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Chevron Environmental Management Company

2010 Site Assessment and Second Semi-Annual Groundwater Monitoring Report

Former Chevron Facility No. 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska
Alaska DEC File # 100.26.040

April 11, 2011

ARCADIS

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Fairbanks, Alaska

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1. Introduction

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS U.S., Inc. (ARCADIS) has prepared this site assessment report and second semi-annual groundwater monitoring report for Former Unocal Fuel Distribution Facility (Unocal #0207, Chevron #306443), located at Fairbanks International Airport (FIA), Gate 28, West Ramp, Fairbanks, Alaska shown on **Figure 1**. This work was conducted under the direction of a "qualified person" [18 AAC 75. 990 (100), and 18 AAC 78.995 (118)] and in accordance with the *2010 Work Plan for Additional Assessment* (ARCADIS, 2010). The following sections report activities and results associated with site assessment work performed in August 2010 and second semi-annual groundwater monitoring performed in September 2010.

2. Site Description

The site facility lease included Parcel A and Parcel B of FIA Block 1, Lot 8, located at 5245 Airport Road. The site is currently owned by the Alaska Department of Transportation and Public Facilities (ADOT&PF) which is leasing Block 1, Lot 8 to Frontier Flying which was recently acquired by Era Alaska. Frontier Flying has been leasing Lot 8 since April 2003; previously Frontier Flying subleased Lot 8 from Falcon Properties. Nearby properties include the ADOT&PF airport maintenance and Alaska Rescue Fire Fighting (ARFF) facility across Brumbaugh Avenue to the northeast, and Northern Air Cargo (NAC) adjacent to the southwest.

Unocal formerly subleased a portion (Parcels A and B) of Lot 8 from Trans-Arctic Airlines and operated a fuel distribution facility that provided aviation gasoline and Jet-A fuel to airplanes at FIA. Parcel A was a rectangular piece of land, 100 feet in length and 50 feet in width, running northwest to southeast approximately 20 feet inside the northeastern lot boundary. Parcel B was a circular parcel of land adjacent to the southeasterly property line of Lot 8 and having a diameter of 200 feet and is shown on **Figure 2**. Parcel A and Parcel B are presently being used only for periodic vehicle storage, with the exception of the northwest corner of Parcel A. Due to the airport development since the decommissioning of the Unocal facilities, the historic boundaries of Parcels A and B's boundaries are difficult to define.

In October 1991, Dames & Moore observed and monitored the removal of four 10,000-gallon underground storage tanks (USTs), two pump islands and associated piping, as reported in "Site Assessment Report for Underground Storage Tank Closure, CEM Leasing, Inc., Fairbanks, Alaska," dated December 17, 1991. The USTs were seated in

sandy gravel, covered with 3 feet of silty sand, and capped with asphalt/concrete. Excavation and removal of the underground piping included two 5-foot deep by 4-foot wide trenches.

The UST excavation was approximately 65 feet by 40 feet and averaged 10 feet in depth. The four USTs were "free of dents and holes and appeared to be in good condition," according to Dames & Moore. Groundwater was encountered in the excavation; no free product was observed. Several samples had concentrations of diesel-range organics (DRO), and benzene, toluene, ethylbenzene, and total xylenes (BTEX), and gasoline-range organics (GRO) that were greater than Alaska Department of Environmental Conservation (ADEC) cleanup levels. Approximately 1,200 cubic yards of soil were excavated during UST and pipeline removal. Soil suspected of containing hydrocarbon impact was used to backfill the excavation. A layer of visqueen was placed over the impacted soil, and clean imported fill was used to restore the excavation area to original grade. GeoEngineers installed nine groundwater monitoring wells in September 2003; GEI-1 through GEI-9. During recent LNAPL gauging activities on September 23, 2010, LNAPL was detected in monitoring wells GEI-1, GEI-4 through GEI-6 and GEI-9 at thicknesses ranging from 0.04 feet in monitoring well GEI-1 to 1.06 feet in monitoring well GEI-5. Hydrocarbon Identification (HCID) of free product collected from groundwater monitoring well GEI-5 indicated concentrations of aliphatic and aromatic hydrocarbons in the jet fuel range (C10-C16). Current site activities include semi-annual groundwater monitoring and semi-annual to monthly light non-aqueous phase liquid (LNAPL) gauging and removal.

In July 2008, five monitoring wells (MW-1 through MW-5) and twelve soil borings (SB-1 through SB-10, SB-12, and SB-13) were installed in order to delineate the impact to soil and groundwater onsite. In addition, a recovery well (RW-1) was installed onsite for potential future pilot testing or LNAPL recovery. Concentrations of GRO and/or DRO exceeded respective cleanup levels in soil samples collected from monitoring well MW-3, soil borings SB-1 through SB-3, SB-5, SB-7 through SB-9, SB-12, and recovery well RW-1. Benzene was detected above the cleanup level in the soil sample collected from SB-3. The locations of these borings are generally in the down-gradient (westward to north-westward) direction of groundwater flow in both Parcel A and B and suggest that the seasonal fluctuation and movement of groundwater are contributing factors to soils exhibiting elevated levels of GRO, DRO, and benzene in these areas.

3. Site Geology

Soils logged during site assessment activities ranged from poorly graded sandy gravels to silts. Boring logs are included in **Appendix A**. A geotechnical analysis conducted on soil samples in 2008 indicated a soil density of 1.47 grams per cubic centimeter (g/cm^3) and a specific gravity of 2.742. Porosity results were determined from calculations of specific gravity and density to equal 46.4 percent.

4. Constituents of Potential Concern (COPCs)

COPCs for this site and their associated ADEC cleanup levels (CLs) for soil and groundwater are presented in the table below. In addition, the applicable laboratory analysis method and laboratory detection limits are presented below.

Contaminants of Potential Concern (COPC)	Soil Cleanup Level (mg/kg)[1]	Groundwater Cleanup Level (ug/L)	Laboratory Method	Detection Limit: Soil (mg/kg)/Water (ug/L)
Gasoline range organics (GRO)	300	2,200	Alaska Method AK 101	0.6 / 10
Diesel range organics (DRO)	250	1,500	Alaska Method AK 102	4.4 / 50
Residual range organics (RRO)	11,000	1,100	Alaska Method AK 103	4.4 / 50
Benzene	0.025	5	EPA Method 8021B	0.005 / 0.5
Ethylbenzene	6.9	700	EPA Method 8021B	0.005 / 0.5
Toluene	6.5	1,000	EPA Method 8021B	0.005 / 0.5
Total Xylenes	63	10,000	EPA Method 8021B	0.02 / 1.5
1,2 Ethylene dibromide (EDB)	0.00016	0.05	EPA Method 8011M	NA / 0.01
Naphthalene	20	730	EPA Method 8021B	NA / 1
Lead (total for soil) (dissolved for GW)	400[2]	15	EPA Method 6020	0.04 / 0.1

mg/kg = milligrams per kilograms NA = not applicable ug/L = micrograms per liter
mg/L = milligrams per liter -- = no set limit
EPA = Environmental Protection Agency
CL = 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, rev. October 9, 2008; Table B1. Method Two - Soil Cleanup Levels (Migration to Groundwater) & Table C. Groundwater Cleanup Levels
[1]Method Two – Soil Cleanup Levels, migration to groundwater
[2]Method Two – Soil Cleanup Levels, under 40 inch zone, direct contact

5. Soil Boring and Monitoring Well Installation

In order to delineate soil and groundwater impacts at the site, five monitoring wells (MW-6 through MW-10) and two soil borings (SB-14 and SB-15) were installed at the site on August 23rd through August 27th, 2010. Monitoring wells MW-6 through MW-9 were installed in a downgradient direction relative to Parcels A and B. Monitoring well MW-10 was installed offsite to the northeast and upgradient of the site. Soil borings SB-14 and SB-15 were installed in Parcels B and A, respectively. The locations of the monitoring wells and soil borings in relation to other site features are shown on **Figure 2**.

5.1 Soil Sample Collection Methods

Each boring was cleared to a depth of eight feet below ground surface (bgs) using a vacuum truck to assure utility clearance. At two foot intervals the vacuum was stopped and a hand auger was advanced to collect an undisturbed sample for screening using a photoionization detector (PID) and classification using the United Soil Classification System (USCS). The soil borings were then advanced using a hollow stem auger drill rig provided by Discovery Drilling of Anchorage, Alaska. Soil samples were collected continuously using split spoon soil samplers to the final depth of the boring. Each split spoon was inspected by ARCADIS field staff and analytical samples were collected based on field screening indications. Up to four samples were collected for laboratory analysis per boring. At least one shallow sample was collected. In addition, a sample from the groundwater interface zone was collected. Finally, one sample was collected from the bottom of the bore hole once the desired depth drilled was reached. An additional sample was collected where the highest elevated PID readings were detected if not covered in the samples previously mentioned.

Analytical samples were placed directly into clean, laboratory supplied containers and preserved specific to the analysis to be performed. The containers, 4-ounce or larger jars with a Teflon-lined septum fused to the lid, were zeroed with a field scale. The soil was immediately preserved by submerging the sample in surrogate methanol in the jars. Soil only came into contact with properly decontaminated or disposable materials and handling of the soils was kept at a minimum to prevent volatilization or possible cross contamination. Samples were collected in accordance to ADEC Draft Field Sampling Guidance dated January 2010.

Sample containers were labeled to include the date, time, location and depth of the sample collection and immediately stored in an iced cooler and kept at a temperature

of 2 to 6 degrees Celsius. The samples were retained at this temperature and accompanied by the chain-of-custody through delivery to the laboratory. Collected samples were documented on field boring logs, included in **Appendix A**, and in field note documents, included in **Appendix B**.

5.2 Field Screening

Field screening of soil samples was performed continuously during drilling activities using a PID and visual classification using USCS. Soils from each split spoon sampler were placed into a sealable plastic bag and allowed to volatilize for at least 10 minutes but no more than 60 minutes. A PID was then inserted into a small opening of the plastic bag and used to read the level of volatile organic compounds (VOCs) in the bag. The VOC reading was recorded on the boring logs and field sheets used for documentation of drilling activities. Field screening for volatiles also included a visual inspection of soils for the presence of light non-aqueous phase liquid (LNAPL), hydrocarbon odor or hydrocarbon sheen on the soils or groundwater. Lithology descriptions and soil classifications were conducted by trained ARCADIS field staff and recorded on boring logs included in **Appendix A**.

5.3 Monitoring Well Construction

Upon completion of borings and soil sample collection, monitoring wells MW-6 through MW-10 were installed in accordance with ADEC's Monitoring Well Guidance document (February 2009). The monitoring wells were constructed of 2.0-inch diameter schedule 40 polyvinyl chloride (PVC) well casing with 0.010-inch factory-slotted screen and 2.0-inch solid schedule 40 PVC riser. The wells were set at 20 feet bgs with a screened interval from 5 to 20 feet bgs. The depth to water onsite is generally 6 ft bgs to 12 ft bgs. A standard sand pack (#10/20 silica sand) was placed from the bottom of the borehole to approximately one-foot above the screened interval. The sand pack was followed by hydrated bentonite chips, pea gravel and a bentonite-cement seal. The wells were fitted with sealing and locking well caps and traffic-rated well boxes installed at the surface to provide secure wellheads. Monitoring well constructions are shown on the boring logs included in **Appendix A**.

5.4 Soil Boring Installation

Soil borings SB-14 and SB-15 were installed in Parcels A and B, respectively, to delineate the vertical extent of hydrocarbon impact below the vadose zone. Soil borings SB-14 and SB-15 were both installed to a depth of 20 feet bgs using the

methods described above. Upon completion, soil borings SB-14 and SB-15 were backfilled with hydrated bentonite chips, pea gravel and completed flush to the surface with concrete.

5.5 Soil Analytical Methods

Soil sample analysis was conducted by Lancaster Laboratories in Lancaster, Pennsylvania with a standard turnaround time of 10 days. The laboratory sample bottles and preservatives needed to complete this project are listed in the table below.

	Soil	Lab Method
GRO	1 – 125 mL widemouth amber glass jar (MeOH w/ surrogate preservative)	GRO = Alaska Method AK 101
DRO and RRO	1 – 125 mL widemouth amber glass jar (Unpreserved)	DRO and RRO = Alaska Method AK 102 and 103
BTEX	Run with GRO (1 – 125 mL widemouth amber glass jar (MeOH w/ surrogate preservative)	BTEX = US EPA method 8021B
Total Lead	1-125 mL wide mouth clear glass jar (unpreserved)	Total lead = EPA method 6020B
PAHs	1 – 125 mL widemouth glass jar (unpreserved)	PAHs = US EPA method 8270C SIM

mL = milliliter
L = liter
MeOH = methanol
HCL = hydrochloric acid
PAHs = polynuclear aromatic hydrocarbons
SIM = selected ion monitoring

5.6 Soil Analytical Results

GRO was detected at concentrations above the soil cleanup level (SCL) of 300 mg/kg in the soil samples collected from monitoring well MW-8 at depths of 8.0 – 12.0 feet bgs, soil boring SB-14 from depths of 2.0 and 8.0 – 10.0 feet bgs and soil boring SB-15 from depths of 2.0 and 10.0 – 12.0 feet bgs. GRO concentrations exceeding the applicable SCL ranged from 650 mg/kg in the sample collected from soil boring SB-15 at 2.0 feet bgs to 3,000 mg/kg in the sample collected from soil boring SB-15 from 10.0 – 12.0 feet bgs.

DRO was detected at concentrations above SCL of 250 mg/kg in the soil samples collected from monitoring well MW-8 at depths of 8.0 – 12.0 feet bgs, soil boring SB-14 from depths of 2.0 and 8.0 – 10.0 feet bgs and soil boring SB-15 from depths of 2.0 and 10.0 – 12.0 feet bgs. DRO concentrations exceeding the applicable SCL ranged from 980 mg/kg in the sample collected from monitoring well MW-8 from 10.0 – 12.0 feet bgs to 11,000 mg/kg in the sample collected from soil boring SB-14 from 8.0 – 10.0 feet bgs.

Toluene was detected above the SCL of 6.5 mg/kg in the sample collected from soil boring SB-15 from 10.0 – 12.0 feet bgs at a concentration of 24 mg/kg. Total xylenes were detected above the SCL of 63 mg/kg in the sample collected from soil boring SB-15 from 10.0 – 12.0 feet bgs at a concentration of 160 mg/kg.

Benzene was not detected in the soil samples collected from monitoring wells MW-6 through MW-10 or soil borings SB-14 and SB-15; however, due to laboratory dilution, the reporting limits were raised above the applicable SCL in the soil samples collected from monitoring wells MW-6 at 2.0 feet bgs, MW-8 from 8.0 – 12.0 feet bgs and MW-10 at 2.0 feet bgs and soil borings SB-14 at 2.0 feet bgs, SB-14 from 8.0 – 10.0 feet bgs, and SB-15 from 10.0 – 12.0 feet bgs.

RRO, ethylbenzene, lead and PAHs were not detected above their respective ADEC SCLs during the 2010 site assessment. Based on the soil analytical results from soil borings SB-14 and SB-15 and monitoring wells MW-6 through MW-10, PID readings and field visual inspection, vertical delineation has been defined at the site. Impacts to soil appear to be limited to the upper 15 feet bgs. Soil analytical results are summarized in **Table 1** and **Table 2** and are shown on **Figure 3** and **Figure 4**. Soil analytical laboratory reports are included in **Appendix C**.

5.7 Monitoring Well Development

Well development was conducted by ARCADIS on September 20, 2010. Well development was performed by surging the wells over the length of the screen interval using a bailer and then purging the well until the water was relatively free of suspended sediments and/or until approximately 10 well volumes have been removed. Monitoring well development purge water was containerized in Department of Transportation (DOT) approved 55 gallon drums and sampled for disposal.

5.8 Surveying

McLane Consulting Inc., a licensed surveyor from Soldotna, Alaska, surveyed the new monitoring well locations on September 23, 2010 relative to existing site features and determined top-of-casing well elevations relative to NAD83 (EPOCH 2003) for horizontal control and NAVD88 OPUS Solution for vertical control to the nearest 0.01-ft.

6. Second Semi-Annual 2010 Groundwater Monitoring

The second semi-annual groundwater sampling event of 2010 was conducted on September 23rd and 24th, 2010. Monitoring wells GEI-1 through GEI-9, MW-1 through MW-10 and RW-1 were gauged with a decontaminated oil/water interface probe. Monitoring wells GEI-2, GEI-3, GEI-7, GEI-8, MW-1 through MW-10 and RW-1 were sampled by ARCADIS. Duplicate samples were collected from monitoring wells MW-1 and MW-5 and labeled BD-1 and BD-2, respectively. The duplicate samples were submitted with the sample set to Lancaster Laboratories.

6.1 Groundwater Flow

LNAPL was detected in monitoring wells GEI-1, GEI-4 through GEI-6 and GEI-9 at thicknesses ranging from 0.04 feet in monitoring well GEI-1 to 1.06 feet in monitoring well GEI-5. Monitoring wells not containing measurable LNAPL were purged of three casing volumes of water using a peristaltic pump and then sampled. Water quality parameters including temperature, pH, electrical conductivity, oxidation/reduction potential (ORP), dissolved oxygen (DO) and turbidity were measured at regular intervals during purging using a YSI 556 groundwater quality meter and were recorded on groundwater sample field data sheets included in **Appendix D**.

Depth to groundwater ranged from 7.82 feet below top of casing (TOC) to 9.51 feet below TOC in monitoring wells MW-2 and GEI-5, respectively. Groundwater elevations in the monitoring wells ranged from 423.79 feet above mean sea level (amsl) in monitoring wells GEI-5, MW-8 and MW-9 to 423.98 feet amsl in monitoring well MW-4. Due to the presence of LNAPL, groundwater elevations in monitoring wells GEI-1, GEI-4 through GEI-6 and GEI-9 were corrected using the following formula:

Corrected Groundwater Elevation =
(Top of Casing – Depth to Water) + (LNAPL Thickness x Specific Gravity)

Based on the water levels measured during the September 2010 sampling event, the general groundwater flow direction at the site is to the west-northwest. Groundwater elevation data are summarized in **Table 3**. A potentiometric surface map illustrating the groundwater flow direction is included in **Figure 5**.

6.2 Groundwater Analytical Methods

Groundwater sample analysis was conducted by Lancaster Laboratories with a standard turnaround time of 10 days. The laboratory sample bottles and preservatives needed to complete this project are listed in the table below.

	Water	Lab Method
GRO	3 - 40 mL VOA vials (HCl preservative)	GRO = Alaska Method AK 101
DRO and RRO	2 - 1.0 L amber bottles (HCl preservative)	DRO and RRO = Alaska Method AK 102 and 103
BTEX	Run with GRO (3 - 40 mL VOA vial (HCl preservative))	BTEX = US EPA method 8021B
EDB	2 - 40 mL clear VOA vails (sodium thiosulfate preservative)	EDB = US EPA method 8011M
Naphthalene	3 - 40 mL amber VOA vails (HCl preservative)	Napthalene = US EPA method 8260
Dissolved Lead	1-500 mL plastic bottle (HNO3 preservative)	Diss. lead = EPA method 200.8
Total Alkalinity	1-500 mL plastic bottle (unpreserved)	US EPA method 310.1
Sulfate and Nitrate	2-40 mL VOA vials (unpreserved)	US EPA method 300.0
Methane	2-40 mL VOA vials (HCl preservative)	RSK 175
Ferrous Iron	Colorimetric Field Kit	Colorimetric Field Kit
Nitrate as Nitrogen	Colorimetric Field Kit	Colorimetric Field Kit
mL = milliliter L = liter MeOH = methanol HCL = hydrochloric acid		

6.3 Groundwater Analytical Results

GRO was detected below the ADEC groundwater cleanup level (GCL) of 2,200 micrograms per liter (µg/L) in the groundwater samples analyzed during the second semi-annual 2010 groundwater monitoring event.

DRO was detected above the ADEC GCL of 1,500 µg/L in the groundwater samples collected from GEI-2, GEI-3, GEI-7, MW-1, MW-5, MW-8, MW-9 and RW-1 at concentrations ranging from 1,900 µg/L to 12,000 µg/L in the samples collected from monitoring wells GEI-7 and MW-1, respectively.

RRO was not detected above the ADEC GCL of 1,100 µg/L in the groundwater samples analyzed during the second semi-annual 2010 groundwater monitoring event.

Benzene was detected above the ADEC GCL of 5 µg/L in the groundwater samples collected from monitoring wells MW-1 (parent and duplicate samples) and MW-9 at concentrations of 22 µg/L and 7.3 µg/L, respectively.

Toluene, ethylbenzene, total xylenes, and lead were not detected above their respective ADEC GCLs (1,000 µg/L, 700 µg/L, 10,000 µg/L and 15 µg/L) during the second semi-annual 2010 groundwater monitoring event.

Groundwater analytical results are summarized in **Table 4** and are presented on **Figure 6**. The groundwater analytical laboratory report is included in **Appendix E**.

6.4 Geochemical Parameter Results and Natural Attenuation Assessment

To better assess the potential for natural attenuation at the site, ARCADIS collected groundwater field data and groundwater samples to evaluate the current plume geochemistry. Based on geochemical parameter monitoring data, the hydrocarbon plume can be characterized as aerobic or anaerobic and expanding, stable or contracting. The groundwater geochemistry and gradient data were used to evaluate whether natural attenuation of petroleum hydrocarbons is occurring.

DO concentrations detected in the samples collected in September 2010 ranged from 0.33 mg/L to 3.13 mg/L. The concentrations are consistent with slightly aerobic background concentrations in upgradient and crossgradient wells and anaerobic conditions within the plume.

Sulfate concentrations detected in the samples ranged from 8.5 mg/L to 24.5 mg/L and are highest upgradient of the source area, suggesting a sulfate-reducing plume while the lower concentrations were detected in monitoring wells within or downgradient of the plume.

Methane concentrations in the samples collected in September 2010 ranged from 0.039 mg/L to 2.2 mg/L with concentrations highest cross/downgradient of the source area. These elevated concentrations are strong indicators of methanogenic bioremediation of the petroleum hydrocarbon impact in the source area. The methane concentration of 16.5 mg/L in the sample collected from monitoring well MW-1 in 2009 is indicative of high levels of methanogenic processes and/or background methane degassing from organic materials likely present in the subsurface (i.e. peat).

Based on the limited amount of historical data, it appears that the plume onsite is stable. The groundwater gradient at the site measured on September 23, 2010 of 0.0006 ft/ft indicates very slow nutrient electron acceptor replenishment to the source area as well as slow impact movement downgradient. In addition, the use of electron acceptors is likely slow due to a limited microbial population and/or slow kinetic rates due to the low groundwater temperature. The presence of LNAPL in multiple source area monitoring wells limits the assessment of natural attenuation processes. However, based on lower COC concentrations in downgradient wells than that of the source area, natural attenuation is probably occurring. Geochemical parameter monitoring results are summarized in **Table 5**.

7. Laboratory Data Quality Assurance Summary

As required by ADEC (Technical Memorandum 06-002, dated August 20, 2008), ARCADIS completed a laboratory data review checklist for the TestAmerica Laboratory reports from the site assessment and second semi-annual 2010 groundwater event. The data review checklists are included in **Appendix F**.

7.1 Accuracy

The data meet accuracy objectives by the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for laboratory report numbers 1209765, 1209203, 1209432, 1209536 and 1213829.

7.2 Precision

Based on the LCS/LCSD, matrix spike (MS), and matrix spike duplicate (MSD) relative percent differences (RPD), the data meets precision objectives for laboratory report numbers 1209765, 1209203, 1209432, 1209536 and 1213829 with the few exceptions noted on the data review checklists included in **Appendix F**. Data quality or usability does not appear to be affected.

Field duplicates were collected for the soil and groundwater samples and submitted blind to the laboratory. Relative percent differences between the duplicate samples and their respective parent samples were below the ADEC recommended RPDs of 30% for water and 50% for soil with the following exceptions:

- Laboratory report 1209765: RRO RPD was equivalent to 98.25% (laboratory reporting limit compared to parent sample concentration);
- Laboratory report 1209203: RRO RPD was equivalent to 94.12%; and
- Laboratory report 1209536: RRO, ethylbenzene (duplicate was non-detect), total xylenes (duplicate was non-detect) and naphthalene RPDs were equivalent to 66.67%, 96.30%, 111.11% and 69.39%, respectively. Data quality or usability does not appear to be affected.

7.3 Representativeness

The data appear to be representative of the site conditions and are generally consistent with objectives to further delineate the site impacts.

7.4 Comparability

Laboratory results are generally consistent with previous assessment reports. These data are reported using the same units and formats as previous monitoring reports to allow for comparison.

7.5 Completeness

The results presented in laboratory reports 1209765, 1209203, 1209432, 1209536 and 1213829 appear to be valid and usable.

7.6 Sensitivity

The sensitivity of the analyses for soil and groundwater were adequate for the samples as the method blank and trip blank were less than the MRL. Additionally, with the few exceptions noted above in Section 5.6 and in the data review checklists included in **Appendix F**, the sensitivity of the analyses for soil and groundwater were adequate.

8. Management of Investigation-Derived Wastes (IDW)

Development water, purge water and soil cuttings generated during the field activities were contained in DOT-approved 55-gallon steel drums and plastic lined super-sacks. The IDW was appropriately labeled and stored on site pending characterization. Following receipt of laboratory analytical data and ADEC approval, the IDW was transported offsite. The development water was transported to Emerald Alaska for treatment and disposal and the soil cuttings were transported to Alaska Soil Recycling for treatment and disposal.

9. Updated Conceptual Site Model (CSM)

The site is currently owned by the Alaska Department of Transportation and Public Facilities (ADOT&PF) which is leasing Block 1, Lot 8 to Era Alaska. Impacted groundwater extends through the middle of the site westerly from the former tank locations. The environmental impact caused by the release of petroleum hydrocarbons at the site is believed to be limited to groundwater, soil, and possibly air. The current potential receptors are commercial or industrial workers, and site visitors or trespassers.

The future potential receptors include residents and construction workers. A well search and mail survey was conducted by ARCADIS in 2008 and identified two private wells at Frontier Flying/Era Alaska (not in use, building has public water and sewer). The Frontier building/hangar is approximately 400 feet northwest of the site (down gradient). There are a number of private wells in the vicinity of the site on FIA property. Based on records supplied from FIA, none are used for drinking water and a public water supply is available in the area. Other receptors which were considered and were ruled out include farmers or subsistence harvesters and subsistence consumers. These receptors were excluded because the site is located in a commercial/industrial area of Fairbanks. The site is located on secure airport property. An updated ADEC CSM scoping form and graph are included in **Appendix G**.

10. Conclusions

In August 2010, five monitoring wells (MW-6 through MW-10) and two soil borings (SB-14 and SB-15) were installed in order to continue delineation of impacted soil and groundwater. Concentrations of GRO exceeding applicable SCLs were present in the soil samples collected from monitoring well MW-8 and soil borings SB-14 and SB-15. DRO exceeded respective cleanup levels in soil samples collected from monitoring well MW-8 and soil borings SB-14 and SB-15. Soil borings SB-14 and SB-15 are located in the source area and were installed to delineate vertical impact. Monitoring well MW-8 is located generally downgradient (westward to north-westward). Groundwater flow suggests that the seasonal fluctuation and movement of groundwater are contributing factors to soils exhibiting elevated levels of GRO and DRO in this area. The current and historical soil borings, soil concentrations and groundwater concentrations of COCs indicate vertical and lateral delineation is complete with the exception of the area west and southwest of monitoring well MW-8 and west and northwest of monitoring well MW-9.

On September 23, 2010, site monitoring wells were gauged to determine depth to groundwater and thickness of LNAPL. The groundwater flow direction is west-northwest which is consistent with historical data. Monitoring wells GEI-2, GEI-3, GEI-7, GEI-8, MW-1 through MW-10 and RW-1 were sampled by ARCADIS during the second semi-annual 2010 groundwater monitoring event. Groundwater samples were not collected due to the presence of LNAPL measured in monitoring wells GEI-1, GEI-4 through GEI-6 and GEI-9. Concentrations of DRO and/or benzene exceeded respective cleanup levels in groundwater samples collected from monitoring wells GEI-2, GEI-3, GEI-7, MW-1, MW-5, MW-8, MW-9 and RW-1.

To better assess the potential for natural attenuation at the site, ARCADIS collected groundwater field data and groundwater samples to evaluate the current plume geochemistry. The results are consistent with an anaerobic to slightly aerobic, sulfate-reducing plume with methanogenic bioremediation of the petroleum hydrocarbon impact in the source area. The presence of LNAPL in multiple source area monitoring wells limits the assessment of natural attenuation processes. However, based on lower COC concentrations in downgradient wells than that of the source area, natural attenuation is probably occurring.

11. References

Alaska Department of Environmental Conservation (ADEC). 2009. Division of Spill Prevention and Response Contaminated Sites Program, *Monitoring Well Guidance*. February.

ADEC Division of Spill Prevention and Response Contaminated Sites Program. 2010. *Draft Field Sampling Guidance*. January.

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ARCADIS

Tables

Table 1
Soil Boring GRO, DRO, RRO, BTEX and Lead Analytical Results

Former Chevron Facility No. 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Location	Sample Depth/ Interval	Sample Date	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
ADEC Soil Cleanup Levels [1]			*300*	*250*	*11,000*	*0.025*	*6.5*	*6.9*	*63*	*800*
FALCON-912-01[2]	--	09/12/91	2	--	--	0.32	0.05	0.07	0.2	--
FALCON-912-02[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-03[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-04[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-05[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-06[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-07[2]	--	09/12/91	<1	--	--	<0.01	0.05	0.04	0.09	--
FALCON-912-08[2]	--	09/12/91	3	--	--	<0.01	0.1	0.03	0.22	--
FALCON-912-09[2]	--	09/12/91	4	--	--	<0.01	0.06	0.04	0.24	--
FALCON-912-10[2]	--	09/12/91	4	<10	--	<0.01	0.05	0.04	0.11	--
FALCON-912-11[2]	--	09/12/91	6	<10	--	<0.01	0.04	0.03	0.09	--
FALCON-912-12[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-13[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-14[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-15[2]	--	09/12/91	703	1,950	--	2.2	6.8	1.6	16	--
FALCON-912-16[2]	--	09/12/91	--	--	--	--	--	--	--	--
FALCON-912-17[2]	--	09/12/91	7	10	--	<0.01	0.04	0.04	0.12	--
FALCON-1010-18[2]	--	10/10/91	6	--	--	<0.01	0.16	0.02	0.11	--
23231-1024-01[2]	--	10/24/91	--	--	--	--	--	--	--	--
23231-1024-02[2]	--	10/24/91	<1	2	--	<0.01	<0.02	<0.01	<0.04	--
23231-1024-03[2]	--	10/24/91	--	--	--	--	--	--	--	--
23231-1024-04[2]	--	10/24/91	--	--	--	--	--	--	--	--
23231-1024-05[2]	--	10/24/91	<1	23	--	<0.01	0.02	<0.01	<0.04	--
23231-1024-06[2]	--	10/24/91	--	--	--	--	--	--	--	--
23231-1024-07[2]	--	10/24/91	<1	3,100	--	<0.01	<0.02	<0.01	29	--
23231-1024-08[2]	--	10/24/91	--	--	--	--	--	--	--	--
23231-1024-09[2]	--	10/24/91	--	--	--	--	--	--	--	--
23231-1024-10[2]	--	10/24/91	<1	5,800	--	<0.01	<0.02	<0.01	27	--
23231-1028-01[2]	--	10/28/91	--	8,900	--	--	--	--	--	--
23231-1028-02[2]	--	10/28/91	--	5,200	--	--	--	--	--	--
23231-1028-03[2]	--	10/28/91	--	--	--	--	--	--	--	--
23231-1028-04[2]	--	10/28/91	--	--	--	--	--	--	--	--
23231-1028-05[2]	--	10/28/91	--	--	--	--	--	--	--	--
23231-1028-06[2]	--	10/28/91	--	11,000	--	--	--	--	--	--
23231-1028-07[2]	--	10/28/91	--	4,000	--	--	--	--	--	--
23231-1028-08[2]	--	10/28/91	--	4,000	--	--	--	--	--	--
23231-1029-09[2]	--	10/29/91	--	--	--	--	--	--	--	--
23231-1029-10[2]	--	10/29/91	1,700	8,100	--	<0.01	12	9.7	44	--
23231-1029-11[2]	--	10/29/91	230	1,100	--	<0.01	0.75	0.33	3.6	--
23231-1029-12[2]	--	10/29/91	240	580	--	<0.01	0.81	<0.01	7.9	--
23231-1029-13[2]	--	10/29/91	690	2,400	--	<0.01	2.4	1.2	21	--
23231-1029-14[2]	--	10/29/91	--	--	--	--	--	--	--	--
23231-1029-15[2]	--	10/29/91	--	--	--	--	--	--	--	--
23231-1029-16[2]	--	10/29/91	<40	570	--	<0.01	<0.02	<0.01	<0.04	--
GEI-1 (6.0-6.5)	6.0-6.5	07/28/03	172	13,300	--	<0.106	<0.265	<0.265	2.28	--
GEI-1 (8.0-8.5)	8.0-8.5	07/28/03	2,200	8,620	--	<0.190	<0.475	5.03	21.7	--
GEI-2 (6.0-6.5)	6.0-6.5	07/28/03	<3.30	6.51	--	<0.0132	<0.0330	<0.0330	<0.0659	--
GEI-3 (6.5-7.0)	6.5-7.0	07/28/03	<3.73	<4.00	--	<0.0149	<0.0373	<0.0373	<0.0746	--
GEI-3 (8.5-9.0)	8.5-9.0	07/28/03	<3.82	<4.00	--	<0.0153	<0.0382	<0.0382	<0.0765	--
Duplicate	--	07/28/03	<3.42	--	--	<0.0137	<0.0342	<0.0342	<0.0683	--
GEI-3 (14.5-15.0)	14.5-15.0	07/28/03	5.26	<4.00	--	<0.0133	<0.0333	<0.0333	<0.0666	--
GEI-4 (6.5-7.0)	6.5-7.0	07/28/03	<3.70	24.9	--	<0.0148	<0.0370	0.0397	<0.0740	--
GEI-5 (6.5-7.0)	6.5-7.0	07/29/03	<3.06	4.74	--	<0.0122	<0.0306	<0.0306	<0.0611	--
GEI-5 (8.5-9.0)	8.5-9.0	07/29/03	72.2	96.8	--	<0.0216	<0.0541	0.216	0.51	--
GEI-6 (6.0-6.5)	6.0-6.5	07/29/03	<2.65	4.08	--	<0.0106	<0.0265	<0.0265	<0.0530	--
GEI-6 (9.0-9.5)	9.0-9.5	07/29/03	370	8.44	--	0.186	<0.0202	1.84	5.55	--
GEI-6 (14.5-15.0)	14.5-15.0	07/29/03	17.4	288	--	0.00757	<0.01686	0.0676	0.208	--
GEI-7 (8.0-8.5)	8.0-8.5	07/29/03	<2.16	<4.00	--	<0.00864	<0.0216	<0.0216	<0.0432	--
GEI-7 (14.5-15.0)	14.5-15.0	07/29/03	<2.05	<4.00	--	<0.00820	<0.0205	<0.0205	<0.0410	--
GEI-8 (6.0-6.5)	6.0-6.5	08/22/03	<2.59	<4.00	--	<0.00104	<0.0259	<0.0259	<0.0518	--
GEI-8 (13.5-14.0)	13.5-14.0	08/22/03	<1.52	<4.00	--	<0.00606	<0.0152	<0.0152	<0.0303	--
GEI-9 (1.5-2.0)	1.5-2.0	08/22/03	1,020	16,500	--	<0.154	<0.385	3.78	12.3	--
GEI-9 (9.0-9.5)	9.0-9.5	08/22/03	4.06	1,020	--	<0.0129	<0.0322	0.0517	0.104	--
Duplicate-8/22/03	--	08/22/03	169	1,160	--	0.0339	<0.0305	0.917	2.10	--

Table 1
Soil Boring GRO, DRO, RRO, BTEX and Lead Analytical Results

Former Chevron Facility No. 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Location	Sample Depth/ Interval	Sample Date	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
ADEC Soil Cleanup Levels [1]			*300*	*250*	*11,000*	*0.025*	*6.5*	*6.9*	*63*	*800*
MW-1	9.0	07/17/08	<5.16	<5.56	--	<0.0310	<0.0516	<0.0516	<0.103	--
MW-2	9.0	07/18/08	<3.71	<4.32	--	<0.0222	<0.0371	<0.0371	<0.0741	--
MW-3	9.0	07/18/08	213	406	--	<0.0397	<0.0661	0.486	1.33	--
MW-4	9.0	07/16/08	<4.91	<5.06	--	<0.0294	<0.0491	<0.0491	<0.0981	--
MW-5	8.5	07/18/08	<3.87	<4.58	--	<0.0232	<0.0387	<0.0387	<0.0774	--
MW-6	**2.0**	**08/25/10**	**<11**	**<7.6**	**50**	**<0.1**	**<0.1**	**<0.1**	**<0.3**	**8.24**
	8.0	**08/25/10**	**<0.8**	**<0.008**	**<6.1**	**<0.008**	**0.02**	**<0.008**	**<0.02**	**3.86**
	18.0-20.0	**08/27/10**	**<0.6**	**<5.5**	**<5.5**	**<0.006**	**<0.006**	**<0.006**	**<0.02**	**3.88**
MW-7	**2.0**	**08/24/10**	**<0.6**	**<5.5**	**19**	**<0.006**	**<0.006**	**<0.006**	**<0.02**	**5.22**
	8.0-10.0	**08/26/10**	**<0.9**	**<6.8**	**20**	**<0.009**	**<0.009**	**<0.009**	**<0.03**	**12.9**
	18.0-20.0	**08/26/10**	**<0.7**	**<5.7**	**11**	**<0.007**	**<0.007**	**<0.007**	**<0.02**	**3.93**
MW-8	**2.0**	**08/24/10**	**<0.6**	**<5.4**	**9**	**<0.006**	**<0.006**	**<0.006**	**<0.02**	**5.02**
	2.0[D]	**08/24/10**	**<0.5**	**<5.4**	**25**	**<0.005**	**<0.005**	**<0.005**	**<0.02**	**5.16**
	8.0-10.0	**08/26/10**	**1,200**	**3,300**	**<580**	**<0.3**	**<0.3**	**1.5**	**6.5**	**4.23**
	10.0-12.0	**08/26/10**	**730**	**980**	**<260**	**<0.2**	**<0.2**	**0.9**	**3.7**	**2.97**
	18.0-20.0	**08/26/10**	**1.0**	**<5.8**	**35**	**<0.006**	**<0.006**	**<0.006**	**<0.02**	**2.58**
MW-9	**2.0**	**08/24/10**	**<0.6**	**5.8**	**9.4**	**<0.006**	**<0.006**	**<0.006**	**<0.02**	**5.99**
	10.0-12.0	**08/26/10**	**0.8**	**<6.0**	**30**	**<0.007**	**<0.04**	**0.02**	**0.07**	**6.51**
	10.0-12.0[D]	**08/26/10**	**<0.7**	**<6.2**	**15**	**<0.007**	**<0.007**	**<0.007**	**<0.02**	**7.10**
	18.0-20.0	**08/26/10**	**<0.6**	**<5.5**	**<5.5**	**<0.006**	**<0.006**	**0.009**	**<0.02**	**3.58**
MW-10	**2.0**	**08/25/10**	**<6.2**	**15**	**80**	**<0.06**	**<0.06**	**<0.06**	**0.2**	**7.14**
	8.0	**08/25/10**	**<0.8**	**10**	**63**	**<0.008**	**<0.008**	**<0.008**	**0.02**	**10.7**
	8.0-10.0	**08/27/10**	**<0.9**	**<6.9**	**42**	**<0.009**	**0.02**	**<0.009**	**<0.03**	**8.45**
	18.0-20.0	**08/27/10**	**<0.7**	**<5.7**	**17**	**<0.007**	**<0.007**	**<0.007**	**<0.02**	**3.74**
	18.0-20.0[D]	**08/27/10**	**<0.6**	**<5.8**	**<5.8**	**<0.006**	**<0.006**	**<0.006**	**<0.02**	**2.96**
RW-1	4.0	07/16/08	830	19,900	--	<1.16	<1.94	<1.94	6.96	--
	8.5	07/16/08	470	9,160	--	<0.197	<0.328	<0.328	2.65	--
SB-1	4.0	07/16/08	588	22,000	--	<0.423	<0.705	<0.705	3.97	--
SB-2	4.0	07/16/08	276	13,700	--	<1.22	<2.03	<2.03	<4.05	--
	9.0	07/16/08	82	634	--	<0.234	<0.390	<0.390	0.900	--
SB-3	6.0	07/16/08	1,710	15,200	--	0.355	<0.393	2.65	13.0	--
SB-4	9.0	07/17/08	<4.29	<5.21	--	<0.0258	<0.0429	<0.0429	<0.0859	--
SB-5	6.0	07/16/08	285	1,020	--	<1.48	<2.47	<2.47	<4.94	--
	9.5	07/17/08	244	2,820	--	<0.197	<0.329	2.58	14.1	--
SB-6	8.5	07/17/08	5.66	45.9	--	<0.0186	<0.0310	<0.0310	0.0800	--
SB-7	2.0	07/15/08	864	3,170	--	<0.129	<0.215	0.723	4.35	--
SB-8	4.0	07/15/08	1,630	12,000	--	<0.506	<0.843	1.67	34.3	--
	9.0	07/17/08	<3.31	10.0	--	<0.0199	<0.0331	<0.0331	<0.0662	--
SB-9	4.0	07/15/08	721	6,070	--	<1.62	<2.70	<2.70	10.8	--
	9.0	07/16/08	1,050	15,800	--	<1.56	<2.60	4.58	17.6	--
SB-10	9.5	07/17/08	<7.73	<6.60	--	<0.0464	<0.0773	<0.0773	<0.155	--
SB-12	2.0	07/15/08	1,440	13,800	--	<1.32	<2.19	2.86	29.2	--
	8.5	07/16/08	<5.22	10.6	--	<0.0313	<0.0522	<0.0522	<0.104	--
SB-13	9.5	07/16/08	<5.77	<5.15	--	<0.0346	<0.0577	<0.0577	<0.115	--
SB-14	**2.0**	**08/23/10**	**1,200**	**9,300**	**<670**	**<0.3**	**<0.3**	**6.7**	**14**	**10.5**
	8.0-10.0	**08/25/10**	**2,300**	**11,000**	**<1,100**	**<0.7**	**<0.7**	**3.2**	**22**	**3.43**
	18.0-20.0	**08/25/10**	**0.9**	**<5.9**	**<5.9**	**<0.007**	**<0.007**	**<0.007**	**<0.02**	**4.38**
SB-15	**2.0**	**08/23/10**	**650**	**1,200**	**<270**	**<0.02**	**<0.02**	**2.0**	**7.3**	**5.43**
	10.0-12.0	**08/25/10**	**3,000**	**10,000**	**<600**	**<1.5**	**24**	**4.8**	**160**	**4.48**
	18.0-20.0	**08/25/10**	**0.8**	**<5.4**	**<8.0**	**<0.006**	**0.009**	**<0.006**	**<0.02**	**2.48**

Notes:
All results are reported in milligrams per kilogram (mg/kg).
Bold type indicates data collected during the 2010 Site Assessment.
Gasoline range organics (GRO) was analyzed by AK Method 101.
Diesel range organics (DRO) was analyzed by AK Method 102.
Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were analyzed by EPA Method 8021B.
[D]Duplicate sample of the preceding sample.
[1]ADEC Soil Cleanup Levels (SCLs) per 18 AAC 75.355, Table B1, Register 188, October 2008, & Technical Memorandum 02-006.
Highlighted cell = exceeds soil cleanup level.
[2]Gasoline range organics analyzed by EPA Method 8015 and diesel range organics analyzed by EPA 8100.
< = not detected greater than the laboratory reporting limit indicated.

