?	Ved No N/A	
Were samples in good condition (no leaks/cracks/breakage)?	Ver No N/A	
Packing material used (specify all that apply): Bobble Wran	US NO INA	
Separate plastic bags Vermiculite Other:		
Were all VOA vials free of headspace (i.e., bubbles <6 mm)?	Yes No VA	
Were all soil VOAs field extracted with MeOH+BFB?	Nes No N/A	
Were proper containers (type/mass/volume/preservative*) used?	NO N/A	
* Note: Exemption permitted for waters to be analyzed for metals.		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	(Yes No N/A	and the second
For special handling (e.g., "MI" or foreign soils, lab filter, limited	Yes No MA	
volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?		
For preserved waters (other than VOA vials, LL-Mercury or	Yes No N/A	
microbiological analyses), was pH verified and compliant?		
If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No NA	
For RUSH/SHORT Hold Time or site-specific OC (e.g.,	Mes No N/A	
BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g.,	X	
stickers) accordingly? For RUSH/SHORT HT, was email sent?		the second se
For any question answered "No," has the PM been notified and the	Yes No MA	SRF Completed by: VWB
problem resolved (or paperwork put in their bin)?	9	PM = FAT N/A
Was PEER REVIEW of sample numbering/labeling completed?	Yes No MA	Peer Reviewed by: (N/)
Additional notes (if applicable):		
* Per PM, there should be enough sample	in septa ja	r to run; proceed w/ analysis.

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.



4892 339 117 0249 4892 SHIPPER'S ACCOUNT NUMBER / **=** // AIR WAYBIL AIR CONSIGNMENT NOT UNHUSKA 6100 BOEING AVE ANCHORAGE, ALASKA 99502 Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity If the carriage involves an ultimate destination or stop in a country other than the country of departure the Warsaw Convention may be applicable and the Convention governs and in most cases limits the liability of carriers in respect of loss or damage to cargo. Agreed stopping places are those places (other than the places of departure and destination) shown udder requested routing and/or those places shown in carriers' timetables as scheduled stopping places for the roule. Address of first carrier is the airport of departure. SEE CONDITIONS ON REVERSE HEREOF. UNILISK CONSIGNEE'S NAME AND ADDRESS CONSIGNEE'S ACCOUNT NUMBER SGS LABS Please print your nam ANCHORAGE Signature ECONOMY PRIORITY DATE TIME PHONE PE ON CONTACTED BY INSTRUCTIONS TO CARRIER TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER UNLESS SHIPPER GIVES OTHER INSTRUCTIONS HEREON. AGENTS IATA CODE ACCOUNT NO. Domestic Liability: If no value declared PEN AIR liability will not exceed \$ .50 plus transportation costs. See rule G32B5 A.T.P. AIRPORT OF DEPARTURE (ADDR OF FIRST CARRIER) AND REQUESTED ROUTING DIA AND DESTINATION CURRENCY ECLARED VALUE FOR CUSTOMS CHGS BY FIRST CARFIER TO TO BY BY 130 FOR CARRIER USE ONLY AIRPORT OF DESTINATION FLIGHT/DATE HANDLING INFORMATION 326-35 1 NEA 14 T 4 NO. OF PIECES RCP GROSS CHARGEABLE RATE CLASS FOTAL 737 COMMODITY WEIGHT WEIGHT CHARGE Stice SCIL FI er. SHITTE 1121774 LPCF 37072 PREPAID WEIGHT CHARGE COLLECT PICKUP CHARGES OFIGIN ADVANCE CHARGES DESCRIPTION OF ORIGIN ADVANCE P-UP PREPAID 5 V VALUATION CHARGE DELIVERY CHARGES DES ADVANCE CHARGES DESCRIPTION OF DEST. ADVANCE. ITEMS<sup>7</sup> COLLECT n TAX SHIPPER'S R.F.C. OTHER CHARGES AND DESCRIPTION TOTAL OTHER CHARGES DUE AGENT Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods (hazardous materials) such part is properly described by name and is in proper condition for carriage by air according to the applicable government rejutations and, for international shipments, the current International Air Transport Association's Dangerous Goods Regulation of it is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. THE SHIPPER'S ATTENTION IS DRAWN GET THE NOTICE CONCERNING CARRIERS LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by delaring a higher value for carriage and pay a supplemental charge if required. SIGNATURE OF SHIPPER OR HIS AGENT AND INITIAL APPROPRIATE BOX BELOW TOTAL OTHER CHARGES DUE CARRIER CURRENC COD 1241 TOTAL PREPAID TOTAL COLLECT This shipment DOES contain Dangerous Goods. This shipment does NOT contain Dangerous Goods. 22 EXECUTED ON CURRENCY CONVERSION RATES TOTAL COLLECT. IN DESTINATION CURRENCY SIGNATURE OF ISSUING CARRIER OR ITS AGEN (Time) at CHARGES AT DESTINATION TOTAL COLLECT CHARGES FOR CARRIERS USE ONLY AT DESTINATION (ALL COLLECT CHARGES 0249 4892 IN DESTINATION CURRENCY) FORM AC-17U UNIVERSAL UNIFORM AIRBILL PRINTED IN U.S.A. REV 07/10

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

# ATTACHMENT E

## 1.1 PRECISION

A total of 40 confirmation soil samples were collected throughout the *Project*, with 4 of those confirmation samples doubled with a blind duplicate sample (DUP-01 through DUP-04). The RPD was calculated for each target analyte where both duplicates included quantifiable concentrations. A relative percent difference <50% is acceptable per ADECs 2010 *Draft Field Sampling Guidance*. While the RPD was higher than 50% in some of the PAH results, the level of precision is still high enough that the results with respect to CULs are unchanged.

RPD (%) = Absolute value of  $\frac{(R1 - R2)}{((R1 + R2)/2)} \times 100$ 

 Table 2 includes RPD calculations.

**SGS Report No. 1121591.** For DW-2+50-4 and corresponding DUP-01 a RPD of 25.6% was calculated for RRO and 13.5% for percent moisture. Other analytes were not calculable due to both non-detect results. There was a mixture of corresponding non-detect and measurable concentrations in the PAHs, but this was due to DUP-01 having detection levels lower than the quantifiable levels for DW-2+50-4. The precision of RRO and % moisture results are not low enough to affect the interpretation of most other results with the same analytes with regards to exceedence of CULs. The exception is DRO results for DW-3+00-4, where the CUL is within 13.5% (the % moisture RPD) of the result, but the RPD in percent moisture was likely confined to DW-2+50 and DUP-01 as the result of variability in the submitted soils.

The laboratory performed the appropriate number of QC samples for the lab report MS/MSD and LCS/LCSD.

**SGS Report No. 1121608** For EP-6+10-4 and corresponding DUP-02 a RPD was calculated as: 17% for 1-Methyl-Naphthalene, 9% for 2-Methyl-Naphthalene, 18% for Naphthalene, and 4% was calculated for percent moisture. Other analytes were not calculable due to two non-detect results. There was a mixture of corresponding non-detect and measurable concentrations in the PAHs, these have RPDs higher than 50%, but the quantified results are very close to the limits of quantification and well below CULs. The observed precision levels are not low enough to affect the interpretation of other results with the same analytes with regards to exceedence of CULs.

For EP-11+60-4 and corresponding DUP-03 a RPD was calculated as: 2% for DRO, 9% for RRO, 51% for Benzo(a)Anthracene, 37% for Benzo(a)pyrene, 38% for Benzo(b)Fluoranthene, 26% for Benzo(g,h,i)perylene, 17% for Benzo(k)fluoranthene, 44% for Chrysene, 45% for Fluoranthene, 31% for Indeno(1,2,3-cd)pyrene, 38% for

Phenanthrene, 44% for Pyrene, and 2% for % moisture. Other analytes were not calculable due to two non-detect results. There was a mixture of corresponding non-detect and measurable concentrations in the PAHs, these have RPDs higher than 50%, but the quantified results are very close to the limits of quantification and well below CULs. The observed precision levels are not low enough to affect the interpretation of other results with the same analytes with regards to exceedence of CULs, but it is noted that the RPD for Benzo(a)Anthracene was slightly higher than 50%.

For EP-12+97-4 and corresponding DUP-04 a RPD was calculated as: 1% for DRO, 9% for RRO, 14% for Acenaphthene, 20% for Anthracene, 27% for Benzo(a)Anthracene, 13% for Benzo(a)pyrene, 14% for Benzo(b)Fluoranthene, 1% for Benzo(g,h,i)perylene, 13% for Benzo(k)fluoranthene, 20% for Chrysene, 3% for Dibenz(a,h)anthracene, 11% for Fluoranthene, 1% for Fluorene, 19% for Phenanthrene, 16% for Pyrene, and 0.5% for total solids. Other analytes were not calculable due to two non-detect results. The observed precision levels are not low enough to affect the interpretation of other results with the same analytes with regards to exceedence of CULs.

The laboratory performed the appropriate number of QC samples for the lab report MS/MSD and LCS/LCSD.

# 1.2 ACCURACY

Each lab report included analysis of lab control samples at a rate of at least 1 lab control sample per 20 field confirmation samples, matrix, and analysis. In addition, surrogate percent recoveries were analyzed and reported for each field confirmation sample analyte.

The following are potential issues with lab results as taken from a review of the reports and the individual case narratives

## SGS Report No. 1121591

SGS Report No. 1121591 contains laboratory results for DW-0+00 through DW-4+00, EP-1+60 through EP-5+60, DUP-01, and TB-01.

All benzene PQLs (also LOQ or REPDL, i.e. the lower limit for quantifiable results) exceeded the migration to groundwater CULs for benzene. However, as the LODs (i.e. 2 times the DL. The DL is the lower limit of qualifiable results) for benzene were all below the CUL for benzene then the presence of benzene above CULs would have at least been noted as a concentration with a J flag. This did not occur in any of the non-detect U qualified values for benzene.

The two coolers shared a trip blank (TB-01) as noted by the lab. All samples were stored together with that trip blank prior to being split for shipment in the sealed coolers.

## AK102/103 - Unknown hydrocarbon with several peaks is present.

DW-0+00-4, DW-0+50-4, DW-2+00-4, DW-4+00-4, DUP-01, EP-3+10-2, EP-3+60-2, EP-4+10-2, EP-5+10-4 are affected.

## AK102/103 - The pattern is consistent with a lube oil.

DW-1+00-4, DW-1+50-4, DW-2+50-4, and DW-3+00-4 are affected.

# AK102/103 - Sample was diluted due to dark color of extract; therefore the LOQ was elevated.

DW-1+00-4 and DW-1+50 were affected. The data is not affected as the LOQs are still below CULs.

# 8270D SIM- Surrogate (2-fluorobiphenyl) recovery is outside of QC criteria due to sample dilution.

DW-1+50-4 was affected for PAHs. 2-fluorobiphenyl was recovered at 42.8% just below the 45%-105% acceptable range. In samples with low surrogate recoveries, target analytes may not have been detected if present in low concentrations. However; the LOQs are well below the CULs for PAHs so the data is still usable.

## AK102/103 - The pattern is consistent with a weathered middle distillate.

DW-3+50-4, EP-1+60-2, EP-2+10-2, EP-4+10-4, EP-4+60-2, EP-4+60-4, EP-5-10-4, EP-5+60-2, and EP-5+60-4 are affected.

## 8270D SIM - Elevated LOQs due to sample dilution. Sample diluted due to dark extract.

DUP-01, EP-3+10-2, EP-4+10-2, EP-4+60-2 are affected. The data is still usable as the LOQs are below the CULs.

# 8270D SIM- Surrogate (2-fluorobiphenyl and terphenyl-d14) recovery is outside of QC criteria due to sample dilution.

EP-5-10-4 is affected. Samples with high surrogate recoveries indicate that the target analytes will be detected if present, but the concentrations may be exaggerated. As PAHs did not exceed CULs the data usability is not affected.

# 8270D SIM - MS recovery for naphthalene, benzo(a)anthracene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy.

DW-0+00-4, DW-0+50-4, DW-1+00-4, DW-1+50-4, DW-2+50-4, DW-3+00-4, DW-3+50-4, DW-4+00-4, DUP-01, EP-1+60-2, EP-2+10-2, EP-3+10-2, EP-3+60-2EP-4+10-2, EP-4+10-4, and EP-4+60-2 are affected. This indicates matrix interference; however, the corresponding LCS percent recoveries fell within acceptable bounds and the data is still usable.

## 8270D SIM - MSD recovery for naphthalene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy.

See notes above.

## 8270D SIM- MS/MSD RPD for acenaphthene does not meet QC criteria.

DW-0+00-4, DW-0+50-4, DW-1+00-4, DW-1+50-4, DW-2+50-4, DW-3+00-4, DW-3+50-4, DW-4+00-4, DUP-01, EP-1+60-2, EP-2+10-2, EP-3+10-2, EP-3+60-2EP-4+10-2, EP-4+10-4, and EP-4+60-2 are affected. This is actually a precision issue and indicates variation in the results between duplicates of a matrix spike above acceptable levels; however, Acenaphthene results are well below CULs and the LCS/LCSD was acceptable so the usability of the data is not affected.

## <u>8021B - LCSD recovery is outside of acceptance criteria for benzene (biased high).</u> <u>Sample concentrations are less than LOQ.</u>

DW-0+00-4, DW-0+50-4, DW-1+00-4, DW-1+50-4, DW-2+00-4, DW-2+50-4, DW-3+00-4, DW-3+50-4, DW-4+00-4, DUP-01, EP-1+60-2, EP-2+10-2, EP-3+10-2, EP-3+60-2, and TB-01 are affected. Data usability may be affected because DW-3+50-4 had a benzene detection above the CUL. The labs statement that "Sample concentrations are less than the LOQ" is therefore incorrect, however, the bias would not be enough to drive DW-3+50-4 below the CUL or the LOQ for benzene, so the data is usable.

## <u>8021B - CCV recovery is outside of acceptance criteria for benzene (biased high).</u> <u>Sample concentrations are less than LOQ.</u>

CCV2 for HBN 1339072 (VFC/1097 is affected. Lab report does not describe the affected field samples; however, the effect on the results would be conservative.

# 8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

DW-2+00-4, EP-4+60-4, EP-5+10-4 (EP-5+10-2), EP-5-10-4 (EP-5+10-4), EP-5+60-2, EP-5+60-4 are affected. This indicates matrix interference; however, the corresponding LCS percent recoveries fell within acceptable bounds and the data is still usable on that basis. The field notes show that EP-4+60-4 which was the matrix used in this spike was sand and gravel, where sand was a rare find during this *Project* and is therefore not entirely representative of the other affected field samples.

# 8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

See above, this appears to be a repeat.

<u>8021B - CCV recovery is outside of acceptance criteria for benzene (biased high).</u> Sample concentrations are less than LOQ. CCV2 for HBN 1339072 (VFC/1097. Lab report does not describe the affected field samples; however, the effect on the results would be conservative as they are biased high.

## SGS Report No. 1121608

SGS Report No. 1121608 contains laboratory results for EP-6+10 through EP-12+97, DUP-02, DUP-03, DUP-04, and TB-02.

All benzene PQLs (the same as the LOQ, i.e. the lower limit for quantifiable results) exceeded the migration to groundwater CULs for benzene. However, as the LODs (2xDL) for benzene were all below the CUL for benzene, the presence of benzene above CULs would have at least been noted as a concentration with a J flag. This did not occur in any of the non-detect U qualified values.

Samples arrived at the lab in a cooler which was shipped air freight from Dutch Harbor to Anchorage. The cooler arrived at -0.3°C. The low temperature is not expected to affect the results, but is noted because ADEC's 2010 *Draft Field Sampling Guidance* recommends  $4^{\circ}C \pm 2^{\circ}C$ .

AK102/103 - Unknown hydrocarbon with several peaks is present.

EP-6+60-4, EP-11+60-4, and EP-12+10-4 are affected.

AK103 - Unknown hydrocarbon with several peaks is present.

EP-7+10-4, EP-7+60-4, EP-8+10-4, EP-8+60-4, DUP-02, DUP-03, DUP-04, EP-9+10-2, EP-9+10-4, EP-9+60-4, EP-10+10-4, EP-10+60-4, EP-11+10-4, EP-11+60-4, EP-12+60-4, and EP-12+97-4 are affected.

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

EP-7+60-4, EP-8+10-4, EP-8+60-4, DUP-03, DUP-04, EP-10+10-4, EP-10+60-4, EP-12+60-4, and EP-12+97-4 are affected.

# 8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

EP-6+60-2 through EP-8+60-4, DUP-2, DUP-03, and EP-11+1-4 through EP-12+97-4 are affected. The matrix interference was based on EP-11+60-4 which was noted as aggregate and shot rock which was composed of gravel fill and native crushed bedrock. The lab report refers to the LCS for accuracy which had accurate results which is the best that can be done under the circumstances.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

See above.

## SGS Report No. 1121608

SGS Report No. 1121608 contains laboratory results for EP-13+39 (EP-13+36). The actual location was EP-13+36.

The benzene PQL (also LOQ or REPDL, i.e. the lower limit for quantifiable results) exceeded the migration to groundwater CUL for benzene. However, as the LOD (i.e. 2 times the DL, i.e. the DL is the lower limit of qualifiable results) for benzene was below the CUL for benzene then the presence of benzene above CULs would have at least been noted as a concentration with a J flag. This did not occur for this non-detect U qualified value.