Table 2
Soil Boring PAH Analytical Results

Former Chevron Facility No. 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Location	Sample Depth/ Interval	Date Sampled	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
ADEC Soil Cleanup Levels [1]			*210*	*--*	*4,300*	*6*	*3*	*20*	*--*	*200*	*620*	*6*	*2,100*	*270*	*54*	*43*	*--*	*1,500*
MW-6	2.0	08/25/10	<.0010	0.0010	<.00050	<.0010	<.0010	<.0010	<.0010	<.0010	0.00059	<.0010	<.0010	0.0012	<.0010	0.0023	0.0015	<.0010
	8.0	08/25/10	<.00082	<.00041	<.00041	<.00082	<.00082	<.00082	<.00082	<.00041	<.00041	<.00082	<.00082	<.00082	<.00082	<.00082	<.00082	<.00082
	18.0-20.0	08/27/10	<0.00073	<0.00037	<0.00037	<0.00073	<0.00073	<0.00073	<0.00073	<0.00073	<0.00037	<0.00073	<0.00073	<0.00073	<0.00073	<0.00073	<0.00073	<0.00073
MW-7	2.0	08/24/10	<0.00073	<0.00037	<0.00037	<0.00073	<0.00073	<0.00073	<0.00073	<0.00073	<0.00037	<0.00073	<0.00073	<0.00073	<0.00073	0.00096	<0.00073	<0.00073
	8.0-10.0	08/26/10	<0.00091	<0.00045	<0.00045	<0.00091	<0.00091	<0.00091	<0.00091	<0.00091	<0.00045	<0.00091	<0.00091	<0.00091	<0.00091	<0.00091	<0.00091	<0.00091
	18.0-20.0	08/26/10	<0.00076	<0.00038	<0.00038	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00038	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076
MW-8	2.0	08/24/10	<0.00072	<0.00036	<0.00036	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00036	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072
	2.0[D]	08/24/10	<0.00072	<0.00036	<0.00036	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00036	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072
	8.0-10.0	08/26/10	0.37	<0.12	0.027	<0.015	<0.015	<0.015	<0.015	<0.015	<0.0077	<0.015	<0.015	0.38	<0.015	5.9	0.19	<0.015
	10.0-12.0	08/26/10	0.071	<0.059	0.0030	<0.00071	<0.00071	<0.00071	<0.00071	<0.00071	0.00063	<0.00071	0.0011	0.19	<0.00071	2.1	0.072	0.0011
	18.0-20.0	08/26/10	<0.00077	<0.00038	<0.00038	<0.00077	<0.00077	<0.00077	<0.00077	<0.00077	<0.00038	<0.00077	<0.00077	<0.00077	<0.00077	0.0050	<0.00077	<0.00077
MW-9	2.0	08/23/10	0.00075	0.0013	<0.00037	<0.00074	<0.00074	<0.00074	<0.00074	<0.00074	0.00060	<0.00074	0.0012	0.0045	<0.00074	0.0075	0.0024	0.00078
	10.0-12.0	08/26/10	<0.00081	<0.00040	<0.00040	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00040	<0.00081	<0.00081	<0.00081	<0.00081	0.016	<0.00081	<0.00081
	10.0-12.0[D]	08/26/10	<0.00082	<0.00041	<0.00041	<0.00082	<0.00082	<0.00082	<0.00082	<0.00082	<0.00041	<0.00082	<0.00082	<0.00082	<0.00082	0.033	<0.00082	<0.00082
	18.0-20.0	08/26/10	<0.00074	<0.00037	<0.00037	<0.00074	<0.00074	<0.00074	<0.00074	<0.00074	<0.00037	<0.00074	<0.00074	<0.00074	<0.00074	0.0073	<0.00074	<0.00074
MW-10	2.0	08/25/10	<0.00074	<0.00037	<0.00037	<0.00074	<0.00074	0.00075	<0.00074	<0.00074	0.00080	<0.00074	<0.00074	<0.00074	<0.00074	0.0028	0.0017	<0.00074
	8.0	08/25/10	<0.00089	<0.00044	<0.00044	<0.00089	0.00091	0.0015	0.0011	<0.00089	0.0013	<0.00089	0.0012	<0.00089	<0.00089	0.0010	0.0012	0.0012
	8.0-10.0	08/27/10	<0.0091	<0.00046	<0.00046	<0.00091	<0.00091	<0.00091	<0.00091	<0.00091	<0.00046	<0.00091	<0.00091	<0.00091	<0.00091	0.0013	0.0010	<0.00091
	18.0-20.0	08/27/10	<0.00076	<0.00038	<0.00038	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00038	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076
	18.0-20.0[D]	08/27/10	<0.00077	<0.00038	<0.00038	<0.00077	<0.00077	<0.00077	<0.00077	<0.00077	<0.00038	<0.00077	<0.00077	<0.00077	<0.00077	<0.00077	<0.00077	<0.00077
SB-14	2.0	08/23/10	0.066	0.062	0.0095	<0.18	<0.18	<0.18	<0.18	<0.18	<0.0089	<0.18	<0.18	0.15	<0.18	2.5	0.091	0.00078
	8.0-10.0	08/25/10	0.13	0.18	<0.37	<0.74	<0.74	<0.74	<0.74	<0.74	<0.37	<0.74	<0.74	0.41	<0.74	10	0.18	<0.74
	18.0-20.0	08/25/10	<0.00079	<.00039	<0.00039	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00039	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079
SB-15	2.0	08/23/10	0.037	0.037	<0.0071	<0.014	<0.014	<0.014	<0.014	<0.014	<0.0071	<0.014	<0.014	0.081	<0.014	0.44	0.022	<0.14
	10.0-12.0	08/25/10	0.53	0.39	<0.040	<0.080	<0.080	<0.080	<0.080	<0.080	<0.040	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
	18.0-20.0	08/25/10	<0.00072	<0.00036	<0.00036	<0.00072	<0.00072	<0.00072	<0.00072	<0.00072	<0.00036	<0.00072	<0.00072	<0.00072	<0.00072	0.0020	<0.00072	<0.00072

Notes
PAHs were analyzed by EPA Method 8270 C.
All results reported in milligrams per kilogram (mg/kg)
< = not detected greater than the laboratory reporting limit indicated
[D] Duplicate
[1] ADEC Soil Cleanup Levels (SCLs) per 18 AAC 75.355, Table B1. Register 188, October 2008, & Technical Memorandum 02-006.
PAH = Polynuclear Aromatic Hydrocarbons

Table 3
Groundwater Elevation Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
GEI-1	99.87	09/04/03	6.32	--	--	93.55
		04/24/04	Well buried under snow/ice			
		09/16/04	8.56	--	--	91.31
		04/21/05	Well buried under snow/ice			
		09/30/05	8.17	--	--	91.70
		04/19/06	Well buried under snow/ice			
		09/21/06	9.04	--	--	90.83
		04/03/07	11.35	11.08	0.27	88.74
		09/29/07	8.60	8.54	0.06	91.32
		10/15/07	10.35	9.94	0.41	89.86
		11/19/07	10.91	10.78	0.13	89.07
		03/29/08	Well buried under snow/ice			
		06/25/08	9.35	--	--	90.52
		07/14/08	8.22	--	--	91.65
		08/06/08	5.83	--	--	94.04
		09/10/08	8.22	8.20	0.02	91.67
		11/24/08	9.88	--	--	89.99
		12/18/08	10.06	--	--	89.81
		01/27/09	10.73	10.70	0.03	89.16
		02/20/09	11.18	10.98	0.20	88.85
		04/21/09	Well buried under snow/ice			
		10/06/09	10.35	10.33	0.02	89.54
		06/18/10	9.42	9.41	0.01	90.46
	432.17	**09/23/10**	**8.29**	**8.25**	**0.04**	**423.91**
GEI-2	99.79	09/04/03	6.19	--	--	93.60
		04/24/04	Well buried under snow/ice			
		09/16/04	8.47	--	--	91.32
		04/21/05	Well buried under snow/ice			
		09/30/05	7.76	--	--	92.03
		04/19/06	Well buried under snow/ice			
		09/21/06	9.01	--	--	90.78
		04/03/07	Well Dry			
		09/29/07	8.57	--	--	91.22
		03/29/08	10.22	--	--	89.57
		09/10/08	8.18	--	--	91.61
		04/21/09	Well under water			
		10/06/09	Well Dry			
		06/18/10	9.43	9.42	0.01	90.37
	432.15	**09/23/10**	**8.25**	**--**	**--**	**423.90**
GEI-3	99.73	09/04/03	6.14	--	--	93.59
		04/24/04	9.49	--	--	90.24
		09/16/04	8.38	--	--	91.35
		04/21/05	9.84	--	--	89.89
		09/30/05	7.67	--	--	92.06
		04/19/06	11.28	10.75	0.53	88.88
		09/21/06	8.91	--	--	90.82
		04/03/07	10.80	10.78	0.02	88.95
		09/29/07	8.47	--	--	91.26
		03/29/08	10.15	--	--	89.58
		09/10/08	8.08	--	--	91.65
		04/21/09	11.11	10.89	0.22	88.80
		10/06/09	10.22	10.20	0.02	89.53
		06/18/10	9.37	9.36	0.01	90.37
	432.07	**09/23/10**	**8.16**	**--**	**--**	**423.91**

Table 3
Groundwater Elevation Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
GEI-4	99.66	09/04/03	6.12	--	--	93.54
		04/24/04	9.52	--	--	90.14
		09/16/04	8.41	--	--	91.25
		04/21/05	9.83	--	--	89.83
		09/30/05	7.69	--	--	91.97
		04/19/06	10.90	--	--	88.76
		09/21/06	8.91	--	--	90.75
		04/03/07	10.98	--	--	88.68
		09/29/07	8.44	--	--	91.22
		03/29/08	10.08	--	--	89.58
		09/10/08	8.03	--	--	91.63
		04/21/09	10.65	--	--	89.01
		10/06/09	10.14	--	--	89.52
		06/18/10	9.24	--	--	90.42
	431.97	**09/23/10**	**8.10**	**8.05**	**0.05**	**423.91**
GEI-5	99.88	09/04/03	8.28	5.97	2.31	93.49
		04/24/04	10.11	9.71	0.40	90.09
		09/16/04	10.40	8.21	2.19	91.28
		04/21/05	10.49	10.06	0.43	89.74
		09/30/05	7.95	--	--	91.97
		04/19/06	11.75	11.01	0.74	88.74
		09/21/06	10.09	9.01	1.08	90.68
		04/03/07	11.70	11.23	0.47	88.57
		09/29/07	9.22	8.72	0.50	91.07
		03/29/08	10.67	10.45	0.22	89.39
		09/10/08	8.71	8.37	0.34	91.45
		11/24/08	10.08	--	--	89.80
		12/18/08	10.29	--	--	89.59
		01/27/09	11.26	10.94	0.32	88.88
		02/20/09	11.65	11.21	0.44	88.59
		04/21/09	11.44	11.02	0.42	88.78
		10/06/09	10.65	10.53	0.12	89.33
		06/18/10	9.73	9.72	0.01	90.16
	432.43	**09/23/10**	**9.51**	**8.45**	**1.06**	**423.79**
GEI-6	99.95	09/04/03	6.47	--	--	93.48
		04/24/04	9.95	--	--	90.00
		09/16/04	8.83	--	--	91.12
		04/21/05	10.28	--	--	89.67
		09/30/05	8.24	--	--	91.71
		04/19/06	Well buried under snow/ice			
		09/21/06	9.30	9.30	<0.1	90.65
		04/03/07	Well Dry			
		09/29/07	9.10	8.81	0.29	91.09
		10/15/07	10.70	10.26	0.44	89.61
		11/19/07	11.04	10.71	0.33	89.18
		03/29/08	10.61	10.60	0.01	89.35
		06/25/08	9.58	--	--	90.37
		07/14/08	8.51	--	--	91.44
		08/06/08	6.44	6.08	0.36	93.81
		09/10/08	9.25	8.41	0.84	91.39
		11/24/08	10.30	10.22	0.08	89.72
		12/18/08	10.52	10.38	0.14	89.54
		01/27/09	11.10	10.96	0.14	88.96
		02/20/09	11.10	--	--	88.85
		04/21/09	Well blocked at 11.5' below TOC			
		10/06/09	10.85	10.68	0.17	89.10
		06/18/10	9.80	--	--	90.15
	432.49	**09/23/10**	**9.31**	**8.52**	**0.79**	**423.83**

Table 3
Groundwater Elevation Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
GEI-7	99.44	09/04/03	5.92	--	--	93.52
		04/24/04	9.49	--	--	89.95
		09/16/04	8.36	--	--	91.08
		04/21/05	9.95	--	--	89.49
		09/30/05	7.74	--	--	91.70
		04/19/06	11.04	--	--	88.40
		09/21/06	9.06	--	--	90.38
		04/03/07	11.21	--	--	88.23
		09/29/07	8.59	--	--	90.85
		03/29/08	10.28	10.26	0.02	89.18
		09/10/08	8.21	--	--	91.23
		04/21/09	10.90	10.86	0.04	88.57
		10/06/09	10.36	10.34	0.02	89.10
		06/18/10	9.48	9.47	0.01	89.97
	432.14	**09/23/10**	**8.32**	**--**	**--**	**423.82**
GEI-8	100.01	09/04/03	6.48	--	--	93.53
		04/24/04	9.94	--	--	90.07
		09/16/04	8.84	--	--	91.17
		04/21/05	10.31	--	--	89.70
		09/30/05	8.18	--	--	91.83
		04/19/06	11.47	--	--	88.54
		09/21/06	9.48	--	--	90.53
		04/03/07	11.63	--	--	88.38
		09/29/07	9.08	--	--	90.93
		03/29/08	10.77	--	--	89.24
		09/10/08	8.72	8.70	0.02	91.31
		11/24/08	10.36	--	--	89.65
		12/18/08	10.55	--	--	89.46
		01/27/09	11.24	--	--	88.77
		02/20/09	11.55	--	--	88.46
		04/21/09	11.50	--	--	88.51
		10/06/09	10.82	--	--	89.19
		06/18/10	9.96	--	--	90.05
	432.68	**09/23/10**	**8.80**	**--**	**--**	**423.88**
GEI-9	100.02	09/04/03	6.42	--	--	93.60
		04/24/04	9.82	--	--	90.20
		09/16/04	8.21	--	--	91.81
		04/21/05	Well buried under snow/ice			
		09/30/05	8.14	--	--	91.88
		04/19/06	Well buried under snow/ice			
		09/21/06	9.31	--	--	90.71
		04/03/07	11.39	--	--	88.63
		09/29/07	8.91	--	--	91.11
		03/29/08	10.73	10.65	0.08	89.36
		09/10/08	8.63	--	--	91.39
		04/21/09	Well buried under snow/ice			
		10/06/09	10.90	10.87	0.03	89.12
		08/16/10	Well Not Sampled			
	432.81	**09/23/10**	**9.00**	**8.87**	**0.13**	**423.92**

Table 3
Groundwater Elevation Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth to Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)
MW-1	432.51	09/10/08	8.65	--	--	423.86
		04/21/09	11.26	--	--	421.25
		10/06/09	10.75	--	--	421.76
		06/18/10	9.85	9.79	0.06	422.71
	432.50	**09/23/10**	**8.68**	**--**	**--**	**423.82**
MW-2	431.79	09/10/08	7.75	--	--	424.04
		04/21/09		Well under water		
		10/06/09	9.89	--	--	421.90
		06/18/10	9.02	--	--	422.77
	431.77	**09/23/10**	**7.82**	**--**	**--**	**423.95**
MW-3	432.89	09/10/08	9.00	--	--	423.89
		04/21/09	11.69	--	--	421.20
		10/06/09	10.15	--	--	422.74
		06/18/10	10.22	--	--	422.67
	432.90	**09/23/10**	**9.08**	**--**	**--**	**423.82**
MW-4	432.29	09/10/08	8.26	--	--	424.03
		04/21/09		Well buried under snow/ice		
		10/06/09	10.57	--	--	421.72
		06/18/10	9.49	--	--	422.80
	432.31	**09/23/10**	**8.33**	**--**	**--**	**423.98**
MW-5	432.76	09/10/08	8.81	--	--	423.94
		04/21/09	11.51	--	--	421.24
		10/06/09	11.03	--	--	421.72
		06/18/10	10.10	--	--	422.65
	432.85	**09/23/10**	**8.98**	**--**	**--**	**423.87**
MW-6	**432.58**	**09/23/10**	**8.70**	--	--	**423.88**
MW-7	**432.78**	**09/23/10**	**8.93**	--	--	**423.85**
MW-8	**433.11**	**09/23/10**	**9.32**	--	--	**423.79**
MW-9	**432.39**	**09/23/10**	**8.60**	--	--	**423.79**
MW-10	**432.75**	**09/23/10**	**8.92**	--	--	**423.83**
RW-1	432.30	09/10/08	8.30	--	--	424.00
		04/21/09		Well buried under snow/ice		
		10/06/09	10.45	--	--	421.85
		06/18/10	9.54	--	--	422.76
	432.30	**09/23/10**	**8.39**	**--**	**--**	**423.91**

Notes:
LNAPL = Light non-aqeous phase liquid
Groundwater elevations were corrected due to the presence of LNAPL in well. Specific gravity of 0.82 was used for the LNAPL (Jet-A Fuel).
Bold text indicates most recent sampling event.
TOC = top of casing.
"--" = not applicable.

Table 4
Groundwater Analytical Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead	EDB
GCL:		*2,200*	*1,500*	*1,100*	*5*	*1,000*	*700*	*10,000*	*15*	*0.05*
GEI-1	04/24/04	Well buried by snow/ice								
	09/16/04	1,760	151,000	--	7.05	1.83	47.9	251	--	--
	09/16/04[D]	--	--	--	5.40	2.02	42.2	233	--	--
	04/21/05	Well buried by snow/ice								
	09/30/05	2,270	327,000	<3,970	5.52	0.945	36.6	208	--	--
	04/19/06	Well buried by snow/ice								
	09/21/06	1,300	690,000	<9,800	10.0	0.8	22	140	--	--
	04/03/07	LNAPL Present - Well not sampled								
	09/29/07	LNAPL Present - Well not sampled								
	03/29/08	Well buried by snow/ice								
	09/10/08	LNAPL Present - Well not sampled								
	04/22/09	Well buried under snow/ice								
	10/06/09	LNAPL Present - Well not sampled								
	06/18/10	LNAPL Present - Well not sampled								
	09/23/10	**LNAPL Present - Well not sampled**								
GEI-2	04/24/04	Well buried by snow/ice								
	09/16/04	76.6	1,430	--	2.53	0.547	<0.500	1.81	--	--
	04/21/05	Well buried by snow/ice								
	09/30/05	65.6	885	<391	<0.500	<0.500	<0.500	<1.50	--	--
	04/19/06	Well buried by snow/ice								
	09/21/06	56.0	1,500	430	<0.5	<0.500	<0.500	<1.50	--	--
	04/03/07	Well dry - Not sampled								
	09/29/07	30	--	--	<1.00	<1.00	<1.00	<2.00	--	--
	03/29/08	<50.0	--[3]	--[3]	<0.500	<0.500	<0.500	<1.00	--	--
	09/10/08	52[4]	5,300[5]	<743	0.225	<0.500	1.16	<1.00	<1.00	--
	04/22/09	Well under water								
	10/06/09	Well dry - Not sampled								
	06/18/10	LNAPL Present - Well not sampled								
	09/23/10	**<10**	**2,500**	**210**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**<0.052**	**--**
GEI-3	04/24/04	1,330	21,000	--	<5.00	<5.00	13.9	59.8	--	--
	09/16/04	310	18,300	--	1.26	<0.500	8.27	14.9	--	--
	04/21/05	464	22,900	--	<0.500	<0.500	6.24	14.6	--	--
	09/30/05	450	33,300	625	<0.500	<0.500	3.45	10.6	--	--
	04/19/06	LNAPL Present - Well not sampled								
	09/21/06	500	29,000	<480	<0.600	<0.500	7.7	25.0	--	--
	04/03/07	LNAPL Present - Well not sampled								
	09/29/07	700	65,000	<2,100	<5.00	<5.00	<5.00	<20	--	--
	03/29/08	492	47,100[2]	863	<0.500	<0.500	5.01	16.0	--	--
	09/10/08	374[4]	22,400[6]	<3,750	<1.00	<2.50	7.06	13.7	<1.00	--
	04/22/09	LNAPL Present - Well not sampled								
	10/06/09	LNAPL Present - Well not sampled								
	06/18/10	LNAPL Present - Well not sampled								
	09/23/10	**450**	**2,400**	**<140**	**<0.5**	**<0.5**	**2.2**	**8.6**	**<0.052**	**--**
GEI-4	04/24/04	1,270	43,600	--	<5.00	<5.00	14.6	57.2	--	--
	09/16/04	638	36,200	--	15.0	0.675	21.8	35.7	--	--
	04/21/05	570	37,500	--	35.4	1.27	17.7	40.1	--	--
	09/30/05	1,030	122,000	<4,100	7.47	4.88	25.1	58.7	--	--
	04/19/06	879	17,800	<391	7.58	<0.500	21.8	27.9	<1.00	--
	09/21/06	630	12,000	<480	24.0	0.5	25	43	--	--
	04/03/07	300	2,000	<40	5.0	<1.00	9	8.0	--	--
	09/29/07	1,400	43,000	<2,000	20	1.00	20	40	--	--
	03/29/08	255[1]	11,300[2]	<735	2.17	<0.500	4.16	9.20	--	--
	09/10/08	889[4]	32,300[5]	<3,750	53.2	2.42	37.9	71.0	<1.00	--
	04/22/09	229[1]	2,840[5]	<721	2.90	<0.500	4.50	7.64	<1.00[7]	<0.01
	10/06/09	305	5,820	787	15.7	<1.00	17.3	33.77	<1.00	<0.0100
	06/18/10	Well Not Sampled								
	09/23/10	**LNAPL Present - Well not sampled**								

Table 4
Groundwater Analytical Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead	EDB
GCL:		*2,200*	*1,500*	*1,100*	*5*	*1,000*	*700*	*10,000*	*15*	*0.05*
GEI-5	04/24/04	LNAPL Present - Well not sampled								
	09/16/04	LNAPL Present - Well not sampled								
	04/21/05	LNAPL Present - Well not sampled								
	09/30/05	2,530	671,000	<8,700	12.4	<0.500	107	326	--	--
	04/19/06	LNAPL Present - Well not sampled								
	09/21/06	LNAPL Present - Well not sampled								
	04/03/07	LNAPL Present - Well not sampled								
	09/29/07	LNAPL Present - Well not sampled								
	03/29/08	68.1	1,860 [2]	<708	<0.500	<0.500	<0.500	1.78		--
	09/10/08	LNAPL Present - Well not sampled								
	04/22/09	LNAPL Present - Well not sampled								
	10/06/09	LNAPL Present - Well not sampled								
	06/18/10	LNAPL Present - Well not sampled								
	09/23/10	**LNAPL Present - Well not sampled**								
GEI-6	04/24/04	2,930	168,000	--	8.17	<5.00	59.6	145	--	--
	09/16/04	1,880	39,600	--	7.80	1.57	23.8	75.0	--	--
	04/21/05	1,290	25,300	--	15.7	<0.500	57.1	134	--	--
	09/30/05	2,220	120,000	<4,770	14.8	<0.500	20.8	107	--	--
	04/19/06	Well buried by snow/ice								
	09/21/06	LNAPL Present - Well not sampled								
	04/03/07	Well Dry - Not sampled								
	09/29/07	LNAPL Present - Well not sampled								
	03/29/08	1,170 [1]	334,000 [2]	904	8.41	<2.50	33.8	128	58.8	--
	09/10/08	LNAPL Present - Well not sampled								
	04/22/09	Well blocked at 11.5' below TOC								
	10/06/09	LNAPL Present - Well not sampled								
	06/18/10	LNAPL Present - Well not sampled								
	09/23/10	**LNAPL Present - Well not sampled**								

Table 4
Groundwater Analytical Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead	EDB
GCL:		***2,200***	***1,500***	***1,100***	***5***	***1,000***	***700***	***10,000***	***15***	***0.05***
GEI-7	04/24/04	2,440	43,200	--	6.97	<5.00	7.58	20.0	--	--
	09/16/04	363	5,660	--	<0.500	1.34	8.89	14.2	--	--
	04/21/05	1,080	13,600	--	32.6	2.52	64.6	92.0	--	--
	09/30/05	226	6,700	<397	<0.500	<0.500	3.68	4.72	--	--
	04/19/06	934	25,200	<856	37.9	4.11	77.8	103	<1.00	--
	09/21/06	470	4,100	<98	1.2	<0.5	14	15	--	--
	04/03/07	2,200	12,000	<980	50	4	90	200	--	--
	04/03/07[D]	2,200	12,000	<980	40	4	90	200	--	--
	09/29/07	1,500	130,000	<2,000	<5	<5	<10	<20	27.9	--
	09/29/07[D]	900	92,000	<2,000	<5	<5	<10	<20	--	--
	03/29/08	1,630 [1]	44,200	1,320	31.1	<5.00	90.5	147	--	--
	03/29/08[D]	1,630	51,400	1,470	26.8	<5.00	85.2	131	--	--
	09/10/08	352 [4]	15,200 [5]	<833	<1.00	<2.50	10.7	8.02	<1.00	--
	04/22/09	LNAPL Present - Well not sampled								
	10/06/09	LNAPL Present - Well not sampled								
	06/18/10	LNAPL Present - Well not sampled								
	09/24/10	**570**	**1,900**	**200**	**<2.0**	**<2.0**	**9.7**	**11**	**<0.052**	**--**
GEI-8	04/24/04	<500	7,390	--	<5.00	<5.00	11.7	30.4	--	--
	09/16/04	82	8,690	--	<0.500	<0.500	0.520	1.12	--	--
	04/21/05	54.3	1,460	--	<0.500	<0.500	<0.500	<1.50	--	--
	04/21/05[D]	<50	--	--	<0.500	<0.500	<0.500	<1.50	--	--
	09/30/05	<50	4,970	<397	<0.500	<0.500	<0.500	<1.50	--	--
	04/19/06	<50	1,480	<400	<0.500	<0.500	<0.500	<1.50	--	--
	04/19/06[D]	78.0	--	--	<0.500	<0.500	<0.500	<1.50	<1.00	--
	09/21/06	40.0	1,800	<160	<0.5	<0.5	<0.5	<1.5	--	--
	04/03/07	60	910	360	<1.0	<1.0	<1.0	<2.0	--	--
	09/29/07	80	4,400	<200	<1.0	<1.0	<1.0	<2.0	--	--
	03/29/08	62.0 [1]	2,830 [2]	<758	<0.500	<0.500	<0.500	1.94	--	--
	09/10/08	LNAPL Present - Well not sampled								
	04/22/09	66.6 [1]	1,810 [9]	818 [9]	<0.200	<0.500	<0.500	<1.00	<1.00 [7]	<0.01
	10/06/09	50.9	942	<391	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100
	10/06/09	50.9	942	<391	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100
	06/18/10	Obstruction - Well not sampled								
	09/23/10	**11**	**530**	**220**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**<0.052**	**--**
GEI-9	04/24/04	8,370	33,700	--	9.53	<5.00	113	321	--	--
	09/16/04	1,350	77,400	--	17.3	<0.500	58.3	57.5	--	--
	04/21/05	Well buried by snow/ice								
	09/30/05	838	50,900	<443	16.2	<0.500	55.4	82.3	--	--
	04/19/06	Well buried by snow/ice								
	09/21/06	1,200	95,000	<1,900	23.0	<0.5	52	80	36.5	--
	09/21/06[D]	1,300	43,000	<980	22.0	<0.5	50	75	--	--
	04/03/07	1,600	9,700	<400	6.0	<1.0	40	80	0.62	--
	09/29/07	1,800	680,000	<20,000	10.0	<5.00	40	70	29.8	--
	03/29/08	1,690 [1]	111,000 [2]	839	7.23	<5.00	25.1	85.5	89.4	--
	09/10/08	1,510 [4]	118,000 [6]	<8,330	9.04	<5.00	29.3	63.1	<1.00	--
	9/10/08 [D]	1,150 [4]	191,000 [5]	<7,500	9.18	<5.00	25.0	56.1	<1.00	--
	04/22/09	Well buried under snow/ice								
	10/06/09	LNAPL Present - Well not sampled								
	06/18/10	Well not sampled								
	09/23/10	**LNAPL Present - Well not sampled**								
MW-1	09/10/08	2,000 [4]	10,900 [5]	<743	27.4	<0.500	99.8	163	<1.00	--
	04/22/09	2,260 [1]	20,700 [5]	1,190 [8]	42.2	0.566	84.3	236	<1.00 [7]	<0.01
	10/07/09	1,040	8,070	642	25.4	<10.0	81.8	171.9	<1.00	<0.0100
	06/18/10	LNAPL Present - Well not sampled								
	09/24/10	**1,800**	**12,000**	**<1,500**	**21**	**<0.5**	**55**	**130**	**--**	**--**
Duplicate	**09/24/10**	**1,800**	**--**	**--**	**22**	**<0.5**	**56**	**130**	**--**	**--**

Table 4
Groundwater Analytical Data

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead	EDB
GCL:		***2,200***	***1,500***	***1,100***	***5***	***1,000***	***700***	***10,000***	***15***	***0.05***
MW-2	09/10/08	<50.0	208 [6]	<743	<0.20	<0.500	<0.50	<1.00	<1.00	--
	04/22/09	Well buried under snow/ice								
	10/06/09	<50.0	<410	<410	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100
	06/18/10	11	530	290	<0.5	<0.5	<0.5	<1.5	<.05	--
	09/23/10	**<10**	**100**	**150**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**--**	**--**
MW-3	09/10/08	144 [4]	2,800 [5]	<743	0.263	<0.500	0.687	1.56	<1.00	--
	04/22/09	96.4 [1]	1,600 [5]	<728	0.210	<0.500	1.09	1.81	<1.00 [7]	<0.01
	10/07/09	205	1,350	<391	<0.400	<2.00	10.5	10.02	<1.00	<0.0100
	06/18/10	220	17,000	< 3.4	<0.5	<2	<0.5	< 5	<0.05	--
Duplicate	06/18/10	64	17,000	<3.5	<0.5	<0.5	<0.5	<1.5	--	--
	09/24/10	**27**	**510**	**91**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**--**	**--**
MW-4	09/10/08	<50.0	150 [6]	<743	<0.20	<0.500	<0.50	<1.00	<1.00	--
	04/22/09	Well buried under snow/ice								
	10/06/09	<50.0	<391	<391	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100
	10/06/09 [D]	<50.0	<403	<403	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100
	06/18/10	LNAPL Present - Well not sampled								
	09/24/10	**<10**	**56**	**75**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**--**	**--**
MW-5	09/10/08	89.1 [4]	2,240 [5]	<743	0.378	<0.500	2.42	3.28	<1.00	--
	04/22/09	254 [1]	4,230 [5]	<728	0.590	<0.500	6.95	5.14	<1.00 [7]	<0.01
	04/2209 [D]	248 [1]	4,150 [5]	<721	0.593	<0.500	6.82	4.90	<1.00 [7]	<0.01
	10/07/09	<50.0	1,040	<391	<0.200	<1.00	1.35	<3.00	<1.00	<0.0100
	06/18/10	540	1,500	<1.7	<0.5	<.5	2	<5	--	--
	09/24/10	**230**	**6,500**	**<690**	**<0.5**	**<0.5**	**4.3**	**7.8**	**--**	**--**
Duplicate	**09/24/10**	**240**	**--**	**--**	**<0.5**	**<0.5**	**4.6**	**8.0**	**--**	**--**
MW-6	**09/24/10**	**81**	**560**	**86**	**<0.5**	**<0.5**	**2.3**	**3.9**	**--**	**--**
MW-7	**09/24/10**	**<10**	**200**	**92**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**--**	**--**
MW-8	**09/24/10**	**1,000**	**4,500**	**<360**	**1.3**	**<0.5**	**38**	**69**	**--**	**--**
MW-9	**09/24/10**	**890**	**6,000**	**<730**	**7.3**	**<0.5**	**50**	**55**	**--**	**--**
MW-10	**09/24/10**	**<10**	**850**	**520**	**<0.5**	**<0.5**	**<0.5**	**<1.5**	**--**	**--**
RW-1	10/06/09	172	4,260	512	<0.200	<1.00	1.04	2.25	<1.00	<0.0100
	06/18/10	260	1,500	80	<0.5	<2.00	0.7	8.6	--	--
	09/24/10	**330**	**4,100**	**<350**	**<0.5**	**<2.0**	**1.3**	**8.6**	**--**	**--**

Notes:
All results are reported in micrograms per liter (ug/l).
GCL = ADEC 18 AAC 75 Groundwater Cleanup Level.
[D] - duplicate of preceding sample.
-- = sample was not analyzed for this compound.
< = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was diluted.
Highlighted cell= exceeds GCL.
Bold Type indicates most recent sampling event.
[1] Detected hydrocarbons in the gasoline range appear to be due to overlap of diesel range hydrocarbons.
[2] Hydrocarbon pattern most closely resembles kerosene.
[3] Insufficient water to collect sample.
[4] Does not match typical pattern.
[5] Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel.
[6] The chromatographic pattern is not consistent with diesel fuel.
[7] Sample filtered in lab.
[8] The heavy oil range organics present are due to hydrocarbons eluting primarily in the diesel range.
[9] Hydrocarbon pattern most closely resembles a blend of Weathered Diesel and Transformer Oil.

Table 5

Geochemical Parameter Monitoring Results

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

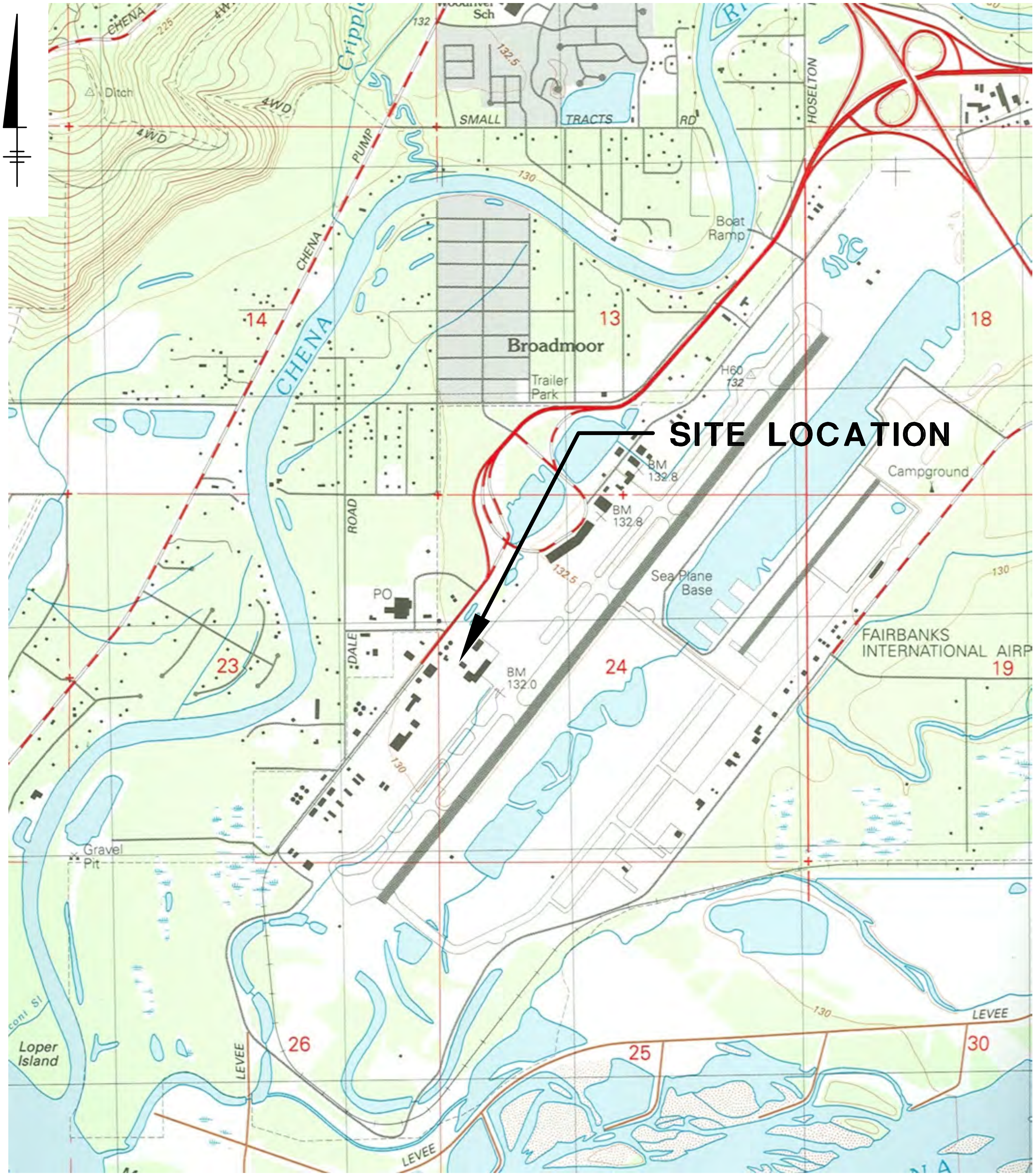
Relative Location	Monitoring Well ID	Date Sampled	DO (mg/L)[1]	ORP (mV)[1]	Total Alkalinity (mg/L as $CaCO_3$)[2]	Sulfate (mg/L)[3]	Nitrate as Nitrogen (mg/L)[3]	Methane (mg/L)[4]	Ferrous Iron (mg/L)[5]	Nitrate by Field Measurement (mg/L)[5]
Up gradient	**MW-2**	**09/23/10**	**0.91**	**24.50**	**395**	**24.5**	**1.7**	**0.039**	**2.0**	**0.0**
Up gradient	**MW-10**	**09/24/10**	**1.39**	**-61.4**	**476**	**20.0**	**<0.25** [7]	**0.10**	**--**	**--**
Cross/Up gradient	**MW-4**	**09/24/10**	**3.13**	**143.9**	**301**	**22.1**	**0.53** [7]	**<0.0050**	**0.0**	**0.0**
Within Plume Close to Source	**GEI-8**	04/22/09	0.60	-93.16	588	7.40	<0.20	0.468	6.2	0.0
Within Plume Close to Source	**RW-1**	**09/24/10**	**2.75**	**-99.0**	**288**	**<1.5**	**<0.25** [7]	**0.44**	**1.0**	**0.0**
Cross gradient	**GEI-4**	04/22/09	0.56	-80.61	349	6.22	<0.20	1.95 [6]	4.0	0.0
Cross gradient	**GEI-7**	**09/24/10**	**0.33**	**-38.10**	**554**	**<1.5**	**<0.25** [7]	**1.4**	**2.0**	**0.0**
Cross gradient	**MW-1**	04/22/09	0.32	-108.16	540	<0.40	<0.20	16.5 [6]	5.6	0.0
Cross gradient	**MW-6**	**09/24/10**	**0.50**	**-69.9**	**360**	**8.5**	**<0.25** [7]	**2.2**	**0.8**	**0.0**
Cross/Down gradient	**MW-3**	04/22/09	1.07	-108.06	338	8.24	<0.20 [7]	1.05 [6]	3.0	0.0
Cross/Down gradient	**MW-5**	04/22/09	0.31	-84.71	438	6.88	<0.20 [7]	1.2 [6]	5.0	0.0
	Duplicate	04/22/09	--	--	429	6.84	<0.20 [7]	0.83	--	--

[1]: DO and ORP measured using an In-Situ® 9500 and flow through cell instrument.
[2]: Total alkalinity analyzed using EPA method 310.1.
[3]: Sulfate and nitrate as nitrogen analyzed by EPA method 300.0.
[4]: Methane analyzed using GC/FID.
[5]: Ferrous iron and nitrate field measurement analyzed using a Hach field kit.
[6]: Sample required dilution due to high concentrations of target analyte.
[7]: The holding time was not met.

DO = Dissolved oxygen
ORP = Oxidation-reduction potential
"<" = Indicates analyte not detected above MRL
"--" = Indicates analyte was not sampled or analyzed for
mV = millivolts
Bolded data indicates bost recent sampling event
MRL = Method reporting limit
$CaCO_3$ = Calcium carbonate
EPA = Environemental Protection Agency
mg/L = milligrams per liter
µg/L = micrograms per liter
ADEC = Alaska Department of Environmental Conservation

ARCADIS

Figures



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE: FAIRBANKS (D–2) SW, AK., 1992, FAIRBANKS NORTH STAR BOROUGH, SECTION: 24, TOWNSHIP: 1S, RANGE: 2W

0 2000' 4000'

APPROXIMATE GRAPHIC SCALE

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.