Samples arrived at the lab in a cooler which was shipped air freight from Dutch Harbor to Anchorage. The cooler arrived at 3.8°C.

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

EP-13-36-4 is affected.

AK103 - The pattern is consistent with a lube oil.

EP-13+36-4 is affected.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

EP-6+60-2 through EP-8+60-4, DUP-2, DUP-03, and EP-11+1-4 through EP-12+97-4 are affected. The matrix interference was based on EP-11+60-4 which was noted as aggregate and shot rock which was composed of gravel fill and native crushed bedrock. The lab report refers to the LCS for accuracy which had accurate results which is the best that can be done under the circumstances.

## 1.3 REPRESENTATIVENESS

Representativeness may be divided into two categories:

- 1. The extent to which the physical location of the field screen and confirmation soil samples characterize the *Project* area; and
- 2. Whether confirmation soil sample laboratory results are representative of the actual field conditions at the time of sample collection.

Test pits were advanced at approximately 50 feet or smaller intervals along the Delta Way proposed storm drain (Station 0+00 to 4+00) and along the East Point Road storm drain (Station 1+60 to 13+36; exception 2+60 bypassed due to groundwater above 2-feet bgs).

In the field, a PID meter was used to screen 62 field samples and the results were used to bias 40 confirmation samples to the vertical level (2 or 4-feet bgs) which represented the highest soil contamination within each test pit. Soil screening was also used to judge vertical locations to take additional field confirmation samples in order to better delineate the extents of the highest soil contamination. These additional vertical delineation confirmation samples occurred where the 2-feet vertical horizon had a higher PID reading than 4-feet, or where the PID reading at 4-feet significantly exceeded the PID reading at 2-feet.

The respective storm drain paths appear to be well characterized as to the extent and levels of soil contamination to 4-feet bgs along the test pit route. However, because the Delta Way route has been relocated and was not pre-characterized, all soils from DW-2+75 to the outfall will be assumed over CULs. Along the East Point Road Route a 'clean' sample at EP-6+10-4 is neglected because it appears to be isolated.

# 1.4 COMPARABILITY

Per ADECs May 2010 *Draft Field Sampling Guidance*, ADEC recommends a correlation study between on-site field screening and site specific analytical results be evaluated and reported where variable field screening results are common or expected.

The author used the PID meter as a screening device to bias field confirmation sample locations towards the highest soil contamination. The PID meter was used as a guide but not as a qualitative or quantitative device. There are many factors present in the soil which may limit correlation; the below are some factors relevant to this *Project*:

- The age and nature of the release(s) including biogenic and other unknown interferences. A better correlation would be expected for a fresh release versus an aged release where the volatile portions have had more time to dissipate;
- The moisture content of the soil. Dry soil allows fuel to volatize to the air more effectively than wetter soil, which restrains volatilization;
- Stabilization in rock. Hydrocarbon contamination may become adsorbed in the micro-pores of rocky material and fail to volatize effectively; and
- The general heterogeneity of the soils and/or contamination encountered throughout the *Project* area.

## Delta Way

The PID readings from Delta Way are plotted versus the Site field confirmation sample laboratory TPH concentrations on a log-log scale in **Figure 1**. There is not a clear correlation between PID readings and laboratory results even when non-detect readings for DRO were removed from comparison. In the authors experience this behavior can be typical of low PID readings in areas with residual or background contamination, and may also be due to scaling problems with low threshold PID readings or laboratory results. In

addition, the material was very rocky, and releases in the area would be aged. If one neglects the benzene exceedence in DW-3+50-4, then a PID reading over 0.4 ppmv could be used to indicate an exceedence for DRO in this vicinity, but it is not recommended to do so due to the lack of repeatable results.

## East Point Road

The PID readings from East Point Road are plotted versus the Site field confirmation sample laboratory TPH concentrations on a log-log scale in **Figure 2**. There is not a clear correlation between PID readings and laboratory results even when locations with non-detect readings for DRO were removed from comparison or only DRO CUL exceedence points were used. The lack of correlation is likely due to the heterogeneity of the soils and the age of the releases in the area. If one neglects the DRO exceedence in EP-13+36-4, and EP-1+60-2, then a PID reading over 100 ppmv may indicate an exceedence of the CUL for DRO in this vicinity, but is not definitive.

Note that EP-13+36-4 appeared clear by evidence of the PID meter, but lab results yielded a 10% exceedence of the DRO CUL.

Also note that EP-6+10-4 verified by DUP-02 had a PID reading of 114.4 ppmv yet did not exceed CULs. The material at EP-6+10-4 was a native brown silt of medium plasticity which was unique to this sample set. In the authors experience this type of native materials in Dutch Harbor/Unalaska consisting of little or no aggregate and a dark organic appearance, tend to yield low lab results despite elevated PID readings.

# 1.5 COMPLETENESS

During the *Project* a total of 40 field confirmation samples were sent to the laboratory. Samples from SGS report 1121608 arrived to the lab at temperatures below freezing. This issue is neglected as unlikely to affect the test results. There is then a 100% validity rate for data submitted to the lab for this *Project*.

## 1.6 SENSITIVITY

The LOD fell below the most stringent migration to groundwater CULs for all constituents analyzed. The LOD is the level below which a statistically valid qualitative statement of the presence of a chemical cannot be made. I.e. non-detect U qualified.

SGS lab report noted that the samples were transported in two coolers but that only one of the coolers contained a trip blank (TB-01). This was intentional as all of the samples handled were handled and stored together with the trip blank prior to shipment in sealed coolers.

All trip blank results were also non-detect U qualified.

# Laboratory Data Review Checklist

		11	/			
Completed by:	Robert Lund	11-1				
Title:	Engineering Technician			Date:	6/14/2012	
CS Report Name:	Characterization Report and Work Plan Addendum			Report Date:	5/29/2012	
Consultant Firm:	City of Unalas	ka				
Laboratory Name:	SGS Labs	La	rt Number: 1121591			
ADEC File Number:	Number: ADEC RecKey Nur				nber:	
1. Laboratory						
a. Did an	ADEC CS appro	oved laboratory receiv	e and <u>perform</u>	all of the submitted	sample analyses?	
• Yes	• Yes C No C NA (Please explain.)					
b. If the sa laborate	mples were tran ory, was the labo	nsferred to another "ne pratory performing the	twork" laborate analyses ADE	ory or sub-contracte C CS approved?	d to an alternate	
⊂ Yes	C No ( NA (Please explain)			Comments:		
Not transferred						
2. Chain of Custody	<u>(COC)</u>					
a. COC info	mation complet	ted, signed, and dated	(including rele	ased/received by)?		
@ Yes	C No	⊂ NA (Please explain)		Comments:		
b. Correct ar	alyses requeste	d?	1 • >	Commentati		
(• Yes	( No	( NA (Please ex	(plain)	Comments:		
3. Laboratory Samp	le Receipt Docu	mentation				
a. Sample/co	oler temperature	e documented and wit	hin range at rec	ceipt (4° ± 2° C)?		
⊂ Yes	• No	⊂ NA (Please e	xplain)	Comments:		

Samples transported in two coolers. Cooler 1 was 0.8dC and Cooler 2 was 0.0dC.
b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

• Yes	C No	⊂ NA (Please explain)	Comments:
c. Sample cor	dition docume	ented - broken, leaking (Methanol),	zero headspace (VOC vials)?
• Yes	C No	⊂ NA (Please explain)	Comments:
lo problems not	ed.		
d. If there wer preservation,	e any discrepa sample temper	ncies, were they documented? - Fo ature outside of acceptance range, i	r example, incorrect sample containe insufficient or missing samples, etc.?
• Yes	C No	⊂NA (Please explain)	Comments:
emperatures belo	ow range.		
e. Data quality	y or usability a	ffected? (Please explain)	
			Comments:
Inlikely. ADEC	guidance defir	nes frozen soils as <7dC and Unala	ska soils undergo freeze/thaw natural
Inlikely. ADEC e Narrative a. Present and @ Yes	guidance defir understandabl ⊂ No	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments:
Inlikely. ADEC <u>e Narrative</u> a. Present and (• Yes b. Discrepance	guidance defir understandable C No ies, errors or Q	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments:
Inlikely. ADEC <u>e Narrative</u> a. Present and (• Yes b. Discrepance (• Yes	guidance defir understandable C No ies, errors or Q C No	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments: Comments:
Inlikely. ADEC e Narrative a. Present and (• Yes b. Discrepance (• Yes c. Were all con	guidance defir understandable C No ies, errors or Q C No	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments: Comments:
Inlikely. ADEC e Narrative a. Present and (• Yes b. Discrepance (• Yes c. Were all con (• Yes	guidance defir understandable $\subset$ No ies, errors or Q $\subset$ No rrective actions $\subset$ No	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments: Comments:
Inlikely. ADEC e Narrative a. Present and (• Yes b. Discrepance (• Yes c. Were all con (• Yes	guidance defir understandable $\subset$ No ies, errors or Q $\subset$ No rrective actions $\subset$ No	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments: Comments: Comments:
Inlikely. ADEC e Narrative a. Present and (• Yes b. Discrepance (• Yes c. Were all con (• Yes d. What is the	guidance defir understandable $\subset$ No ies, errors or Q $\subset$ No rrective actions $\subset$ No effect on data	nes frozen soils as <7dC and Unala e?	ska soils undergo freeze/thaw natural Comments: Comments: Comments: ase narrative?

\* LCSD biased high for benzene. CCV2 biased high for benzene.

## 5. Samples Results

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

		( NA (Please explain)	Comments:
2			
b. All applical	ole holding tim	es met?	
• Yes	C No	∩ NA (Please explain)	Comments:
c. All soils rep	orted on a dry	weight basis?	
• Yes	C No	⊂ NA (Please explain)	Comments:
d. Are the repo project?	orted PQLs less	s than the Cleanup Level or the mini	imum required detection level for the
⊂ Yes	No	⊂ NA (Please explain)	Comments:
All PQLs (SGS/I	REPDL) exceed	ded migration to groundwater CULs	for over 60 inch Zone for benzene.
e. Data quality	or usability af	fected? (Please explain)	Comments:
No. LOD (2xDL)	below the CU	L for benzene. J flag results would h	be shown if benzene was above CUI
No. LOD (2xDL)	below the CU	L for benzene. J flag results would b	be shown if benzene was above CUI
No. LOD (2xDL)	below the CU	L for benzene. J flag results would b	be shown if benzene was above CUI
No. LOD (2xDL)	below the CU	L for benzene. J flag results would b	be shown if benzene was above CUI
No. LOD (2xDL) <u>C Samples</u> a. Method Blan	below the CU k	L for benzene. J flag results would b	be shown if benzene was above CUI
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me	below the CU k thod blank rep	L for benzene. J flag results would b orted per matrix, analysis and 20 sar	be shown if benzene was above CUI
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me @ Ye	below the CU k thod blank rep s C No	L for benzene. J flag results would b orted per matrix, analysis and 20 san	pe shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Ye	below the CU k thod blank rep s ⊂ No	L for benzene. J flag results would b orted per matrix, analysis and 20 san	pe shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Ye.	below the CU k thod blank rep s ⊂ No	L for benzene. J flag results would b orted per matrix, analysis and 20 san	be shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me • Ye ii. All method	below the CU k thod blank rep s C No	L for benzene. J flag results would b orted per matrix, analysis and 20 sar	pe shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Ye ii. All method (• Ye	below the CU k thod blank rep s   No hod blank resul	L for benzene. J flag results would b orted per matrix, analysis and 20 san	pe shown if benzene was above CUI mples? Comments: Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Yes Yes.	below the CU k thod blank report c No hod blank result c No	L for benzene. J flag results would b orted per matrix, analysis and 20 sar $\cap$ NA (Please explain) Its less than PQL? $\cap$ NA (Please explain)	pe shown if benzene was above CUI mples? Comments: Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Ye ii. All method (• Ye Yes. iii. If abov	below the CU k thod blank rep s C No hod blank resul s C No e PQL, what sa	L for benzene. J flag results would b orted per matrix, analysis and 20 san $\cap$ NA (Please explain) its less than PQL? $\cap$ NA (Please explain)	pe shown if benzene was above CUI mples? Comments: Comments:

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

	(Yes	C No	• NA (Please explain)	Comments:
No is	ssues noted.			
_	v. Data qu	ality or usabi	lity affected? (Please explain)	Comments:
No	issues noted.			
b.	Laboratory	Control Samp	ble/Duplicate (LCS/LCSD)	
	i. Organics per AK me	s - One LCS/I ethods, LCS r	CCSD reported per matrix, analysis equired per SW846)	and 20 samples? (LCS/LCSD required
	• Yes	C No	⊂ NA (Please explain)	Comments:
	ii. Metals/J samples?	Inorganics - C	One LCS and one sample duplicate r	reported per matrix, analysis and 20
	⊂ Yes	C No	• NA (Please explain)	Comments:
Not a	nalyzed for.			
	iii. Accura project spe 75%-125%	cy - All perce ccified DQOs, 6, AK103 60%	nt recoveries (%R) reported and wi if applicable. (AK Petroleum meth 6-120%; all other analyses see the la	thin method or laboratory limits? And ods: AK101 60%-120%, AK102 aboratory QC pages)
	(Yes	• No	⊂ NA (Please explain)	Comments:
	iv. Precision limits? And or sample/s pages)	on - All relativ d project spec sample duplic	ve percent differences (RPD) report ified DQOs, if applicable. RPD rep eate. (AK Petroleum methods 20%;	ed and less than method or laboratory orted from LCS/LCSD, MS/DMSD, and all other analyses see the laboratory QC
	∩ Yes	• No	∩ NA (Please explain)	Comments:
All r	eported, not	all are within	limits.	
	v. If %R or	r RPD is outsi	ide of acceptable limits, what sampl	es are affected? Comments:
All s	amples affec	eted.		

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

• Yes	C No	∩ NA (Please explain)	Comments:
Flags noted in c	ase narrative	only.	
vii. Data c	quality or usat	oility affected? (Please explain)	Comments:
Benzene may b	e biased high.	PAHs are affected, however exhibit	ed okay surrogate recovery.
c. Surrogates	- Organics On	ıly	
i. Are surro	ogate recoveri	es reported for organic analyses - fie	ld, QC and laboratory samples?
Yes	C No	∩NA (Please explain)	Comments:
ii. Accurac project spe the laborat	cy - All percer ecified DQOs tory report pa	nt recoveries (%R) reported and with , if applicable. (AK Petroleum metho ges)	in method or laboratory limits? And ds 50-150 %R; all other analyses see
⊂ Yes	No	⊂ NA (Please explain)	Comments:
Exceedance for	PAHs due to	required sample dilution.	
iii. Do the clearly def	sample result fined?	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags
• Yes	C No	⊂ NA (Please explain)	Comments:
iv. Data qu	uality or usabi	lity affected? (Use the comment box	to explain.). Comments:
Suggests a low b	ias for PAHs.	Recovery for 2-Fluorobiphenyl was	42.8% versus the 45% required.
d. Trip Blank <u>Soil</u> i. One trip (If not, ent	- Volatile ana blank reporte ter explanation	lyses only (GRO, BTEX, Volatile Cl d per matrix, analysis and for each co n below.)	nlorinated Solvents, etc.): <u>Water and</u> ooler containing volatile samples?
⊂ Yes	• No	⊂ NA (Please explain.)	Comments:
trip blank submi	tted for 2 coo	lers. All were stored together prior to	shipment in sealed coolers.
ii. Is the co (If not, a	ooler used to t a comment ex	ransport the trip blank and VOA sam plaining why must be entered below)	ples clearly indicated on the COC?
C Yes	No	∩ NA (Please explain.)	Comments:

( ICS	C No	⊂ NA (Please explain.)	Comments:
iv. If abo	ove PQL, what	samples are affected?	
			Comments:
JA.			
v. Data q	uality or usabil	ity affected? (Please explain.)	
			Comments:
lo issues noted	1.		
e. Field Dupli	cate	mitted per matrix analysis and 10 *	project samples?
i. One ne	ia aupricate sut	sinteed per matrix, analysis and 10 p	sojeet samples :
• Yes	C No	⊂ NA (Please explain)	Comments:
ii. Submi	itted blind to la	b?	
• Yes	C No	∩ NA (Please explain.)	Comments:
	, but the lab do	es require a sample date for duplicat	tes.
ubmitted blind			
ubmitted blind iii. Precis (Reco	ion - All relation mmended: 30%	ve percent differences (RPD) less that water, 50% soil)	an specified DQOs?
ubmitted blind iii. Precis (Reco	sion - All relativ mmended: 30% F	ve percent differences (RPD) less the 6 water, 50% soil) 2PD (%) = Absolute Value of: <u>(R1- I</u>	an specified DQOs?
ubmitted blind iii. Precis (Reco	sion - All relativ mmended: 30% F	we percent differences (RPD) less the water, 50% soil) RPD (%) = Absolute Value of: $(R_1 - R_2)$ (( $R_1 + R_2$ )	an specified DQOs? <u>R2)</u> x 100 )/2)
ubmitted blind iii. Precis (Reco Where I F	sion - All relativ mmended: 30% F $R_1 = Sample CoR_2 = Field Dupl$	we percent differences (RPD) less the 6 water, 50% soil) RPD (%) = Absolute Value of: $(R_1 - R_2)$ (( $R_1 + R_2$ ) incentration icate Concentration	an specified DQOs? R2) x 100 )/2)
ubmitted blind iii. Precis (Reco Where I F (• Yes	sion - All relation mmended: 30% $F_1 = Sample ConstantR_2 = Field Dupl\subset No$	we percent differences (RPD) less the 6 water, 50% soil) RPD (%) = Absolute Value of: $(R_1 - I)$ (( $R_1 + R_2$ ) incentration icate Concentration $\cap$ NA (Please explain)	an specified DQOs? R2)_x 100 )/2) Comments:
ubmitted blind iii. Precis (Reco Where I F (• Yes iv. Data c	sion - All relativ mmended: 30% F $R_1 = Sample CoR_2 = Field Dupl\bigcirc Noquality or usabi$	we percent differences (RPD) less the 6 water, 50% soil) RPD (%) = Absolute Value of: $(R_1 - I)$ (( $R_1 + R_2$ ) oncentration icate Concentration $\cap$ NA (Please explain) lity affected? (Use the comment box	an specified DQOs? (32) x 100 )/2) Comments: (x to explain why or why not.)