2010 SITE ASSESSMENT AND SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

SITE LOCATION MAP

ARCADIS

FIGURE **1**

CITY:TMAPA,FL DIV/GROUP:85 DB:JAR LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* G:\ENVCAD\Tampa-BAC\TB0045507 306443\0004\00005\2SA GMR NOV 2010\B0045507N01.dwg LAYOUT: 1SAVED: 3/23/2011 2:57 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: PDF-APPLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/23/2011 2:57 PM BY: RICHARDS, JIM

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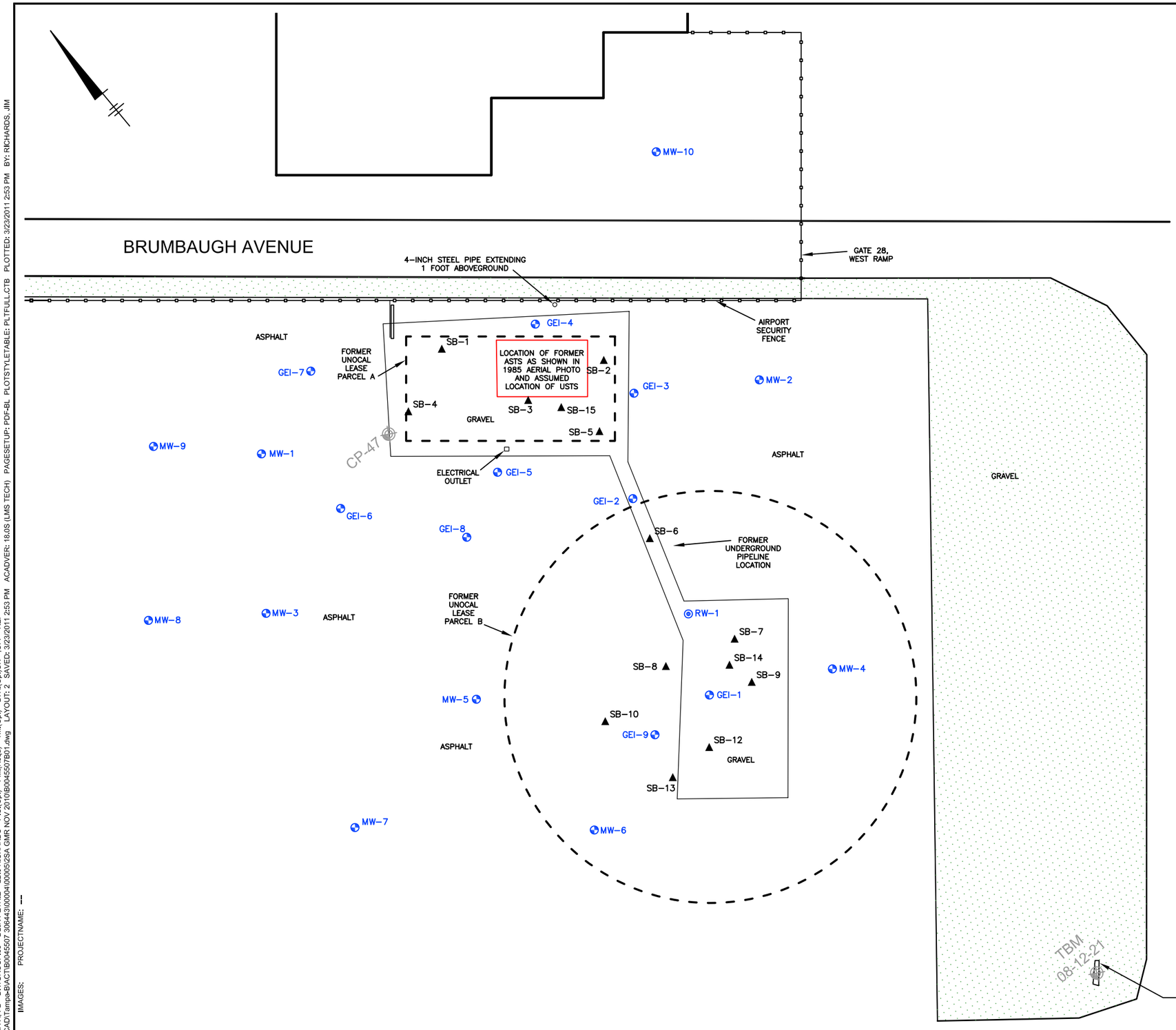


LEGEND

- SURVEY CONTROL POINT
- MONITORING WELL
- RECOVERY WELL
- SOIL BORING

Notes:

1. Basis of horizontal control NAD83 position (EPOCH 2003) and vertical control (NAVD88) was an Opus solution from NGS stations "SUAF Surveyorsexch UAF CORS APR", "FAIR GILMORE CREEK OBS CORS ARP", GRNX AKDA AS204 CORS ARP", "CENA CENTRAL ALSAKA CORS ARP", "AB39 FORTYUKON AK2008 CORS ARP", "AB37 PAXON2 AS2004 CORS ARP" to establish the position and elevation oc CP-47.
2. The geodetic position of CP-47 was determined to have a Latitude fo 64°48'45.32158"N and a Longitude of 147°52'32.92546"W. The Alaska State Plane coordinates (ASP) Zone 3 NAD 83 in feet for CP-47 are:
   N=3955792.291
   E=1348117.704
   Elev.=432.502 (NAVD88)
3. SB-14 and SB-15 were not surveyed.

0 50' 100'

GRAPHIC SCALE

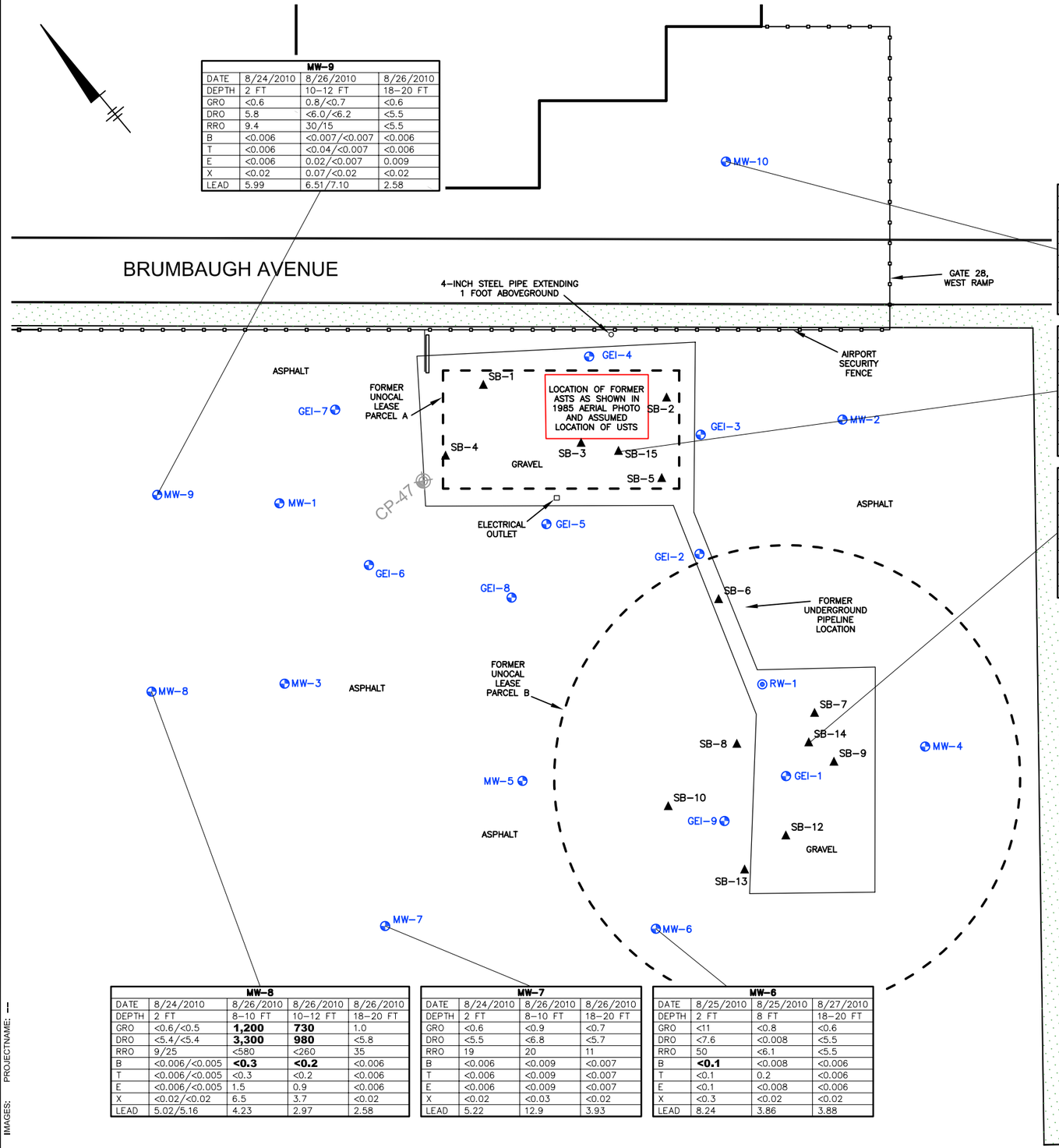
SOURCE: Base map provided by GEOENGINEERS. Map date 5/15/05, full scale. Base map updated with survey information by "McLane Consulting, Inc.", Date 8/31/08 and 10/28/10.

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
2010 SITE ASSESSMENT AND SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

SITE MAP

ARCADIS

FIGURE **2**



MW-9			
DATE	8/24/2010	8/26/2010	8/26/2010
DEPTH	2 FT	10–12 FT	18–20 FT
GRO	<0.6	0.8/<0.7	<0.6
DRO	5.8	<6.0/<6.2	<5.5
RRO	9.4	30/15	<5.5
B	<0.006	<0.007/<0.007	<0.006
T	<0.006	<0.04/<0.007	<0.006
E	<0.006	0.02/<0.007	0.009
X	<0.02	0.07/<0.02	<0.02
LEAD	5.99	6.51/7.10	2.58

MW-10				
DATE	8/25/2010	8/25/2010	8/27/2010	8/27/2010
DEPTH	2 FT	8 FT	8–10 FT	18–20 FT
GRO	<6.2	<0.8	<0.9	<0.7/<0.6
DRO	15	10	<6.9	<5.7/<5.8
RRO	80	63	42	17/<5.8
B	**<0.06**	<0.008	<0.009	<0.007/<0.006
T	<0.06	<0.008	0.02	<0.007/<0.006
E	<0.06	<0.008	<0.009	<0.007/<0.006
X	0.2	0.02	<0.03	<0.02/<0.02
LEAD	7.14	10.7	8.45	3.74/2.96

SB-15			
DATE	8/23/2010	8/25/2010	8/25/2010
DEPTH	2 FT	10–12 FT	18–20 FT
GRO	**650**	**3,000**	0.8
DRO	**1,200**	**10,000**	<5.4
RRO	<270	<600	<8.0
B	<0.02	**<1.5**	<0.006
T	<0.02	**24**	0.009
E	2.0	4.8	<0.006
X	7.3	**160**	<0.02
LEAD	5.43	4.48	2.48

SB-14			
DATE	8/23/2010	8/25/2010	8/25/2010
DEPTH	2 FT	8–10 FT	18–20 FT
GRO	**1,200**	**2,300**	0.9
DRO	**9,300**	**11,000**	<5.9
RRO	<670	<1,100	<5.9
B	**<0.3**	**<0.7**	<0.007
T	<0.3	<0.7	<0.007
E	6.7	3.2	<0.007
X	14	22	<0.02
LEAD	10.5	3.43	4.38

MW-8				
DATE	8/24/2010	8/26/2010	8/26/2010	8/26/2010
DEPTH	2 FT	8–10 FT	10–12 FT	18–20 FT
GRO	<0.6/<0.5	**1,200**	**730**	1.0
DRO	<5.4/<5.4	**3,300**	**980**	<5.8
RRO	9/25	<580	<260	35
B	<0.006/<0.005	**<0.3**	**<0.2**	<0.006
T	<0.006/<0.005	<0.3	<0.2	<0.006
E	<0.006/<0.005	1.5	0.9	<0.006
X	<0.02/<0.02	6.5	3.7	<0.02
LEAD	5.02/5.16	4.23	2.97	2.58

MW-7			
DATE	8/24/2010	8/26/2010	8/26/2010
DEPTH	2 FT	8–10 FT	18–20 FT
GRO	<0.6	<0.9	<0.7
DRO	<5.5	<6.8	<5.7
RRO	19	20	11
B	<0.006	<0.009	<0.007
T	<0.006	<0.009	<0.007
E	<0.006	<0.009	<0.007
X	<0.02	<0.03	<0.02
LEAD	5.22	12.9	3.93

MW-6			
DATE	8/25/2010	8/25/2010	8/27/2010
DEPTH	2 FT	8 FT	18–20 FT
GRO	<11	<0.8	<0.6
DRO	<7.6	<0.008	<5.5
RRO	50	<6.1	<5.5
B	**<0.1**	<0.008	<0.006
T	<0.1	0.2	<0.006
E	<0.1	<0.008	<0.006
X	<0.3	<0.02	<0.02
LEAD	8.24	3.86	3.88

LEGEND

- SURVEY CONTROL POINT
- MONITORING WELL
- RECOVERY WELL
- SOIL BORING

SAMPLE LOCATION	
DATE	SAMPLE DATE
DEPTH	SAMPLE DEPTH
GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS
RRO	RESIDUAL RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
LEAD	LEAD

RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

BOLD = EXCEEDS SOIL CLEANUP LEVEL

<0.6/<0.5 = DUPLICATE SAMPLE COLLECTED

Notes:

1. Basis of horizontal control NAD83 position (EPOCH 2003) and vertical control (NAVD88) was an Opus solution from NGS stations "SUAF Surveyorsexch UAF CORS APR", "FAIR GILMORE CREEK OBS CORS ARP", GRNX AKDA AS204 CORS ARP", "CENA CENTRAL ALSAKA CORS ARP", "AB39 FORTYUKON AK2008 CORS ARP", "AB37 PAXON2 AS2004 CORS ARP" to establish the position and elevation oc CP-47.
2. The geodetic position of CP-47 was determined to have a Latitude fo 64°48'45.32158"N and a Longitude of 147°52'32.92546"W. The Alaska State Plane coordinates (ASP) Zone 3 NAD 83 in feet for CP-47 are:
   N=3955792.291
   E=1348117.704
   Elev.=432.502 (NAVD88)
3. SB-14 and SB-15 were not surveyed.

0 50' 100'

GRAPHIC SCALE

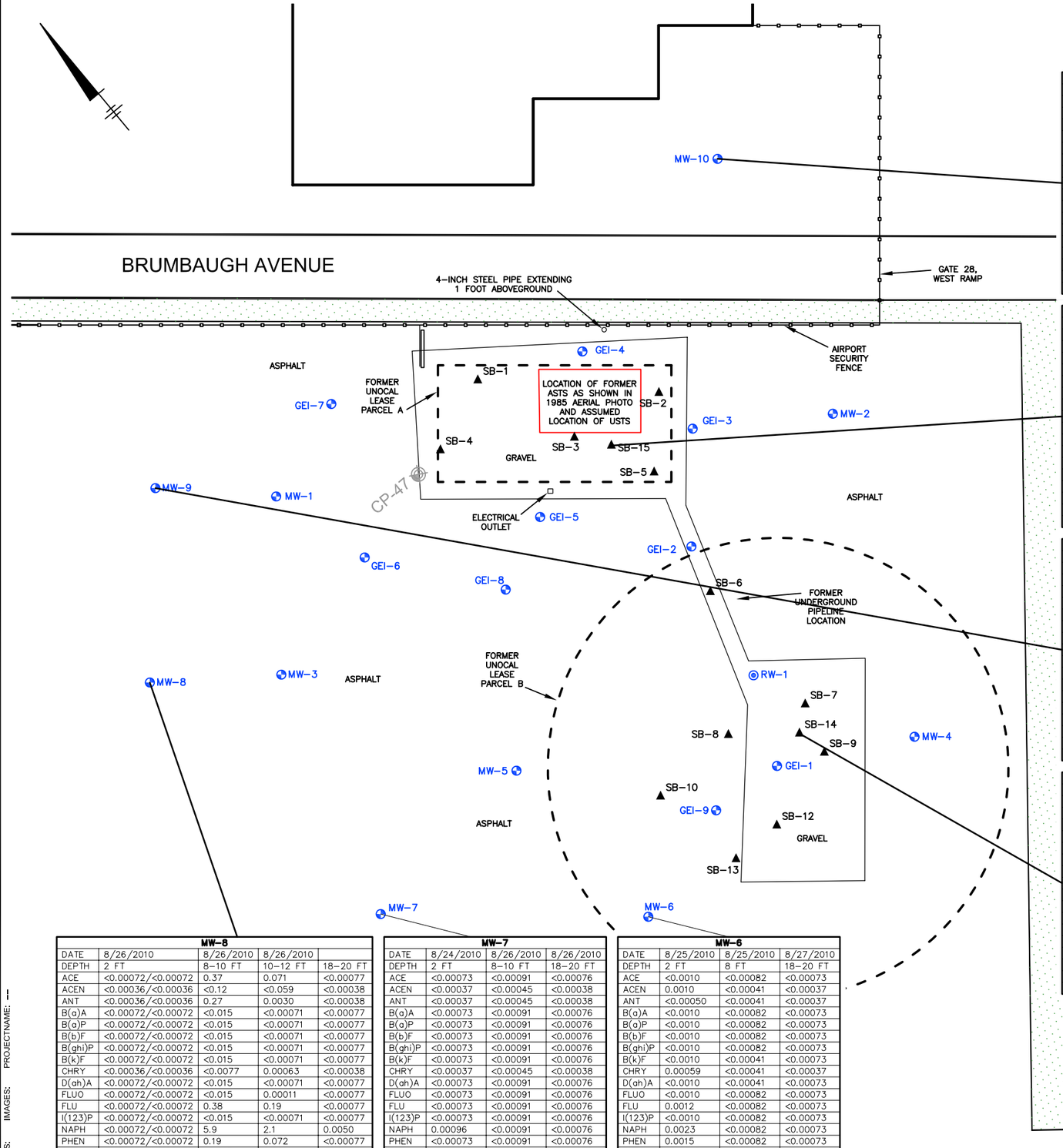
SOURCE: Base map provided by GEOENGINEERS. Map date 5/15/05, full scale. Base map updated with survey information by "McLane Consulting, Inc.", Date 8/31/08 and 10/28/10.

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
2010 SITE ASSESSMENT AND SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

SOIL BORING ANALYTICAL SUMMARY MAP (HYDROCARBON COMPOUNDS AND LEAD)

ARCADIS

FIGURE 3



MW-10				
DATE	8/25/2010	8/25/2010	8/27/2010	8/27/2010
DEPTH	2 FT	8 FT	8-10 FT	18-20 FT
ACE	<0.00074	<0.00089	<0.00091	<0.00076/<0.00077
ACEN	<0.00037	<0.00044	<0.00046	<0.00038/<0.00038
ANT	<0.00037	<0.00044	<0.00046	<0.00038/<0.00038
B(a)A	<0.00074	<0.00089	<0.00091	<0.00076/<0.00077
B(a)P	<0.00074	0.00091	<0.00091	<0.00076/<0.00077
B(b)F	0.00075	0.0015	<0.00091	<0.00076/<0.00077
B(ghi)P	<0.00074	0.0011	<0.00091	<0.00076/<0.00077
B(k)F	<0.00074	<0.00089	<0.00091	<0.00076/<0.00077
CHRY	0.00080	0.0013	<0.00046	<0.00038/<0.00038
D(ah)A	<0.00074	<0.00089	<0.00091	<0.00076/<0.00077
FLUO	<0.00074	0.0012	<0.00091	<0.00076/<0.00077
FLU	<0.00074	<0.00089	<0.00091	<0.00076/<0.00077
I(123)P	<0.00074	<0.00089	<0.00091	<0.00076/<0.00077
NAPH	0.0028	0.0010	0.0013	<0.00076/<0.00077
PHEN	0.0017	0.0012	0.0010	<0.00076/<0.00077
PYR	<0.00074	0.0012	<0.00091	<0.00076/<0.00077

SB-15			
DATE	8/23/2010	8/25/2010	8/25/2010
DEPTH	2 FT	10-12 FT	18-20 FT
ACE	0.037	0.53	<0.00072
ACEN	0.037	0.39	<0.00036
ANT	<0.0071	<0.040	<0.00036
B(a)A	<0.014	<0.080	<0.00072
B(a)P	<0.014	<0.080	<0.00072
B(b)F	<0.014	<0.080	<0.00072
B(ghi)P	<0.014	<0.080	<0.00072
B(k)F	<0.014	<0.080	<0.00072
CHRY	<0.0071	<0.040	<0.00036
D(ah)A	<0.014	<0.080	<0.00072
FLUO	<0.014	<0.080	<0.00072
FLU	0.081	<0.080	<0.00072
I(123)P	<0.014	<0.080	<0.00072
NAPH	0.44	<0.080	0.0020
PHEN	0.022	<0.080	<0.00072
PYR	<0.014	<0.080	<0.00072

MW-9			
DATE	8/23/2010	8/26/2010	8/26/2010
DEPTH	2 FT	10-12 FT	18-20 FT
ACE	0.00075	<0.00081/<0.00082	<0.00074
ACEN	0.0013	<0.00040/<0.00041	<0.00037
ANT	<0.00037	<0.00040/<0.00041	<0.00037
B(a)A	<0.00074	<0.00081/<0.00082	<0.00074
B(a)P	<0.00074	<0.00081/<0.00082	<0.00074
B(b)F	<0.00074	<0.00081/<0.00082	<0.00074
B(ghi)P	<0.00074	<0.00081/<0.00082	<0.00074
B(k)F	<0.00074	<0.00081/<0.00082	<0.00074
CHRY	0.00060	<0.00040/<0.00041	<0.00037
D(ah)A	<0.00074	<0.00081/<0.00082	<0.00074
FLUO	0.0012	<0.00081/<0.00082	<0.00074
FLU	0.0045	<0.00081/<0.00082	<0.00074
I(123)P	<0.00074	<0.00081/<0.00082	<0.00074
NAPH	0.0075	0.016/0.033	0.0073
PHEN	0.0024	<0.00081/<0.00082	<0.00074
PYR	0.00078	<0.00081/<0.00082	<0.00074

SB-14			
DATE	8/23/2010	8/25/2010	8/25/2010
DEPTH	2 FT	8-10 FT	18-20 FT
ACE	0.066	0.13	<0.00079
ACEN	0.062	0.18	<0.00039
ANT	0.0095	<0.34	<0.00039
B(a)A	<0.18	<0.74	<0.00079
B(a)P	<0.18	<0.74	<0.00079
B(b)F	<0.18	<0.74	<0.00079
B(ghi)P	<0.18	<0.74	<0.00079
B(k)F	<0.18	<0.74	<0.00079
CHRY	<0.0089	<0.37	<0.00039
D(ah)A	<0.18	<0.74	<0.00079
FLUO	<0.18	<0.74	<0.00079
FLU	0.15	0.41	<0.00079
I(123)P	<0.18	<0.74	<0.00079
NAPH	2.5	10	<0.00079
PHEN	0.091	0.18	<0.00079
PYR	0.00078	<0.74	<0.00079

MW-8				
DATE	8/26/2010	8/26/2010	8/26/2010	
DEPTH	2 FT	8-10 FT	10-12 FT	18-20 FT
ACE	<0.00072/<0.00072	0.37	0.071	<0.00077
ACEN	<0.00036/<0.00036	<0.12	<0.059	<0.00038
ANT	<0.00036/<0.00036	0.27	0.0030	<0.00038
B(a)A	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
B(a)P	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
B(b)F	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
B(ghi)P	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
B(k)F	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
CHRY	<0.00036/<0.00036	<0.0077	0.00063	<0.00038
D(ah)A	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
FLUO	<0.00072/<0.00072	<0.015	0.00011	<0.00077
FLU	<0.00072/<0.00072	0.38	0.19	<0.00077
I(123)P	<0.00072/<0.00072	<0.015	<0.00071	<0.00077
NAPH	<0.00072/<0.00072	5.9	2.1	0.0050
PHEN	<0.00072/<0.00072	0.19	0.072	<0.00077
PYR	<0.00072/<0.00072	<0.015	0.0011	<0.00077

MW-7			
DATE	8/24/2010	8/26/2010	8/26/2010
DEPTH	2 FT	8-10 FT	18-20 FT
ACE	<0.00073	<0.00091	<0.00076
ACEN	<0.00037	<0.00045	<0.00038
ANT	<0.00037	<0.00045	<0.00038
B(a)A	<0.00073	<0.00091	<0.00076
B(a)P	<0.00073	<0.00091	<0.00076
B(b)F	<0.00073	<0.00091	<0.00076
B(ghi)P	<0.00073	<0.00091	<0.00076
B(k)F	<0.00073	<0.00091	<0.00076
CHRY	<0.00037	<0.00045	<0.00038
D(ah)A	<0.00073	<0.00091	<0.00076
FLUO	<0.00073	<0.00091	<0.00076
FLU	<0.00073	<0.00091	<0.00076
I(123)P	<0.00073	<0.00091	<0.00076
NAPH	0.00096	<0.00091	<0.00076
PHEN	<0.00073	<0.00091	<0.00076
PYR	<0.00073	<0.00091	<0.00076

MW-6			
DATE	8/25/2010	8/25/2010	8/27/2010
DEPTH	2 FT	8 FT	18-20 FT
ACE	<0.0010	<0.00082	<0.00073
ACEN	0.0010	<0.00041	<0.00037
ANT	<0.00050	<0.00041	<0.00037
B(a)A	<0.0010	<0.00082	<0.00073
B(a)P	<0.0010	<0.00082	<0.00073
B(b)F	<0.0010	<0.00082	<0.00073
B(ghi)P	<0.0010	<0.00082	<0.00073
B(k)F	<0.0010	<0.00041	<0.00073
CHRY	0.00059	<0.00041	<0.00037
D(ah)A	<0.0010	<0.00041	<0.00073
FLUO	<0.0010	<0.00082	<0.00073
FLU	0.0012	<0.00082	<0.00073
I(123)P	<0.0010	<0.00082	<0.00073
NAPH	0.0023	<0.00082	<0.00073
PHEN	0.0015	<0.00082	<0.00073
PYR	<0.0010	<0.00082	<0.00073

LEGEND

- SURVEY CONTROL POINT
- MONITORING WELL
- RECOVERY WELL
- SOIL BORING

SAMPLE LOCATION	
DATE	SAMPLE DATE
DEPTH	SAMPLE DEPTH
ACE	ACENAPHTHENE
ACEN	ACENAPHTHYLENE
ANT	ANTHRACENE
B(a)A	BENZO(a)ANTHRACENE
B(a)P	BENZO(a)PYRENE
B(b)F	BENZO(b)FLUORANTHENE
B(ghi)P	BENZO(g,h,i)PERLENE
B(k)F	BENZO(k)FLUORRNTHENE
CHRY	CHRYSENE
D(ah)A	DIBENZ(a,h)ANTHRACENE
FLUO	FLUORANTHENE
FLU	FLUORENE
I(123)P	INDENO(1,2,3-cd)PYRENE
NAPH	NAPHTHALENE
PHEN	PHENANTHRENE
PYR	PYRENE

RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

Notes:

1. Basis of horizontal control NAD83 position (EPOCH 2003) and vertical control (NAVD88) was an Opus solution from NGS stations "SUAF Surveyorsexch UAF CORS APR", "FAIR GILMORE CREEK OBS CORS ARP", GRNX AKDA AS204 CORS ARP", "CENA CENTRAL ALSAKA CORS ARP", "AB39 FORTYUKON AK2008 CORS ARP", "AB37 PAXON2 AS2004 CORS ARP" to establish the position and elevation oc CP-47.
2. The geodetic position of CP-47 was determined to have a Latitude fo 64°48'45.32158"N and a Longitude of 147°52'32.92546"W. The Alaska State Plane coordinates (ASP) Zone 3 NAD 83 in feet for CP-47 are:
   N=3955792.291
   E=1348117.704
   Elev.=432.502 (NAVD88)
3. SB-14 and SB-15 were not surveyed.

0 50' 100'
GRAPHIC SCALE

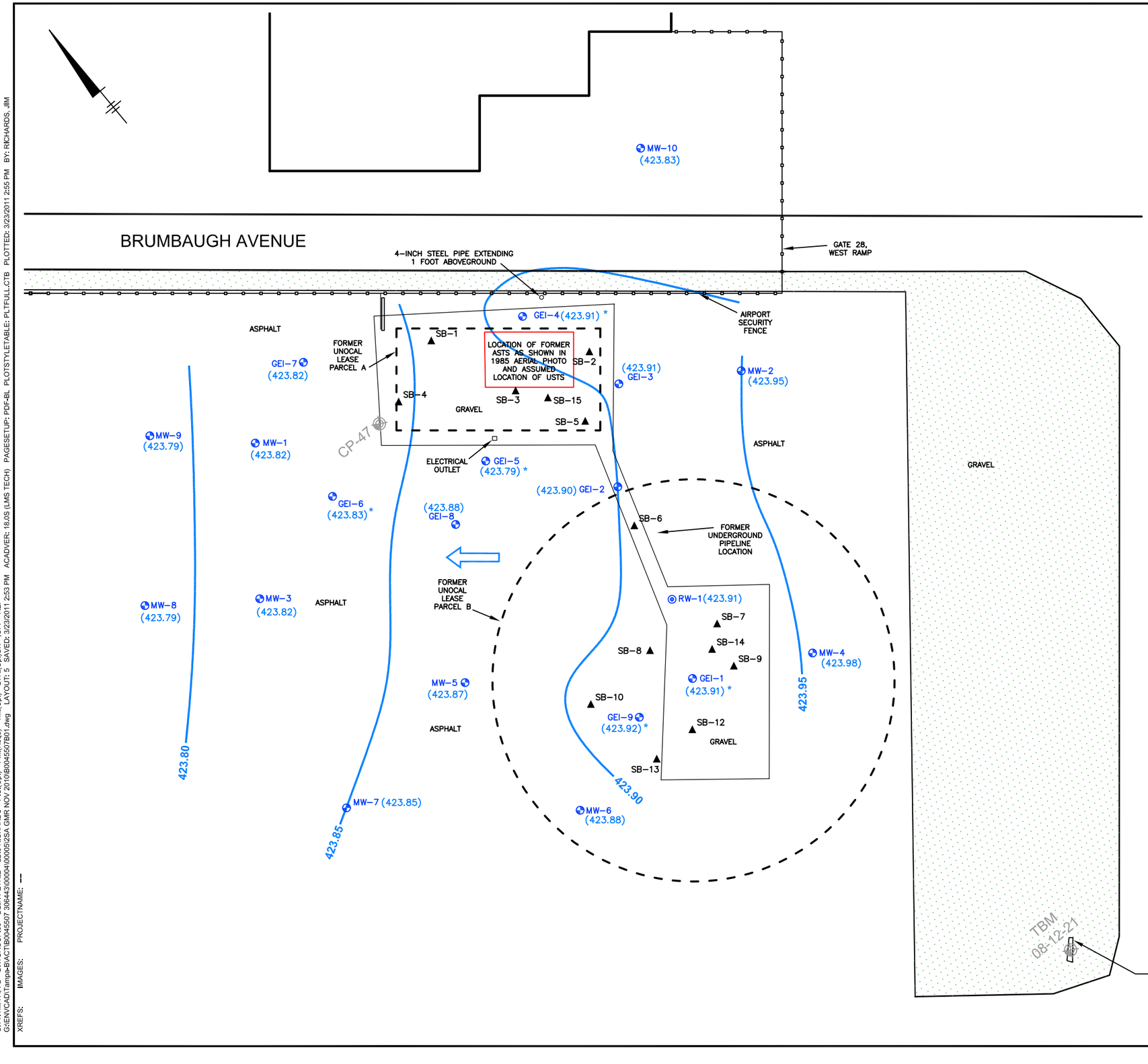
SOURCE: Base map provided by GEOENGINEERS. Map date 5/15/05, full scale. Base map updated with survey information by "McLane Consulting, Inc.", Date 8/31/08 and 10/28/10.

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
2010 SITE ASSESSMENT AND SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

SOIL BORING ANALYTICAL SUMMARY MAP (PAHs)

ARCADIS

FIGURE 4



LEGEND

- SURVEY CONTROL POINT
- MONITORING WELL
- RECOVERY WELL
- SOIL BORING
- (423.83) POTENTIOMETRIC SURFACE ELEVATION (FT)
- 423.80 INFERRED CONTOUR INTERVAL
- APPARENT DIRECTION OF GROUNDWATER FLOW
- * GROUNDWATER ELEVATION CORRECTED FOR THE PRESENCE OF LNAPL

Notes:

1. Basis of horizontal control NAD83 position (EPOCH 2003) and vertical control (NAVD88) was an Opus solution from NGS stations "SUAF Surveyorsexch UAF CORS APR", "FAIR GILMORE CREEK OBS CORS ARP", GRNX AKDA AS204 CORS ARP", "CENA CENTRAL ALSAKA CORS ARP", "AB39 FORTYUKON AK2008 CORS ARP", "AB37 PAXON2 AS2004 CORS ARP" to establish the position and elevation oc CP-47.
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   E=1348117.704
   Elev.=432.502 (NAVD88)
3. SB-14 and SB-15 were not surveyed.

0 50' 100'
GRAPHIC SCALE

SOURCE: Base map provided by GEOENGINEERS. Map date 5/15/05, full scale. Base map updated with survey information by "McLane Consulting, Inc.", Date 8/31/08 and 10/28/10.

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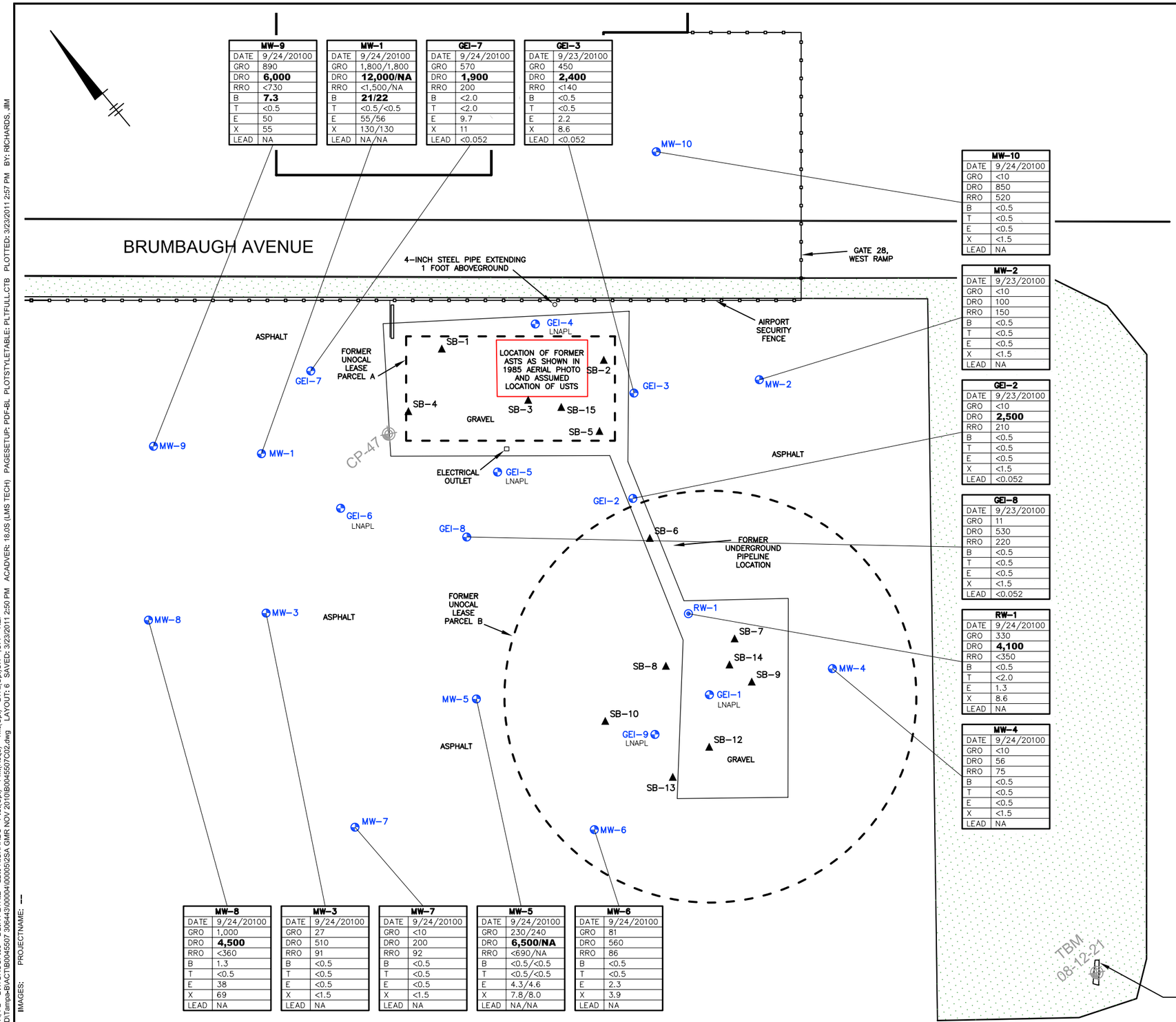
2010 SITE ASSESSMENT AND SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

POTENTIOMETRIC SURFACE MAP (SEPTEMBER 23, 2010)

ARCADIS

FIGURE
5



MW-9	
DATE	9/24/20100
GRO	890
DRO	**6,000**
RRO	<730
B	**7.3**
T	<0.5
E	50
X	55
LEAD	NA

MW-1	
DATE	9/24/20100
GRO	1,800/1,800
DRO	**12,000/NA**
RRO	<1,500/NA
B	**21/22**
T	<0.5/<0.5
E	55/56
X	130/130
LEAD	NA/NA

GEI-7	
DATE	9/24/20100
GRO	570
DRO	**1,900**
RRO	200
B	<2.0
T	<2.0
E	9.7
X	11
LEAD	<0.052

GEI-3	
DATE	9/23/20100
GRO	450
DRO	**2,400**
RRO	<140
B	<0.5
T	<0.5
E	2.2
X	8.6
LEAD	<0.052

MW-10	
DATE	9/24/20100
GRO	<10
DRO	850
RRO	520
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	NA

MW-2	
DATE	9/23/20100
GRO	<10
DRO	100
RRO	150
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	NA

GEI-2	
DATE	9/23/20100
GRO	<10
DRO	**2,500**
RRO	210
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	<0.052

GEI-8	
DATE	9/23/20100
GRO	11
DRO	530
RRO	220
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	<0.052

RW-1	
DATE	9/24/20100
GRO	330
DRO	**4,100**
RRO	<350
B	<0.5
T	<2.0
E	1.3
X	8.6
LEAD	NA

MW-4	
DATE	9/24/20100
GRO	<10
DRO	56
RRO	75
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	NA

MW-8	
DATE	9/24/20100
GRO	1,000
DRO	**4,500**
RRO	<360
B	1.3
T	<0.5
E	38
X	69
LEAD	NA

MW-3	
DATE	9/24/20100
GRO	27
DRO	510
RRO	91
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	NA

MW-7	
DATE	9/24/20100
GRO	<10
DRO	200
RRO	92
B	<0.5
T	<0.5
E	<0.5
X	<1.5
LEAD	NA

MW-5	
DATE	9/24/20100
GRO	230/240
DRO	**6,500/NA**
RRO	<690/NA
B	<0.5/<0.5
T	<0.5/<0.5
E	4.3/4.6
X	7.8/8.0
LEAD	NA/NA

MW-6	
DATE	9/24/20100
GRO	81
DRO	560
RRO	86
B	<0.5
T	<0.5
E	2.3
X	3.9
LEAD	NA

LEGEND

- SURVEY CONTROL POINT
- MONITORING WELL
- RECOVERY WELL
- SOIL BORING

SAMPLE LOCATION	
DATE	SAMPLE DATE
GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS
RRO	RESIDUAL RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
LEAD	LEAD

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

BOLD INDICATES VALUES EXCEED GROUNDWATER CLEANUP LEVELS

230/240 = DUPLICATE SAMPLE COLLECTED

NS = WELL NOT SAMPLED, LNAPL PRESENT

LNAPL = LIQUID NON-AQUEOUD PHASE LIQUID

Notes:

1. Basis of horizontal control NAD83 position (EPOCH 2003) and vertical control (NAVD88) was an Opus solution from NGS stations "SUAF Surveyorsexch UAF CORS APR", "FAIR GILMORE CREEK OBS CORS ARP", GRNX AKDA AS204 CORS ARP", "CENA CENTRAL ALSAKA CORS ARP", "AB39 FORTYUKON AK2008 CORS ARP", "AB37 PAXON2 AS2004 CORS ARP" to establish the position and elevation oc CP-47.
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3. SB-14 and SB-15 were not surveyed.