1. Decontamination of Equipment Blank (II applicable)	f.	Decontamination	or	Equipment	Blank	(if applicable)	
---	----	-----------------	----	-----------	-------	-----------------	--

AT.				Comments:	
New	sample equi	pment and glo	ves used between sample points.		_
	i. All result	ts less than PQ	PL?		
_	⊂ Yes	C No	• NA (Please explain)	Comments:	
-			1		
	11. If above	PQL, what sa	mples are affected?	Comments:	
NA					
	iii. Data qu	ality or usabil	ity affected? (Please explain.)	Commonto	
				Comments:	
١A				Comments.	
NA 1er E	Data Flags/Qu	ualifiers (ACO	E. AFCEE, Lab Specific, etc.)	Comments:	
NA ner I a.	Data Flags/Qu Defined and	ualifiers (ACO appropriate?	E. AFCEE, Lab Specific, etc.)	Comments:	
NA ner I a.	Data Flags/Qu Defined and ( Yes	ualifiers (ACO appropriate? ( No	E. AFCEE, Lab Specific, etc.) ⊂ NA (Please explain)	Comments:	
NA ner I a.	Data Flags/Qu Defined and (• Yes	ualifiers (ACO appropriate?	E. AFCEE, Lab Specific, etc.) ∩NA (Please explain)	Comments:	
NA ner I a.	Data Flags/Qu Defined and (• Yes	ualifiers (ACO appropriate?	E. AFCEE, Lab Specific, etc.) ∩NA (Please explain)	Comments:	

Completed by:	Robert Lund	10				
ïtle:	Engineering To	echnician		Date:	2 L	6/15/2012
S Report Name:	Characterizatio	on Report and Wor	k Plan Addendur	n Repo	ort Date:	5/29/2012
Consultant Firm:	City of Unalas	ka				
aboratory Name:	SGS Labs		Laboratory Rep	ort Number:	1121608	
DEC File Number:			ADEC RecKey	Number:		
1. Laboratory						
a. Did an	ADEC CS appro	oved laboratory re	ceive and <u>perform</u>	all of the su	ıbmitted	sample analyse
Yes	C No	⊂ NA (Pleas	e explain.)	Com	ments:	I J
laborato	ry, was the labo	ratory performing	the analyses ADI	EC CS appro	ved?	d to an alternate
laborato	ry, was the labo	ratory performing	the analyses ADI explain)	EC CS appro	oved? ments:	d to an alternate
laborato C Yes Not transferred.	ry, was the labo	atory performing	explain)	EC CS appro	ments:	d to an alternate
laborato C Yes Not transferred 2. Chain of Custody	<pre>c No</pre> . . .	atory performing (● NA (Please	the analyses ADI explain)	Com	ments:	d to an alternate
laborato C Yes Not transferred. 2. <u>Chain of Custody</u> a. COC infor	The second secon	• NA (Please ed, signed, and da	the analyses ADI explain)	Com Com	ed by)?	d to an alternate
laborato C Yes Not transferred 2. <u>Chain of Custody</u> a. COC infor @ Yes	C No C No (COC) mation complet	• NA (Please ed, signed, and da	the analyses ADI explain) ted (including rele explain)	EC CS appro Com eased/receive Com	ed by)?	d to an alternate
laborato C Yes Not transferred 2. Chain of Custody a. COC infor (• Yes	ry, was the labo C No (COC) rmation complet C No	<ul> <li>In the original of the forming</li> <li>Image: Image: Image:</li></ul>	the analyses ADI explain) ted (including rele explain)	EC CS appro Com eased/receive Com	ed by)?	d to an alternate
laborato C Yes Not transferred 2. Chain of Custody a. COC infor @ Yes b. Correct ar	ry, was the labo ○ No (COC) rmation complet ○ No nalyses requested	<ul> <li>NA (Please</li> <li>ed, signed, and da</li> <li>C NA (Please</li> </ul>	the analyses ADI explain) ted (including rele explain)	EC CS appro	ed by)?	d to an alternate
laborato C Yes Not transferred. 2. <u>Chain of Custody</u> a. COC infor @ Yes b. Correct an @ Yes	ry, was the labo	ed, signed, and da C NA (Please NA (Please NA (Please A) C NA (Please	the analyses ADI explain) ted (including rele explain)	com Com com com com	ed by)? ments: ments:	
laborato C Yes Not transferred. 2. Chain of Custody a. COC infor (• Yes b. Correct ar (• Yes	ry, was the labo C No (COC) rmation complet C No nalyses requested C No	<ul> <li>NA (Please</li> <li>NA (Please</li> <li>ed, signed, and da</li> <li>NA (Please</li> <li>d?</li> <li>NA (Please</li> </ul>	the analyses ADI explain) ted (including rele explain) se explain)	eased/receive Com	ed by)? ments: ments: ments:	
laborato C Yes Not transferred. 2. Chain of Custody a. COC infor @ Yes b. Correct an @ Yes 3. Laboratory Sample	ry, was the labo C No (COC) rmation complet C No halyses requested C No halyses requested C No	<ul> <li>NA (Please</li> </ul>	the analyses ADI explain) ted (including rele explain)	com com com com com	ed by)? ments: ments:	
laborato C Yes Not transferred. 2. Chain of Custody a. COC infor © Yes b. Correct ar © Yes 3. Laboratory Sampl a. Sample/co	ry, was the labo C No (COC) rmation complet C No halyses requested C No le Receipt Documoler temperature	<ul> <li>NA (Please</li> <li>d?</li> <li>NA (Please</li> <li>de the second sec</li></ul>	the analyses ADI explain) ted (including rele explain) se explain) within range at re	com com com com com com	ed by)? ments: ments: ments: 2° C)?	

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

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?	• Yes	C No	⊂ NA (Please explain)	Comments:
c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)? © Yes C No C NA (Please explain) Comments: problems noted. d. If there were any discrepancies, were they documented? - For example, incorrect sample contains preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.? © Yes C No C NA (Please explain) Comments: ssing label on one jar. Identified by default. e. Data quality or usability affected? (Please explain) Comments: blikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw nature Narrative a. Present and understandable? © Yes C No C NA (Please explain) Comments: b. Discrepancies, errors or QC failures identified by the lab? © Yes C No C NA (Please explain) Comments: c. Were all corrective actions documented? C Yes C No @ NA (Please explain) Comments: c. Were all corrective actions documented? C Yes C No @ NA (Please explain) Comments: precetive actions not noted or not needed. d. What is the effect on data quality/usability according to the case narrative? Comments:				
@ Yes       ∩ No       ∩ NA (Please explain)       Comments:         >> problems noted.	c. Sample con	dition docume	nted - broken, leaking (Methanol),	zero headspace (VOC vials)?
a) problems noted.   d. If there were any discrepancies, were they documented? - For example, incorrect sample contains preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?   (a) Yes No   (b) Yes No   (c) Na (Please explain)   (c) Comments:   Itikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw natural Narrative a. Present and understandable? (c) Yes (c) No (c) NA (Please explain) Comments: b. Discrepancies, errors or QC failures identified by the lab? (c) Yes (c) No (c) NA (Please explain) Comments: (c) Yes (c) No (c) NA (Please explain) Comments: (c) Yes (c) No (c) NA (Please explain) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Comments: (c) Yes (c) No (c) NA (Please explain) (c) Manual explanation of not needed. (d) What is the effect on data quality/usability according to the case narrative? (c) No (c) No (c) Na (c) No (c) No (c) N	• Yes	C No	∩ NA (Please explain)	Comments:
d. If there were any discrepancies, were they documented? - For example, incorrect sample contain         preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?	No problems not	ed.		
Yes ∩ No ∩ NA (Please explain) Comments:      ssing label on one jar. Identified by default.      e. Data quality or usability affected? (Please explain)         Comments:      hikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw natura     Narrative a. Present and understandable?	d. If there wer preservation, s	e any discrepa sample temper	ncies, were they documented? - Fo ature outside of acceptance range,	or example, incorrect sample containe insufficient or missing samples, etc.?
ssing label on one jar. Identified by default. e. Data quality or usability affected? (Please explain) Comments: alikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw natura Narrative a. Present and understandable? (a) Yes ( No ( NA (Please explain)) Comments: b. Discrepancies, errors or QC failures identified by the lab? (a) Yes ( No ( NA (Please explain)) Comments: c. Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: c. Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: c. Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Were all corrective actions documented? (c) Yes ( No ( NA (Please explain)) Comments: (c) Ye	• Yes	C No	⊂NA (Please explain)	Comments:
e. Data quality or usability affected? (Please explain) Comments:  Ilikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw natura Narrative a. Present and understandable?	lissing label on c	one jar. Identif	ied by default.	
Comments:         Dikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw natura	e Data quality	v or usability a	ffected? (Please explain)	
<ul> <li>comments:</li> </ul>	e. Data quality	, or asubility a	mooren (r rouso onprann)	Comments:
Interior       ADEC guidance defines frozen soits as        AC and Onalaska soits undergo freeze/thaw hatura         Narrative       a. Present and understandable?       Comments:	Unlikely ADEC	midanaa dafi		
a. Present and understandable?	ennikely. ADLe	Bullance dem	tes nozen sons us arde und onun	iska sons undergo neeze/thaw hatara
a. Present and understandable?            • Yes         • No         • NA (Please explain)         • Comments:          b. Discrepancies, errors or QC failures identified by the lab?            • Yes         • No         • NA (Please explain)         • Comments:             • Ves         • No         • NA (Please explain)         • Comments:             • Ves         • No         • NA (Please explain)         • Comments:             • Ves         • No         • NA (Please explain)         • Comments:             • Were all corrective actions documented?         • Yes         • No         • NA (Please explain)         • Comments:             • Were all corrective actions documented?         • Yes         • No         • NA (Please explain)         • Comments:             • Were all corrective actions documented?         • Yes         • No         • NA (Please explain)         • Comments:             • Prective actions not noted or not needed.             • What is the effect on data quality/usability according to the case narrative?         • Comments:         • Comments:         • Comments:         • Comments:         • Comments:         • Comments:				
a. Present and understandable? Yes	se Narrative			
● Yes       ∩ No       ∩ NA (Please explain)       Comments:         b. Discrepancies, errors or QC failures identified by the lab?           ● Yes       ∩ No       ∩ NA (Please explain)       Comments:         c. Were all corrective actions documented?       ∩ Yes       ∩ No       ● NA (Please explain)         c. Were all corrective actions documented?       ∩ Yes       ∩ No       ● NA (Please explain)       Comments:         orrective actions not noted or not needed.         Comments:          d. What is the effect on data quality/usability according to the case narrative?       Comments:	a. Present and	understandabl	e?	
<ul> <li>b. Discrepancies, errors or QC failures identified by the lab?</li> <li></li></ul>	• Yes	C No	⊂ NA (Please explain)	Comments:
<ul> <li>b. Discrepancies, errors or QC failures identified by the lab?</li> <li></li></ul>				
<ul> <li></li></ul>	b. Discrepanci	ies, errors or Q	C failures identified by the lab?	
c. Were all corrective actions documented? C Yes C No ( NA (Please explain) Comments: prrective actions not noted or not needed. d. What is the effect on data quality/usability according to the case narrative? Comments:	• Yes	C No	⊂ NA (Please explain)	Comments:
c. Were all corrective actions documented? C Yes C No NA (Please explain) Comments: prrective actions not noted or not needed. d. What is the effect on data quality/usability according to the case narrative? Comments:	1			
C. were an corrective actions documented?         C Yes       No         Image: No intervention of the case intervention of the c	a Wara all an	mostizio estica	a dogumentad?	
d. What is the effect on data quality/usability according to the case narrative? Comments:	C. were all col	C No	• NA (Please explain)	Comments:
d. What is the effect on data quality/usability according to the case narrative? Comments:	Corrective entire	a not noted on	not needed	
d. What is the effect on data quality/usability according to the case narrative? Comments:	CONCENTE ACTION		not needed.	
Comments:	d. What is the	effect on data	quality/usability according to the c	case narrative?
nna notad				Comments:
	None noted.			

## 5. Samples Results

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

	C No	⊂ NA (Please explain)	Comments:
b. All applicat	ole holding tin	nes met?	
• Yes	C No	⊂ NA (Please explain)	Comments:
c. All soils rep	orted on a dry	v weight basis?	
• Yes	C No	⊂ NA (Please explain)	Comments:
d. Are the repo project?	orted PQLs les	ss than the Cleanup Level or the mini	mum required detection level for the
( Yes	• No	∩NA (Please explain)	Comments:
Most POLs (SGS	S/REPDL) exc	eeded migration to groundwater CU	Ls for over 60 inch Zone for benzen
e Data quality	or usahility a	ffected? (Please explain)	
e. Data quality	or usability a	ffected? (Please explain)	Comments:
e. Data quality No. LOD (2xDL)	or usability a below the CU	Iffected? (Please explain) JL for benzene. J flag results would b	Comments: be shown if benzene was above CUI
e. Data quality No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me	or usability a below the CU k thod blank report of the second se	offected? (Please explain) JL for benzene. J flag results would b ported per matrix, analysis and 20 sar ∩ NA (Please explain)	Comments: be shown if benzene was above CUI nples? Comments:
e. Data quality lo. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me @ Yes	or usability a below the CU k thod blank reps $\bigcirc$ No	offected? (Please explain) JL for benzene. J flag results would b ported per matrix, analysis and 20 sar ∩ NA (Please explain)	Comments: be shown if benzene was above CUI nples? Comments:
e. Data quality No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me @ Yes ii. All mether	or usability a below the CU k thod blank report of No constraints of the constraints of	Iffected? (Please explain) JL for benzene. J flag results would b ported per matrix, analysis and 20 sar NA (Please explain)	Comments: pe shown if benzene was above CUI nples? Comments:
e. Data quality No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me © Yes ii. All meth © Yes	or usability a below the CU k thod blank report of the contract of the contra	Iffected? (Please explain) JL for benzene. J flag results would b ported per matrix, analysis and 20 sar ( NA (Please explain) Its less than PQL? ( NA (Please explain)	Comments: pe shown if benzene was above CUI nples? Comments:
e. Data quality No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me ( Yes ii. All meth Yes.	or usability a below the CU k thod blank reported blank results $\bigcirc$ No	Iffected? (Please explain) JL for benzene. J flag results would b ported per matrix, analysis and 20 sar NA (Please explain)	Comments: De shown if benzene was above CUI mples? Comments: Comments:
e. Data quality No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me © Yes ii. All meth © Yes. iii. If abov	or usability a below the CU k thod blank reported blank reported blank results $\bigcirc$ No blank	ffected? (Please explain) JL for benzene. J flag results would b ported per matrix, analysis and 20 sar ∩ NA (Please explain) alts less than PQL? ∩ NA (Please explain) samples are affected?	Comments: pe shown if benzene was above CUI mples? Comments: Comments:

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

C Yes	C No	• NA (Please explain)	Comments:
No issues not	ed.		
v. Data	quality or usabi	lity affected? (Please explain)	Comments:
No issues not	ted.		
b. Laborato	ory Control Sam	ple/Duplicate (LCS/LCSD)	
i. Orgai per AK	nics - One LCS/ methods, LCS r	LCSD reported per matrix, analysis a required per SW846)	and 20 samples? (LCS/LCSD required
• Yes	C No	⊂ NA (Please explain)	Comments:
ii. Meta sample:	ıls/Inorganics - ( s?	One LCS and one sample duplicate r	eported per matrix, analysis and 20
⊂ Yes	C No	• NA (Please explain)	Comments:
Not analyzed	for.		
iii. Acc project 75%-12	uracy - All perce specified DQOs 25%, AK103 60%	ent recoveries (%R) reported and with, if applicable. (AK Petroleum meth- %-120%; all other analyses see the la	thin method or laboratory limits? And ods: AK101 60%-120%, AK102 aboratory QC pages)
• Yes	⊂ No	⊂ NA (Please explain)	Comments:
iv. Prec limits? or samp pages)	ision - All relati And project spec ble/sample duplic	ve percent differences (RPD) reporte cified DQOs, if applicable. RPD rep cate. (AK Petroleum methods 20%; a	ed and less than method or laboratory orted from LCS/LCSD, MS/DMSD, and all other analyses see the laboratory QC
⊂ Yes	No	⊂ NA (Please explain)	Comments:
MS/MSD sho	w several issues	with PAHs on one run; lab refer to	the LCS for accuracy.
v. If %I	R or RPD is outs	ide of acceptable limits, what sampl	es are affected? Comments:
	1 55 0 . (0		