0 50' 100'

GRAPHIC SCALE

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CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
2010 SITE ASSESSMENT AND SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

GROUNDWATER ANALYTICAL SUMMARY MAP

ARCADIS

FIGURE 6

CITY:TMA-A, FL DIV/GROUP:85 DB:R PETRIE LD:J RICHARDS PIC:(Opt) PM:(Read) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Tampa-B\ACT\B0045507 306443000004\00005\25A GMR NOV 2010\B0045507C02.dwg LAYOUT: 6 SAVED: 3/23/2011 2:50 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: PDF-BL PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/23/2011 2:57 PM BY: RICHARDS, JIM
XREFS: IMAGES: PROJECTNAME: ---

ARCADIS

Appendix A

Boring Logs

Date Start/Finish: 8/25/10, 8/27/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 4 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 20
Surface Elevation:

Descriptions By: JML & MLS

Well/Boring ID: **MW-6**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0										2" of asphalt at surface, saw cut. Borehole cleared to 8' bbgs with vac truck.	Locking monument and 2-inch j-plug; Concrete; Pea gravel
		1	2-2.5	0.5			0.0	X	SM		Silty sand (SM), brownish orange to dark brown, trace organics, fine to very fine sands, low strength, loose, damp, no odor.	2-inch Sch. 40 PVC well casing
											Same as above, no odor.	
5	-5	2	4-4.5	0.5			0.2		SM			Hydrated bentonite chips
		3	6-6.5	0.5			0.1		SM		Same as above, no odor.	2-inch Sch. 40 PVC 0.010-inch slot
		4	8-10	1	1 1 2 1	3	0.2	X	SM		Same as above, no odor.	
10	-10	5	10-12	1.5	2 2 3 5	8	0.1		SM		Poorly graded gravel (GP), grey, some coarse sand, trace silt, subrounded gravel (1/4" diameter), wet, no odor.	10/20 Sand pack
		6	12-14	1	4 4 4 4	8	0.5		GP		Same as above, some large gravel (1"-2" diameter), wet, no odor.	
15	-15	7	14-16	1	6 6 4 4	8	0.5		GP			
		8	16-18	1	12 11 8 4	12	0.5		GP			
		9	18-20	1	3 2 4 5	9	0.2		GP			
20	20											

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface

Analytical Samples Collected:
MW-6-2.0, MW-6-8.0

Date Start/Finish: 8/24/10, 8/26/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 4 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 20
Surface Elevation:

Descriptions By: MLS

Well/Boring ID: **MW-7**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0										2" asphalt at surface (saw cut). Borehole cleared to 8' bgs with vac truck.	Locking monument and 2-inch j-plug; Concrete; Pea gravel
		1	2-2.5	0.5			0.7		SM		Silty sand (SM), brown, very fine sand, low strength and toughness, trace subrounded gravel (1/2" diameter), damp, no odor.	2-inch Sch. 40 PVC well casing
											Same as above, dark brown, organic material (roots), damp, no odor.	
		2	4-4.5	0.5			0.8		SM			Hydrated bentonite chips
5	-5	3	6-6.5	0.5			0.6		ML		Inorganic silt (ML), brown, medium strength toughness and plasticity, trace very fine sand and organic material, moist, no odor.	2-inch Sch. 40 PVC 0.010-inch slot
		4	8-10	2	1 2 3 2	5	0.8				Same as above, wet, no odor.	
10	-10	5	10-12	2	2 1 2 1	3	0.6		ML		Same as above, grey, wet, no odor.	
		6	12-14	1.5	5 5 7 7	14	0.8				Poorly graded gravel (GP), grey, subrounded gravel (1/4"-1/2" diameter), some coarse sand, wet, no odor.	10/20 Sand pack
15	-15	7	14-16	1.5	5 7 7 7	14	0.9					
		8	16-18	1.5	9 7 8 8	16	1.1		GP			
20	-20	9	18-20	1.5	3 5 4 3	7	1.2					

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface

Analytical Samples Collected:
MW-7-2.0, MW-7-8.0-10.0, MW-7-18.0-20.0

Date Start/Finish: 8/24/10, 8/26/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 4 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 20
Surface Elevation:

Descriptions By: MLS

Well/Boring ID: **MW-8**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0										2" asphalt at surface (saw cut). Borehole cleared to 8' bgs with vac truck.	Locking monument and 2-inch j-plug; Concrete; Pea gravel
		1	2-2.5	0.5			0.1		SP		Poorly graded sand (SP), light brownish grey, very fine to fine sand, trace silt, trace subrounded gravel (1/2" diameter), damp, no odor.	2-inch Sch. 40 PVC well casing
											Silty sand (SM), light brown, fine sand, low strength and toughness, trace organic material, damp, no odor.	
		2	4-4.5	0.5			0.4		SM			Hydrated bentonite chips
5	-5											
		3	6-6.5	0.5			0.6		ML		Inorganic silt (ML), brown, medium strength and density, medium plasticity, trace very fine sand, moist, no odor.	2-inch Sch. 40 PVC 0.010-inch slot
		4	8-10	2	1 1 3 5	8	108		ML		Same as above, trace subangular gravel (1/2" diameter), wet, petroleum-like odor.	
10	-10	5	10-12	2	3 5 4 6	10	167		GP		Poorly graded gravel (GP), grey, subrounded gravel (1/4"-1/2" diameter), some coarse sand, trace silt, wet, petroleum-like odor.	10/20 Sand pack
		6	12-14	1.5	8 7 6 6	12	119					
15	-15	7	14-16	1.5	8 6 9 7	16	11.8					
		8	16-18	1.5	4 6 5 4	9	1.3				Same as above, no odor.	
		9	18-20	1.5	4 6 4 4	8	3.4				Same as above, woody debris, slight petroleum-like odor.	
20	-20											

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface

Analytical Samples Collected:
MW-8-2.0, MW-8-8.0-10.0, MW-8-10.0-12.0, MW-8-18.0-20.0

Date Start/Finish: 8/24/10, 8/26/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 4 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

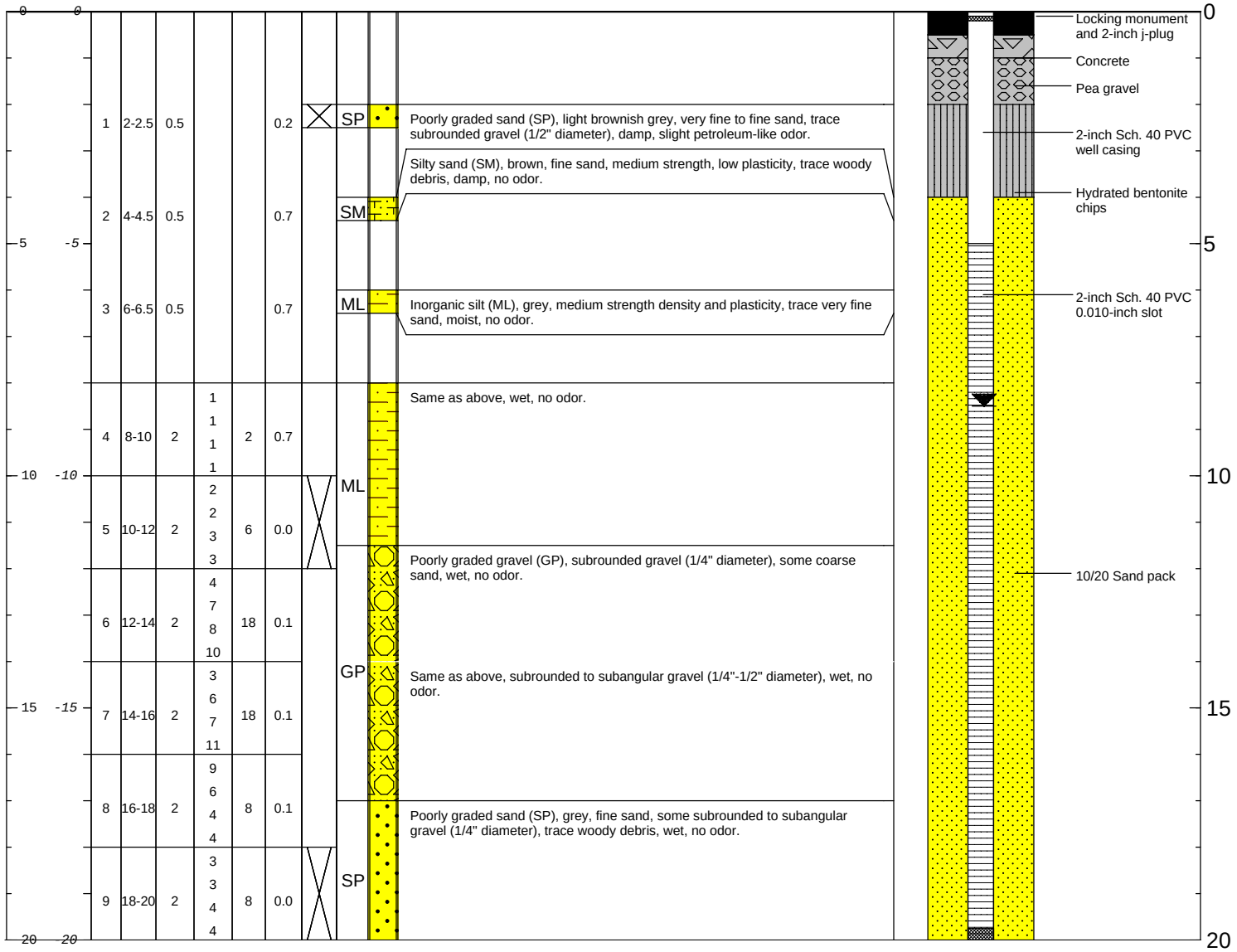
Borehole Depth: 20
Surface Elevation:

Descriptions By: MLS

Well/Boring ID: **MW-9**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp



Remarks: bgs = below ground surface

Analytical Samples Collected:
MW-9-2.0, MW-9-10.0-12.0, MW-9-18.0-20.0

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 8/25/10, 8/27/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 4 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 20
Surface Elevation:

Descriptions By: MLS

Well/Boring ID: **MW-10**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0										2" asphalt at surface (saw cut). Borehole cleared to 8' bgs with vac truck.	Locking monument and 2-inch j-plug; Concrete; Pea gravel
		1	2-2.5	0.5			0.1		SM		Silty sand (SM), brown, fine to very fine sand, trace rounded to subrounded gravel (1/2" diameter), loose, low strength, damp, no odor.	2-inch Sch. 40 PVC well casing
		2	4-4.5	0.5			0.1		SM		Same as above, fine sand, trace organic material and subrounded gravel (1/2" diameter), damp, no odor.	Hydrated bentonite chips
5	-5	3	6-6.5	0.5			0.0		SM		Same as above, dark to light grey, fine to very fine sand, damp, no odor.	2-inch Sch. 40 PVC 0.010-inch slot
		4	8-10	2	2 1 1 1	2	0.9				Same as above, medium strength and plasticity, wet, no odor.	
10	-10	5	10-12	2	1 1 1 2	3	0.9		SM			10/20 Sand pack
		6	12-14	2	1 1 2 4	6	1.2					
15	-15	7	14-16	2	3 4 5 6	11	0.5				Poorly graded gravel (GP), grey, subrounded to subangular gravel (1/4"-1/2" diameter), some coarse sand, trace silt, wet, no odor.	
		8	16-18	2	4 7 8 9	17	0.5		GP			
		9	18-20	2	4 9 6 5	11	0.2				Same as above, more coarse sand, wet, no odor.	
20	20											

Remarks: bgs = below ground surface

Analytical Samples Collected:
MW-10-2.0, MW-10-8.0

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 8/23/10, 8/25/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 3 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

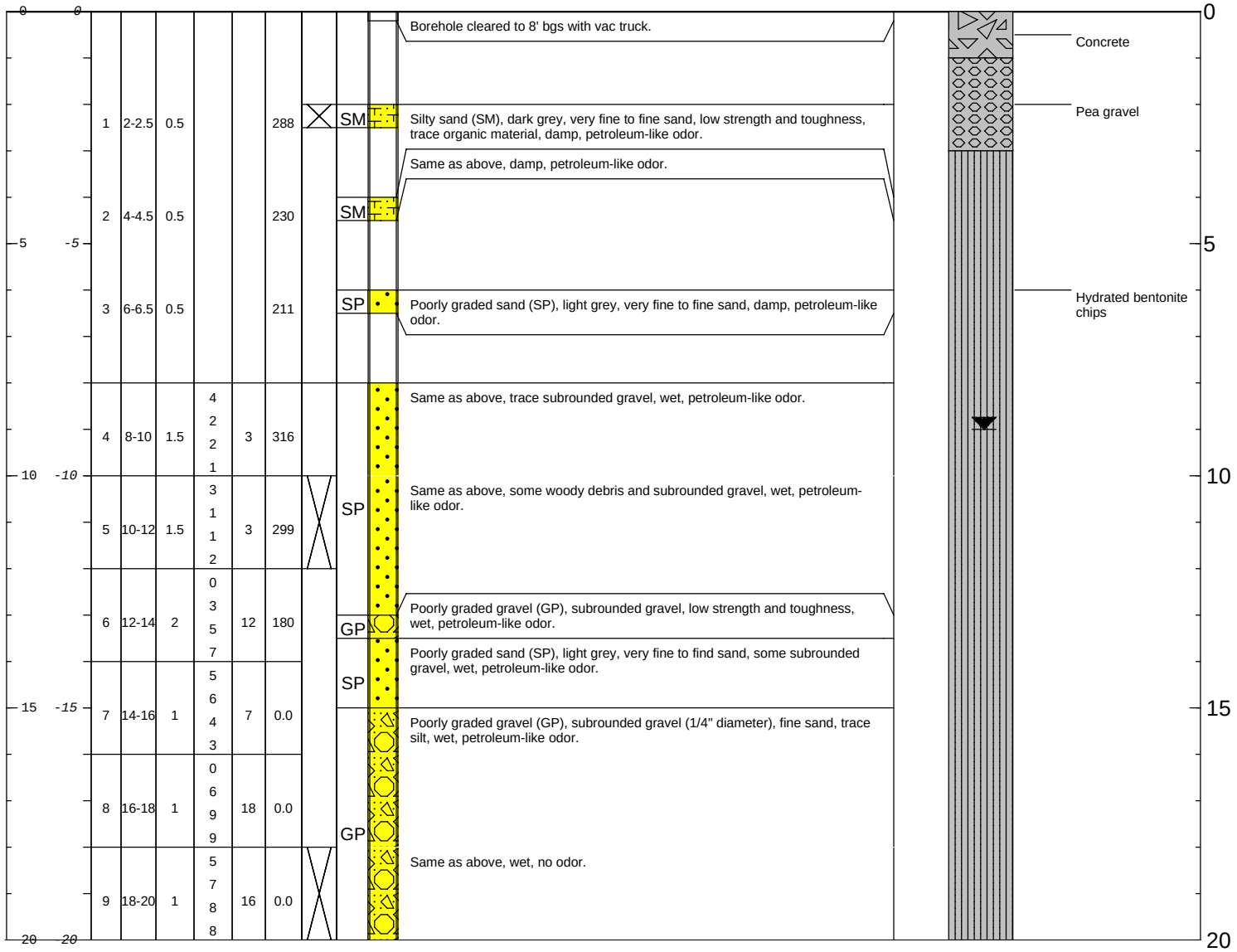
Borehole Depth: 20
Surface Elevation:

Descriptions By: MLS

Well/Boring ID: **SB-14**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp



Remarks: bgs = below ground surface

Analytical Samples Collected:
SB-14-2.0, SB-14-8.0-10.0, SB-14-18.0-20.0

ARCADIS
Infrastructure, environment, facilities

Project Number:B0045507
Data File:SB-14.dat

Template:boring_well2005analUSCS.ldf
Date:12/20/2010 MLS

Date Start/Finish: 8/23/10, 8/25/10
Drilling Company: Discovery Drilling
Driller's Name: Tim Beckner
Drilling Method: Hollow-Stem Auger
Auger Size: 3 1/4"
Rig Type: CME
Sampling Method: 2' Split Spoon

Northing:
Easting:
Casing Elevation:

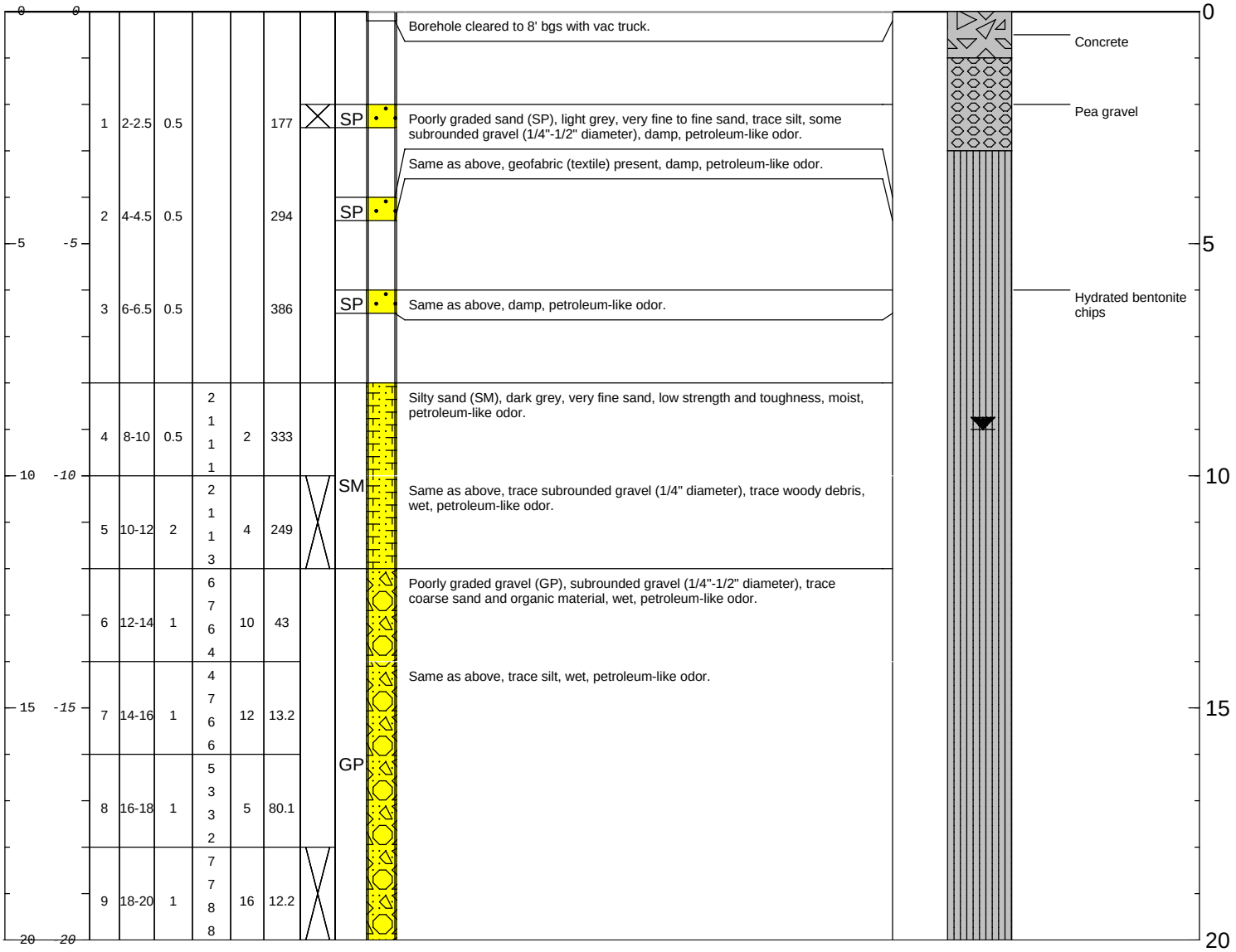
Borehole Depth: 20
Surface Elevation:

Descriptions By: MLS

Well/Boring ID: **SB-15**

Client: Chevron EMC

Location: Fairbanks International Airport, Gate 28, West Ramp



Remarks: bgs = below ground surface

Analytical Samples Collected:
SB-15-2.0, SB-15-10.0-12.0, SB-15-18.0-20.0

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Infrastructure, environment, facilities

ARCADIS

Appendix B

Field Notes

52 Location FIA Unocal Date 8/18/10
Project / Client 306443

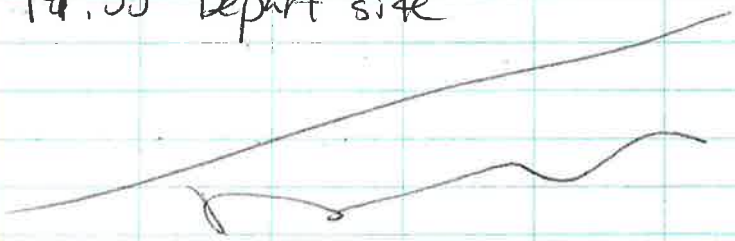
Wells			Distance
MW-1	to	MW-9	52.3
MW-1	to	MW-8	96.7
MW-8	to	MW-9	96.7
MW-8	to	MW-3	56.15
MW-5	to	MW-7	84.11
MW-5	to	MW-6	84.2
MW-6	to	MW-7	113.0
SB-15	to	GEI-5	28.9
SB-15	to	GEI-3	51.7
SB-14	to	GEI-1	21.4
SB-14	to	RW-1	26.4

Also see photos

17:15 load up and finish MW-10 locate

18:38 Two possible locations for MW-10 between fence and parking spots. See photos.

19:00 Depart site



53 Location FIA Unocal Date 8/23/10
Project / Client 306443

1500: ARCADIS (M. Stricker) and Alaska Pipeliner (Keith, Greg) onsite, sign in with Airport Badge office and obtain temporary ramp permits. Tailgate safety meeting, sign PTW.

1610: Begin clearing SB-14 with vac truck.

SB-14-2.0 @ 1620

1640: SB-14 cleared to 8' bgs w/vac truck.

1650: Begin clearing SB-15 with vac truck.

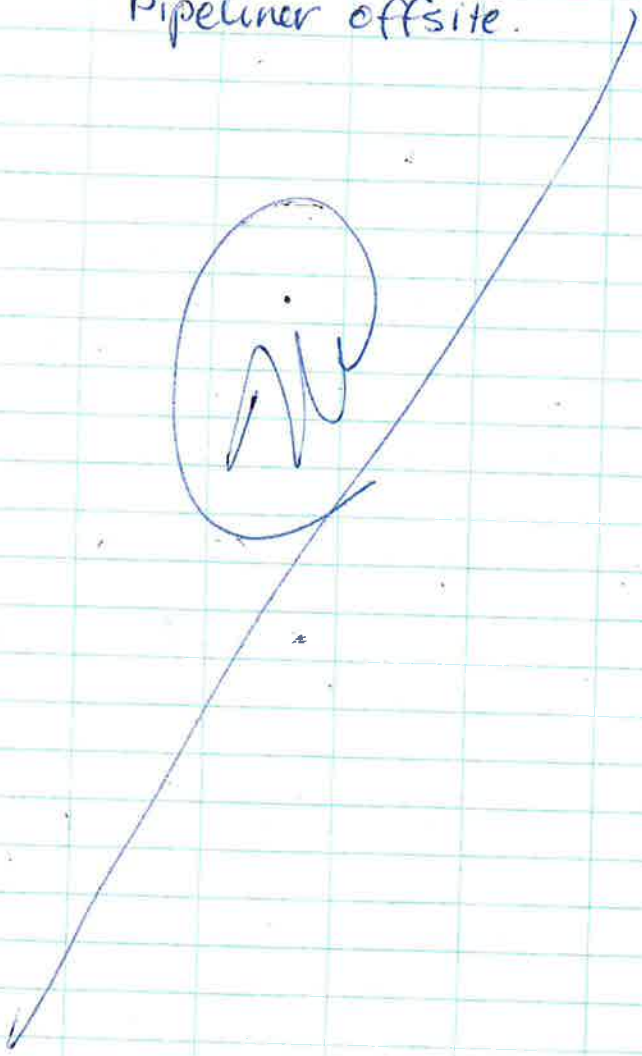
SB-15-2.0 @ 1700

1710: SB-15 cleared to 8' bgs.

Location FIA Unocal Date 8/23/10

Project / Client 306443

1730: ARCADIS and Alaska Pipeliner offsite.



Location FIA Unocal Date 8/24/10

Project / Client 306443

1015: ARCADIS (M. Strickler) and AK Pipeliner (Keith, Greg) onsite, obtain temp. ramp permit for truck. Tailgate safety meeting, sign PTW.

1100: AK Pipeliner to empty soil cuttings from 8/23/10 into supersack onsite near Gate 28.

1115: Called Jim Hadjukovich (Frontier) to verify proximity to air plane (N200AK tail #).

1124: Mob to MW-9 to begin vac clearance. MultiRae Plus vender calibrated (first use). Zero'd.

Location FIA Unocal Date 8/24/10
Project / Client 306443

MW-9-2.0 @ 1140

1149: Woody debris encountered appx. 3.5' bgs in MW-9.

1225: Cleared MW-9 to 8' bgs. Fill with sand and asphalt cold-patch at surface.

1245: ARCADIS and AK Pipeliner offsite for lunch and to get fuel.

1345: ARCADIS and AK Pipeliner onsite.

1415: Rebekah Cadigan (FIA) onsite, discuss locations.

1430: Begin saw cutting and clearing MW-8.

MW-8-2.0 @ 1440

Location FIA Unocal Date 8/24/10
Project / Client 306443

BD-1 @ (no time)

blind duplicate collected from MW-8-2.0.

1525: MW-8 cleared to 8' bgs w/ vac truck. Backfill with sand and asphalt (cold patch) flush w/ surface. Empty soil cuttings into supersack.

1550: Begin saw cutting and clearing MW-7.

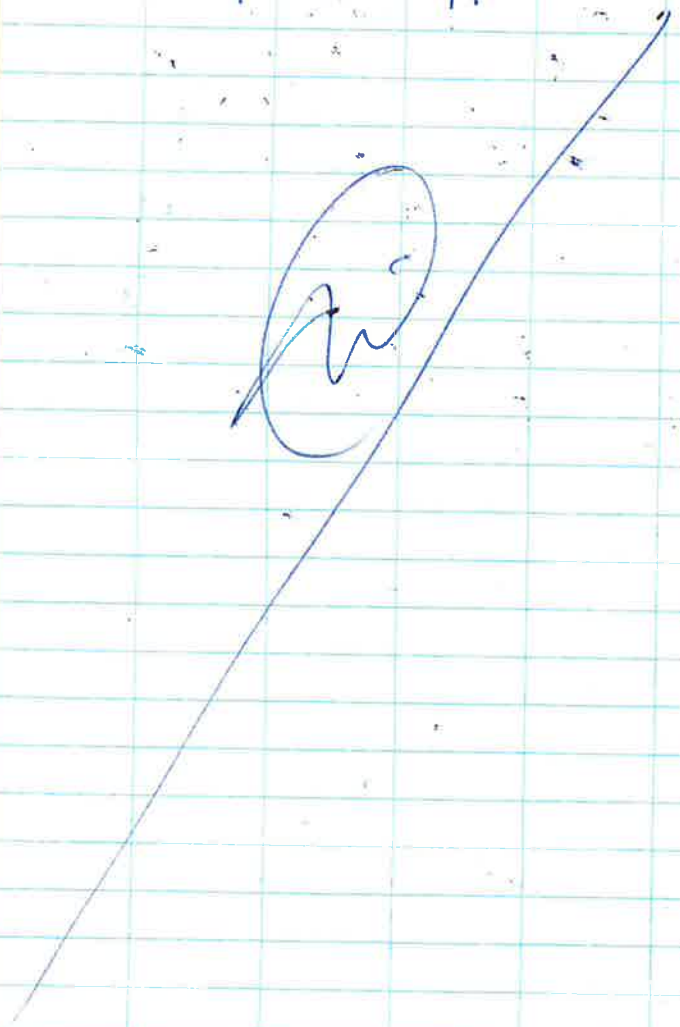
MW-7-2.0 @ 1605

1645: Cleared MW-7 ~~to~~ 8' bgs w/ vac truck. Backfill with sand and asphalt (cold patch) flush w/ surface.

Location FIA Unocal Date 8/24/10

Project / Client 306443

1715: ARCADIS and AK Pipeliner offsite.



Location FIA Unocal Date 8/25/10

Project / Client 3064143

0700: ARCADIS (M. Strickler, J. Luckett, D. Beaudoin, A. Ohrt, J. DeJong) G. Montgomery, AK Pipeliner (Keith, Greg), Discovery Drilling (Tim, Tim) and Chevron (D. Carrier) onsite for tailgate health and safety meeting (at Soyo site), discuss PTW and HazID and airport protocols.

0800: Sign PTW, offsite to take coolers to FedEx.

0915: Onsite at Airport Fire and Police to obtain temporary ramp permits for drillers.

Location FIA Unocal Date 8/25/10
Project / Client 306443

0950: Calibrate Multi-gas meters with isobutylen and mixed-gas cal gases and zeroed meters. Begin clearing MW-6 and setup to drill SB-14.

1030: complete clearing MW-6 to 8' bgs w/ vac truck.

MW-6-2.0 @ 1010
MW-6-8.0 @ 1030

~~MW~~ SB-14-8.0-10.0 @ 1025

Backfill MW-6 w/ sand and asphalt (cold patch) to surface.

SB-14-18.0-20.0 @ 1120

Location FIA Unocal Date 8/25/10
Project / Client 306443

1115: D. Carrier and G. Montgomery onsite. Complete SB-14 to 20' bgs. Backfill with bentonite chips to 3' bgs, pea gravel and concrete cap.

1130: Begin clearing MW-10.

1215: UPO feedback session with G. Montgomery and D. Carrier.

1240: D. Carrier and G. Montgomery offsite.

1250: Discovery and ARCADIS offsite for lunch and to get wheel chocks.

13:50 Discovery & ARCADIS onsite

14:00 Discovery set @ Soil boring →

Location FIA Unocal Date 8-25-10

Project / Client 306443

14:08 ① setting backed drill rig up onto SB-15 location

14:05 - 14:15 Mid-day health and Safety meeting.

14:20 Discovery raised drill rig deck & got sed to drill & split spoon sample

1445: AK Pipeliner onsite to empty vac truck into supersack and drum.

SB-15-10.0-12.0@1500

SB-15-18.0-20.0@1535

1540: SB-15 completed to 20' bgs. Backfill with hydrated bentonite, pea gravel and concrete flush to surface.

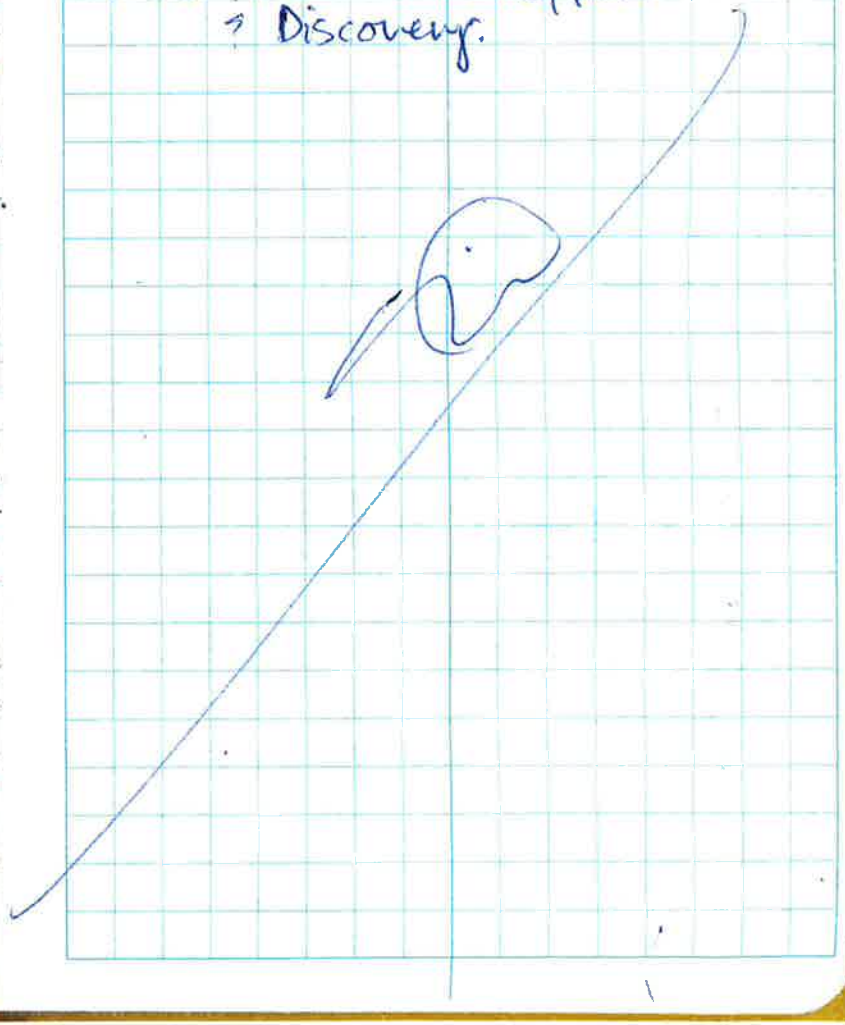
1645: ARCADIS and Discovery offsite

Location FIA Unocal Date 8/25/10

Project / Client 306443

to Saupe to decon augers.

1735: ARCADIS offsite.
→ Discovery.



Location FIA Unocal Date 8/26/10

Project / Client 306443

0700: ARCADIS (M. Strickler, D. Beaudoin) and Discovery Drilling (Tim, Tim) onsite, enter Gate 28.

0720: Tailgate safety Meeting, emergency procedures, setup exclusion zone, sign PTW.

0800: Calibrate MultiRae with mixed gas and isobutylene fresh air calibration.

0805: Begin drilling MW-9.

0820: D. Carrier and G. Montgomery onsite.

MW-9-10.0-12.0@0825

BD-2 collected from MW-9-10.0-12.0.

Location FIA Unocal Date 8/26/10

Project / Client 306443

0900: D. Carrier and G. Montgomery offsite.

MW-9-18.0-20.0@0905

0914: Complete boring for MW-9 to 20' bgs, begin well construction.

1030: Mob to MW-8.

1054: Begin drilling MW-8.

MW-8-8.0-10.0@1100

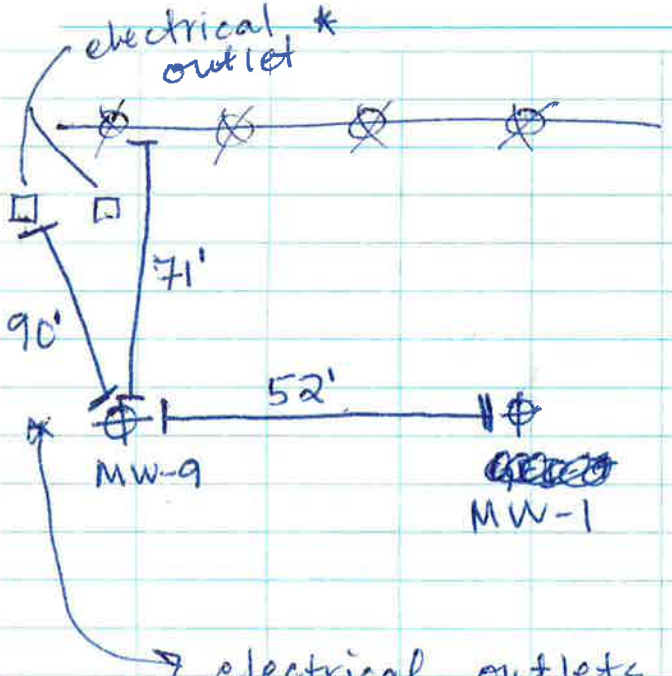
MW-8-10.0-12.0@1135

MW-8-18.0-20.0@1145

1150: Completed MW-8 boring to 20' bgs, begin well construction.

Location FIA Unocal Date 8/26/10

Project / Client 306443



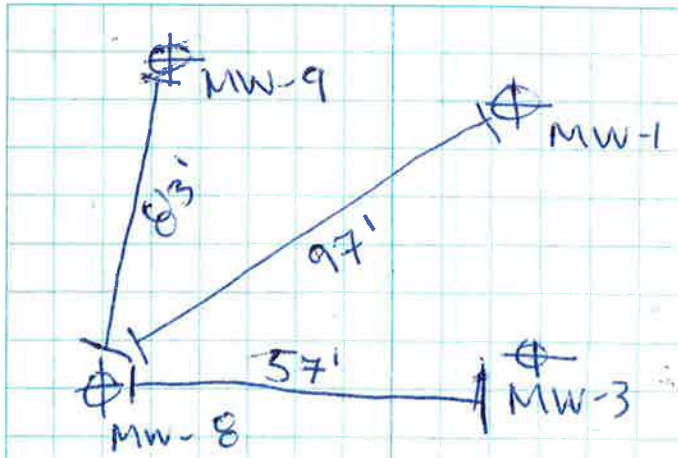
→ electrical outlets are farther apart than drawn.

1315: ARCADIS and Discovery offsite for lunch and supplies.

1530: ARCADIS and Discovery onsite.

Location FIA Unocal Date 8/26/10

Project / Client 306443



1600: Mob to MW-7 to begin drilling.

MW-7-8.0-10.0@1615

1635: J. Luckett offsite to get supplies for Discovery.

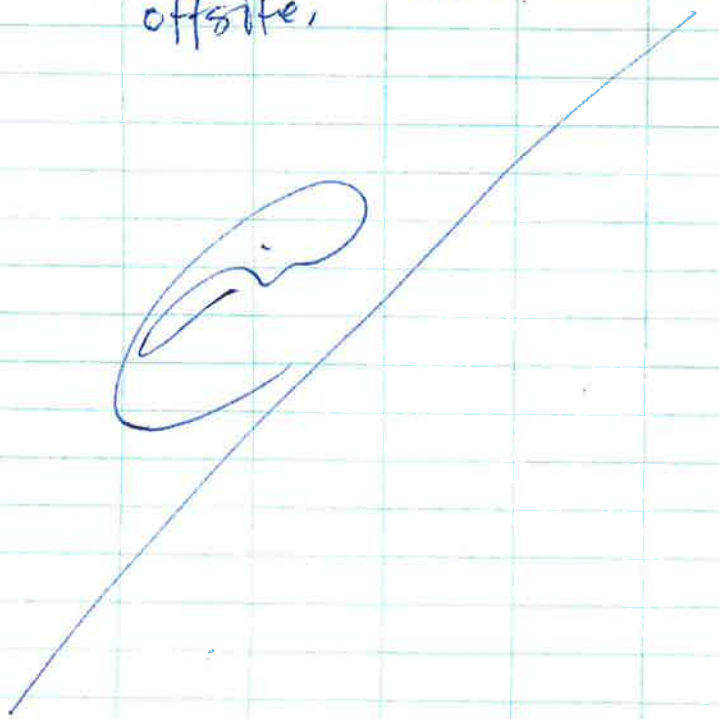
MW-7-18.0-20.0@1645.

Location FIA Unocal Date 8/26/10
Project / Client 306443

1700: complete MW-7 to 20' bgs, begin well construction.

1810: ARCADIS and Discovery offsite to Sample to decon.

1900: ARCADIS and Discovery offsite.



Location FIA Unocal Date 8/27/10
Project / Client 306443

0700: ARCADIS (M. Strickler, D. Beaudoin) & Discovery (Tim, Tim) onsite

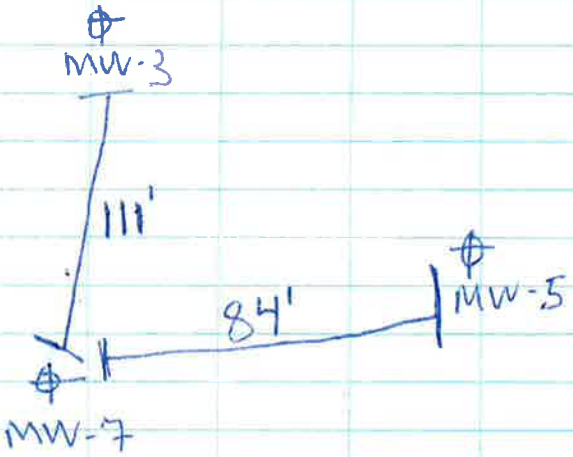
0715: Tailgate safety meeting, discuss emergency procedures, etc.

0740: Sign PTW. Calibrate MultiRae with mixed gas and isobutylene, zero cal. Await arrival of FIA operations to verify drill rig weight.

0755: Measure out MW-7

Location FIA Unocal Date 8/27/10

Project / Client 306443



0831: Received call from Rebekah Cadigan (FIA) that operations has cleared work to proceed at MW-6.

0840: Begin drilling MW-6.

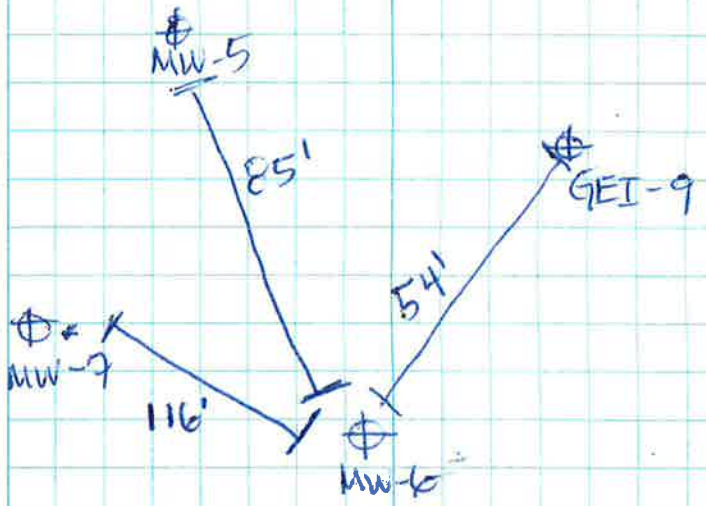
MW-6-18.0-20.0@ 0940

0945: Complete boring for MW-6 to 20' bgs,

Location FIA Unocal Date 8/27/10

Project / Client 306443

Begin well construction.



1105: Mob to MW-10.

MW-10-8.0-10.0@1140

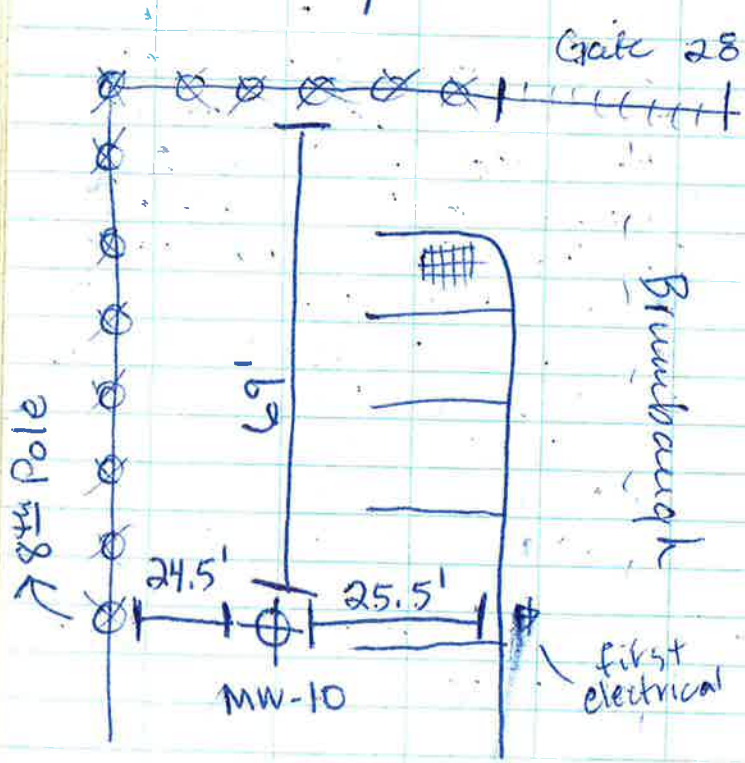
MW-10-18.0-20.0@1220

BD-3@ notime

Location FIA Unocal Date 8/27/10
Project / Client 306443

BD-3 collected from MW-10-18.0-20.0

1220: Completed boring for MW-10 to 20' bgs, begin well completion.



Location FIA Unocal Date 8/27/10
Project / Client 306443

1335: ARCADIS and Discover offsite for lunch

1430: ARCADIS (M. Stridder) onsite to sample super sacks. Airport operations informed ARCADIS that TSA paperwork had been lost in badge office. Required a company badge control officer. Called Greg Montgomer and received approva to sign the paperwork to become the Badge Control Officer for ARCADIS. Signed appropriate paperwork.

1617: Entered site to sample supersacks.

Location FIA Unocal Date 8/27/10

Project / Client 306443

1620: Begin sampling 8 total supersacks located onsite near Gate 28.

COMP-1-S @ 1640
COMP-2-S @ 1650
COMP-3-S @ 1655
COMP-4-S @ 1705
COMP-5-S @ 1710
COMP-6-S @ 1720
COMP-7-S @ 1725
COMP-8-S @ 1735

1740: Covered 8 supersacks in Visqueen.

1800: Site secure, ARCADIS offsite.

Location FIA Unocal Date 9/20/10

Project / Client 306443

Clear, 45F

10[00] - Check in with airport badge office, get D. Berube re-applied @ badge office.