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

⊂ Yes	C No	• NA (Please explain)	Comments:
Lab refers to LC	CS for accurac	y and samples are not flagged.	
vii. Data q	uality or usab	ility affected? (Please explain)	Comments:
There is matrix	interference;	however, it is beyond the labs contr	ol. Results were well below the CULs.
c Surrogates	- Organics On	12	
i. Are surro	ogate recoveri	es reported for organic analyses - fi	eld, QC and laboratory samples?
• Yes	C No	∩NA (Please explain)	Comments:
11. Accurate project spect the laborate	cy - All percen ecified DQOs tory report pag	nt recoveries (%R) reported and wit , if applicable. (AK Petroleum meth ges)	hin method or laboratory limits? And lods 50-150 %R; all other analyses see
• Yes	⊂ No	⊂ NA (Please explain)	Comments:
iii. Do the clearly def	sample result ined?	s with failed surrogate recoveries ha	ave data flags? If so, are the data flags
• Yes	C No	⊂ NA (Please explain)	Comments:
iv. Data qu	ality or usabi	lity affected? (Use the comment bo	x to explain.). Comments:
o effects.			
d. Trip Blank Soil i. One trip (If not. ent	- Volatile ana blank reporte er explanation	lyses only (GRO, BTEX, Volatile C d per matrix, analysis and for each below.)	Chlorinated Solvents, etc.): <u>Water and</u> cooler containing volatile samples?
• Yes	No	∩ NA (Please explain.)	Comments:
ii. Is the co (If not, a	ooler used to t a comment ex	ransport the trip blank and VOA sam plaining why must be entered below	mples clearly indicated on the COC? v)
⊂ Yes	C No	• NA (Please explain.)	Comments:
nly 1 cooler use	d, samples we	ere stored and shipped with trip blar	ık.

iii. All res	ults less than ]	PQL?	
• Yes	C No	∩ NA (Please explain.)	Comments:
iv. If abo	ve PQL, what	samples are affected?	
			Comments:
JA.			
v. Data qu	uality or usabi	lity affected? (Please explain.)	
			Comments:
No issues noted			
e. Field Duplic	ate		
i. One fiel	d duplicate sul	bmitted per matrix, analysis and 10	project samples?
• Yes	C No	⊂ NA (Please explain)	Comments:
1			
		1.0	
11. Submi	tted blind to la	6?	
• Yes	C No	⊂ NA (Please explain.)	Comments:
Submitted blind	but the lab do	es require at least a sample date for	r duplicates
iii Droois	ion All relati	us paraant differences (PDD) loss t	han apositized DOOs?
(Reco	nmended: 30%	% water, 50% soil)	nan specificu DQOS?
	ז	PD(%) = Absolute Value of (R)	<b>R</b> <sub>2</sub> ) 100
		$(R_{1+}R_{1+})$	$(x_2)/2)$
Where F	$R_1 = $ Sample Co	oncentration	, ,
R	$_2 = Field Dup!$	icate Concentration	
⊂ Yes	No	⊂ NA (Please explain)	Comments:
Some out of ran	ge values in D	UP-02 and DUP-03. DUP-04 was (	Okay.
iv Data o	uality or usab	lity affected? (Use the comment bo	x to explain why or why not )
	No	( NA (Please explain)	Comments:
C Yes	( No	( NA (Please explain)	Comments:

% difference not high enough to drive any results over the CULs.

nnle equi			
inple equi	pment and glo	ves used between sample points.	
All result	s less than PQ	L?	
Yes	C No	• NA (Please explain)	Comments:
. If above	PQL, what sa	mples are affected?	Comments:
i. Data qu	ality or usabili	ity affected? (Please explain.)	Comments:
Flags/Qu	alifiers (ACO	E, AFCEE, Lab Specific, etc.)	
ined and	appropriate?		
5 Yes	C No	∩NA (Please explain)	Comments:
	All result Yes If above Data qua Flags/Qua ined and a Yes	All results less than PQ Yes No If above PQL, what sa . Data quality or usabili Flags/Qualifiers (ACO ined and appropriate? Yes C No	All results less than PQL?   Yes   Yes   No   If above PQL, what samples are affected?   If above PQL, what samples are affected? Data quality or usability affected? (Please explain.) Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.) The and appropriate? Yes No NA (Please explain)

**Reset Form** 

	$\mathbf{L}_{i}$	aboratory D	ata Review C	<u>Checklist</u>	
Completed by:	Robert Lund	1/			
Title:	Engineering T	echnician		Date:	6/18/2012
CS Report Name:	Characterizatio	on Report and Wo	ork Plan Addendu	n Report Date:	5/30/2012
Consultant Firm:	City of Unalas	ka			
Laboratory Name:	SGS Labs		Laboratory Rep	ort Number: 1121774	4
ADEC File Number:			ADEC RecKey	Number:	
1. Laboratory					
a. Did an	ADEC CS appro	oved laboratory r	eceive and <u>perforn</u>	n all of the submitted	sample analyses?
(• Ye	s CNo	⊂ NA (Plea	se explain.)	Comments:	
b. If the s laborat	amples were tran ory, was the labo	sferred to anothe pratory performing	r "network" labora g the analyses AD e explain)	tory or sub-contracte EC CS approved? Comments:	ed to an alternate
Not transferre	4				
Not transferred	u.				
2. Chain of Custod	<u>y (COC)</u>				
a. COC info	ormation complet	ed, signed, and d	ated (including rel	eased/received by)?	
• Yes	C No	⊂ NA (Pleas	e explain)	Comments:	
b. Correct a	malyses requeste	d?			
• Yes	C No	⊂ NA (Plea	use explain)	Comments:	
3. Laboratory Sam	ole Receipt Docu	mentation			
a. Sample/c	ooler temperatur	e documented and	d within range at r	eceipt $(4^\circ \pm 2^\circ C)$ ?	
⊂ Yes	No	⊂ NA (Ple	ase explain)	Comments:	
1					

Cooler temperature blank was 3.8dC.

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

• Yes	C No	⊂ NA (Please explain)	Comments:
c. Sample con	dition docume	nted - broken, leaking (Methanol),	zero headspace (VOC vials)?
• Yes	C No	⊂ NA (Please explain)	Comments:
Lab did note that	the PM was as	sked if there was enough MeOH fo	r analysis, but no leakage was noted.
d. If there wer preservation, s	e any discrepan sample tempera	ncies, were they documented? - Fo ature outside of acceptance range, i	or example, incorrect sample contained insufficient or missing samples, etc.?
• Yes	C No	⊂NA (Please explain)	Comments:
lone.			
e. Data quality	or usability at	ffected? (Please explain)	
	÷		Commonto
			Comments.
No. se Narrative			Comments.
No. se Narrative a. Present and @ Yes	understandable ∩ No	e? ∩NA (Please explain)	Comments:
No. se Narrative a. Present and Yes	understandable ∩ No	e? ⊂ NA (Please explain)	Comments:
No. <u>se Narrative</u> a. Present and (• Yes b. Discrepanci	understandable	e? ∩ NA (Please explain) C failures identified by the lab?	Comments:
No. <u>se Narrative</u> a. Present and (• Yes b. Discrepanci (• Yes	understandable	e? ∩ NA (Please explain) C failures identified by the lab? ∩ NA (Please explain)	Comments:
No. <u>se Narrative</u> a. Present and (• Yes b. Discrepanci (• Yes	understandable	e? ∩ NA (Please explain) C failures identified by the lab? ∩ NA (Please explain)	Comments: Comments:
No. <u>se Narrative</u> a. Present and (• Yes b. Discrepanci (• Yes c. Were all con	understandable	e? ∩ NA (Please explain) C failures identified by the lab? ∩ NA (Please explain) s documented?	Comments: Comments:
No. <u>se Narrative</u> a. Present and (• Yes b. Discrepanci (• Yes c. Were all con (• Yes	understandable	e?	Comments: Comments:
No. <u>se Narrative</u> a. Present and (• Yes b. Discrepanci (• Yes c. Were all con (• Yes Corrective action	understandable	e?	Comments: Comments: Comments:
No. <u>use Narrative</u> a. Present and (• Yes b. Discrepanci (• Yes c. Were all con (• Yes Corrective action d. What is the	understandable $\bigcirc$ No tes, errors or Q $\bigcirc$ No rrective actions $\bigcirc$ No s not noted or p effect on data	e? (` NA (Please explain) C failures identified by the lab? (` NA (Please explain) s documented? (• NA (Please explain) not needed.	Comments: Comments: Comments:

## 5. Samples Results

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

	C No	∩ NA (Please explain)	Comments:
b. All applical	ble holding tim	nes met?	
Yes	C No	⊂ NA (Please explain)	Comments:
c. All soils rep	ported on a dry	weight basis?	
• Yes	C No	⊂ NA (Please explain)	Comments:
/			
d. Are the rep project?	orted PQLs les	ss than the Cleanup Level or the min	imum required detection level for the
⊂ Yes	No	⊂ NA (Please explain)	Comments:
PQL (SGS/REP	DL) exceeded	migration to groundwater CUL for o	over 60 inch Zone for benzene.
	4 444.		
e. Data quality	y or usability a	ffected? (Please explain)	Comments:
No. LOD (2xDL	) below the CU	JL for benzene. J flag results would	be shown if benzene was above CUI
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One mo	) below the CU nk ethod blank rep	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples?
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Ye	) below the CU nk ethod blank rep s	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One mo	) below the CU nk ethod blank rep rs	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One mo • Ye ii. All met	) below the CU nk ethod blank rep rs	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples? Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One me (• Ye ii. All met (• Ye	) below the CU nk ethod blank rep is ( No hod blank resu es ( No	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples? Comments: Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One mo © Ye ii. All met © Ye Yes.	) below the CU nk ethod blank rep s ( No hod blank resu es ( No	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples? Comments: Comments:
No. LOD (2xDL) <u>C Samples</u> a. Method Blan i. One mo © Ye ii. All met © Ye <u>Yes.</u> iii. If abov	) below the CU nk ethod blank rep s ( No hod blank resu es ( No re PQL, what s	JL for benzene. J flag results would ported per matrix, analysis and 20 sa	be shown if benzene was above CUI mples? Comments: Comments:

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

⊂ Yes	C No	• NA (Please explain)	Comments:
No issues noted	l.		
v. Data q	uality or usabi	lity affected? (Please explain)	Comments:
No issues note	d.		
b. Laborator	y Control Samp	ble/Duplicate (LCS/LCSD)	
i. Organi per AK n	cs - One LCS/I nethods, LCS r	CCSD reported per matrix, analysis equired per SW846)	and 20 samples? (LCS/LCSD required
• Yes	C No	⊂ NA (Please explain)	Comments:
ii. Metals samples?	/Inorganics - C	One LCS and one sample duplicate r	eported per matrix, analysis and 20
⊂ Yes	C No	• NA (Please explain)	Comments:
Not analyzed fo	or.		
iii. Accur project sj 75%-125	acy - All perce becified DQOs %, AK103 60%	ent recoveries (%R) reported and wi , if applicable. (AK Petroleum meth %-120%; all other analyses see the l	thin method or laboratory limits? And ods: AK101 60%-120%, AK102 aboratory QC pages)
• Yes	C No	⊂ NA (Please explain)	Comments:
iv. Precis limits? A or sample pages)	ion - All relativ nd project spec e/sample duplic	ve percent differences (RPD) report cified DQOs, if applicable. RPD rep cate. (AK Petroleum methods 20%;	ed and less than method or laboratory orted from LCS/LCSD, MS/DMSD, and all other analyses see the laboratory QC
⊂ Yes	• No	⊂ NA (Please explain)	Comments:
MS/MSD show	several issues	with PAHs on one run; lab refer to	the LCS for accuracy.
v. If %R	or RPD is outs	ide of acceptable limits, what samp	les are affected? Comments:
EP-13+36-4 by	MS/MSD,		

⊂ Yes	C No	• NA (Please explain)	Comments:
ab refers to L	CS for accurac	y and samples are not flagged.	
vii. Data	quality or usab	ility affected? (Please explain)	Comments:
here is matrix	x interference; l	nowever, it is beyond the labs control	I. Results were well below the CULs
c. Surrogates	- Organics On	ly	
i. Are sur	rogate recoveri	es reported for organic analyses - fiel	d, QC and laboratory samples?
• Yes	C No	∩NA (Please explain)	Comments:
ii. Accura project sp the labora	acy - All percer pecified DQOs, atory report pag	at recoveries (%R) reported and within if applicable. (AK Petroleum methoo ges)	in method or laboratory limits? And ds 50-150 %R; all other analyses see
• Yes	C No	⊂ NA (Please explain)	Comments:
iii. Do th clearly de	e sample result: efined?	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags
iii. Do th clearly do • Yes	e sample result: efined? ( No	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags Comments:
iii. Do th clearly de Yes	e sample result: efined?	s with failed surrogate recoveries hav ∩ NA (Please explain)	ve data flags? If so, are the data flags Comments:
iii. Do the clearly do • Yes iv. Data c	e sample results efined?	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags Comments: to explain.). Comments:
iii. Do the clearly do • Yes iv. Data o o effects.	e sample results efined?	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags Comments: to explain.). Comments:
iii. Do the clearly do re Yes iv. Data o o effects. d. Trip Blank Soil	e sample results efined?	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags Comments: to explain.). Comments:
<ul> <li>iii. Do the clearly do</li> <li>• Yes</li> <li>iv. Data do</li> <li>o effects.</li> <li>d. Trip Blands</li> <li>Soil</li> <li>i. One trig</li> <li>(If not, ergent)</li> </ul>	e sample result: efined?	s with failed surrogate recoveries hav C NA (Please explain) lity affected? (Use the comment box lyses only (GRO, BTEX, Volatile Ch d per matrix, analysis and for each co below.)	ve data flags? If so, are the data flags Comments: to explain.). Comments:
<ul> <li>iii. Do the clearly do</li> <li>• Yes</li> <li>iv. Data do</li> <li>o effects.</li> <li>d. Trip Blank Soil</li> <li>i. One trig (If not, end)</li> <li>• Yes</li> </ul>	e sample results efined?	s with failed surrogate recoveries hav	ve data flags? If so, are the data flags Comments: to explain.). Comments: alorinated Solvents, etc.): <u>Water and</u> poler containing volatile samples? Comments:
<ul> <li>iii. Do the clearly do</li> <li>• Yes</li> <li>iv. Data do</li> <li>o effects.</li> <li>d. Trip Blank Soil <ul> <li>i. One trip</li> <li>(If not, erging)</li> <li>• Yes</li> </ul> </li> <li>ii. Is the do (If not, orging)</li> </ul>	e sample results efined?	s with failed surrogate recoveries hav C NA (Please explain) lity affected? (Use the comment box lyses only (GRO, BTEX, Volatile Ch d per matrix, analysis and for each co below.) C NA (Please explain.) ransport the trip blank and VOA samplaining why must be entered below)	ve data flags? If so, are the data flags Comments: to explain.). Comments: nlorinated Solvents, etc.): <u>Water and</u> poler containing volatile samples? Comments: ples clearly indicated on the COC?

• Yes C No C	NA (Please explain.)	Comments:
iv. If above PQL, what samples	s are affected?	
		Comments:
JA.		
v. Data quality or usability affe	cted? (Please explain.)	
		Comments:
No issues noted.		
e. Field Duplicate		
i. One field duplicate submitted	per matrix, analysis and 10	0 project samples?
• Yes C No C ]	NA (Please explain)	Comments:
ii. Submitted blind to lab?		
• Yes C No C	NA (Please explain)	Commenter
		Comments.
ubmitted blind, but the lab does requi	ire at least a sample date fo	or duplicates.
iii. Precision - All relative perce (Recommended: 30% water,	ent differences (RPD) less 50% soil)	than specified DQOs?
RPD (%)	= Absolute Value of: (R <sub>1</sub> ) ((R <sub>1+</sub> )	<u>- R<sub>2</sub>)</u> x 100 R <sub>2</sub> )/2)
Where $R_1 =$ Sample Concentra	ition	
$R_2 = Field Duplicate Co$	oncentration	
CYes © No CN	A (Please explain)	Comments:
ome out of range values in DUP-02 a	and DUP-03 DUP-04 was	Okay

% difference not high enough to drive any results over the CULs.

⊂ Yes	No	⊂ NA (Please explain)	Comments:
w sample equ	ipment and glo	oves used between sample points.	
i. All resu	lts less than PC	QL?	
⊂ Yes	C No	• NA (Please explain)	Comments:
ii. If abov	e PQL, what sa	imples are affected?	Commenter
			Comments:
iii. Data q	uality or usabil	lity affected? (Please explain.)	Comments:
Data Flags/Q	Qualifiers (ACC	DE, AFCEE, Lab Specific, etc.)	
. Defined and	l appropriate?		
• Yes	C No	⊂ NA (Please explain)	Comments:

Reset Form

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

## ATTACHMENT F