10[15] - Leave badge office. Enter gate. Sign PTW, HASP, Haz ID forms, prep equip. for developing wells (Fresh air cal PID)

Well ID	Time	DTW	DTP	PID (ppm)	Notes
		DTB			
MW-6	10[40]	8.45 / 19.85	-	3.0	15/16" bolt
MW-7	10[45]	8.68 / 18.00	-	0.6	15/16" bolt
MW-8	10[48]	9.07 / 19.66	-	587	15/16" bolt
MW-9	10[53]	8.30 / 19.31	-	2.9	15/16" bolt
MW-10	17:30	8.58 / 18.16		0.9	15/16" bolt

10:30 stage drum by fence line 55gal steel bung top

Note- locks placed on @ MW-6 through MW-9

Location FIA Unocal Date 9/20/10

Project / Client 306443

40's-50's, clear well development w/ bailers

11[00] Gauged MW-6 through MW-9. Begin purging/surging wells using teflon bailer. Calculate out volume per well.

well	volume per well (one well volume)
MW-6	1.82 gal.
MW-7	1.81 gal.
MW-8	1.69 gal.
MW-9	1.76 gal.
MW-10	1.53 gal

11[30] - Through 10 gallons purged on MW-8, 15 gallons MW-9. Call in to G. Montgomery, purge until as clear as possible, continue to surge/purge.

12:00 Discuss well development w/ Greg Montgomery - will call back

12:10 Confirm 45 gal purge per well w/ A Ohrt, if wells remain turbid after 45, let rest.

Location FIA Unocal Date 9/20/10

Project / Client 306443

12:23 demob, depart site for additional drums

12[41] - offload equip. for GW sampling

13[12] - Lunch leave for Geist

13[26] - Leave Geist, pickup a single available drum. Depart for Arctic Fire & Safety for additional drums.

13[57] leave Arctic Fire & Safety with three more drums.

14:15 arrive on site. Mid-day H+S continue

16[45] - mob to MW-10,

Drums: PW-1 = MW-9 & MW-8
PW-2 = MW-9, 8, 7 & 6
PW-3 = MW-7 & 6
PW-4 = MW-7 & 6 & MW-10
PW-5
MW-10

Location FIA Unocal Gate 28 Date 9/20/10

Project / Client 306443

* MW-10 needs a lock.

Volume actually purged:

MW-9 = 42 gallons
MW-8 = 40 gallons
MW-7 = 45 gallons
MW-6 = 45 gallons
MW-10 = 40 gallons

total = 212 gallons

PW-1 = MW-9 & MW-8
PW-2 = MW-9, MW-8, MW-7, MW-6
PW-3 = MW-7, MW-6
PW-4 = MW-7, MW-6, MW-10
PW-5 = MW-10

-6:30 - Complete purging/surging MW-10. ARCADIS cleans up, offsite.

JPG

Location FIA Unocal Gate 28 Date 9/23/10

Project / Client 306443

Weather: 40° windy
Activity: Survey + GW sampling low flow + MW

10:30 Arrive on site w/ McClane + ARCADIS Brian + Matt H+S meeting cold temperatures/airport safety/ keep doors shut/traffic control/ knee pads/ high visibility vest/ survey + gw procedures permit in window/ sunscreen/stop work

11:31 position trucks on site, permission granted for additional vehicles/PPW calibrate PID isobutylene 100 ppm and fresh air. Begin gauging

12:30 Calibrate both PSIs

Survey Crew (McLane) collect Northing & Southing data for Monitoring wells on site.

Gauging monitoring wells on site completed.

13:30 ARCADIS & McLane mob offsite for Lunch + drums

80

Location FIA Unocal Gate 28 Date 9/23/10

Project / Client # 306443

Well ID	DTW	DTB	DTP	PID	→
GEI-1	8.25	12.08	8.29	443	
GEI-2	8.25	17.15	—	1,3	
GEI-3	8.16	11.40	—	283	
GEI-4	8.10	12.60	8.05	79.9	
GEI-5	9.51	11.74	8.45	185	—
GEI-6	9,31	11.02	8.52	285	
GEI-7	8.3	13.28	—	87.4	—
GEI-8	8.80	13.06	—	6.5	
GEI-9	9.00	12.75	8.87	5.3	
MW-1	8.68	18.95	—	11.9	
MW-2	7.82	18.76	—	1.4	
MW-3	9.08	18.08	—	122	
MW-4	8.33	17.95	—	4.5	—
MW-5	8.98	19.17	—	1.0	
MW-6	8.70	19.85	—	1.2	
MW-7	8.93	18.00	—	1.0	
MW-8	9.32	19.66	—	249	
MW-9	8.60	19.31	—	2.0	
MW-10	8.92	18.90	—	0.3	
IRW-1	8.39	17.18	—	454	
BD-1	from	MW-1			
BD-2	from	MW-5			

P

81

Location FIA Unocal Gate 28 Date 9/23/10

Project / Client # 306443

NA = not analyzed NS = not sampled

Comment	Fe^{2+} mg/L	Nitrate mg/L	Sampled @
—	—	—	NS
16:00 9/23	NA	NA	16:00 9/23/10
15:50 9/23	NA	NA	15:50 9/23/10
—	—	—	NS
—	—	—	NS
—	—	—	NS
16:07 9/24	2.0	0.0	16:07 9/24/10
17:35 9/23	NA	NA	17:35 9/23/10
—	—	—	NS
14:50 9/24/10	—	—	14:50 9/24/10
—	2.0	0.0	17:50 9/23/10
10:07 9/24	NA	NA	10:07 9/24/10
10:30 9/24	0.0	0.0	10:30 9/24/10
14:40 9/24	—	—	14:40 9/24/10
17:05 9/24	0.8	0.0	17:05 9/24/10
1600 9/24/10	NA	NA	16:00 9/24/10
11:52 9/24	NA	NA	11:52 9/24/10
17:16 9/24	—	—	17:16 9/24/10
18:28 9/24			18:28 9/24/10
12:25 9/24	1.0	0.0	12:25 9/24/10
—	—	—	MW-1 9/24/10
			MW-5 9/24/10

Location: FIA Unocal / Gate 28 Date: 9-23-16
Project / Client: 306443

14:30 ARCADIS and Melam Arrive onsite
Mid-day safety meeting conducted
Discussed: increase traffic on site, trips, slips, falls, heavy lifting, ear protection
15:00 call G Montgomery regarding progress
15:15 Set up on GEI-2 & GEI-3
16:50 McCane offsite
17:20 Decon/Demob/Depart site
Drum labeled and secure

Location: FIA Unocal Date: 9/24/16
Project / Client: # 306443 Gate 28

Weather: 30° Sunny
Activity: Continued Low Flow sampling
Personnel: D Bembe / D Baldwin

08:35 Arrive on site. Set up traffic control. H+S meeting. OE remnants / PPE / sunscreen / knee pads / trips slips falls / spiders / light traffic on site. stay truck by well / PTW

08:50 Wait for plane to depart.
08:55 calibrate TSIs + PIDs
isobutylene 100ppm / ORP spec pH DO

09:24 setup on MW-3 and MW-4

10:30 R Greisler on-site to drop off tubing shipment. Escort through gate LPO to be conducted

10:50 set up MW-8/RW-1
11:35 RGreisler off site after LPO + review w/ project manager - Feedback session w/ A. Ohrt

Location 306443 Date 9/24/10

Project / Client FIA Unocal Gate 28

12:39 offsite for break

13:20 call R Gressler + A Ohrt regarding cooler shipment Supe

13:40 telecom w/ G Montgomery

13:50 Mid day meeting Review FBOK policy / Right tools for task / work gloves when opening lid

14:00 Mob to MW-1 and MW-5 both duplicate wells

15:05 Mob to OEI-7 and MW-7

16:25 Mob to MW-6 and MW-9

17:30 Mob to MW-10
fill PW-6 with purge water from today's wells 9/24/10
all drums labeled and secure
Placed by sock drum - staged by fence

17:50 Depart site

Location 306443 Date 9/24/10

Project / Client FIA Unocal Gate 28
West Ramp

Weather: 34°
Activity: Purge Drum sampling
Personnel: D Benbe / D Baudoin

14:06 Arrive on site H+S meeting
DMB PTW / drum opener - proper tool / mark car w/ magnet / display badge / Kevlar + nitrile / heavy lifting

Samples	Time	
PW-1	14:10	
PW-2	14:15	BD-1 taken from PW-2
PW-3	14:20	
PW-4	14:25	
PW-5	14:35	
PW-6	14:50	

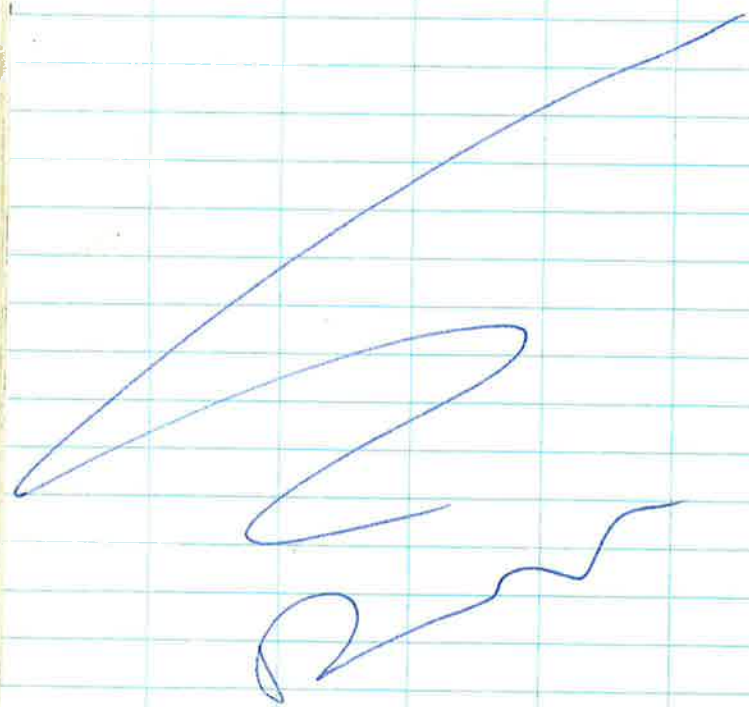
note PW-6 is from low flow sampling event on 9/23/10. The remaining drums PW-1 thru PW-5 were generated during well development on 9/20/10. PW also has low flow H_2O + MW-10 well development

14:55 Demob / Decon / Depart s - drop off badge + permit

Location 306443 Date 9/26/10

Project / Client FIA Unocal Gate 28

15:35 Bring Dane to airport
15:46 Depart for Fed Ex →
16:25 Depart Fed ex for goldstreak
17:00 Depart Goldstreak for storage unit
17:40 Depart storage unit for hotel
18:10 + ice coolers



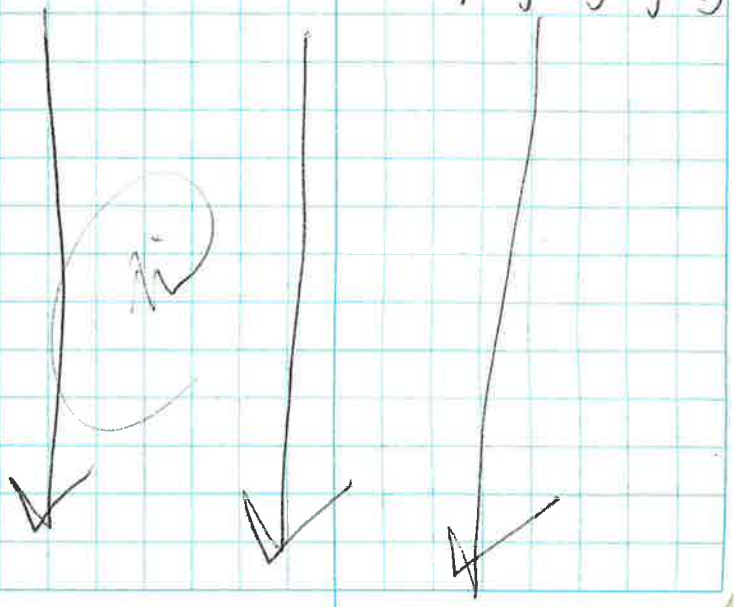
Location 306443 Date 10/25/10

Project / Client FIA Unocal Gate 28

Weather: 28
Activity: 4210 Gauging
Personnel: D Berube M Strickler

14:05 Arrive on site. Reprogram clicker + get permit

14:18 HASP/PTW/Keep doors closed/tail gate shut/trips slips falls/Knee pads/aircraft traffic/US spotter/ice/ Fresh air calibration PID/Begin gauging



ARCADIS

Appendix C

Soil Analytical Laboratory Reports

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

September 09, 2010

Project: 306443

Submittal Date: 08/26/2010
Group Number: 1209203
SDG: LSS11
PO Number: 0015060864
Release Number: CARRIER
State of Sample Origin: AK

Client Sample Description	Lancaster Labs (LLI) #
SB-14-2.0 Grab Soil	6069941
SB-15-2.0 Grab Soil	6069942
MW-9-2.0 Grab Soil	6069943
Trip_Blank NA MeOH	6069944
MW-8-2.0 Grab Soil	6069945
MW-7-2.0 Grab Soil	6069946
BD-1 Grab Soil	6069947

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Arcadis	Attn: Greg Montgomery
ELECTRONIC COPY TO	Arcadis	Attn: Russ Greisler
1 COPY TO	Data Package Group	

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

Barbara F. Reedy
Senior Specialist

Lancaster Laboratories

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Analysis Report

Sample Description: SB-14-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069941
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/23/2010 16:20 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2814 SDG#: LSS11-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.066	0.018	20
10722	Acenaphthylene	208-96-8	0.062	0.0089	20
10722	Anthracene	120-12-7	0.0095	0.0089	20
10722	Benzo(a)anthracene	56-55-3	N.D.	0.018	20
10722	Benzo(a)pyrene	50-32-8	N.D.	0.018	20
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.018	20
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.018	20
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.018	20
10722	Chrysene	218-01-9	N.D.	0.0089	20
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.018	20
10722	Fluoranthene	206-44-0	N.D.	0.018	20
10722	Fluorene	86-73-7	0.15	0.018	20
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.018	20
10722	Naphthalene	91-20-3	2.5	0.018	20
10722	Phenanthrene	85-01-8	0.091	0.018	20
10722	Pyrene	129-00-0	N.D.	0.018	20
	Reporting limits were raised due to interference from the sample matrix.				
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	1,200	35	1306.24
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.3	1306.24
05878	Ethylbenzene	100-41-4	6.7	0.3	1306.24
05878	Toluene	108-88-3	N.D.	0.3	1306.24
05878	Total Xylenes	1330-20-7	14	1.0	1306.24
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	9,300	670	100
01738	C25-C36 RRO	n.a.	N.D.	670	100
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	10.5	0.0139	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	25.2	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

Lancaster Laboratories

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Analysis Report

Sample Description: SB-14-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069941
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/23/2010 16:20 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2814 SDG#: LSS11-01

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10239SLA026	09/02/2010 11:12	Mark A Clark	20
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10239SLA026	08/29/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023822131	08/23/2010 16:20	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	09/01/2010 13:16	Marie D John	1306.24
05878	BTEX Soil	SW-846 8021B	1	10242B31A	09/01/2010 13:16	Marie D John	1306.24
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102400010A	08/31/2010 22:05	Heather E Williams	100
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102400010A	08/30/2010 09:40	Denise L Trimby	1
06135	Lead	SW-846 6020	1	102426150002A	09/01/2010 11:48	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150002	08/30/2010 21:40	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10242820002B	08/30/2010 18:49	Scott W Freisher	1

Lancaster Laboratories

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Analysis Report

Sample Description: SB-15-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069942
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/23/2010 17:00 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2815 SDG#: LSS11-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.037	0.014	20
10722	Acenaphthylene	208-96-8	0.037	0.0071	20
10722	Anthracene	120-12-7	N.D.	0.0071	20
10722	Benzo(a)anthracene	56-55-3	N.D.	0.014	20
10722	Benzo(a)pyrene	50-32-8	N.D.	0.014	20
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.014	20
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.014	20
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.014	20
10722	Chrysene	218-01-9	N.D.	0.0071	20
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.014	20
10722	Fluoranthene	206-44-0	N.D.	0.014	20
10722	Fluorene	86-73-7	0.081	0.014	20
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.014	20
10722	Naphthalene	91-20-3	0.44	0.014	20
10722	Phenanthrene	85-01-8	0.022	0.014	20
10722	Pyrene	129-00-0	N.D.	0.014	20
	Reporting limits were raised due to interference from the sample matrix.				
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	650	24	1106.73
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.2	1106.73
05878	Ethylbenzene	100-41-4	2.0	0.2	1106.73
05878	Toluene	108-88-3	N.D.	0.2	1106.73
05878	Total Xylenes	1330-20-7	7.3	0.7	1106.73
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	1,200	270	50
01738	C25-C36 RRO	n.a.	N.D.	270	50
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	5.43	0.0109	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	6.6	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

Lancaster Laboratories

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Analysis Report

Sample Description: SB-15-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069942
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/23/2010 17:00 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2815 SDG#: LSS11-02

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10239SLA026	09/02/2010 12:46	Mark A Clark	20
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10239SLA026	08/29/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023822131	08/23/2010 17:00	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	09/01/2010 13:53	Marie D John	1106.73
05878	BTEX Soil	SW-846 8021B	1	10242B31A	09/01/2010 13:53	Marie D John	1106.73
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102400010A	08/31/2010 23:27	Heather E Williams	50
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102400010A	08/30/2010 09:40	Denise L Trimby	1
06135	Lead	SW-846 6020	1	102426150002A	09/01/2010 11:59	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150002	08/30/2010 21:40	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10242820002B	08/30/2010 18:49	Scott W Freisher	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-9-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069943
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 11:40 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2809 SDG#: LSS11-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.00075	0.00074	1
10722	Acenaphthylene	208-96-8	0.0013	0.00037	1
10722	Anthracene	120-12-7	N.D.	0.00037	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00074	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00074	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00074	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00074	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	1
10722	Chrysene	218-01-9	0.00060	0.00037	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	1
10722	Fluoranthene	206-44-0	0.0012	0.00074	1
10722	Fluorene	86-73-7	0.0045	0.00074	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	1
10722	Naphthalene	91-20-3	0.0075	0.00074	1
10722	Phenanthrene	85-01-8	0.0024	0.00074	1
10722	Pyrene	129-00-0	0.00078	0.00074	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.6	28.36
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	28.36
05878	Ethylbenzene	100-41-4	N.D.	0.006	28.36
05878	Toluene	108-88-3	N.D.	0.006	28.36
05878	Total Xylenes	1330-20-7	N.D.	0.02	28.36
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	5.8	5.5	1
01738	C25-C36 RRO	n.a.	9.4	5.5	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	5.99	0.0114	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	9.8	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-9-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069943
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 11:40 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2809 SDG#: LSS11-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10239SLA026	09/02/2010 13:50	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10239SLA026	08/29/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023822131	08/24/2010 11:40	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	08/31/2010 20:39	Marie D John	28.36
05878	BTEX Soil	SW-846 8021B	1	10242B31A	08/31/2010 20:39	Marie D John	28.36
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 18:23	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	2	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150002A	09/01/2010 12:01	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150002	08/30/2010 21:40	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10242820002B	08/30/2010 18:49	Scott W Freisher	1

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Analysis Report

Sample Description: Trip_Blank NA MeOH
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # G5 6069944
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/23/2010

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G28TB SDG#: LSS11-04TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.5	25
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.005	25
05878	Ethylbenzene	100-41-4	N.D.	0.005	25
05878	Toluene	108-88-3	N.D.	0.005	25
05878	Total Xylenes	1330-20-7	N.D.	0.02	25

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06119	GC - Field Preserved (AK-101)	AK 101	1	201023822131	08/23/2010 00:00	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	08/31/2010 17:34	Marie D John	25
05878	BTEX Soil	SW-846 8021B	1	10242B31A	08/31/2010 17:34	Marie D John	25

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Analysis Report

Sample Description: MW-8-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069945
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 14:40 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2808 SDG#: LSS11-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00072	1
10722	Acenaphthylene	208-96-8	N.D.	0.00036	1
10722	Anthracene	120-12-7	N.D.	0.00036	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00072	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00072	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00072	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00072	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00072	1
10722	Chrysene	218-01-9	N.D.	0.00036	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00072	1
10722	Fluoranthene	206-44-0	N.D.	0.00072	1
10722	Fluorene	86-73-7	N.D.	0.00072	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00072	1
10722	Naphthalene	91-20-3	N.D.	0.00072	1
10722	Phenanthrene	85-01-8	N.D.	0.00072	1
10722	Pyrene	129-00-0	N.D.	0.00072	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.6	27.15
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	27.15
05878	Ethylbenzene	100-41-4	N.D.	0.006	27.15
05878	Toluene	108-88-3	N.D.	0.006	27.15
05878	Total Xylenes	1330-20-7	N.D.	0.02	27.15
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.4	1
01738	C25-C36 RRO	n.a.	9.0	5.4	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	5.02	0.0109	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	6.8	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-8-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069945
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 14:40 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2808 SDG#: LSS11-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10239SLA026	09/02/2010 14:22	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10239SLA026	08/29/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023822131	08/24/2010 14:40	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	08/31/2010 21:16	Marie D John	27.15
05878	BTEX Soil	SW-846 8021B	1	10242B31A	08/31/2010 21:16	Marie D John	27.15
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 18:50	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	2	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150002A	09/01/2010 12:06	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150002	08/30/2010 21:40	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10242820002B	08/30/2010 18:49	Scott W Freisher	1

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Analysis Report

Sample Description: MW-7-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069946
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 16:05 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2807 SDG#: LSS11-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00073	1
10722	Acenaphthylene	208-96-8	N.D.	0.00037	1
10722	Anthracene	120-12-7	N.D.	0.00037	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00073	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00073	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00073	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00073	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00073	1
10722	Chrysene	218-01-9	N.D.	0.00037	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00073	1
10722	Fluoranthene	206-44-0	N.D.	0.00073	1
10722	Fluorene	86-73-7	N.D.	0.00073	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00073	1
10722	Naphthalene	91-20-3	0.00096	0.00073	1
10722	Phenanthrene	85-01-8	N.D.	0.00073	1
10722	Pyrene	129-00-0	N.D.	0.00073	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.6	27.68
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	27.68
05878	Ethylbenzene	100-41-4	N.D.	0.006	27.68
05878	Toluene	108-88-3	N.D.	0.006	27.68
05878	Total Xylenes	1330-20-7	N.D.	0.02	27.68
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.5	1
01738	C25-C36 RRO	n.a.	19	5.5	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	5.22	0.0114	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	8.8	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-7-2.0 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069946
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 16:05 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G2807 SDG#: LSS11-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10239SLA026	09/02/2010 14:54	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10239SLA026	08/29/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023822131	08/24/2010 16:05	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	08/31/2010 21:52	Marie D John	27.68
05878	BTEX Soil	SW-846 8021B	1	10242B31A	08/31/2010 21:52	Marie D John	27.68
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 19:18	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	2	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150002A	09/01/2010 12:08	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150002	08/30/2010 21:40	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10242820002B	08/30/2010 18:49	Scott W Freisher	1

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Analysis Report

Sample Description: BD-1 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069947
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G28FD SDG#: LSS11-07FD*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00072	1
10722	Acenaphthylene	208-96-8	N.D.	0.00036	1
10722	Anthracene	120-12-7	N.D.	0.00036	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00072	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00072	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00072	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00072	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00072	1
10722	Chrysene	218-01-9	N.D.	0.00036	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00072	1
10722	Fluoranthene	206-44-0	N.D.	0.00072	1
10722	Fluorene	86-73-7	N.D.	0.00072	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00072	1
10722	Naphthalene	91-20-3	N.D.	0.00072	1
10722	Phenanthrene	85-01-8	N.D.	0.00072	1
10722	Pyrene	129-00-0	N.D.	0.00072	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.5	24.74
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.005	24.74
05878	Ethylbenzene	100-41-4	N.D.	0.005	24.74
05878	Toluene	108-88-3	N.D.	0.005	24.74
05878	Total Xylenes	1330-20-7	N.D.	0.02	24.74
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.4	1
01738	C25-C36 RRO	n.a.	25	5.4	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	5.16	0.0112	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	6.8	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: BD-1 Grab Soil
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6069947
LLI Group # 1209203
Account # 11964

Project Name: 306443

Collected: 08/24/2010 by MLS

Submitted: 08/26/2010 09:20
Reported: 09/09/2010 10:19
Discard: 10/10/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

G28FD SDG#: LSS11-07FD*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10239SLA026	09/02/2010 15:25	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10239SLA026	08/29/2010 23:00	Patricia L Foreman	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10242B31A	08/31/2010 22:29	Marie D John	24.74
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201023822133	08/26/2010 21:55	Scott W Freisher	n.a.
05878	BTEX Soil	SW-846 8021B	1	10242B31A	08/31/2010 22:29	Marie D John	24.74
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 19:45	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	2	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150002A	09/01/2010 12:10	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150002	08/30/2010 21:40	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10242820002B	08/30/2010 18:49	Scott W Freisher	1

Quality Control Summary

Client Name: Chevron Group Number: 1209203
Reported: 09/09/10 at 10:19 AM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 10239SLA026	Sample number(s): 6069941-6069943,6069945-6069947							
Acenaphthene	N.D.	0.00067	mg/kg	88		73-104		
Acenaphthylene	N.D.	0.00033	mg/kg	92		67-100		
Anthracene	N.D.	0.00033	mg/kg	83		69-107		
Benzo(a)anthracene	N.D.	0.00067	mg/kg	87		74-112		
Benzo(a)pyrene	N.D.	0.00067	mg/kg	87		70-109		
Benzo(b)fluoranthene	N.D.	0.00067	mg/kg	81		73-123		
Benzo(g,h,i)perylene	N.D.	0.00067	mg/kg	89		62-128		
Benzo(k)fluoranthene	N.D.	0.00067	mg/kg	90		65-130		
Chrysene	N.D.	0.00033	mg/kg	86		79-111		
Dibenz(a,h)anthracene	N.D.	0.00067	mg/kg	94		69-128		
Fluoranthene	N.D.	0.00067	mg/kg	83		78-114		
Fluorene	N.D.	0.00067	mg/kg	86		75-110		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	mg/kg	90		71-127		
Naphthalene	N.D.	0.00067	mg/kg	84		67-105		
Phenanthrene	N.D.	0.00067	mg/kg	88		76-109		
Pyrene	N.D.	0.00067	mg/kg	93		71-109		
Batch number: 10242B31A	Sample number(s): 6069941-6069947							
Benzene	N.D.	0.005	mg/kg	104	104	76-118	0	30
Ethylbenzene	N.D.	0.005	mg/kg	104	98	77-115	6	30
Toluene	N.D.	0.005	mg/kg	100	96	80-120	4	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	91	93	60-120	2	20
Total Xylenes	N.D.	0.02	mg/kg	107	101	78-115	6	30
Batch number: 102400010A	Sample number(s): 6069941-6069942							
C10-<C25 DRO	N.D.	5.0	mg/kg	106	106	75-125	0	50
C25-C36 RRO	8.1	5.0	mg/kg	111	113	75-125	1	50
Batch number: 102440017A	Sample number(s): 6069943,6069945-6069947							
C10-<C25 DRO	N.D.	5.0	mg/kg	101	97	75-125	4	50
C25-C36 RRO	N.D.	5.0	mg/kg	115	115	75-125	0	50
Batch number: 102426150002A	Sample number(s): 6069941-6069943,6069945-6069947							
Lead	N.D.	0.0104	mg/kg	101		80-120		
Batch number: 10242820002B	Sample number(s): 6069941-6069943,6069945-6069947							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209203
Reported: 09/09/10 at 10:19 AM

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 10239SLA026	Sample number(s): 6069941-6069943,6069945-6069947 UNSPK: 6069941								
Acenaphthene	49	13*	44-122	20	30				
Acenaphthylene	55	11*	23-143	26	30				
Anthracene	69	63	34-161	7	30				
Benzo(a)anthracene	104	98	20-138	6	30				
Benzo(a)pyrene	83	82	34-156	1	30				
Benzo(b)fluoranthene	80	81	43-155	1	30				
Benzo(g,h,i)perylene	80	82	33-141	3	30				
Benzo(k)fluoranthene	80	80	49-145	0	30				
Chrysene	109	113	41-126	4	30				
Dibenz(a,h)anthracene	105	107	10-157	2	30				
Fluoranthene	96	95	35-138	1	30				
Fluorene	21*	43	34-142	6	30				
Indeno(1,2,3-cd)pyrene	106	101	10-164	4	30				
Naphthalene	-317 (2)	-1779 (2)	35-147	33*	30				
Phenanthrene	32*	16*	37-134	7	30				
Pyrene	88	87	31-120	1	30				
Batch number: 102400010A	Sample number(s): 6069941-6069942 UNSPK: 6069941								
C10-<C25 DRO	-841 (2)	2183 (2)	60-140	17	50				
C25-C36 RRO	0*	0*	60-140	0	50				
Batch number: 102440017A	Sample number(s): 6069943,6069945-6069947 UNSPK: P072252								
C10-<C25 DRO	104	104	60-140	0	50				
C25-C36 RRO	101	100	60-140	1	50				
Batch number: 102426150002A	Sample number(s): 6069941-6069943,6069945-6069947 UNSPK: 6069941 BKG: 6069941								
Lead	123	93	75-125	8	20	7.87	7.74	2	20
Batch number: 10242820002B	Sample number(s): 6069941-6069943,6069945-6069947 BKG: 6069946								
Moisture						8.8	8.9	0	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH SIM 8270 Soil Microwave
Batch number: 10239SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6069941	9414*	183*	78
6069942	1796*	157*	80
6069943	95	88	71
6069945	87	90	72
6069946	91	91	72
6069947	88	91	73
Blank	91	103	106
LCS	83	92	93
MS	9975*	172*	75
MSD	6880*	151*	74

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209203
Reported: 09/09/10 at 10:19 AM

Surrogate Quality Control

Limits:	53-152	52-132	51-141

Analysis Name: TPH-GRO AK soil C6-C10
Batch number: 10242B31A

	Trifluorotoluene-F	Trifluorotoluene-P
6069941	159*	66*
6069942	130*	82
6069943	79	77
6069944	80	84
6069945	73	80
6069946	75	77
6069947	84	86
Blank	93	99
LCS	98	90
LCSD	100	88
Limits:	60-120	73-117

Analysis Name: TPH-DRO/RRO (AK)
Batch number: 102400010A

	Orthoterphenyl	n-Triacontane-d62
6069941	112	243*
6069942	91	106
Blank	98	65
LCS	91	57*
LCSD	92	57*
MS	108	190*
MSD	123	174*
Limits:	50-150	50-150

Analysis Name: TPH-DRO/RRO (AK)
Batch number: 102440017A

	Orthoterphenyl	n-Triacontane-d62
6069943	97	100
6069945	96	101
6069946	100	103
6069947	102	101
Blank	97	103
LCS	95	88
LCSD	92	84
MS	93	83
MSD	92	83
Limits:	50-150	50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11964 Sample #: 6069941-47 SCR#: 94578 014579
C# 1209303

Facility #: 306443
Site Address: FIA, Gate 28, West Ramp
Chevron PM: Dan Carrier Lead Consultant: ARCADIS
Consultant/Office: ARCADIS / Seattle
Consultant Prj. Mgr.: Greg Montgomery
Consultant Phone #: 206-726-4742 Fax #: 206-325-8218
Sampler: MLS
Service Order #: NWRTB-0306443-AIL ☐ Non SAR:

Analyses Requested

Preservation Codes

Matrix

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (☐ Potable ☐ NPDES)	Oil ☐ Air ☐	Total Number of Containers	BTEX ~~+MTBE~~ 8021 ☒ 8260 ☐ Naphth ☐	8260 full scan	Oxygenates	X ~~TPH~~ GRO AK 101	X ~~TPH~~ ☐ Extended Rng. DRO ☐ Silica Gel Cleanup AK 102	Lead Total ☐ Diss. ☐ Method	VPH/EPH	NWTPH H HCID ☐ quantification	Lead (Total) EPA 6020B	Moisture	RRO AK 103	PAHs (8270 SIM)
SB-14-2.0	8/23/10	~~1620~~ 1700	X		X			3	X			X	X				X	X	X	X
SB-15-2.0	8/23/10	1700	X		X			3	X			X	X				X	X	X	X
MW-9-2.0	8/24/10	1140	X		X			3	X			X	X				X	X	X	X
Trip Blank	—	—	X					1	X			X								
MW-8-2.0	8/24/10	1440	X		X			3	X			X	X				X	X	X	X
MW-7-2.0	8/24/10	1605	X		X			3	X			X	X				X	X	X	X
BD-1	8/24/10	—	X		X			3	X			X	X				X	X	X	X

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks
O = MeOH Preservative

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full
Type VI (Raw Data) Disk / EDD
WIP (RWQCB) Standard Format
Disk _____ Other.

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	8-25-10	1200			
[signature]	8/25/10	0700			
Relinquished by Commercial Carrier: UPS (FedEx) Other _____			Received by: Kathy Binkley	8-26-	0920
Temperature Upon Receipt 1.6 C°			Custody Seals Intact? (Yes) No		

Lancaster Laboratories

Environmental Sample Administration
Receipt Documentation Log

(Arcadis)

Client/Project: Chevron (WA)

Date of Receipt: 8-26-10

Time of Receipt: 0920

Source Code: 50-1

Unpacker Emp. No.: 1255

Shipping Container Sealed: (YES) NO

Custody Seal Present * : (YES) NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	9422	1.6°	TB	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Brinkley	8-26-10	1235	Unpacking to storage
Tammy Deloach	8/26/10	1331	Place in Storage or (Entry)
			Entry
			Entry

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

September 07, 2010

Project: 306443

Submittal Date: 08/27/2010
Group Number: 1209432
SDG: LSS17
PO Number: 0015060864
Release Number: CARRIER
State of Sample Origin: AK

Client Sample Description	Lancaster Labs (LLI) #
MW-6-2.0 Grab Soil Sample	6071425
MW-6-8.0 Grab Soil Sample	6071426
SB-14-8.0-10.0 Grab Soil Sample	6071427
SB-14-18.0-20.0 Grab Soil Sample	6071428
SB-15-10.0-12.0 Grab Soil Sample	6071429
SB-15-18.0-20.0 Grab Soil Sample	6071430
MW-10-2.0 Grab Soil Sample	6071431
MW-10-8.0 Grab Soil Sample	6071432

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Arcadis	Attn: Greg Montgomery
ELECTRONIC COPY TO	Arcadis	Attn: Russ Greisler
1 COPY TO	Data Package Group	

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

Dorothy M. Love

Dorothy M. Love
Group Leader

Lancaster Laboratories

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Analysis Report

Sample Description: MW-6-2.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071425
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 10:10 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W62 SDG#: LSS17-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.0010	1
10722	Acenaphthylene	208-96-8	0.0010	0.00050	1
10722	Anthracene	120-12-7	N.D.	0.00050	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.0010	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.0010	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.0010	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.0010	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.0010	1
10722	Chrysene	218-01-9	0.00059	0.00050	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0010	1
10722	Fluoranthene	206-44-0	N.D.	0.0010	1
10722	Fluorene	86-73-7	0.0012	0.0010	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0010	1
10722	Naphthalene	91-20-3	0.0023	0.0010	1
10722	Phenanthrene	85-01-8	0.0015	0.0010	1
10722	Pyrene	129-00-0	N.D.	0.0010	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	11	370.89
	Reporting limits were raised due to sample foaming.				
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.1	370.89
05878	Ethylbenzene	100-41-4	N.D.	0.1	370.89
05878	Toluene	108-88-3	N.D.	0.1	370.89
05878	Total Xylenes	1330-20-7	N.D.	0.3	370.89
	Reporting limits were raised due to sample foaming.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	7.6	1
01738	C25-C36 RRO	n.a.	50	7.6	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	8.24	0.0151	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	33.8	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

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Analysis Report

Sample Description: MW-6-2.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071425
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 10:10 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W62 SDG#: LSS17-01

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 00:20	Linda M Hartenstine	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 10:10	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33A	08/31/2010 20:23	Marie D John	370.89
05878	BTEX Soil	SW-846 8021B	1	10243A33A	08/31/2010 20:23	Marie D John	370.89
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/01/2010 16:06	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 18:57	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-6-8.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071426
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 10:30 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W68 SDG#: LSS17-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00082	1
10722	Acenaphthylene	208-96-8	N.D.	0.00041	1
10722	Anthracene	120-12-7	N.D.	0.00041	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00082	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00082	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00082	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00082	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00082	1
10722	Chrysene	218-01-9	N.D.	0.00041	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00082	1
10722	Fluoranthene	206-44-0	N.D.	0.00082	1
10722	Fluorene	86-73-7	N.D.	0.00082	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00082	1
10722	Naphthalene	91-20-3	N.D.	0.00082	1
10722	Phenanthrene	85-01-8	N.D.	0.00082	1
10722	Pyrene	129-00-0	N.D.	0.00082	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.8	30.9
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.008	30.9
05878	Ethylbenzene	100-41-4	N.D.	0.008	30.9
05878	Toluene	108-88-3	0.02	0.008	30.9
05878	Total Xylenes	1330-20-7	N.D.	0.02	30.9
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	6.1	1
01738	C25-C36 RRO	n.a.	N.D.	6.1	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	3.86	0.0126	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	18.5	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-6-8.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071426
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 10:30 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W68 SDG#: LSS17-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 01:55	Linda M Hartenstine	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 10:30	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33A	08/31/2010 23:05	Marie D John	30.9
05878	BTEX Soil	SW-846 8021B	1	10243A33A	08/31/2010 23:05	Marie D John	30.9
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/01/2010 13:49	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 18:59	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

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Analysis Report

Sample Description: SB-14-8.0-10.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071427
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 10:25 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W48 SDG#: LSS17-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.13	0.074	100
10722	Acenaphthylene	208-96-8	0.18	0.037	100
10722	Anthracene	120-12-7	N.D.	0.037	100
10722	Benzo(a)anthracene	56-55-3	N.D.	0.074	100
10722	Benzo(a)pyrene	50-32-8	N.D.	0.074	100
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.074	100
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.074	100
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.074	100
10722	Chrysene	218-01-9	N.D.	0.037	100
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.074	100
10722	Fluoranthene	206-44-0	N.D.	0.074	100
10722	Fluorene	86-73-7	0.41	0.074	100
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.074	100
10722	Naphthalene	91-20-3	10	0.074	100
10722	Phenanthrene	85-01-8	0.18	0.074	100
10722	Pyrene	129-00-0	N.D.	0.074	100
	Reporting limits were raised due to interference from the sample matrix.				
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	2,300	68	3059.4
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.7	3059.4
05878	Ethylbenzene	100-41-4	3.2	0.7	3059.4
05878	Toluene	108-88-3	N.D.	0.7	3059.4
05878	Total Xylenes	1330-20-7	22	2.0	3059.4
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	11,000	1,100	200
01738	C25-C36 RRO	n.a.	N.D.	1,100	200
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	3.43	0.0111	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	10	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

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Analysis Report

Sample Description: SB-14-8.0-10.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071427
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 10:25 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W48 SDG#: LSS17-03

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 21:55	Linda M Hartenstine	100
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 10:25	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33B	09/01/2010 20:59	Carrie E Miller	3059.4
05878	BTEX Soil	SW-846 8021B	1	10243A33B	09/01/2010 20:59	Carrie E Miller	3059.4
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/02/2010 17:17	Heather E Williams	200
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 19:05	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

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Analysis Report

Sample Description: SB-14-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071428
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 11:20 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W41 SDG#: LSS17-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00079	1
10722	Acenaphthylene	208-96-8	N.D.	0.00039	1
10722	Anthracene	120-12-7	N.D.	0.00039	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00079	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00079	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00079	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00079	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00079	1
10722	Chrysene	218-01-9	N.D.	0.00039	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00079	1
10722	Fluoranthene	206-44-0	N.D.	0.00079	1
10722	Fluorene	86-73-7	N.D.	0.00079	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00079	1
10722	Naphthalene	91-20-3	N.D.	0.00079	1
10722	Phenanthrene	85-01-8	N.D.	0.00079	1
10722	Pyrene	129-00-0	N.D.	0.00079	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	0.9	0.7	29.42
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.007	29.42
05878	Ethylbenzene	100-41-4	N.D.	0.007	29.42
05878	Toluene	108-88-3	N.D.	0.007	29.42
05878	Total Xylenes	1330-20-7	N.D.	0.02	29.42
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.9	1
01738	C25-C36 RRO	n.a.	N.D.	5.9	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	4.38	0.0118	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	15.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

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Analysis Report

Sample Description: SB-14-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071428
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 11:20 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W41 SDG#: LSS17-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 02:58	Linda M Hartenstine	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 11:20	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33A	08/31/2010 23:41	Marie D John	29.42
05878	BTEX Soil	SW-846 8021B	1	10243A33A	08/31/2010 23:41	Marie D John	29.42
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/01/2010 14:44	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 19:06	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

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Analysis Report

Sample Description: SB-15-10.0-12.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071429
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 15:00 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W51 SDG#: LSS17-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.53	0.080	100
10722	Acenaphthylene	208-96-8	0.39	0.040	100
10722	Anthracene	120-12-7	N.D.	0.040	100
10722	Benzo(a)anthracene	56-55-3	N.D.	0.080	100
10722	Benzo(a)pyrene	50-32-8	N.D.	0.080	100
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.080	100
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.080	100
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.080	100
10722	Chrysene	218-01-9	N.D.	0.040	100
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.080	100
10722	Fluoranthene	206-44-0	N.D.	0.080	100
10722	Fluorene	86-73-7	1.3	0.080	100
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	100
10722	Naphthalene	91-20-3	34	0.080	100
10722	Phenanthrene	85-01-8	0.44	0.080	100
10722	Pyrene	129-00-0	N.D.	0.080	100
	Reporting limits were raised due to interference from the sample matrix.				
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	3,000	150	6063.66
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	1.5	6063.66
05878	Ethylbenzene	100-41-4	24	1.5	6063.66
05878	Toluene	108-88-3	4.8	1.5	6063.66
05878	Total Xylenes	1330-20-7	160	4.4	6063.66
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	10,000	600	100
01738	C25-C36 RRO	n.a.	N.D.	600	100
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	4.48	0.0125	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	17.1	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

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Analysis Report

Sample Description: SB-15-10.0-12.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071429
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 15:00 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W51 SDG#: LSS17-05

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 22:27	Linda M Hartenstine	100
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 15:00	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33A	09/01/2010 02:08	Marie D John	6063.66
05878	BTEX Soil	SW-846 8021B	1	10243A33A	09/01/2010 02:08	Marie D John	6063.66
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/02/2010 08:55	Heather E Williams	100
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 19:08	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

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Analysis Report

Sample Description: SB-15-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071430
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 15:35 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W58 SDG#: LSS17-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00072	1
10722	Acenaphthylene	208-96-8	N.D.	0.00036	1
10722	Anthracene	120-12-7	N.D.	0.00036	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00072	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00072	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00072	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00072	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00072	1
10722	Chrysene	218-01-9	N.D.	0.00036	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00072	1
10722	Fluoranthene	206-44-0	N.D.	0.00072	1
10722	Fluorene	86-73-7	N.D.	0.00072	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00072	1
10722	Naphthalene	91-20-3	0.0020	0.00072	1
10722	Phenanthrene	85-01-8	N.D.	0.00072	1
10722	Pyrene	129-00-0	N.D.	0.00072	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	0.8	0.6	27.25
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	27.25
05878	Ethylbenzene	100-41-4	N.D.	0.006	27.25
05878	Toluene	108-88-3	0.009	0.006	27.25
05878	Total Xylenes	1330-20-7	N.D.	0.02	27.25
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.4	1
01738	C25-C36 RRO	n.a.	8.0	5.4	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	2.48	0.0109	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	7.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: SB-15-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071430
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 15:35 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W58 SDG#: LSS17-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 04:02	Linda M Hartenstine	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 15:35	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33A	09/01/2010 00:18	Marie D John	27.25
05878	BTEX Soil	SW-846 8021B	1	10243A33A	09/01/2010 00:18	Marie D John	27.25
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/01/2010 15:38	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 19:10	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

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Analysis Report

Sample Description: MW-10-2.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071431
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 12:00 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W12 SDG#: LSS17-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00074	1
10722	Acenaphthylene	208-96-8	N.D.	0.00037	1
10722	Anthracene	120-12-7	N.D.	0.00037	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00074	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00074	1
10722	Benzo(b)fluoranthene	205-99-2	0.00075	0.00074	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00074	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	1
10722	Chrysene	218-01-9	0.00080	0.00037	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	1
10722	Fluoranthene	206-44-0	N.D.	0.00074	1
10722	Fluorene	86-73-7	N.D.	0.00074	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	1
10722	Naphthalene	91-20-3	0.0028	0.00074	1
10722	Phenanthrene	85-01-8	0.0017	0.00074	1
10722	Pyrene	129-00-0	N.D.	0.00074	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	6.2	276.98
	Reporting limits were raised due to sample foaming.				
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.06	276.98
05878	Ethylbenzene	100-41-4	N.D.	0.06	276.98
05878	Toluene	108-88-3	N.D.	0.06	276.98
05878	Total Xylenes	1330-20-7	N.D.	0.2	276.98
	Reporting limits were raised due to sample foaming.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	15	5.6	1
01738	C25-C36 RRO	n.a.	80	5.6	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	7.14	0.0113	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	10.3	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

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Analysis Report

Sample Description: MW-10-2.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071431
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 12:00 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W12 SDG#: LSS17-07

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 17:39	Linda M Hartenstine	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 12:00	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33A	08/31/2010 21:15	Marie D John	276.98
05878	BTEX Soil	SW-846 8021B	1	10243A33A	08/31/2010 21:15	Marie D John	276.98
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/01/2010 17:55	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 18:46	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

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Analysis Report

Sample Description: MW-10-8.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071432
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 12:50 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W18 SDG#: LSS17-08*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00089	1
10722	Acenaphthylene	208-96-8	N.D.	0.00044	1
10722	Anthracene	120-12-7	N.D.	0.00044	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00089	1
10722	Benzo(a)pyrene	50-32-8	0.00091	0.00089	1
10722	Benzo(b)fluoranthene	205-99-2	0.0015	0.00089	1
10722	Benzo(g,h,i)perylene	191-24-2	0.0011	0.00089	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00089	1
10722	Chrysene	218-01-9	0.0013	0.00044	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00089	1
10722	Fluoranthene	206-44-0	0.0012	0.00089	1
10722	Fluorene	86-73-7	N.D.	0.00089	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00089	1
10722	Naphthalene	91-20-3	0.0010	0.00089	1
10722	Phenanthrene	85-01-8	0.0012	0.00089	1
10722	Pyrene	129-00-0	0.0012	0.00089	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.8	29.15
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.008	29.15
05878	Ethylbenzene	100-41-4	N.D.	0.008	29.15
05878	Toluene	108-88-3	0.009	0.008	29.15
05878	Total Xylenes	1330-20-7	N.D.	0.02	29.15
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	10	6.7	1
01738	C25-C36 RRO	n.a.	63	6.7	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	10.7	0.0137	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	25.0	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-10-8.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6071432
LLI Group # 1209432
Account # 11964

Project Name: 306443

Collected: 08/25/2010 12:50 by MLS

Submitted: 08/27/2010 09:00
Reported: 09/07/2010 13:11
Discard: 10/08/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

28W18 SDG#: LSS17-08*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLA026	09/05/2010 18:12	Linda M Hartenstine	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLA026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201023922159	08/25/2010 12:50	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33B	09/01/2010 10:37	Carrie E Miller	29.15
05878	BTEX Soil	SW-846 8021B	1	10243A33B	09/01/2010 10:37	Carrie E Miller	29.15
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102420020A	09/01/2010 18:22	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102420020A	08/31/2010 08:30	Olivia Arosemena	1
06135	Lead	SW-846 6020	1	102426150004A	09/01/2010 19:12	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150004	08/31/2010 08:45	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10243820003A	08/31/2010 17:56	Scott W Freisher	1

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Group Number: 1209432
Reported: 09/07/10 at 01:11 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 10243SLA026	Sample number(s): 6071425-6071432							
Acenaphthene	N.D.	0.00067	mg/kg	97		73-104		
Acenaphthylene	N.D.	0.00033	mg/kg	100		67-100		
Anthracene	N.D.	0.00033	mg/kg	97		69-107		
Benzo(a)anthracene	N.D.	0.00067	mg/kg	96		74-112		
Benzo(a)pyrene	N.D.	0.00067	mg/kg	98		70-109		
Benzo(b)fluoranthene	N.D.	0.00067	mg/kg	110		73-123		
Benzo(g,h,i)perylene	N.D.	0.00067	mg/kg	95		62-128		
Benzo(k)fluoranthene	N.D.	0.00067	mg/kg	91		65-130		
Chrysene	N.D.	0.00033	mg/kg	100		79-111		
Dibenz(a,h)anthracene	N.D.	0.00067	mg/kg	96		69-128		
Fluoranthene	N.D.	0.00067	mg/kg	98		78-114		
Fluorene	N.D.	0.00067	mg/kg	103		75-110		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	mg/kg	97		71-127		
Naphthalene	N.D.	0.00067	mg/kg	99		67-105		
Phenanthrene	N.D.	0.00067	mg/kg	102		76-109		
Pyrene	N.D.	0.00067	mg/kg	97		71-109		
Batch number: 10243A33A	Sample number(s): 6071425-6071426,6071428-6071431							
Benzene	N.D.	0.005	mg/kg	98	92	76-118	6	30
Ethylbenzene	N.D.	0.005	mg/kg	100	100	77-115	0	30
Toluene	N.D.	0.005	mg/kg	102	102	80-120	0	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	73	78	60-120	6	20
Total Xylenes	N.D.	0.02	mg/kg	98	99	78-115	1	30
Batch number: 10243A33B	Sample number(s): 6071427,6071432							
Benzene	N.D.	0.005	mg/kg	98	92	76-118	6	30
Ethylbenzene	N.D.	0.005	mg/kg	100	100	77-115	0	30
Toluene	N.D.	0.005	mg/kg	102	102	80-120	0	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	73	78	60-120	6	20
Total Xylenes	N.D.	0.02	mg/kg	98	99	78-115	1	30
Batch number: 102420020A	Sample number(s): 6071425-6071432							
C10-<C25 DRO	N.D.	5.0	mg/kg	103	102	75-125	2	50
C25-C36 RRO	N.D.	5.0	mg/kg	110	109	75-125	1	50
Batch number: 102426150004A	Sample number(s): 6071425-6071432							
Lead	N.D.	0.0103	mg/kg	119		80-120		
Batch number: 10243820003A	Sample number(s): 6071425-6071432							
Moisture				100		99-101		

Sample Matrix Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209432
Reported: 09/07/10 at 01:11 PM
Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 10243SLA026	Sample number(s): 6071425-6071432 UNSPK: 6071425								
Acenaphthene	87	90	44-122	3	30				
Acenaphthylene	95	97	23-143	2	30				
Anthracene	89	74	34-161	18	30				
Benzo(a)anthracene	90	92	20-138	1	30				
Benzo(a)pyrene	89	92	34-156	3	30				
Benzo(b)fluoranthene	87	101	43-155	15	30				
Benzo(g,h,i)perylene	62	56	33-141	10	30				
Benzo(k)fluoranthene	89	86	49-145	4	30				
Chrysene	91	91	41-126	0	30				
Dibenz(a,h)anthracene	78	74	10-157	5	30				
Fluoranthene	110	90	35-138	20	30				
Fluorene	94	96	34-142	2	30				
Indeno(1,2,3-cd)pyrene	74	70	10-164	6	30				
Naphthalene	91	94	35-147	3	30				
Phenanthrene	92	94	37-134	1	30				
Pyrene	77	78	31-120	1	30				
Batch number: 102420020A	Sample number(s): 6071425-6071432 UNSPK: 6071425								
C10-<C25 DRO	110	98	60-140	11	50				
C25-C36 RRO	164*	120	60-140	23	50				
Batch number: 102426150004A	Sample number(s): 6071425-6071432 UNSPK: 6071431 BKG: 6071431								
Lead	111	105	75-125	2	20	6.41	6.40	0	20
Batch number: 10243820003A	Sample number(s): 6071425-6071432 BKG: P071534								
Moisture						6.5	6.8	4	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH SIM 8270 Soil Microwave
Batch number: 10243SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6071425	83	113	71
6071426	99	88	85
6071427	25709*	300*	121
6071428	69	58	86
6071429	16116*	356*	110
6071430	122	82	55
6071431	102	96	80
6071432	80	70	78
Blank	112	103	98
LCS	113	103	89
MS	114	95	73
MSD	112	95	73
Limits:	53-152	52-132	51-141

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209432
Reported: 09/07/10 at 01:11 PM

Surrogate Quality Control

Analysis Name: TPH-GRO AK soil C6-C10
Batch number: 10243A33A

	Trifluorotoluene-F	Trifluorotoluene-P
6071425	84	87
6071426	63	73
6071428	80	83
6071429	262*	122*
6071430	75	81
6071431	103	117
Blank	85	94
LCS	84	91
LCSD	90	89
Limits:	60-120	73-117

Analysis Name: TPH-GRO AK soil C6-C10
Batch number: 10243A33B

	Trifluorotoluene-F	Trifluorotoluene-P
6071427	11*	87
6071432	71	84
Blank	83	93
LCS	84	91
LCSD	90	89
Limits:	60-120	73-117

Analysis Name: TPH-DRO/RRO (AK)
Batch number: 102420020A

	Orthoterphenyl	n-Triacontane-d62
6071425	94	93
6071426	91	89
6071427	95	165*
6071428	90	88
6071429	92	109
6071430	95	89
6071431	93	85
6071432	90	82
Blank	91	88
LCS	91	76
LCSD	91	83
MS	89	91
MSD	89	85
Limits:	50-150	50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

014578

For Lancaster Laboratories use only
Acct. #: 11964 Sample #: 607425-32 SCR#:

C# 1209432

Facility #: 306443
Site Address: Gate 2E, West Ramp, FIA
Chevron PM: Dan Carrier Lead Consultant: ARCADIS
Consultant/Office: ARCADIS / Seattle
Consultant Prj. Mgr.: Greg Montgomery
Consultant Phone #: 206-726-4742 Fax #: 206-325-8218
Sampler: MLS
Service Order #: NWRTB-030443-1-LAB ☐ Non SAR:

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Oil ☐ Air ☐	Total Number of Containers	BTEX + ~~MTBE~~ 8021 ☐ 8260 ☐ Naphth ☐	8260 full scan	Oxygenates ___	X ~~TPH~~ GRO AK 101	X ~~TPH~~ DRO ☐ Extended Rng. ☐ Silica Gel Cleanup AK 103	Lead Total ☐ Diss. ☐ Method EPA 6020B	VPH/EPH	NWTPH H HCID ☐ quantification	Moisture	RRO AK 103	PAHs (8270 SIM)
								Preservation Codes:	O			O	–	–			–	–	–
MW-6-2.0	8/25/10	1010	X		X			3	X			X	X	X			X	X	X
MW-6-8.0	8/25/10	1030	X		X			3	X			X	X	X			X	X	X
SB-14-8.0-10.0	8/25/10	1025	X		X			3	X			X	X	X			X	X	X
SB-14-18.0-20.0	8/25/10	1120	X		X			3	X			X	X	X			X	X	X
SB-15-10.0-12.0	8/25/10	1500	X		X			3	X			X	X	X			X	X	X
SB-15-18.0-20.0	8/25/10	1535	X		X			3	X			X	X	X			X	X	X
MW-10-2.0	8/25/10	1200	X		X			3	X			X	X	X			X	X	X
MW-10-8.0	8/25/10	1250	X		X			3	X			X	X	X			X	X	X

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks
O = MeOH Preservative

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full
Type VI (Raw Data) Disk / EDD
WIP (RWQCB) Standard Format
Disk ____ Other.

Relinquished by:	Date 8/26	Time 900	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS FedEx Other ____			Received by:	Date 8/27/10	Time 0810
Temperature Upon Receipt 5.7 C°			Custody Seals Intact? Yes No		

Lancaster Laboratories

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Chevron

Date of Receipt: 8/27/10

Time of Receipt: 0900

Source Code: 50-1

Unpacker Emp. No.: 2241

Shipping Container Sealed: YES NO

Custody Seal Present * : YES NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: Chilled Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	9422	5.7	TB	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
K Ann	8/27/10	1430	Unpacking to storage
Tammy Leland	8/27/10	1517	Place in Storage or (Entry)
			Entry
			Entry

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

September 17, 2010

Project: 306443

Submittal Date: 08/28/2010
Group Number: 1209536
SDG: LSS19
PO Number: 0015060864
Release Number: CARRIER
State of Sample Origin: AK

Client Sample Description	Lancaster Labs (LLI) #
MW-9-10.0-12.0 Grab Soil Sample	6072244
MW-9-18.0-20.0 Grab Soil Sample	6072245
MW-8-8.0-10.0 Grab Soil Sample	6072246
MW-8-10.0-12.0 Grab Soil Sample	6072247
MW-8-18.0-20.0 Grab Soil Sample	6072248
BD-2 Grab Soil Sample	6072249
MW-7-8.0-10.0 Grab Soil Sample	6072250
MW-7-18.0-20.0 Grab Soil Sample	6072251

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Arcadis	Attn: Greg Montgomery
ELECTRONIC COPY TO	Arcadis	Attn: Russ Greisler
1 COPY TO	Data Package Group	

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Analysis Report

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

Dorothy M. Love

Dorothy M. Love
Group Leader

Lancaster Laboratories

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Analysis Report

Sample Description: MW-9-10.0-12.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072244
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 08:25 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR910 SDG#: LSS19-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00081	1
10722	Acenaphthylene	208-96-8	N.D.	0.00040	1
10722	Anthracene	120-12-7	N.D.	0.00040	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00081	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00081	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00081	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00081	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00081	1
10722	Chrysene	218-01-9	N.D.	0.00040	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00081	1
10722	Fluoranthene	206-44-0	N.D.	0.00081	1
10722	Fluorene	86-73-7	N.D.	0.00081	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00081	1
10722	Naphthalene	91-20-3	0.016	0.00081	1
10722	Phenanthrene	85-01-8	N.D.	0.00081	1
10722	Pyrene	129-00-0	N.D.	0.00081	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	0.8	0.7	30.14
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.007	30.14
05878	Ethylbenzene	100-41-4	0.02	0.007	30.14
05878	Toluene	108-88-3	N.D.	0.04	30.14
05878	Total Xylenes	1330-20-7	0.07	0.02	30.14
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	6.0	1
01738	C25-C36 RRO	n.a.	30	6.0	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	6.51	0.0121	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	17.3	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

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Analysis Report

Sample Description: MW-9-10.0-12.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072244
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 08:25 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR910 SDG#: LSS19-01

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 09:28	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 08:25	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10245A31A	09/02/2010 22:36	Marie D John	30.14
05878	BTEX Soil	SW-846 8021B	1	10245A31A	09/02/2010 22:36	Marie D John	30.14
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 20:40	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:45	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Sample Description: MW-9-18.0-20.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072245
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 09:05 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR918 SDG#: LSS19-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00074	1
10722	Acenaphthylene	208-96-8	N.D.	0.00037	1
10722	Anthracene	120-12-7	N.D.	0.00037	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00074	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00074	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00074	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00074	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	1
10722	Chrysene	218-01-9	N.D.	0.00037	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	1
10722	Fluoranthene	206-44-0	N.D.	0.00074	1
10722	Fluorene	86-73-7	N.D.	0.00074	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	1
10722	Naphthalene	91-20-3	0.0073	0.00074	1
10722	Phenanthrene	85-01-8	N.D.	0.00074	1
10722	Pyrene	129-00-0	N.D.	0.00074	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.6	27.86
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	27.86
05878	Ethylbenzene	100-41-4	0.009	0.006	27.86
05878	Toluene	108-88-3	N.D.	0.006	27.86
05878	Total Xylenes	1330-20-7	N.D.	0.02	27.86
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.5	1
01738	C25-C36 RRO	n.a.	N.D.	5.5	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	3.58	0.0114	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	9.4	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-9-18.0-20.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072245
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 09:05 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR918 SDG#: LSS19-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 09:59	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 09:05	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10245A31A	09/02/2010 13:55	Marie D John	27.86
05878	BTEX Soil	SW-846 8021B	1	10245A31A	09/02/2010 13:55	Marie D John	27.86
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 21:35	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:47	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Sample Description: MW-8-8.0-10.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072246
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 11:00 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR8-8 SDG#: LSS19-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.37	0.015	20
10722	Acenaphthylene	208-96-8	N.D.	0.12	20
10722	Anthracene	120-12-7	0.027	0.0077	20
10722	Benzo(a)anthracene	56-55-3	N.D.	0.015	20
10722	Benzo(a)pyrene	50-32-8	N.D.	0.015	20
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.015	20
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.015	20
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.015	20
10722	Chrysene	218-01-9	N.D.	0.0077	20
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.015	20
10722	Fluoranthene	206-44-0	N.D.	0.015	20
10722	Fluorene	86-73-7	0.38	0.015	20
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.015	20
10722	Naphthalene	91-20-3	5.9	0.015	20
10722	Phenanthrene	85-01-8	0.19	0.015	20
10722	Pyrene	129-00-0	N.D.	0.015	20

Reporting limits were raised due to interference from the sample matrix.

Due to the presence of an interferent near the retention time of acenaphthylene, the reporting limit was raised. This was due to the fact that the interferent had a significant abundance of ions at or near the mass of acenaphthylene.

GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	1,200	26	1118.33
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.3	1118.33
05878	Ethylbenzene	100-41-4	1.5	0.3	1118.33
05878	Toluene	108-88-3	N.D.	0.3	1118.33
05878	Total Xylenes	1330-20-7	6.5	0.8	1118.33

Reporting limits were raised due to interference from the sample matrix.

GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	3,300	580	100
01738	C25-C36 RRO	n.a.	N.D.	580	100
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	4.23	0.0120	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	13.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

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Analysis Report

Sample Description: MW-8-8.0-10.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072246
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 11:00 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR8-8 SDG#: LSS19-03

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/16/2010 05:48	Linda M Hartenstine	20
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 11:00	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33B	09/01/2010 19:28	Carrie E Miller	1118.33
05878	BTEX Soil	SW-846 8021B	1	10243A33B	09/01/2010 19:28	Carrie E Miller	1118.33
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/07/2010 19:23	Heather E Williams	100
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:52	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-8-10.0-12.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072247
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 11:35 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR810 SDG#: LSS19-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	0.071	0.00071	1
10722	Acenaphthylene	208-96-8	N.D.	0.059	1
10722	Anthracene	120-12-7	0.0030	0.00035	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00071	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00071	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00071	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00071	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00071	1
10722	Chrysene	218-01-9	0.00063	0.00035	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00071	1
10722	Fluoranthene	206-44-0	0.0011	0.00071	1
10722	Fluorene	86-73-7	0.19	0.00071	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00071	1
10722	Naphthalene	91-20-3	2.1	0.0071	10
10722	Phenanthrene	85-01-8	0.072	0.00071	1
10722	Pyrene	129-00-0	0.0011	0.00071	1

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Due to the presence of an interferent near the retention time of acenaphthylene, the reporting limit was raised. This was due to the fact that the interferent had a significant abundance of ions at or near the mass of acenaphthylene.

GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	730	24	1125.77
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.2	1125.77
05878	Ethylbenzene	100-41-4	0.9	0.2	1125.77
05878	Toluene	108-88-3	N.D.	0.2	1125.77
05878	Total Xylenes	1330-20-7	3.7	0.7	1125.77

Reporting limits were raised due to interference from the sample matrix.

GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	980	260	50
01738	C25-C36 RRO	n.a.	N.D.	260	50
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	2.97	0.0109	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	5.5	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

Sample Description: MW-8-10.0-12.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072247
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 11:35 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR810 SDG#: LSS19-04

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 11:03	Mark A Clark	1
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/16/2010 06:19	Linda M Hartenstine	10
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 11:35	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10243A33B	09/01/2010 18:52	Carrie E Miller	1125.77
05878	BTEX Soil	SW-846 8021B	1	10243A33B	09/01/2010 18:52	Carrie E Miller	1125.77
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/07/2010 19:51	Heather E Williams	50
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:54	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Sample Description: MW-8-18.0-20.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072248
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 11:45 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

F8-18 SDG#: LSS19-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00077	1
10722	Acenaphthylene	208-96-8	N.D.	0.00038	1
10722	Anthracene	120-12-7	N.D.	0.00038	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00077	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00077	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00077	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00077	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00077	1
10722	Chrysene	218-01-9	N.D.	0.00038	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00077	1
10722	Fluoranthene	206-44-0	N.D.	0.00077	1
10722	Fluorene	86-73-7	N.D.	0.00077	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00077	1
10722	Naphthalene	91-20-3	0.0050	0.00077	1
10722	Phenanthrene	85-01-8	N.D.	0.00077	1
10722	Pyrene	129-00-0	N.D.	0.00077	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	1.0	0.6	28.09
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	28.09
05878	Ethylbenzene	100-41-4	N.D.	0.006	28.09
05878	Toluene	108-88-3	N.D.	0.006	28.09
05878	Total Xylenes	1330-20-7	N.D.	0.02	28.09
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.8	1
01738	C25-C36 RRO	n.a.	35	5.8	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	2.58	0.0120	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	13.4	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-8-18.0-20.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072248
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 11:45 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

F8-18 SDG#: LSS19-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 11:36	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 11:45	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10245A31A	09/02/2010 14:31	Marie D John	28.09
05878	BTEX Soil	SW-846 8021B	1	10245A31A	09/02/2010 14:31	Marie D John	28.09
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 22:57	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:56	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Sample Description: BD-2 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072249
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FRBD2 SDG#: LSS19-06FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00082	1
10722	Acenaphthylene	208-96-8	N.D.	0.00041	1
10722	Anthracene	120-12-7	N.D.	0.00041	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00082	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00082	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00082	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00082	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00082	1
10722	Chrysene	218-01-9	N.D.	0.00041	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00082	1
10722	Fluoranthene	206-44-0	N.D.	0.00082	1
10722	Fluorene	86-73-7	N.D.	0.00082	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00082	1
10722	Naphthalene	91-20-3	0.033	0.00082	1
10722	Phenanthrene	85-01-8	N.D.	0.00082	1
10722	Pyrene	129-00-0	N.D.	0.00082	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.7	28.73
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.007	28.73
05878	Ethylbenzene	100-41-4	N.D.	0.007	28.73
05878	Toluene	108-88-3	N.D.	0.007	28.73
05878	Total Xylenes	1330-20-7	N.D.	0.02	28.73
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	6.2	1
01738	C25-C36 RRO	n.a.	15	6.2	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	7.10	0.0127	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	19.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: BD-2 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072249
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FRBD2 SDG#: LSS19-06FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 12:07	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 00:00	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10245A31B	09/03/2010 10:10	Elizabeth J Marin	28.73
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201024522233	09/02/2010 12:34	Larry E Bevins	n.a.
05878	BTEX Soil	SW-846 8021B	1	10245A31B	09/03/2010 10:10	Elizabeth J Marin	28.73
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 23:24	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:58	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Sample Description: MW-7-8.0-10.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072250
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 16:15 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR7-8 SDG#: LSS19-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00091	1
10722	Acenaphthylene	208-96-8	N.D.	0.00045	1
10722	Anthracene	120-12-7	N.D.	0.00045	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00091	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00091	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00091	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00091	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00091	1
10722	Chrysene	218-01-9	N.D.	0.00045	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00091	1
10722	Fluoranthene	206-44-0	N.D.	0.00091	1
10722	Fluorene	86-73-7	N.D.	0.00091	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00091	1
10722	Naphthalene	91-20-3	N.D.	0.00091	1
10722	Phenanthrene	85-01-8	N.D.	0.00091	1
10722	Pyrene	129-00-0	N.D.	0.00091	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.9	32.13
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.009	32.13
05878	Ethylbenzene	100-41-4	N.D.	0.009	32.13
05878	Toluene	108-88-3	N.D.	0.009	32.13
05878	Total Xylenes	1330-20-7	N.D.	0.03	32.13
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	6.8	1
01738	C25-C36 RRO	n.a.	20	6.8	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	12.9	0.0136	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	26.4	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

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Analysis Report

Sample Description: MW-7-8.0-10.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072250
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 16:15 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR7-8 SDG#: LSS19-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 12:39	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 16:15	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10245A31A	09/02/2010 15:08	Marie D John	32.13
05878	BTEX Soil	SW-846 8021B	1	10245A31A	09/02/2010 15:08	Marie D John	32.13
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/03/2010 23:51	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 14:59	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Sample Description: MW-7-18.0-20.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072251
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 16:45 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR718 SDG#: LSS19-08*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00076	1
10722	Acenaphthylene	208-96-8	N.D.	0.00038	1
10722	Anthracene	120-12-7	N.D.	0.00038	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00076	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00076	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00076	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00076	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00076	1
10722	Chrysene	218-01-9	N.D.	0.00038	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00076	1
10722	Fluoranthene	206-44-0	N.D.	0.00076	1
10722	Fluorene	86-73-7	N.D.	0.00076	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00076	1
10722	Naphthalene	91-20-3	N.D.	0.00076	1
10722	Phenanthrene	85-01-8	N.D.	0.00076	1
10722	Pyrene	129-00-0	N.D.	0.00076	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.7	29.02
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.007	29.02
05878	Ethylbenzene	100-41-4	N.D.	0.007	29.02
05878	Toluene	108-88-3	N.D.	0.007	29.02
05878	Total Xylenes	1330-20-7	N.D.	0.02	29.02
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.7	1
01738	C25-C36 RRO	n.a.	11	5.7	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	3.93	0.0114	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	11.7	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Lancaster Laboratories

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Analysis Report

Sample Description: MW-7-18.0-20.0 Grab Soil Sample
Facility# 306443
FIA, Gate 28, West Ramp - Fairbanks, AK

LLI Sample # SW 6072251
LLI Group # 1209536
Account # 11964

Project Name: 306443

Collected: 08/26/2010 16:45 by MLS

Submitted: 08/28/2010 10:00
Reported: 09/17/2010 15:13
Discard: 10/18/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FR718 SDG#: LSS19-08*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10243SLB026	09/10/2010 13:10	Mark A Clark	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10243SLB026	08/31/2010 09:25	Kerrie A Freeburn	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024222173	08/26/2010 16:45	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10245A31A	09/02/2010 15:45	Marie D John	29.02
05878	BTEX Soil	SW-846 8021B	1	10245A31A	09/02/2010 15:45	Marie D John	29.02
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102440017A	09/04/2010 00:19	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102440017A	09/02/2010 08:00	Deborah M Zimmerman	1
06135	Lead	SW-846 6020	1	102426150005A	09/03/2010 15:01	Choon Y Tian	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102426150005	08/31/2010 09:10	Denise K Conners	1
00111	Moisture	SM20 2540 G	1	10244820002B	09/01/2010 18:12	Scott W Freisher	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Group Number: 1209536
Reported: 09/17/10 at 03:13 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 10243SLB026	Sample number(s): 6072244-6072251							
Acenaphthene	N.D.	0.00067	mg/kg	95		73-104		
Acenaphthylene	N.D.	0.00033	mg/kg	96		67-100		
Anthracene	N.D.	0.00033	mg/kg	93		69-107		
Benzo(a)anthracene	N.D.	0.00067	mg/kg	94		74-112		
Benzo(a)pyrene	N.D.	0.00067	mg/kg	99		70-109		
Benzo(b)fluoranthene	N.D.	0.00067	mg/kg	111		73-123		
Benzo(g,h,i)perylene	N.D.	0.00067	mg/kg	98		62-128		
Benzo(k)fluoranthene	N.D.	0.00067	mg/kg	96		65-130		
Chrysene	N.D.	0.00033	mg/kg	99		79-111		
Dibenz(a,h)anthracene	N.D.	0.00067	mg/kg	97		69-128		
Fluoranthene	N.D.	0.00067	mg/kg	95		78-114		
Fluorene	N.D.	0.00067	mg/kg	100		75-110		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	mg/kg	99		71-127		
Naphthalene	N.D.	0.00067	mg/kg	97		67-105		
Phenanthrene	N.D.	0.00067	mg/kg	100		76-109		
Pyrene	N.D.	0.00067	mg/kg	99		71-109		
Batch number: 10243A33B	Sample number(s): 6072246-6072247							
Benzene	N.D.	0.005	mg/kg	98	92	76-118	6	30
Ethylbenzene	N.D.	0.005	mg/kg	100	100	77-115	0	30
Toluene	N.D.	0.005	mg/kg	102	102	80-120	0	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	73	78	60-120	6	20
Total Xylenes	N.D.	0.02	mg/kg	98	99	78-115	1	30
Batch number: 10245A31A	Sample number(s): 6072244-6072245,6072248,6072250-6072251							
Benzene	N.D.	0.005	mg/kg	104	94	76-118	10	30
Ethylbenzene	N.D.	0.005	mg/kg	102	104	77-115	2	30
Toluene	N.D.	0.005	mg/kg	98	98	80-120	0	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	90	95	60-120	5	20
Total Xylenes	N.D.	0.02	mg/kg	105	109	78-115	3	30
Batch number: 10245A31B	Sample number(s): 6072249							
Benzene	N.D.	0.005	mg/kg	104	94	76-118	10	30
Ethylbenzene	N.D.	0.005	mg/kg	102	104	77-115	2	30
Toluene	N.D.	0.005	mg/kg	98	98	80-120	0	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	90	95	60-120	5	20
Total Xylenes	N.D.	0.02	mg/kg	105	109	78-115	3	30
Batch number: 102440017A	Sample number(s): 6072244-6072251							
C10-<C25 DRO	N.D.	5.0	mg/kg	101	97	75-125	4	50
C25-C36 RRO	N.D.	5.0	mg/kg	115	115	75-125	0	50
Batch number: 102426150005A	Sample number(s): 6072244-6072251							
Lead	N.D.	0.0102	mg/kg	101		80-120		
Batch number: 10244820002B	Sample number(s): 6072244-6072251							

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209536
Reported: 09/17/10 at 03:13 PM

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 10243SLB026	Sample number(s): 6072244-6072251 UNSPK: P072254								
Acenaphthene	346 (2)	92 (2)	44-122	12	30				
Acenaphthylene	736 (2)	-50 (2)	23-143	62*	30				
Anthracene	100	83	34-161	13	30				
Benzo(a)anthracene	114	125	20-138	9	30				
Benzo(a)pyrene	88	94	34-156	6	30				
Benzo(b)fluoranthene	78	70	43-155	5	30				
Benzo(g,h,i)perylene	96	100	33-141	4	30				
Benzo(k)fluoranthene	98	113	49-145	15	30				
Chrysene	73	80	41-126	6	30				
Dibenz(a,h)anthracene	67	73	10-157	9	30				
Fluoranthene	83	93	35-138	7	30				
Fluorene	321 (2)	-138 (2)	34-142	15	30				
Indeno(1,2,3-cd)pyrene	83	88	10-164	5	30				
Naphthalene	-4561 (2)	-5000 (2)	35-147	1	30				
Phenanthrene	108 (2)	98 (2)	37-134	1	30				
Pyrene	76	84	31-120	5	30				
Batch number: 102440017A	Sample number(s): 6072244-6072251 UNSPK: P072252								
C10-<C25 DRO	104	104	60-140	0	50				
C25-C36 RRO	101	100	60-140	1	50				
Batch number: 102426150005A	Sample number(s): 6072244-6072251 UNSPK: P072252 BKG: P072252								
Lead	129*	107	75-125	7	20	5.45	5.24	4	20
Batch number: 10244820002B	Sample number(s): 6072244-6072251 BKG: P068725								
Moisture						2.6	2.3	12 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH SIM 8270 Soil Microwave
Batch number: 10243SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6072244	92	94	84
6072245	95	110	85
6072246	15375*	508*	110

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209536
Reported: 09/17/10 at 03:13 PM

Surrogate Quality Control

6072247	1239*	133*	97
6072248	87	111	87
6072249	93	100	91
6072250	102	82	78
6072251	106	100	101
Blank	109	104	100
LCS	109	103	91
MS	27141*	1195*	78
MSD	27994*	1067*	85
Limits:	53-152	52-132	51-141

Analysis Name: TPH-GRO AK soil C6-C10
Batch number: 10243A33B

	Trifluorotoluene-F	Trifluorotoluene-P
6072246	110	69*
6072247	125*	83
Blank	83	93
LCS	84	91
LCSD	90	89
Limits:	60-120	73-117

Analysis Name: TPH-GRO AK soil C6-C10
Batch number: 10245A31A

	Trifluorotoluene-F	Trifluorotoluene-P
6072244	74	74
6072245	77	96
6072248	77	80
6072250	65	83
6072251	78	80
Blank	87	91
LCS	97	92
LCSD	102	85
Limits:	60-120	73-117

Analysis Name: TPH-GRO AK soil C6-C10
Batch number: 10245A31B

	Trifluorotoluene-F	Trifluorotoluene-P
6072249	81	86
Blank	91	90
LCS	97	92
LCSD	102	85
Limits:	60-120	73-117

Analysis Name: TPH-DRO/RRO (AK)
Batch number: 102440017A

	Orthoterphenyl	n-Triacontane-d62
6072244	98	94
6072245	96	100
6072246	113	118

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209536
Reported: 09/17/10 at 03:13 PM

Surrogate Quality Control

6072247	147	106
6072248	96	95
6072249	98	100
6072250	96	97
6072251	92	96
Blank	97	103
LCS	95	88
LCSD	92	84
MS	93	83
MSD	92	83
Limits:	50-150	50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

014577

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11964 Sample #: 6072244-51 SCR#:

C#1209536

Facility #: 306443
Site Address: Gate 28, West Ramp, FIA
Chevron PM: Dan Carrier Lead Consultant: ARCADIS
Consultant/Office: ARCADIS/Seattle
Consultant Prj. Mgr.: Greg Montgomery
Consultant Phone #: 206-726-4742 Fax #: 206-325-8218
Sampler: MLS
Service Order #: NWRTB-0306443-1-LAB ☐ Non SAR:

Analyses Requested

Preservation Codes

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds
8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Water	Oil ☐ Air ☐	Total Number of Containers	BTEX + ~~MTBE~~ 8021 ☐ 8260 ☐ Naphth ☐	8260 full scan	Oxygenates	~~TPH~~ GRO AK 101	~~DRO~~ Extended Rng. AK 102 ☐ Silica Gel Cleanup	Lead Total ☐ Diss. ☒ Method 6020 EPA	VPH/EPH	NWTPH H HCID ☐ quantification	Moisture	RRO (AK 103)	PAHs (8270 SIM)
MW-9-10.0-12.0	8/26/10	0825	X		X			3	X			X	X	X			X	X	X
MW-9-18.0-20.0	8/26/10	0905	X		X			3	X			X	X	X			X	X	X
MW-8-8.0-10.0	8/26/10	1100	X		X			3	X			X	X	X			X	X	X
MW-8-10.0-12.0	8/26/10	1135	X		X			3	X			X	X	X			X	X	X
MW-8-18.0-20.0	8/26/10	1145	X		X			3	X			X	X	X			X	X	X
BD-2	8/26/10		X		X			3	X			X	X	X			X	X	X
MW-7-8.0-10.0	8/26/10	1615	X		X			3	X			X	X	X			X	X	X
MW-7-18.0-20.0	8/26/10	1645	X		X			3	X			X	X	X			X	X	X

Comments / Remarks

MeOH = O Preservative

Turnaround Time Requested (TAT) (please circle)

STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)

QC Summary Type I - Full
Type VI (Raw Data) Disk / EDD
WIP (RWQCB) Standard Format
Disk _____ Other.

	Date	Time		Date	Time
Relinquished by:	8/27	0800	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	8/28/10	1000
Temperature Upon Receipt 1.5 C°			Custody Seals Intact? Yes No		

Lancaster Laboratories

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Chevron

Date of Receipt: 8/28/10

Time of Receipt: 1000

Source Code: SU-1

Unpacker Emp. No.: 2241

Shipping Container Sealed: YES NO

Custody Seal Present * : YES NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: Chilled Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	9422	1.8	TB	WI	Y	L	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: Ø

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	8/28/10	1250	Unpacking to storage
Tammy Delcl	8/28/10	1315	Place in Storage or (Entry)
			Entry
			Entry

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

September 23, 2010

Project: 306443

Submittal Date: 08/31/2010
Group Number: 1209765
SDG: LSS26
PO Number: 0015060864
Release Number: CARRIER
State of Sample Origin: AK

Client Sample Description	Lancaster Labs (LLI) #
MW-6-18.0-20.0 Grab Soil Sample	6073260
MW-10-8.0-10.0 Grab Soil Sample	6073261
MW-10-18.0-20.0 Grab Soil Sample	6073262
BD-3 Grab Soil Sample	6073263

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Arcadis	Attn: Greg Montgomery
ELECTRONIC COPY TO	Arcadis	Attn: Russ Greisler
1 COPY TO	Data Package Group	

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

Barbara F. Reedy
Senior Specialist

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: MW-6-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073260
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 09:40 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW620 SDG#: LSS26-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00073	1
10722	Acenaphthylene	208-96-8	N.D.	0.00037	1
10722	Anthracene	120-12-7	N.D.	0.00037	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00073	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00073	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00073	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00073	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00073	1
10722	Chrysene	218-01-9	N.D.	0.00037	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00073	1
10722	Fluoranthene	206-44-0	N.D.	0.00073	1
10722	Fluorene	86-73-7	N.D.	0.00073	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00073	1
10722	Naphthalene	91-20-3	N.D.	0.00073	1
10722	Phenanthrene	85-01-8	N.D.	0.00073	1
10722	Pyrene	129-00-0	N.D.	0.00073	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.6	28.09
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	28.09
05878	Ethylbenzene	100-41-4	N.D.	0.006	28.09
05878	Toluene	108-88-3	N.D.	0.006	28.09
05878	Total Xylenes	1330-20-7	N.D.	0.02	28.09
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.5	1
01738	C25-C36 RRO	n.a.	N.D.	5.5	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	3.88	0.0113	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	9.0	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: MW-6-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073260
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 09:40 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW620 SDG#: LSS26-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10244SLB026	09/21/2010 02:45	Gregory J Drahovsky	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10244SLB026	09/01/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024322204	08/27/2010 09:40	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10246A31A	09/07/2010 21:52	Marie D John	28.09
05878	BTEX Soil	SW-846 8021B	1	10246A31A	09/07/2010 21:52	Marie D John	28.09
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102450014A	09/08/2010 09:57	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102450014A	09/03/2010 03:00	Sherry L Morrow	1
06135	Lead	SW-846 6020	1	102466150001A	09/07/2010 20:33	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102466150001	09/06/2010 21:24	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10244820010A	09/02/2010 17:53	Scott W Freisher	1

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Analysis Report

Sample Description: MW-10-8.0-10.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073261
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 11:40 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

M1010 SDG#: LSS26-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00091	1
10722	Acenaphthylene	208-96-8	N.D.	0.00046	1
10722	Anthracene	120-12-7	N.D.	0.00046	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00091	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00091	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00091	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00091	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00091	1
10722	Chrysene	218-01-9	N.D.	0.00046	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00091	1
10722	Fluoranthene	206-44-0	N.D.	0.00091	1
10722	Fluorene	86-73-7	N.D.	0.00091	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00091	1
10722	Naphthalene	91-20-3	0.0013	0.00091	1
10722	Phenanthrene	85-01-8	0.0010	0.00091	1
10722	Pyrene	129-00-0	N.D.	0.00091	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.9	34.21
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.009	34.21
05878	Ethylbenzene	100-41-4	N.D.	0.009	34.21
05878	Toluene	108-88-3	0.02	0.009	34.21
05878	Total Xylenes	1330-20-7	N.D.	0.03	34.21
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	6.9	1
01738	C25-C36 RRO	n.a.	42	6.9	1

C25-C36 was detected in the method blank at a concentration of 9.6 mg/kg. Results from the reextraction are within the limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. Similar results were obtained in both extracts.

Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	8.45	0.0143	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	27.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

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Analysis Report

Sample Description: MW-10-8.0-10.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073261
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 11:40 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

M1010 SDG#: LSS26-02

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10244SLB026	09/21/2010 11:10	Joseph M Gambler	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10244SLB026	09/01/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024322204	08/27/2010 11:40	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10246A31A	09/07/2010 22:28	Marie D John	34.21
05878	BTEX Soil	SW-846 8021B	1	10246A31A	09/07/2010 22:28	Marie D John	34.21
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102450014A	09/08/2010 10:26	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102450014A	09/03/2010 03:00	Sherry L Morrow	1
06135	Lead	SW-846 6020	1	102466150001A	09/07/2010 20:38	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102466150001	09/06/2010 21:24	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10244820010A	09/02/2010 17:53	Scott W Freisher	1

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Analysis Report

Sample Description: MW-10-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073262
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 12:20 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

M1020 SDG#: LSS26-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00076	1
10722	Acenaphthylene	208-96-8	N.D.	0.00038	1
10722	Anthracene	120-12-7	N.D.	0.00038	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00076	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00076	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00076	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00076	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00076	1
10722	Chrysene	218-01-9	N.D.	0.00038	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00076	1
10722	Fluoranthene	206-44-0	N.D.	0.00076	1
10722	Fluorene	86-73-7	N.D.	0.00076	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00076	1
10722	Naphthalene	91-20-3	N.D.	0.00076	1
10722	Phenanthrene	85-01-8	N.D.	0.00076	1
10722	Pyrene	129-00-0	N.D.	0.00076	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.7	28.64
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.007	28.64
05878	Ethylbenzene	100-41-4	N.D.	0.007	28.64
05878	Toluene	108-88-3	N.D.	0.007	28.64
05878	Total Xylenes	1330-20-7	N.D.	0.02	28.64
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.7	1
01738	C25-C36 RRO	n.a.	17	5.7	1

C25-C36 was detected in the method blank at a concentration of 9.6 mg/kg. Results from the reextraction are within the limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. The C25-C36 result for the reextract is ND.

Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	3.74	0.0115	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	12.7	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

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Analysis Report

Sample Description: MW-10-18.0-20.0 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073262
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 12:20 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

M1020 SDG#: LSS26-03

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10244SLB026	09/21/2010 03:48	Gregory J Drahovsky	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10244SLB026	09/01/2010 23:00	Patricia L Foreman	1
06119	GC - Field Preserved (AK-101)	AK 101	1	201024322204	08/27/2010 12:20	Client Supplied	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10246A31A	09/07/2010 23:05	Marie D John	28.64
05878	BTEX Soil	SW-846 8021B	1	10246A31A	09/07/2010 23:05	Marie D John	28.64
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102450014A	09/08/2010 10:54	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102450014A	09/03/2010 03:00	Sherry L Morrow	1
06135	Lead	SW-846 6020	1	102466150001A	09/07/2010 20:40	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102466150001	09/06/2010 21:24	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10244820010A	09/02/2010 17:53	Scott W Freisher	1

Lancaster Laboratories

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Analysis Report

Sample Description: BD-3 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073263
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MWBD3 SDG#: LSS26-04FD*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C SIM**		**mg/kg**	**mg/kg**	
10722	Acenaphthene	83-32-9	N.D.	0.00077	1
10722	Acenaphthylene	208-96-8	N.D.	0.00038	1
10722	Anthracene	120-12-7	N.D.	0.00038	1
10722	Benzo(a)anthracene	56-55-3	N.D.	0.00077	1
10722	Benzo(a)pyrene	50-32-8	N.D.	0.00077	1
10722	Benzo(b)fluoranthene	205-99-2	N.D.	0.00077	1
10722	Benzo(g,h,i)perylene	191-24-2	N.D.	0.00077	1
10722	Benzo(k)fluoranthene	207-08-9	N.D.	0.00077	1
10722	Chrysene	218-01-9	N.D.	0.00038	1
10722	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00077	1
10722	Fluoranthene	206-44-0	N.D.	0.00077	1
10722	Fluorene	86-73-7	N.D.	0.00077	1
10722	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00077	1
10722	Naphthalene	91-20-3	N.D.	0.00077	1
10722	Phenanthrene	85-01-8	N.D.	0.00077	1
10722	Pyrene	129-00-0	N.D.	0.00077	1
GC Volatiles	**AK 101**		**mg/kg**	**mg/kg**	
01451	TPH-GRO AK soil C6-C10	n.a.	N.D.	0.6	27.1
GC Volatiles	**SW-846 8021B**		**mg/kg**	**mg/kg**	
05878	Benzene	71-43-2	N.D.	0.006	27.1
05878	Ethylbenzene	100-41-4	N.D.	0.006	27.1
05878	Toluene	108-88-3	N.D.	0.006	27.1
05878	Total Xylenes	1330-20-7	N.D.	0.02	27.1
GC Extractable TPH	**AK 102/AK 103 04/08/02**		**mg/kg**	**mg/kg**	
01738	C10-<C25 DRO	n.a.	N.D.	5.8	1
01738	C25-C36 RRO	n.a.	N.D.	5.8	1
Metals	**SW-846 6020**		**mg/kg**	**mg/kg**	
06135	Lead	7439-92-1	2.96	0.0118	2
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	13.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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Analysis Report

Sample Description: BD-3 Grab Soil Sample
Facility# 306443
Gate 28, West Ramp, FIA - Fairbanks, AK

LLI Sample # SW 6073263
LLI Group # 1209765
Account # 11964

Project Name: 306443

Collected: 08/27/2010 by MLS

Submitted: 08/31/2010 09:00
Reported: 09/23/2010 08:48
Discard: 10/24/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MWBD3 SDG#: LSS26-04FD*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10722	PAH SIM 8270 Soil Microwave	SW-846 8270C SIM	1	10244SLB026	09/21/2010 04:20	Gregory J Drahovsky	1
10810	BNA Soil Microwave SIM PAH	SW-846 3546	1	10244SLB026	09/01/2010 23:00	Patricia L Foreman	1
01451	TPH-GRO AK soil C6-C10	AK 101	1	10246A31A	09/07/2010 23:41	Marie D John	27.1
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201024422223	09/01/2010 22:10	Scott W Freisher	n.a.
05878	BTEX Soil	SW-846 8021B	1	10246A31A	09/07/2010 23:41	Marie D John	27.1
01738	TPH-DRO/RRO (AK)	AK 102/AK 103 04/08/02	1	102450014A	09/08/2010 11:50	Heather E Williams	1
11223	AK DRO/ORO Soils Extraction	AK 102/AK 103 04/08/02	1	102450014A	09/03/2010 03:00	Sherry L Morrow	1
06135	Lead	SW-846 6020	1	102466150001A	09/07/2010 20:42	David K Beck	2
06150	ICP/MS SW-846 Solid Digest	SW-846 3050B	1	102466150001	09/06/2010 21:24	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	10244820010A	09/02/2010 17:53	Scott W Freisher	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Group Number: 1209765
Reported: 09/23/10 at 08:48 AM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 10244SLB026	Sample number(s): 6073260-6073263							
Acenaphthene	N.D.	0.00067	mg/kg	87		73-104		
Acenaphthylene	N.D.	0.00033	mg/kg	93		67-100		
Anthracene	N.D.	0.00033	mg/kg	87		69-107		
Benzo(a)anthracene	N.D.	0.00067	mg/kg	91		74-112		
Benzo(a)pyrene	N.D.	0.00067	mg/kg	88		70-109		
Benzo(b)fluoranthene	N.D.	0.00067	mg/kg	77		73-123		
Benzo(g,h,i)perylene	N.D.	0.00067	mg/kg	87		62-128		
Benzo(k)fluoranthene	N.D.	0.00067	mg/kg	84		65-130		
Chrysene	N.D.	0.00033	mg/kg	95		79-111		
Dibenz(a,h)anthracene	N.D.	0.00067	mg/kg	78		69-128		
Fluoranthene	N.D.	0.00067	mg/kg	93		78-114		
Fluorene	N.D.	0.00067	mg/kg	87		75-110		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	mg/kg	80		71-127		
Naphthalene	N.D.	0.00067	mg/kg	85		67-105		
Phenanthrene	N.D.	0.00067	mg/kg	85		76-109		
Pyrene	N.D.	0.00067	mg/kg	74		71-109		
Batch number: 10246A31A	Sample number(s): 6073260-6073263							
Benzene	N.D.	0.005	mg/kg	90	98	76-118	9	30
Ethylbenzene	N.D.	0.005	mg/kg	96	104	77-115	8	30
Toluene	N.D.	0.005	mg/kg	92	100	80-120	8	30
TPH-GRO AK soil C6-C10	N.D.	0.5	mg/kg	82	92	60-120	12	20
Total Xylenes	N.D.	0.02	mg/kg	99	107	78-115	7	30
Batch number: 102450014A	Sample number(s): 6073260-6073263							
C10-<C25 DRO	N.D.	5.0	mg/kg	101	110	75-125	8	50
C25-C36 RRO	9.6	5.0	mg/kg	112	114	75-125	2	50
Batch number: 102466150001A	Sample number(s): 6073260-6073263							
Lead	0.0121	0.0104	mg/kg	106		80-120		
Batch number: 10244820010A	Sample number(s): 6073260-6073263							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 10244SLB026	Sample number(s): 6073260-6073263 UNSPK: P073232								

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209765
Reported: 09/23/10 at 08:48 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Acenaphthene	-33*	119	44-122	38*	30				
Acenaphthylene	238*	303*	23-143	24	30				
Anthracene	110	83	34-161	28	30				
Benzo(a)anthracene	106	105	20-138	1	30				
Benzo(a)pyrene	109	110	34-156	0	30				
Benzo(b)fluoranthene	96	100	43-155	4	30				
Benzo(g,h,i)perylene	107	110	33-141	3	30				
Benzo(k)fluoranthene	103	102	49-145	1	30				
Chrysene	109	108	41-126	1	30				
Dibenz(a,h)anthracene	106	105	10-157	1	30				
Fluoranthene	114	119	35-138	4	30				
Fluorene	-95 (2)	142 (2)	34-142	41*	30				
Indeno(1,2,3-cd)pyrene	107	108	10-164	1	30				
Naphthalene	-7968 (2)	2772 (2)	35-147	65*	30				
Phenanthrene	23*	105	37-134	35*	30				
Pyrene	109	116	31-120	6	30				
Batch number: 102450014A	Sample number(s): 6073260-6073263 UNSPK: P073246								
C10-<C25 DRO	2851 (2)	5443 (2)	60-140	18	50				
C25-C36 RRO	0*	0*	60-140	0	50				
Batch number: 102466150001A	Sample number(s): 6073260-6073263 UNSPK: P073250 BKG: P073250								
Lead	99	109	75-125	4	20	3.67	3.70	1	20
Batch number: 10244820010A	Sample number(s): 6073260-6073263 BKG: P073237								
Moisture						25.9	24.6	5	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH SIM 8270 Soil Microwave
Batch number: 10244SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6073260	108	111	89
6073261	121	85	84
6073262	75	70	82
6073263	102	109	89
Blank	97	98	91
LCS	108	96	84
MS	6478*	141*	92
MSD	9523*	135*	90
Limits:	53-152	52-132	51-141

Analysis Name: TPH-GRO AK soil C6-C10

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1209765
Reported: 09/23/10 at 08:48 AM

Surrogate Quality Control

Batch number: 10246A31A

	Trifluorotoluene-F	Trifluorotoluene-P
6073260	75	78
6073261	64	67*
6073262	71	75
6073263	77	97
Blank	86	96
LCS	89	84
LCSD	99	86
Limits:	60-120	73-117

Analysis Name: TPH-DRO/RRO (AK)
Batch number: 102450014A

	Orthoterphenyl	n-Triacontane-d62
6073260	101	103
6073261	106	104
6073262	101	100
6073263	103	106
Blank	100	100
LCS	89	80
LCSD	95	87
MS	84	110
MSD	82	112
Limits:	50-150	50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

014576

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11964 Sample #: 60732160-163 SCR#:

Group# 1209765

Facility #: 306443
Site Address: Gate 2E, West Ramp, FIA
Chevron PM: Dan Carrier Lead Consultant: ARCADIS
Consultant/Office: ARCADIS / Seattle
Consultant Prj. Mgr.: Greg Montgomery
Consultant Phone #: 206-726-4742 Fax #: 206-325-8218
Sampler: MLS
Service Order #: NWRTB-030643-1-LAB ☐ Non SAR:

Analyses Requested

Preservation Codes

Matrix

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (☐ Potable ☐ NPDES)	Oil ☐ Air ☐	Total Number of Containers	BTEX + MTBE 8021 ☐ 8260 ☐ Naphth ☐	8260 full scan	Oxygenates ___	TPH-G + GRO AK 101	DRO + RRO Extended Rng. ☐ Silica Gel Cleanup ☐ AK 103	Lead Total ☐ Diss. ☐ Method 6010B	VPH/EPH	NWTPH H HCID ☐ quantification	Moisture	RRO AK 103	PAHs (8270C SIM)
MW-6-18.0-20.0	8/27/10	0940	X		X			3	X			X	X	X			X	X	X
MW-10-8.0-10.0	8/27/10	1140	X		X			3	X			X	X	X			X	X	X
MW-10-18.0-20.0	8/27/10	1220	X		X			3	X			X	X	X			X	X	X
BD-3	8/27/10	—	X		X			3	X			X	X	X			X	X	X

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks

O = MeOH Preservative

Turnaround Time Requested (TAT) (please circle)

STD. TAT | 72 hour | 48 hour
24 hour | 4 day | 5 day

Data Package Options (please circle if required)

QC Summary | Type I - Full
Type VI (Raw Data) | Disk / EDD
WIP (RWQCB) | Standard Format
Disk | _____ Other.

	Date	Time		Date	Time
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	8/31/10	0800

Temperature Upon Receipt 2.5 C°

Custody Seals Intact? Yes No

Lancaster Laboratories

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Chevron

Date of Receipt: 8/31/10

Time of Receipt: 0900

Source Code: 50-1

Unpacker Emp. No.: 2241

Shipping Container Sealed: (YES) NO

Custody Seal Present * : (YES) NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	9422	2.5	TB	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: Ø

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	8/31/10	1345	Unpacking / Storage
Mary Beth Mead	8/31/10	1358	Place in Storage or (Entry)
			Entry
			Entry

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

ARCADIS

Appendix D

Groundwater Sample Field Data Sheets

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045527 Well ID GET-3 Date 9/23/10

Project Name/Location Gate 28 FIA Unocal Weather 40° Sunny

Measuring Pt. Description TOC Screen Setting (ft-bmp) — Casing Diameter (in.) 2" Well Material X PVC ___ SS

Static Water Level (ft-btoc) 8.16 Total Depth (ft-btoc) 11.40 Water Column/ Gallons in Well 3.24 Initial PID Reading (ppm) 283

TOC Elevation — Pump Intake (ft-btoc) ___ Purge Method: Peristaltic / Centrifugal / Submersible / Other ___ Sample Method Low Flow

Pump On/Off — Volumes Purged 1.56 max actual

Sample Time: Label 1550 Start 1515 End 1550 Replicate/ Code No. — Sampled by D Beaudoin

	ml	0.1	3%	10%	10%	10%	10%

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
15:15	0	170	8.20	0	6.26	770	2.52	20.42	10.29	-86.5	clear	slight sulfide
15:18	3	170	8.22	510	6.45	763	2.46	16.15	9.82	-105.9	clear	" "
15:22	4	170	8.22	1190	6.51	772	2.41	7.63	9.52	-107.1	clear	" "
15:26	4	170	8.22	1870	6.54	786	2.30	3.91	9.47	-108.7	clear	" "
15:30	4	170	8.22	2550	6.54	795	2.21	3.52	9.69	-108.8	clear	" "
15:34	4	185	8.22	3230	6.53	792	2.19	3.35	9.51	-110.0	clear	" "
15:38	4	195	8.22	3910	6.55	801	1.91	2.49	9.52	-111.7	—	—
15:42	4	185	8.22	4590	6.51	807	1.70	2.47	9.51	-111.7	—	—
15:46	4	195	8.22	5270	6.50	811	1.58	2.42	9.50	-111.6	—	—
15:50	4	195	8.22	5950	6.49	813	1.55	2.39	9.49	-111.5	—	—
15:50	Sample	Collection		1.31 gallons purged								

Constituents Sampled	Container	Number	Preservative
GRO/BTEX	40ml VOA	3	HCl
DRO/RRO	1l amber	2	HCl
Dissolved Pb	500ml	1	

Well Casing Volumes

Gallons/Foot 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: in prk lot Well Locked at Arrival: Yes / No

Condition of Well: good Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well:

New Samp Form 9/23/2010

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0055U7 Well ID GEI-2 Date 9/23/10

Project Name/Location Gate 25 FTA Unural Weather 40° Windy Sunny

Measuring Pt. Description b:b TOC Screen Setting (ft-bmp) — Casing Diameter (in.) 2" Well Material X PVC ___ SS

Static Water Level (ft-btoc) 8.25 Total Depth (ft-btoc) 17.15 Water Column/ Gallons in Well 8.9 Initial PID Reading (ppm) 1.3

TOC Elevation — Pump Intake (ft-btoc) — Purge Method: Peristaltic Centrifugal — Submersible — Other — Sample Method Low Flow

Pump On/Off — Volumes Purged 4.27 max

Sample Time: Label 1600 Start 15:30 End 16:00 Replicate/ Code No. — Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
15:30	0	185	8.27	0	6.75	0.809	—	2.03	10.16	-33.5	—	—
15:35	5	185	8.27	<.5	6.74	0.783	9.91	0.96	9.87	-94.5	—	—
15:40	10	185	8.27	<.5	6.74	0.735	9.96	0.94	9.98	-100.3	—	—
15:45	15	185	8.27	0.5	6.75	0.684	9.91	0.73	10.01	-101.4	—	—
15:48	18	185	8.27	<0.75	6.76	0.668	9.90	0.75	10.17	-107.3	—	—
15:51	21	185	8.27	<0.75	6.76	0.664	9.85	0.65	10.11	-111.3	—	—
15:54	24	185	8.27	0.75	6.75	0.662	9.91	0.60	10.15	-113.4	—	—
	sampled @ 16:00											

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	VOA 40 ml	2	HCl
Dissolved Pb	Poly 500 ml	1	NP
DRO/RRO	Amber 1 liter	2	HCl

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: prk lot grass

Condition of Well: good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well:

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. 30045507 | Well ID MW-2 | Date 9-23-10

Project Name/Location Gate 28 FEA Unocal | Weather 70° sunny

Measuring Pt. Description TOC | Screen Setting (ft-bmp) — | Casing Diameter (in.) 2" | Well Material ✓ PVC / SS

Static Water Level (ft-btoc) 7.52 | Total Depth (ft-btoc) 18.26' | Water Column/ Gallons in Well 10.94' / 3 volumes 5.25 | Initial PID Reading (ppm) 1.4

TOC Elevation — | Pump Intake (ft-btoc) — | Purge Method: Peristaltic Pump / Centrifugal — / Submersible — / Other — | Sample Method Low Flow

Pump On/Off — | Volumes Purged 1.43

Sample Time: Label 1750 | Start 1714 | End 1750 | Replicate/ Code No. —

Sampled by DYG

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged (in 1)	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
17 14	3	185	7.56	555	6.76	624	1.41	1.56	10.51	-6.7	—	—
17 18	4	185	7.56	1295	6.69	614	1.37	0.89	10.67	1.4	—	—
17 22	4	185	7.56	2035	6.53	583	1.32	0.77	10.57	12.9	—	—
17 26	4	185	7.56	2775	6.51	580	1.11	0.80	10.49	14.9	—	—
17 30	4	1.85	7.56	3515	6.51	573	0.68	0.86	10.54	15.7	—	—
17 34	4	1.85	7.57	4255	6.52	561	0.52	0.97	10.16	16.6	—	—
17 38	4	1.85	7.57	4995	6.49	555	0.52	0.99	10.23	21.4	—	—
17 42	4	1.85	7.57	5735	6.49	550	0.55	0.95	10.26	22.9	—	—
17 46	4	1.85	7.59	6475	6.47	549	0.57	0.91	10.25	24.3	—	—
17 50	4	1.85	Sample Collection				1.43 gals purged				—	—

Constituents Sampled	Container	Number	Preservative
GRO / BTEX	40 mL VOA	3	HCl
DRO / RRO	1 Ltr Amber	2	HCl
~~Dissolve~~ Total Alkalinity	500 mL Plastic	1	—
Methane	40 mL VOA	2	HCl
Sulfate / Nitrate	40 mL VOA	2	—

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: | Well Locked at Arrival: Yes / No

Condition of Well: | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

GW Samp Form 9/23/2010

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID GEI-8 | Date 9/23/10

Project Name/Location Gate 28 Mocal | Weather 40° Windy

Measuring Pt. Description below TOC | Screen Setting (ft-bmp) — | Casing Diameter (in.) 2" | Well Material X PVC ___ SS

Static Water Level (ft-btoc) 8.80 | Total Depth (ft-btoc) 13.06 | Water Column/ Gallons in Well 4.26 | Initial PID Reading (ppm) 6.5

TOC Elevation — | Pump Intake (ft-btoc) ___ | Purge Method: Peristaltic | Sample Method LowFlow

Pump On/Off — | Volumes Purged 2.05 max | Centrifugal — | Submersible — | Other —

Sample Time: Label 17:35 | Start 17:05 | End 17:35 | Replicate/ Code No. — | Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
17:05	0	180	8.82	<.5	5.95	0.981	8.21	3.87	7.14	38.0	—	—
17:10	5	180	8.82	<.5	5.95	0.980	2.32	2.67	7.16	41.0	—	—
17:14	9	180	8.82	0.5	5.96	0.982	2.08	1.20	7.07	37.4	—	—
17:17	12	180	8.82	<0.75	5.972	0.980	2.20	0.97	7.10	33.1	—	—
17:20	15	180	8.82	0.75	6.02	0.975	1.83	0.89	7.19	19.5	—	—
17:23	18	180	8.82	<1	6.03	0.975	1.82	0.69	7.14	18.3	—	—
17:26	21	180	8.82	<1	6.03	0.975	1.84	0.60	7.13	12.6	—	—

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	40ml VOA	3	HCl
DRO/RRO	1L amber	2	HC
Dissolved Pb	500ml poly	1	NP
Sampled @ 17:35			

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | (2" = 0.16) | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: pit lot frontier

Condition of Well: good

Well Completion: (Flush Mount) / Stick Up

Well Locked at Arrival: (Yes) / No

Well Locked at Departure: (Yes) / No

Key Number To Well:

GW Samp Form 9/23/2010

MW-1 and MW-5 duplicate

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID MW-3 | Date 9/24/10

Project Name/Location Gate 28 Unocal #3X6443 | Weather Sunny 30°

Measuring Pt. Description Tic | Screen Setting (ft-bmp) — | Casing Diameter (in.) 2 | Well Material X PVC ___ SS

Static Water Level (ft-btoc) 9.08 | Total Depth (ft-btoc) 18.08 | Water Column/ Gallons in Well 9.00 | Initial PID Reading (ppm) 122

TOC Elevation — | Pump Intake (ft-btoc) — | Purge Method: Peristaltic, Centrifugal —, Submersible —, Other — | Sample Method Low Flow

Pump On/Off — | Volumes Purged 4.32 max, actual

Sample Time: Label 1007, Start 935, End 1005 | Replicate/ Code No. —

Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
09:35	0	180	9.08	0	6.69	0.604	0.58	0.55	5.13	-23.6	—	—
09:40	5	180	9.08	<.5	6.36	0.574	0.31	1.52	4.99	-29.6	—	—
09:45	10	180	9.08	0.5	6.42	0.570	0.25	1.62	4.93	-33.1	—	—
09:49	14	180	9.08	<0.75	6.46	0.569	0.28	1.69	4.89	-38.3	—	—
09:53	18	180	9.08	0.75	6.52	0.569	0.10	1.66	4.87	-43.1	—	—
09:57	22	180	9.08	<1	6.53	0.571	0.08	1.73	4.87	-48.1	—	—
10:01	26	180	9.08	~1.0	6.54	0.572	0.01	1.72	4.87	-49.5	—	—
10:05	30	180	9.08	~1.5	6.54	0.571	0.03	1.69	4.89	-50.1	—	—

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	40 ml VOA	3	HCl
DRO/RRO	1L amber	2	HCl
Sampled @ 10:07			

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; ~~1.5" = 0.09~~ 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: p/k lot | Well Locked at Arrival: Yes / No

Condition of Well: good | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID MW-4 | Date 9-24-10

Project Name/Location Gate 28 W. Ramp FIA Unocal | Weather 45° Sunny

Measuring Pt. Description below TOC | Screen Setting (ft-bmp) 7.95-17.95 | Casing Diameter (in.) 2" | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 8.33 | Total Depth (ft-btoc) 17.95 | Water Column/ Gallons in Well 9.28 (1 vol = 1.44 gals) | Initial PID Reading (ppm) 1.5

TOC Elevation — | Pump Intake (ft-btoc) 14 | Purge Method: Peristaltic / Centrifugal / Submersible / Other | Sample Method Low Flow

Pump On/Off — | Volumes Purged 1.53 gals

Sample Time: Label 10:30 | Start 9:46 | End 10:30 | Replicate/ Code No. —

Sampled by DGB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ mL Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
9:46	4	185	8.41	632	6.46	501	7.41	10.2	5.76	204.2	—	—
9:50	4	185	8.41	1204	6.51	496	5.57	12.24	5.60	195.7	—	—
9:54	4	185	8.41	1696	6.60	491	4.32	11.42	5.68	188.4	—	—
9:58	4	185	8.41	2528	6.62	489	3.97	10.12	5.69	186.4	—	—
10:02	4	185	8.41	3160	6.63	486	3.91	9.01	5.69	184.1	—	—
10:06	4	185	8.41	3792	6.64	488	3.53	7.40	5.69	177.7	—	—
10:10	4	185	8.41	4424	6.62	492	2.16	5.22	5.76	167.3	—	—
10:14	4	185	8.41	5056	6.67	491	2.01	4.09	5.85	160.5	—	—
10:18	4	185	8.41	5688	6.66	486	2.07	3.76	5.76	149.7	—	—
10:22	4	185	8.41	6320	6.68	485	2.02	3.24	5.74	146.5	—	—
10:26	4	185	8.41	6952	6.67	485	2.01	3.13	5.78	143.9	—	—
10:30	4	Sample Collection									—	—
			1.53 gals purged									

Constituents Sampled	Container	Number	Preservative
GRO / BTEX	40 ml VOA	3	HCl
DRO / RRO	1 liter Amber	2	HCl
Sulfate / Nitrate	40 ml VOA	2	—
Methane	40 ml VOA	2	HCl
Total Alkalinity	~~1~~ 500 ml Plastic	1	—

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: | Well Locked at Arrival: (Yes) / No

Condition of Well: Good | Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: —

GW Samp Form 9/23/2010

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 Well ID MW-8 Date 7/24/12

Project Name/Location Gate 28 FIA Unocal Weather 30°

Measuring Pt. Description Below TOC Screen Setting (ft-bmp) — Casing Diameter (in.) 2" Well Material X PVC ___ SS

Static Water Level (ft-btoc) 9.32 Total Depth (ft-btoc) 19.66 Water Column/ Gallons in Well 10.34 Initial PID Reading (ppm) 249

TOC Elevation — Pump Intake (ft-btoc) — Purge Method: Peristaltic / Centrifugal / Submersible / Other Sample Method Low Flow

Pump On/Off — Volumes Purged 4.96 max

Sample Time: Label 11:52 Start 11:15 End 11:52 Replicate/ Code No. — Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
11:15	0	180	9.40	<1.5	6.46	0.910	3.55	1.81	5.79	-37.8	—	—
11:18	3	180	9.40	<1.5	6.56	0.919	2.48	0.83	5.78	-42.1	—	—
11:22	7	180	9.40	0.5	6.60	0.920	2.51	0.76	5.81	-44.5	—	—
11:25	10	180	9.40	<0.75	6.63	0.921	2.11	0.68	5.83	-47.3	—	—
11:28	13	180	9.40	0.75	6.32	0.922	2.44	0.64	5.79	-44.5	—	—
11:33	18	180	9.40	<1	6.65	0.923	2.50	0.60	5.80	-50.3	—	—
11:36	21	180	9.40	1	6.72	0.923	2.53	0.65	5.83	-53.3	—	—
11:40	25	180	9.40	<1.5	6.167	0.922	2.50	0.59	5.82	-59.1	—	—
11:43	28	180	9.40	<1.5	6.167	0.922	2.50	0.50	5.83	-59.2	—	—

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	40 ml VOA	3	HCl
DRO/RRO	1 L amber	2	HCl
Sampled @ 11:52			

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: in parking lot

Condition of Well: good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well:

GW Samp Form 9/23/2010

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 Well ID RW-1 Date 9-24-10

Project Name/Location Gate 28 W. Ramp FIA Unocal Weather 45° Sunny wind

Measuring Pt. Description below TOC Screen Setting (ft-bmp) 7.19-17.16 Casing Diameter (in.) 3 Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 8.39 Total Depth (ft-btoc) 17.16 Water Column/ Gallons in Well 1 vol = 3.25 gal 8.79 Initial PID Reading (ppm) 45.4

TOC Elevation — Pump Intake (ft-btoc) ___ Purge Method: Peristaltic Centrifugal ___ Submersible ___ Other ___ Sample Method Low Flow

Pump On/Off — Volumes Purged 1.74 gals

Sample Time: Label 12:25 Start 11:40 End 12:25 Replicate/ Code No. ___ Sampled by D. Beaudoin

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ Purged (in l)	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
11:40	4	180	8.47	720	6.65	477	1.34	24.10	7.33	-75.9	—	—
11:44	4	180	8.47	1440	6.70	479	1.37	6.35	7.44	-89.4	—	—
11:48	4	180	8.47	2160	6.73	480	1.21	4.66	7.45	-94.0	—	—
11:52	4	180	8.47	2880	6.74	480	1.17	4.05	7.42	-96.2	—	—
11:56	4	180	8.47	3600	6.75	480	1.11	3.77	7.40	-95.0	—	—
12:00	4	180	8.47	4320	6.75	481	1.04	3.18	2.47	-102.0	—	—
12:04	4	180	8.47	5040	6.76	480	0.99	3.05	7.39	-98.4	—	—
12:08	4	180	8.47	5760	6.76	480	0.97	2.96	7.34	-95.6	—	—
12:12	4	180	8.47	6480	6.75	480	0.99	2.84	7.33	-94.0	—	—
12:16	4	180	8.47	7200	6.75	480	0.99	2.90	7.34	-98.3	—	—
12:20	4	180	8.47	7920	6.75	480	0.99	2.75	7.33	-99.0	—	—
12:25	Sample Collected			1.74 gals purged								

Constituents Sampled	Container	Number	Preservative
GRO/BTEX	40 ml VOA	3	HCl
DRO/RRO	1 liter Amb	2	HCl
Methane	40 ml VOA	2	HCl
Total Alkalinity	500 ml Plastic	1	—
Sulfate Nitrate	40 ml VOA	2	—

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: Good

Condition of Well: Good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: —

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID MW-5 | Date 9-24-10

Project Name/Location Gate 28, W. Ramp FIA Unocal | Weather 40° Sunny windy

Measuring Pt. Description below TOC | Screen Setting (ft-bmp) 4 | Casing Diameter (in.) 2" | Well Material ✓ PVC / SS

Static Water Level (ft-btoc) below TOC 8.98 | Total Depth (ft-btoc) 19.17 | Water Column/ Gallons in Well 10.19 | Initial PID Reading (ppm) 1.0

TOC Elevation — | Pump Intake (ft-btoc) — | Purge Method: Peristaltic / Centrifugal / Submersible / Other | Sample Method Low Flow

Pump On/Off — | Volumes Purged 1.54 gals

Sample Time: Label — Start — End ✓ | Replicate/ Code No. BD-2 in 1

Sampled by D. Beaudoin

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	~~Gallons~~ Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
1408	8	175	9.06	1400	6.53	774	7.15	1.13	6.51	-54.7	—	—
1412	4	175	9.06	2100	6.54	772	7.13	0.96	6.55	-57.9	—	—
1416	4	175	9.06	2800	6.56	772	6.73	0.96	6.54	-58.8	—	—
1420	4	175	9.06	3500	6.56	770	6.38	0.96	6.58	-60.3	—	—
1424	4	175	9.06	4200	6.58	770	5.58	0.99	6.57	-61.4	—	—
1428	4	175	9.06	4900	6.57	770	5.63	1.05	6.58	-62.6	—	—
1432	4	175	9.06	5600	6.57	770	5.58	1.07	6.57	-63.1	—	—
1436	4	175	9.06	6300	6.58	770	5.40	1.05	6.57	-63.4	—	—
1440	4	175	9.06	7000	Sample Collection						—	—
					1.54 gals purged							

Constituents Sampled	Container	Number	Preservative
GRO/BTEX	40 ml VOA	3	HCl
DRO/RRO	1 Liter Amber	2	HCl

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; (2" = 0.16); 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: | Well Locked at Arrival: (Yes) / No

Condition of Well: Good | Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up | Key Number To Well:

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID MW-1 | Date 9/24/10

Project Name/Location Gate 28, West Ramp FIA Unocal | Weather 90° windy

Measuring Pt. Description TOC | Screen Setting (ft-bmp) — | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 8.68 | Total Depth (ft-btoc) 18.95 | Water Column/ Gallons in Well 4.93 max | Initial PID Reading (ppm) 11.9

TOC Elevation — | Pump Intake (ft-btoc) — | Purge Method: Peristaltic / Centrifugal — / Submersible — / Other — | Sample Method Low Flow

Pump On/Off — | Volumes Purged 26.75 gals

Sample Time: Label 1450 | Start 1420 | End 1450 | Replicate/ Code No. —

Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
14:20	0	175	8.70	0	6.78	1.227	9.81	0.54	7.59	-47.9	—	—
14:23	3	175	8.70	<.5	6.30	1.219	4.95	0.53	7.48	-20.3	—	—
14:26	6	175	8.70	<.5	6.21	1.211	2.77	0.62	7.51	-17.8	—	—
14:29	9	175	8.70	<.5	6.13	1.210	3.37	0.54	7.43	-19.9	—	—
14:32	12	175	8.70	0.5	6.12	1.208	4.00	0.47	7.41	-21.6	—	—
14:35	15	175	8.70	<0.75	6.11	1.205	4.19	0.43	7.32	-30.1	—	—
14:38	18	175	8.70	<0.75	6.12	1.205	2.98	0.43	7.33	-32.2	—	—
14:41	21	175	8.70	0.75	6.11	1.202	2.90	0.38	7.29	-35.3	—	—

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	40ml VOA	3	HCl
D20/RO	1 liter amber	2	HCl

BD-1 from MW-1 → ~~BTEX/GRO~~ (3) 40ml VOAs ~~HCl~~

Sample @ 14:50

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: Piklot Frontier

Condition of Well: good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well:

ARCADIS Groundwater Sampling Form

Project No. 30045507 Well ID MW-7 Date 9-24-10

Project Name/Location Gate 28 W. Ramp FIA Unocal Weather 40° Sunny Windy

Measuring Pt. Description TOC | Screen Setting (ft-bmp) — | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 8.93 | Total Depth (ft-btoc) 18.00 (1 vol. = 1.45 gal) | Water Column/ Gallons in Well 9.07 | Initial PID Reading (ppm) 1.0

TOC Elevation — | Pump Intake (ft-btoc) 14' | Purge Method: Peristaltic / Centrifugal — / Submersible — / Other — | Sample Method Low Flow

Pump On/Off — | Volumes Purged 1.63 gal

Sample Time: Label ___ Start ___ End ✓ | Replicate/ Code No. —

Sampled by D. Boundain

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
15:20	0	185	9.01	0	7.14	669	9.99	4.12	448	-39.0	—	—
15:24	4	185	9.01	740	6.57	659	9.99	2.45	467	-34.1	—	—
15:28	4	185	9.01	1480	6.58	654	9.99	2.28	461	-32.8	—	—
15:32	4	185	9.01	2220	6.59	653	9.99	2.16	458	-31.6	—	—
15:36	4	185	9.01	2960	6.59	652	9.99	1.91	456	-30.3	—	—
15:40	4	185	9.01	3700	6.60	651	9.99	1.63	450	-29.6	—	—
15:44	4	185	9.01	4440	6.60	651	999	1.32	450	-29.2	—	—
15:48	4	185	9.01	5180	6.59	651	999	1.20	450	-28.9	—	—
15:52	4	185	9.01	5920	6.59	650	999	1.11	451	-28.7	—	—
15:56	4	185	9.01	6660	6.59	650	9.99	1.09	452	-28.7	—	—
16:00	4	Sample Collection				—						
					1.63 gals							

Constituents Sampled	Container	Number	Preservative
GRO/BTEX	40 ml VOA	3	HCl
DRO/RRO	1 liter Amber	2	HCl

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: ___ Well Locked at Arrival: (Yes) / No

Condition of Well: Good Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up Key Number To Well: ___

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 Well ID M. GEI-7 Date 9/24/10

Project Name/Location Gate 28 FIA Unocal Weather 95° Windy

Measuring Pt. Description ____ Screen Setting (ft-bmp) ____ Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-btoc) 8.32 Total Depth (ft-btoc) 13.28 Water Column/ Gallons in Well ____ Initial PID Reading (ppm) 87.4

TOC Elevation ____ Pump Intake (ft-btoc) ____ Purge Method: ____ Centrifugal ____ Submersible ____ Other Sample Method Low Flow

Pump On/Off ____ Volumes Purged ____

Sample Time: Label ____ Start ____ End 16:07 Replicate/ Code No. ____ Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
15:32	0	180	8.35	0	6.21	1.147	9.81	0.19	6.18	-14.8	—	—
15:36	4	180	8.35	<.5	6.12	1.147	9.90	0.37	6.12	-19.6	—	—
15:41	9	180	8.35	<.5	6.17	1.148	9.07	0.30	6.10	-27.5	—	—
15:46	14	180	8.35	0.5	6.20	1.145	9.07	0.32	6.13	-32.1	—	—
15:49	17	180	8.35	<.75	6.16	1.144	9.07	0.33	6.23	-35.7	—	—
15:54	22	180	8.35	~0.75	6.37	1.140	9.09	0.30	6.41	-36.1	—	—
15:57	25	180	8.35	~0.75	6.38	1.141	9.06	0.30	6.46	-37.3	—	—
16:00	28	180	8.35	<1.0	6.39	1.141	9.06	0.33	6.43	-38.7	—	—
Sampled @ 16:07												
Fe^{2+} mg/L = 2.0				Nitrate mg/L = 0.0								

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	VOA 40 ml amber	3	HCl
DRO/RRO	Amber 1 L	2	HCl
Total Alkalinity	Poly 500 ml	1	NP
Sulfate/Nitrate	VOA clear 40 ml	2	NP
Methane	VOA 40 ml amber	2	HCl

Note: o-ring cell on YSI cell not secure, Repair + refill cell.

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: prk lot near fence

Condition of Well: good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: ____

New Samp Form 9/23/2010

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID MW-6 | Date 9-24-10

Project Name/Location Gate 2E, W Ramp FTA Vapor | Weather 40° Sunny windy

Measuring Pt. Description TOC | Screen Setting (ft-bmp) — | Casing Diameter (in.) 2" | Well Material (PVC) / SS

Static Water Level (ft-btoc) 8.70 | Total Depth (ft-btoc) 19.85 | Water Column/ Gallons in Well 5.35 max | Initial PID Reading (ppm) 1.2

TOC Elevation — | Pump Intake (ft-btoc) — | Purge Method: Peristaltic / Centrifugal / Submersible / Other | Sample Method Low Flow

Pump On/Off — | Volumes Purged 1.5 gals

Sample Time: Label 1705 | Start 1636 | End 1705 | Replicate/ Code No. —

Sampled by D. Brandes

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
16.36	8	190	8.79	1440	6.97	583	4.17	0.49	7.16	-73.3	—	—
16:40	4	180	8.79	2160	6.89	577	3.59	0.44	7.11	-72.9	—	—
16:44	4	180	8.79	2880	6.85	571	3.41	0.45	7.05	-72.6	—	—
16:48	4	180	8.79	3600	6.84	569	2.89	0.50	6.95	-72.2	—	—
16:52	4	180	8.79	4320	6.85	567	3.34	0.52	6.88	-71.4	—	—
16:56	4	180	8.79	5040	6.81	564	3.19	0.52	6.81	-70.5	—	—
17:00	4	180	8.79	5760	6.79	563	2.97	0.51	6.79	-70.3	—	—
1704	4	180	8.79	6480	6.79	560	2.91	0.50	6.79	-69.9	—	—
1705	Sample Collection				—							
					1.5 gals. purged							

Constituents Sampled	Container	Number	Preservative
GRO/BTEX	40 mL VOA	3	HCl
DRO/ORO	1 Liter Amber	2	HCl
Methane	40 ml VOA	2	HCl
Sulfate, Nitrate	40 ml VOA	2	—
Total Alkalinity	500 ml plastic	1	—
Fe^{2+} 1.8 } HACH			
Nitrate 0. }			

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | (2" = 0.16) | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: | Well Locked at Arrival: (Yes) / No

Condition of Well: Good | Well Locked at Departure: (Yes) / No

Well Completion: (Flush Mount) / Stick Up | Key Number To Well:

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 Well ID MW-9 Date 9/24/10

Project Name/Location Gate 28 FTA Uhde Weather 30-35° Windy

Measuring Pt. Description ____ Screen Setting (ft-bmp) ____ Casing Diameter (in.) ____ Well Material X PVC ___ SS

Static Water Level (ft-btoc) 8.60 Total Depth (ft-btoc) 19.31 Water Column/ Gallons in Well 10.71 Initial PID Reading (ppm) 2.0

TOC Elevation ____ Pump Intake (ft-btoc) ____ Purge Method: PP/pump Centrifugal ____ Submersible ____ Other ____ Sample Method Low Flow

Pump On/Off ____ Volumes Purged 5.14 max

Sample Time: Label ____ Start ____ End 17:16 Replicate/ Code No. ____ Sampled by DMB

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
16:45	0	175	8.70	0	7.18	1,358	3.40	14.63	6.06	-56.0	—	—
16:50	5	175	8.70	~.5	6.47	1,359	3.36	1.01	6.03	-55.7	—	—
16:54	9	175	8.70	0.5	6.34	1,362	3.30	1.40	5.76	-46.1	—	—
16:58	13	175	8.70	~0.7	6.31	1,368	3.35	1.35	5.67	-47.0	—	—
17:00	16	175	8.70	~.75	6.31	1,370	3.30	1.30	5.65	-47.4	—	—
17:03	18	175	8.70	~1	6.30	1,330	3.30	1.34	5.60	-47.3	—	—
17:06	21	175	8.70	~1	6.29	1,371	3.31	1.32	5.55	-47.8	—	—

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	40ml VOA	3	HCl
DRO/RRO	1L amber	2	HCl
Sampled @ 17:16			

Well Casing Volumes

Gallons/Foot 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: near fence pkt lot

Condition of Well: good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well:

GW Samp Form 9/23/2010

* MW-10 needs lock ->

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0045507 | Well ID MW-10 | Date 9-24-10

Project Name/Location Gate 28 West Ramp, FIA (Naval) | Weather 30° windy

Measuring Pt. Description: below TOC | Screen Setting (ft-bmp): — | Casing Diameter (in.): 2" | Well Material: ✓ PVC / SS

Static Water Level (ft-btoc): 8.92 | Total Depth (ft-btoc): 18.90 | Water Column/ Gallons in Well: 9.98 / 4.74 max | Initial PID Reading (ppm): 0.3

TOC Elevation: — | Pump Intake (ft-btoc): — | Purge Method: Peristaltic / Centrifugal / Submersible / Other | Sample Method: Low Flow

Pump On/Off: — | Volumes Purged: 1.63 gal.

Sample Time: Label 1925 | Start 1756 | End 1929 | Replicate/ Code No.: — | Sampled by: DGB

ml

Time	Minutes Elapsed	Rate (gpm) (mL/min)	Depth to Water (ft)	Gallons Purged	pH	Cond. (µMhos) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C) (°F)	Redox (mV)	Appearance Color	Appearance Odor
~~1756~~	8	195	8.95	1480	6.80	499	19.0	2.46	3.94	354.1	—	—
1800	4	195	8.95	2220	6.77	491	15.8	1.87	3.57	-43.9	—	—
1804	4	195	8.95	2960	6.80	506	19.0	3.78	3.62	-46.0	—	—
1808	4	195	8.95	3700	6.85	531	19.0	1.89	3.48	-52.9	—	—
1812	4	195	8.95	4440	6.91	552	32.5	1.95	3.42	-57.0	—	—
1916	4	195	8.95	5180	6.94	558	26.5	1.42	3.35	-60.6	—	—
1920	4	195	8.95	5920	6.95	563	26.2	1.42	3.32	-62.3	—	—
1824	4	195	8.95	6660	6.96	566	25.9	1.39	3.29	-61.4	—	—
1928	4	195	8.95	7400	Sample Collected				1.63	gals purged		

Constituents Sampled	Container	Number	Preservative
GRO/BTEX	40 ml VOA	3	HCl
DRO/RRO	1 Liter Amber	2	HCl
Methane	40 ml VOA	2	HCl
Sulfate Nitrate	40 ml VOA	2	—
Total Alkalinity	500 ml Plastic	1	—

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | ~~1.5" = 0.09~~ 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: — | Well Locked at Arrival: Yes / No

Condition of Well: Good | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well: —

ARCADIS

Appendix E

Groundwater Analytical Laboratory Report

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

October 06, 2010

Project: 306443

Submittal Date: 09/28/2010
Group Number: 1213829
SDG: LSS47
PO Number: 0015060864
Release Number: CARRIER
State of Sample Origin: AK

Client Sample Description	Lancaster Labs (LLI) #
GEI-3 Grab Water Sample	6096331
GEI-3 Filtered Grab Water Sample	6096332
GEI-2 Grab Water Sample	6096333
GEI-2 Filtered Grab Water Sample	6096334
GEI-8 Grab Water Sample	6096335
GEI-8 Filtered Grab Water Sample	6096336
MW-2 Grab Water Sample	6096337
MW-3 Grab Water Sample	6096338
MW-4 Grab Water Sample	6096339
MW-8 Grab Water Sample	6096340
RW-1 Grab Water Sample	6096341
MW-5 Grab Water Sample	6096342
MW-1 Grab Water Sample	6096343
GEI-7 Grab Water Sample	6096344
GEI-7 Filtered Grab Water Sample	6096345
MW-7 Grab Water Sample	6096346
MW-6 Grab Water Sample	6096347
MW-9 Grab Water Sample	6096348
MW-10 Grab Water Sample	6096349
BD-1 Grab Water Sample	6096350
BD-2 Grab Water Sample	6096351
Trip_Blank Water Sample	6096352

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Lancaster Laboratories

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Analysis Report

ELECTRONIC COPY TO	Arcadis	Attn: Russ Greisler
ELECTRONIC COPY TO	Arcadis	Attn: Greg Montgomery
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

Sarah M. Snyder
Senior Specialist

Lancaster Laboratories

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Analysis Report

Sample Description: GEI-3 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096331
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 15:50 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI-3 SDG#: LSS47-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.45	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	0.0022	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.0086	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	2.4	0.098	2
02923	C25-C36 RRO	n.a.	N.D.	0.14	2

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 19:53	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 19:53	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 19:53	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 16:37	Heather E Williams	2
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

Lancaster Laboratories

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Analysis Report

Sample Description: GEI-3 Filtered Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096332
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 15:50 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIF3 SDG#: LSS47-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06035	Lead	7439-92-1	N.D.	0.000052	1

General Sample Comments

State of Alaska Lab Certification No. UST-061
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	EPA 200.8 rev 5.4	1	102777050003A	10/05/2010 18:01	David K Beck	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	102777050003	10/05/2010 08:55	Denise K Conners	1

Lancaster Laboratories

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Analysis Report

Sample Description: GEI-2 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096333
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 16:00 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI-2 SDG#: LSS47-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	N.D.	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	2.5	0.095	2
02923	C25-C36 RRO	n.a.	0.21	0.13	2

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 20:19	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 20:19	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 20:19	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 17:05	Heather E Williams	2
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

Lancaster Laboratories

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Analysis Report

Sample Description: GEI-2 Filtered Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096334
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 16:00 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIF2 SDG#: LSS47-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06035	Lead	7439-92-1	N.D.	0.000052	1

General Sample Comments

State of Alaska Lab Certification No. UST-061
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	EPA 200.8 rev 5.4	1	102777050003A	10/05/2010 18:03	David K Beck	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	102777050003	10/05/2010 08:55	Denise K Conners	1

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Analysis Report

Sample Description: GEI-8 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096335
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 17:35 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI-8 SDG#: LSS47-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.011	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.53	0.052	1
02923	C25-C36 RRO	n.a.	0.22	0.073	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 20:46	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 20:46	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 20:46	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 14:38	Heather E Williams	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: GEI-8 Filtered Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096336
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 17:35 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIF8 SDG#: LSS47-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06035	Lead	7439-92-1	N.D.	0.000052	1

General Sample Comments

State of Alaska Lab Certification No. UST-061
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	EPA 200.8 rev 5.4	1	102777050003A	10/05/2010 18:05	David K Beck	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	102777050003	10/05/2010 08:55	Denise K Conners	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-2 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096337
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 17:50 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM2 SDG#: LSS47-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	N.D.	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.10	0.051	1
02923	C25-C36 RRO	n.a.	0.15	0.072	1
GC Miscellaneous	**SW-846 8015B modified**		**mg/l**	**mg/l**	
07105	Methane	74-82-8	0.039	0.0050	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	1.7	0.25	5
	The holding time was not met. The sample was submitted to the laboratory outside of the holding time.				
00228	Sulfate	14808-79-8	24.5	1.5	5
	EPA 310.1		**mg/l as CaCO3**	**mg/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	395	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 21:13	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 21:13	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 21:13	Katrina T Longenecker	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-2 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096337
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/23/2010 17:50 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM2 SDG#: LSS47-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 15:06	Heather E Williams	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	102720029A	09/30/2010 16:26	Dustin A Underkoffler	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1
00368	Nitrate Nitrogen	EPA 300.0	1	10271196601A	09/28/2010 21:31	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10271196601A	09/28/2010 21:31	Ashley M Adams	5
00202	Alkalinity to pH 4.5	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-3 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096338
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 10:07 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM3 SDG#: LSS47-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.027	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.51	0.053	1
02923	C25-C36 RRO	n.a.	0.091	0.075	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 21:39	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 21:39	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 21:39	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 15:33	Heather E Williams	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: MW-4 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096339
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 10:30 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM4 SDG#: LSS47-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	N.D.	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.056	0.048	1
02923	C25-C36 RRO	n.a.	0.075	0.067	1
GC Miscellaneous	**SW-846 8015B modified**		**mg/l**	**mg/l**	
07105	Methane	74-82-8	N.D.	0.0050	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.53	0.25	5
	The holding time was not met. The sample was submitted to the laboratory outside of the holding time.				
00228	Sulfate	14808-79-8	22.1	1.5	5
	EPA 310.1		**mg/l as CaCO3**	**mg/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	301	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 22:06	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 22:06	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 22:06	Katrina T Longenecker	1

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Analysis Report

Sample Description: MW-4 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096339
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 10:30 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM4 SDG#: LSS47-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 16:01	Heather E Williams	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	102720029A	09/30/2010 16:41	Dustin A Underkoffler	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1
00368	Nitrate Nitrogen	EPA 300.0	1	10271196601A	09/28/2010 21:46	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10271196601A	09/28/2010 21:46	Ashley M Adams	5
00202	Alkalinity to pH 4.5	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1

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Analysis Report

Sample Description: MW-8 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096340
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 11:52 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM8 SDG#: LSS47-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	1.0	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	0.0013	0.0005	1
01588	Ethylbenzene	100-41-4	0.038	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.069	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	4.5	0.26	5
02923	C25-C36 RRO	n.a.	N.D.	0.36	5

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 22:32	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 22:32	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 22:32	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 17:33	Heather E Williams	5
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: RW-1 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096341
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 12:25 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIR1 SDG#: LSS47-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.33	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	0.0013	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0020	1
01588	Total xylenes	1330-20-7	0.0086	0.0015	1
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	4.1	0.25	5
02923	C25-C36 RRO	n.a.	N.D.	0.35	5
GC Miscellaneous	**SW-846 8015B modified**		**mg/l**	**mg/l**	
07105	Methane	74-82-8	0.44	0.0050	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.25	5
	The holding time was not met. The sample was submitted to the laboratory outside of the holding time.				
00228	Sulfate	14808-79-8	N.D.	1.5	5
	EPA 310.1		**mg/l as CaCO3**	**mg/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	288	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 22:59	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 22:59	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 22:59	Katrina T Longenecker	1

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Analysis Report

Sample Description: RW-1 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096341
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 12:25 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIR1 SDG#: LSS47-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 18:02	Heather E Williams	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	102720029A	09/30/2010 16:55	Dustin A Underkoffler	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1
00368	Nitrate Nitrogen	EPA 300.0	1	10271196601A	09/28/2010 22:34	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10271196601A	09/28/2010 22:34	Ashley M Adams	5
00202	Alkalinity to pH 4.5	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1

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Analysis Report

Sample Description: MW-5 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096342
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 14:40 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM5 SDG#: LSS47-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.23	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	0.0043	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.0078	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	6.5	0.49	10
02923	C25-C36 RRO	n.a.	N.D.	0.69	10

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 00:19	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 00:19	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 00:19	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 18:30	Heather E Williams	10
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: MW-1 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096343
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 14:50 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM1 SDG#: LSS47-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	1.8	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	0.021	0.0005	1
01588	Ethylbenzene	100-41-4	0.055	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.13	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	12	1.0	20
02923	C25-C36 RRO	n.a.	N.D.	1.5	20

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 00:46	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 00:46	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 00:46	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 18:58	Heather E Williams	20
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: GEI-7 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096344
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 16:07 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI-7 SDG#: LSS47-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.57	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0020	1
01588	Ethylbenzene	100-41-4	0.0097	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0020	1
01588	Total xylenes	1330-20-7	0.011	0.0015	1
	Reporting limits were raised due to interference from the sample matrix.				
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	1.9	0.10	2
02923	C25-C36 RRO	n.a.	0.20	0.14	2
GC Miscellaneous	**SW-846 8015B modified**		**mg/l**	**mg/l**	
07105	Methane	74-82-8	1.4	0.050	10
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.25	5
	The holding time was not met. The sample was submitted to the laboratory outside of the holding time.				
00228	Sulfate	14808-79-8	N.D.	1.5	5
	EPA 310.1		**mg/l as CaCO3**	**mg/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	554	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 01:12	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 01:12	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 01:12	Katrina T Longenecker	1

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Analysis Report

Sample Description: GEI-7 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096344
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 16:07 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI-7 SDG#: LSS47-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 19:27	Heather E Williams	2
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	102720029A	09/30/2010 21:42	Dustin A Underkoffler	10
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1
00368	Nitrate Nitrogen	EPA 300.0	1	10271196601A	09/28/2010 22:50	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10271196601A	09/28/2010 22:50	Ashley M Adams	5
00202	Alkalinity to pH 4.5	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1

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Analysis Report

Sample Description: GEI-7 Filtered Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096345
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 16:07 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIF7 SDG#: LSS47-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06035	Lead	7439-92-1	N.D.	0.000052	1

General Sample Comments

State of Alaska Lab Certification No. UST-061
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06035	Lead	EPA 200.8 rev 5.4	1	102777050003A	10/05/2010 18:10	David K Beck	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	102777050003	10/05/2010 08:55	Denise K Conners	1

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Analysis Report

Sample Description: MW-7 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096346
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 16:00 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM7 SDG#: LSS47-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	N.D.	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.20	0.050	1
02923	C25-C36 RRO	n.a.	0.092	0.069	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 01:39	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 01:39	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 01:39	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 18:18	Heather E Williams	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: MW-6 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096347
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 17:05 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM6 SDG#: LSS47-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.081	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	0.0023	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.0039	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.56	0.053	1
02923	C25-C36 RRO	n.a.	0.086	0.074	1
GC Miscellaneous	**SW-846 8015B modified**		**mg/l**	**mg/l**	
07105	Methane	74-82-8	2.2	0.10	20
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.25	5
	The holding time was not met. The sample was submitted to the laboratory outside of the holding time.				
00228	Sulfate	14808-79-8	8.5	1.5	5
	EPA 310.1		**mg/l as CaCO3**	**mg/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	360	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 02:05	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 02:05	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 02:05	Katrina T Longenecker	1

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Analysis Report

Sample Description: MW-6 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096347
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 17:05 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM6 SDG#: LSS47-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 18:46	Heather E Williams	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	102720029A	09/30/2010 21:57	Dustin A Underkoffler	20
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1
00368	Nitrate Nitrogen	EPA 300.0	1	10271196601A	09/28/2010 23:06	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10271196601A	09/28/2010 23:06	Ashley M Adams	5
00202	Alkalinity to pH 4.5	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1

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Analysis Report

Sample Description: MW-9 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096348
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 17:16 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIM9 SDG#: LSS47-18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.89	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	0.0073	0.0005	1
01588	Ethylbenzene	100-41-4	0.050	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.055	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	6.0	0.52	10
02923	C25-C36 RRO	n.a.	N.D.	0.73	10

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 02:32	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 02:32	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 02:32	Katrina T Longenecker	1
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/04/2010 19:55	Heather E Williams	10
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1

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Analysis Report

Sample Description: MW-10 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096349
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 18:28 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI10 SDG#: LSS47-19

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	N.D.	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1
GC Extractable TPH	**AK 102/103 4/08/02 modified**		**mg/l**	**mg/l**	
02923	C10-<C25 DRO	n.a.	0.85	0.052	1
02923	C25-C36 RRO	n.a.	0.52	0.073	1
GC Miscellaneous	**SW-846 8015B modified**		**mg/l**	**mg/l**	
07105	Methane	74-82-8	0.10	0.0050	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.25	5
	The holding time was not met. The sample was submitted to the laboratory outside of the holding time.				
00228	Sulfate	14808-79-8	20.0	1.5	5
	EPA 310.1		**mg/l as CaCO3**	**mg/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	476	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 02:58	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 02:58	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 02:58	Katrina T Longenecker	1

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Analysis Report

Sample Description: MW-10 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096349
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 18:28 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEI10 SDG#: LSS47-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02923	TPH-DRO/RRO (AK) water	AK 102/103 4/08/02 modified	1	102720028A	10/01/2010 19:40	Heather E Williams	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	102720029A	09/30/2010 17:40	Dustin A Underkoffler	1
11185	AK DRO/ORO Waters Extraction	AK 102/AK 103 04/08/02	1	102720028A	09/30/2010 09:30	Kerrie A Freeburn	1
00368	Nitrate Nitrogen	EPA 300.0	1	10271196601A	09/28/2010 23:22	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10271196601A	09/28/2010 23:22	Ashley M Adams	5
00202	Alkalinity to pH 4.5	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	10274020201A	10/01/2010 06:48	Susan A Engle	1

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Analysis Report

Sample Description: BD-1 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096350
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIB1 SDG#: LSS47-20FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	1.8	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	0.022	0.0005	1
01588	Ethylbenzene	100-41-4	0.056	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.13	0.0015	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 03:25	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 03:25	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 03:25	Katrina T Longenecker	1

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Analysis Report

Sample Description: BD-2 Grab Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096351
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010 by DGB

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEIB2 SDG#: LSS47-21FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	0.24	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	0.0046	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	0.0080	0.0015	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/02/2010 03:51	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/02/2010 03:51	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/02/2010 03:51	Katrina T Longenecker	1

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Analysis Report

Sample Description: Trip_Blank Water Sample
Facility# 306443
Gate 28, West Ramp,FIA - Fairbanks, AK

LLI Sample # WW 6096352
LLI Group # 1213829
Account # 11964

Project Name: 306443

Collected: 09/24/2010

Submitted: 09/28/2010 09:00
Reported: 10/06/2010 15:07
Discard: 11/06/2010

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

GEITB SDG#: LSS47-22TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	
01440	TPH-GRO AK water C6-C10	n.a.	N.D.	0.010	1
GC Volatiles	**SW-846 8021B**		**mg/l**	**mg/l**	
01588	Benzene	71-43-2	N.D.	0.0005	1
01588	Ethylbenzene	100-41-4	N.D.	0.0005	1
01588	Toluene	108-88-3	N.D.	0.0005	1
01588	Total xylenes	1330-20-7	N.D.	0.0015	1

General Sample Comments

State of Alaska Lab Certification No. UST-061

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01440	TPH-GRO AK water C6-C10	AK 101	1	10272A94A	10/01/2010 18:59	Katrina T Longenecker	1
01146	GC VOA Water Prep	SW-846 5030B	1	10272A94A	10/01/2010 18:59	Katrina T Longenecker	1
01588	BTEX	SW-846 8021B	1	10272A94A	10/01/2010 18:59	Katrina T Longenecker	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Group Number: 1213829
Reported: 10/06/10 at 03:07 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 10272A94A	Sample number(s): 6096331,6096333,6096335,6096337-6096344,6096346-6096352							
Benzene	N.D.	0.0005	mg/l	90	95	80-120	5	30
Ethylbenzene	N.D.	0.0005	mg/l	90	90	80-120	0	30
Toluene	N.D.	0.0005	mg/l	90	95	80-120	5	30
TPH-GRO AK water C6-C10	N.D.	0.010	mg/l	109	109	60-120	0	20
Total xylenes	N.D.	0.0015	mg/l	92	93	80-120	2	30
Batch number: 102720028A	Sample number(s): 6096331,6096333,6096335,6096337-6096344,6096346-6096349							
C10-<C25 DRO	N.D.	0.050	mg/l	89	89	75-125	0	20
C25-C36 RRO	N.D.	0.070	mg/l	92	100	60-120	9	20
Batch number: 102720029A	Sample number(s): 6096337,6096339,6096341,6096344,6096347,6096349							
Methane	N.D.	0.0050	mg/l	93		80-120		
Batch number: 102777050003A	Sample number(s): 6096332,6096334,6096336,6096345							
Lead	N.D.	0.00005	mg/l	94		85-115		
		2						
Batch number: 10271196601A	Sample number(s): 6096337,6096339,6096341,6096344,6096347,6096349							
Nitrate Nitrogen	N.D.	0.050	mg/l	105	105	90-110	0	20
Sulfate	N.D.	0.30	mg/l	102	103	89-110	1	20
Batch number: 10274020201A	Sample number(s): 6096337,6096339,6096341,6096344,6096347,6096349							
Alkalinity to pH 4.5	N.D.	0.46	mg/l as CaCO3	99		98-103		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 10272A94A	Sample number(s): 6096331,6096333,6096335,6096337-6096344,6096346-6096352 UNSPK: 6096333, 6096335								
Benzene	80		80-152						
Ethylbenzene	85		80-133						
Toluene	80		80-133						
TPH-GRO AK water C6-C10	108		60-120						
Total xylenes	83		80-148						
Batch number: 102720029A	Sample number(s): 6096337,6096339,6096341,6096344,6096347,6096349 UNSPK: P098063								
Methane	83	67	35-157	22*	20				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1213829
Reported: 10/06/10 at 03:07 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 102777050003A	Sample number(s): 6096332,6096334,6096336,6096345 UNSPK: P096388 BKG: P096388								
Lead	102		70-130			N.D.	N.D.	0 (1)	20
Batch number: 10271196601A	Sample number(s): 6096337,6096339,6096341,6096344,6096347,6096349 UNSPK: P096097 BKG: P096097								
Nitrate Nitrogen	103		90-110			0.91	0.95	3 (1)	20
Sulfate	96		90-110			147	148	1	20
Batch number: 10274020201A	Sample number(s): 6096337,6096339,6096341,6096344,6096347,6096349 UNSPK: P098063 BKG: P096167								
Alkalinity to pH 4.5	96	96	73-121	0	5	208	208	0	5
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH-GRO AK water C6-C10
Batch number: 10272A94A

	Trifluorotoluene-F	Trifluorotoluene-P
6096331	84	76
6096333	86	87
6096335	86	86
6096337	86	87
6096338	85	87
6096339	86	87
6096340	83	75
6096341	84	82
6096342	89	84
6096343	95	80
6096344	83	74
6096346	86	86
6096347	86	86
6096348	92	87
6096349	99	87
6096350	95	80
6096351	92	84
6096352	87	87
Blank	86	87
LCS	91	86
LCSD	93	86
MS	92	86
Limits:	60-120	58-146

Analysis Name: TPH-DRO/RRO (AK) water
Batch number: 102720028A

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Group Number: 1213829
Reported: 10/06/10 at 03:07 PM

Surrogate Quality Control

	Orthoterphenyl	n-Triacontane-d62
6096331	77	63
6096333	69	61
6096335	96	75
6096337	93	77
6096338	95	68
6096339	90	82
6096340	95	62
6096341	101	76
6096342	115	83
6096343	118	77
6096344	96	70
6096346	92	73
6096347	94	66
6096348	104	61
6096349	72	65
Blank	91	78
LCS	90	67
LCSD	89	71
Limits:	50-150	50-150

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 102720029A

	Propene
6096337	65
6096339	56
6096341	73
6096344	82
6096347	92
6096349	72
Blank	98
LCS	96
MS	77
MSD	61
Limits:	42-131

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

017165

For Lancaster Laboratories use only
Acct. #: 11964 Sample #: 6096331-52 SCR#:
Group# 1213829
1 of 2

Facility #: 306443
Site Address: Gate 28, West Ramp, Fairbanks Airport
Chevron PM: Dan Carrier Lead Consultant: ARCADIS U.S.
Consultant/Office: 2300 East Lake Ave E ste 200 Seattle, WA 98102
Consultant Prj. Mgr.: Greg Montgomery
Consultant Phone #: 206-726-4742 Fax #: 206-325-8218
Sampler: DGB, DMB
Service Order #: NWRTB-0306443-1-Lab ☐ Non SAR:

Analyses Requested / **Preservation Codes**

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil ☐	Air ☐	Total Number of Containers	BTEX + ~~MTBE~~ 8021 ☒ 8260 ☐ Naphth ☐ GRO AK 101 (H)	~~8260 full scan~~ DRO AK 102 w/ RRO 103 (H)	~~Oxygenates~~ Total Alkalinity EPA 310.1	~~TPH G~~ Sulfate, Nitrate EPA 300.0	TPH D ☐ Extended Rng. ☐ Silica Gel Cleanup	Lead Total ☐ Diss. ☒ Method EPA 200.8	~~VPH/EPH~~ Methane EPA RSK 175 (H)	NWTPH H HCID ☐ quantification
GEI-3	9-23-10	15:50	✓			✓			6	✓	✓				✓		
GEI-2	9-23-10	16:00	✓			✓			6	✓	✓				✓		
GEI-8	9-23-10	17:35	✓			✓			6	✓	✓				✓		
MW-2	9-23-10	17:50	✓			✓			10	✓	✓	✓	✓			✓	
MW-3	9-24-10	10:07	✓			✓			5	✓	✓						
MW-4	9-24-10	10:30	✓			✓			10	✓	✓	✓	✓			✓	
MW-8	9-24-10	11:52	✓			✓			5	✓	✓						
RW-1	9-24-10	12:25	✓			✓			10	✓	✓	✓	✓			✓	
MW-5	9-24-10	14:40	✓			✓			5	✓	✓						
MW-1	9-24-10	14:50	✓			✓			5	✓	✓						
GEI-7	9-24-10	16:07	✓			✓			10	✓	✓	✓	✓		✓	✓	
MW-7	9-24-10	16:00	✓			✓			5	✓	✓						
MW-6	9-24-10	17:05	✓			✓			10	✓	✓	✓	✓			✓	

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks
- Lab Filter diss. Pb
- GEI-7 has one 500 mL nalgene bottle for diss Pb and total Alkalinity.

Turnaround Time Requested (TAT) (please circle)
(STD. TAT) 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full
Type VI (Raw Data) Disk / EDD
WIP (RWQCB) Standard Format
Disk ________ Other.

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9/27/10	10:00			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS FedEx Other ______			Received by: [signature]	9/28/10	900
Temperature Upon Receipt ______ C° 0.5° - 1.0°C			Custody Seals Intact? (Yes) No		

Chevron Generic Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11964 Sample #: LD96331-52 SCR#: Group# 1213829
017169
2 of 2

Facility #: 306443
Site Address: Gate 28, West Ramp, Fairbanks Airport
Chevron PM: Dan Carrier Lead Consultant: ARCADIS - U.S. Seattle, WA
Consultant/Office: 2300 East Lake Ave E ste 200 98102
Consultant Prj. Mgr.: Greg Montgomery
Consultant Phone #: 206-726-4742 Fax #: 206-325-8218
Sampler: DGB, DMB
Service Order #: NWRTB-0306443-1-lab ☐ Non SAR:

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Oil ☐ Air ☐	Total Number of Containers	Analyses Requested / Preservation Codes: BTEX ~~MTBE~~ 8021 ☒ 8260 ☐ Naphth ☐ GRO AK101 (H)	DRO AK 102 & 103 (H)	~~8260 full scan~~	Oxygenates	~~TPH~~	TPH D ☐ Extended Rng. ☐ Silica Gel Cleanup	Lead Total ☐ Diss. ☒ Method EPA 200.8	~~VPH/EPH~~	NWTPH H HCID ☐ quantification
									H	H						H	
											Oxygenates	EPA 310.1 Alkalinity	EPA 300.0 Sulfate, Nitrate				
											8260 full scan	Total Alkalinity	TPH D			VPH/EPH	NWTPH H HCID
																EPA RSK 175 Methane	quantification
MW-9	9-24-10	17:16	✓			✓		5	✓	✓							
MW-10	9-24-10	18:28	✓			✓		10	✓	✓	✓	✓				✓	
BD-1	9-24-10	—	✓			✓		3	✓								
DD-2	9-24-10	—	✓			✓		3	✓								
Trip Blank	—	—				✓		4	✓								

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full
Type VI (Raw Data) Disk / EDD
WIP (RWQCB) Standard Format
Disk _____ Other.

		Date	Time		Date	Time
Relinquished by:		9/27/10	10:00	Received by:		
Relinquished by:				Received by:		
Relinquished by:				Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other				Received by:	9/28/10	400
Temperature Upon Receipt	C° 0.5°C-1.0°C			Custody Seals Intact?	Yes / No	

Lancaster Laboratories

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Arcadis

Date of Receipt: 9/28/10

Time of Receipt: 900

Source Code: 50-1

Unpacker Emp. No.: 2308

Shipping Container Sealed: (YES) NO

Custody Seal Present * : (YES) NO

* Custody seal was intact unless otherwise noted in the discrepancy section

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	042951	1.0°C	TB	WI	Y	B	
2	↓	0.7°C	↓	↓	↓	↓	
3	↓	0.5°C	↓	↓	↓	↓	
4		0.6°C					
5			↓				
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Ambers for MW-9 time looks like 1710

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	9/28/10	1257	Unpacking / Storage
Mary Beth Reed	9/28/10	1321	Place in Storage or (Entry)
			Entry
			Entry

Issued by Dept. 6042 Management
2174.05

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

ARCADIS

Appendix F

ADEC Laboratory Data Review Checklists

Laboratory Data Review Checklist

Completed by:

Title: Michael Strickler
Geologist II

Date: April 11, 2011

CS Report Name: 2010 Site Assessment and Second Semi-Annual Groundwater Monitoring Report

Report Date: April 11, 2011

Consultant Firm: ARCADIS

Laboratory Name: Lancaster Laboratories

Laboratory Report Number: 1209765

ADEC File Number: 100.26.040

ADEC RecKey Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ☐ Yes ☐ No Comments:

   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ☑ Yes ☐ No Comments:

   "Received By" Signed

   b. Correct analyses requested?
   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

Data quality or usability not affected.

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

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

Comments:

Data quality/usability not affected.

5. Samples Results

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

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

Reextraction holding times expired for some samples and original extractions are reported.

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

e. Data quality or usability affected?

Comments:

Data quality or usability not affected.

6. QC Samples

a. Method Blank

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

☑ Yes ☐ No Comments:

ii. All method blank results less than PQL?

☐ Yes ☑ No Comments:

C25-C36 was detected in the method blank, results from reextraction were within the limits. The hold time expired prior to reextraction therefore, all results are reported from the original extract. Similar results were obtained in both extracts.

iii. If above PQL, what samples are affected?

MW-10-8.0-10.0 and MW-10-18.0-20.0

Comments:

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

☑ Yes ☐ No Comments:

v. Data quality or usability affected? Explain.

Comments:

Data quality or usability does not appear to be affected.

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

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

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

☐ Yes ☑ No Comments:

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

Comments:

Acenapthene MS/MSD %R and RPD, Acenapthylene MS/MS %R, Fluorene RPD, Phenathrene RPD, RRO MS/MSD %R and RPD

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

c. Surrogates – Organics Only

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

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

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

☐ Yes ☑ No Comments:

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

☐ Yes ☐ No Comments:

N/A

iii. All results less than PQL?

☐ Yes ☐ No Comments:

N/A

iv. If above PQL, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

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

☉ Yes ☐ No Comments:

ii. Submitted blind to lab?

☐ Yes ☐ No Comments:

BD-3 collected from MW-10-18.0-20.0

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☉ No Comments:

Parent RRO Concentration (17 mg/kg) Duplicate RRO Concentration (<5.8) = 98.25%

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

Comments:

Data quality or usability does not appear to be affected.

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

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

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

a. Defined and appropriate?

☐ Yes ☐ No Comments:

N/A

Laboratory Data Review Checklist

Completed by:

Title: Michael L. Strickler
Geologist II

Date: December 15, 2010

CS Report Name: 2010 Site Assessment and Second Semi-Annual Groundwater Monitoring Report

Report Date: April 11, 2011

Consultant Firm: ARCADIS

Laboratory Name: Lancaster Laboratories

Laboratory Report Number: 1209536

ADEC File Number: 100.26.040

ADEC RecKey Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ☐ Yes ☐ No Comments:

   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ☑ Yes ☐ No Comments:

   b. Correct analyses requested?
   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

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

☑ Yes ☐ No Comments:

1.8 degrees Celsius

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

N/A

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

N/A

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

Comments:

There appears to be no effect on data quality/usability.

5. Samples Results

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

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Benzene for MW-8-8.0-10.0 and MW-8-10.0-12.0 reporting limits were raised due to interference from the sample matrix.

e. Data quality or usability affected?

Comments:

Data quality or usability does not appear to be affected.

6. QC Samples

a. Method Blank

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

☑ Yes ☐ No Comments:

ii. All method blank results less than PQL?

☑ Yes ☐ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

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

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Acenapthylene RPD was outside of specification.

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

Comments:

Samples submitted with this laboratory report.

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

c. Surrogates – Organics Only

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Nitrobenzene-d5, 2-Fluorobiphenyl, Trifluorotoluene-F and Trifluorotoluene-P were outside of specification.

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

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

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

☑ Yes ☐ No Comments:

Trip blank is reported with report #1209203

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

☐ Yes ☐ No Comments:

One cooler used for shipment.

iii. All results less than PQL?

☑ Yes ☐ No Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

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

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

BD-2 collected from MW-9-10.0-12.0

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☑ No Comments:

RRO RPD = 66.67%, Ethylbenzene RPD = 96.30% (BD ND), Total Xylenes RPD = 111.11% (BD ND), Napthalene RPD = 69.39%

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

Comments:

Data quality or usability does not appear to be affected.

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

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

Decontamination or Equipment Blank not collected.

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

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

a. Defined and appropriate?

☐ Yes ☐ No Comments:

N/A

Laboratory Data Review Checklist

Completed by:

Title: Michael L. Strickler
Geologist II

Date: December 15, 2010

CS Report Name: 2010 Site Assessment and Second Semi-Annual Groundwater Monitoring Report

Report Date: April 11, 2011

Consultant Firm: ARCADIS

Laboratory Name: Lancaster Laboratories

Laboratory Report Number: 1209432

ADEC File Number: 100.26.040

ADEC RecKey Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ☐ Yes ☐ No Comments:

   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ☑ Yes ☐ No Comments:

   b. Correct analyses requested?
   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

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

☑ Yes ☐ No Comments:

5.7 degrees Celsius

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

N/A

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

N/A

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

Comments:

N/A

5. Samples Results

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

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Benzene for MW-6-2.0 and MW-10-2.0 reporting limits were raised due to sample foaming.

e. Data quality or usability affected?

Comments:

Data quality or usability do not appear to be affected.

6. QC Samples

a. Method Blank

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

☑ Yes ☐ No Comments:

ii. All method blank results less than PQL?

☑ Yes ☐ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

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

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

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

Comments:

N/A

c. Surrogates – Organics Only

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Nitrobenzene-d5, 2-Fluorobiphenyl, Trifluorotoluene-F, Trifluorotoluene-P and n-Triacontane-d62 surrogates are outside of specification.

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability do not appear to be affected.

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

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

☐ Yes ☑ No Comments:

One trip blank submitted for all reports (Report #1209203)

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

☐ Yes ☐ No Comments:

One cooler used for samples associated with the trip blank.

iii. All results less than PQL?

☑ Yes ☐ No Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

e. Field Duplicate

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

☉ Yes ☐ No Comments:

ii. Submitted blind to lab?

☉ Yes ☐ No Comments:

Reported with Report #1209203 and #1209536

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☐ No Comments:

Reported with Report #1209203 and #1209536

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

Comments:

Reported with Report #1209203 and #1209536

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

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

Decontamination or Equipment Blank not collected

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

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

a. Defined and appropriate?

☐ Yes ☐ No Comments:

N/A

Laboratory Data Review Checklist

Completed by:

Title: Michael L. Strickler
Geologist II

Date: December 15, 2010

CS Report Name: 2010 Site Assessment and Second Semi-Annual Groundwater Monitoring Report

Report Date: April 11, 2011

Consultant Firm: ARCADIS

Laboratory Name: Lancaster Laboratories

Laboratory Report Number: 1209203

ADEC File Number: 100.26.040

ADEC RecKey Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ☐ Yes ☐ No Comments:

   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ☑ Yes ☐ No Comments:

   b. Correct analyses requested?
   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

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

☑ Yes ☐ No Comments:

1.6 degrees Celsius

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

N/A

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

N/A

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

Comments:

N/A

5. Samples Results

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

☉ Yes ○ No Comments:

b. All applicable holding times met?

☉ Yes ○ No Comments:

c. All soils reported on a dry weight basis?

☉ Yes ○ No Comments:

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

☉ Yes ○ No Comments:

e. Data quality or usability affected?

Comments:

N/A

6. QC Samples

a. Method Blank

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

☉ Yes ○ No Comments:

ii. All method blank results less than PQL?

☉ Yes ○ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

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

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Acenapthene, acenapthylene, fluorine, phenathrene and RRO MS %Rec and/or MSD %Rec were outside of specification.

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

☐ Yes ☑ No Comments:

Indeno(1,2,3-cd)pyrene RPD was outside of specification.

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

Comments:

Samples submitted with the exception of the trip blank.

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

c. Surrogates – Organics Only

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Nitrobenzene-d5, 2-Fluorobiphenyl, Trifluorotoluene-F, Trifluorotoluene-P and n-Triacontane-d62 were outside of specification.

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

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

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

One cooler used for shipment.

iii. All results less than PQL?

☑ Yes ☐ No Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

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

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

BD-1 collected from MW-8-2.0

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☑ No Comments:

RRO RPD = 94.12%

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

Comments:

Data quality or usability does not appear to be affected.

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

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

Decontamination or Equipment Blank not collected.

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

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

a. Defined and appropriate?

☐ Yes ☐ No Comments:

N/A

Laboratory Data Review Checklist

Completed by:

Title: Michael L. Strickler
Geologist II

Date: December 15, 2010

CS Report Name: 2010 Site Assessment and Second Semi-Annual Groundwater Monitoring Report

Report Date: April 11, 2011

Consultant Firm: ARCADIS

Laboratory Name: Lancaster Laboratories

Laboratory Report Number: 1213829

ADEC File Number: 100.26.040

ADEC RecKey Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ☐ Yes ☐ No Comments:
   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ☑ Yes ☐ No Comments:

   b. Correct analyses requested?
   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

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

☑ Yes ☐ No Comments:

0.5 to 1.0 degrees Celsius

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

N/A

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

N/A

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

Comments:

Data quality/usability does not appear to be affected.

5. Samples Results

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

☉ Yes ☐ No Comments:

b. All applicable holding times met?

☐ Yes ☉ No Comments:

Holding times for nitrate as nitrogen not met.

c. All soils reported on a dry weight basis?

☐ Yes ☉ No Comments:

N/A

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

☉ Yes ☐ No Comments:

e. Data quality or usability affected?

Comments:

Data quality or usability does not appear to be affected as field kit samples were also taken for nitrate as nitrogen.

6. QC Samples

a. Method Blank

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

☉ Yes ☐ No Comments:

ii. All method blank results less than PQL?

☉ Yes ☐ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

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

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☐ Yes ☑ No Comments:

Methane RPD outside of specification.

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

Comments:

Samples included in the laboratory report.

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

☑ Yes ☐ No Comments:

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

Comments:

Data quality or usability does not appear to be affected.

c. Surrogates – Organics Only

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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

Comments:

N/A

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

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

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

Cooler used to transport the trip blank and VOA samples not identified on COC.

iii. All results less than PQL?

☑ Yes ☐ No Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

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

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

BD-1 collected from MW-1, BD-2 collected from MW-5

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☑ Yes ☐ No Comments:

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

Comments:

N/A

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

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

Decontamination or Equipment Blank not collected

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

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

a. Defined and appropriate?

☐ Yes ☐ No Comments:

N/A

ARCADIS

Appendix G

ADEC CSM Scoping Form and Graph

Print Form

Human Health Conceptual Site Model
Scoping Form

Site Name: Former Chevron 306443 (FIA Unocal)

File Number: 100.26.040

Completed by: Michael Strickler

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☒ USTs
- ☒ ASTs
- ☒ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☐ Other:

Release Mechanisms *(check potential release mechanisms at the site)*

- ☒ Spills
- ☒ Leaks
- ☐ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☒ Surface soil (0-2 feet bgs*)
- ☒ Subsurface soil (>2 feet bgs)
- ☒ Air
- ☐ Sediment
- ☒ Groundwater
- ☐ Surface water
- ☐ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☐ Residents (adult or child)
- ☒ Commercial or industrial worker
- ☒ Construction worker
- ☐ Subsistence harvester (i.e. gathers wild foods)
- ☐ Subsistence consumer (i.e. eats wild foods)
- ☒ Site visitor
- ☒ Trespasser
- ☐ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete: Complete

Comments:

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the ground-water is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☐

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☐

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☐

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☐

If all of the boxes are checked, label this pathway complete: Incomplete

Comments:

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☒

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Not Applicable

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Not Applicable

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.
- Chromium is present in soil that can be dispersed as dust particles of any size.

Generally, DEC direct contact soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because it is assumed most dust particles are incidentally ingested instead of inhaled to the lower lungs. The inhalation pathway only needs to be evaluated when very small dust particles are present (e.g., along a dirt roadway or where dusts are a nuisance). This is not true in the case of chromium. Site specific cleanup levels will need to be calculated in the event that inhalation of dust containing chromium is a complete pathway at a site.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Not Applicable

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Not Applicable

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

APPENDIX A

BIOACCUMULATIVE COMPOUNDS OF POTENTIAL CONCERN

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table B-1 of 18 AAC 75.341 that are bioaccumulative, based on the definition above, are listed below.

Aldrin	DDT	Lead
Arsenic	Dibenzo(a,h)anthracene	Mercury
Benzo(a)anthracene	Dieldrin	Methoxychlor
Benzo(a)pyrene	Dioxin	Nickel
Benzo(b)fluoranthene	Endrin	PCBs
Benzo(k)fluoranthene	Fluoranthene	
Cadmium	Heptachlor	Pyrene
Chlordane	Heptachlor epoxide	Selenium
Chrysene	Hexachlorobenzene	Silver
Copper	Hexachlorocyclopentadiene	Toxaphene
DDD	Indeno(1,2,3-c,d)pyrene	Zinc
DDE		

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greather than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000).

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at http://www.pbtprofiler.net/. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX B

VOLATILE COMPOUNDS OF POTENTIAL CONCERN

A chemical is identified here as sufficiently volatile and toxic for further evaluation if the Henry's Law constant is 1 x 10^{-5} atm-m^3/mol or greater, the molecular weight is less than 200 g/mole (EPA 2004a), and the vapor concentration of the pure component posed an incremental lifetime cancer risk greater than 10^{-6} or a non-cancer hazard quotient of 0.1, or other available scientific data indicates the chemical should be considered a volatile. Chemicals that are solid at typical soil temperatures and do not sublime are generally not considered volatile.

Acetone	Mercury (elemental)
Benzene	Methyl bromide (Bromomethane)
Bis(2-chloroethyl)ether	Methyl chloride (Chloromethane)
Bromodichloromethane	Methyl ethyl ketone (MEK)
Bromoform	Methyl isobutyl ketone (MIBK)
n-Butylbenzene	Methylene bromide
sec-Butylbenzene	Methylene chloride
tert-Buytlbenzene	**1-Methylnaphthalene**
Carbon disulfide	**2-Methylnaphthalene**
Carbon tetrachloride	Methyl *tert*-butyl ether (MTBE)
Chlorobenzene	**Naphthalene**
Chlorodibromomethane (Dibromochloromethane)	Nitrobenzene
Chloroethane	n-Nitrosodimethylamine
Chloroform	**n-Propylbenzene**
2-Chlorophenol	**Styrene**
1,2-Dichlorobenzene	1,1,2,2-Tetrachlorethane
1,3-Dichlorobenzene	Tetrachloroethylene (PCE)
1,4-Dichlorobenzene	**Toluene**

Dichlorodifluoromethane	1,2,4-Trichlorobenzene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethylene	Trichloroethane
cis-1,2-Dichloroethylene	2,4,6-Trichlorophenol
trans-1,2-Dichloroethylene	1,2,3-Trichloropropane
1,2-Dichloropropane	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)
1,3-Dichloropropane	Trichlorofluoromethane (Freon-11)
Ethylbenzene	**1,2,4-Trimethylbenzene**
Ethylene dibromide (1,2-Dibromoethane)	**1,3,5-Trimethylbenzene**
Hexachlorobenzene	Vinyl acetate
Hexachloro-1,3-butadiene	Vinyl chloride (Chloroethene)
Hexachlorocyclopentadiene	**Xylenes (total)**
Hexachloroethane	GRO (see note 3 below)
Hydrazine	DRO (see note 3 below)
Isopropylbenzene (Cumene)	RRO (see note 3 below)

Notes:

1. Bolded chemicals should be investigated as volatile compounds when petroleum is present. If fuel containing additives (e.g., 1,2-dichloroethane, ethylene dibromide, methyl *tert*-butyl ether) were spilled, these chemicals should also be investigated.
2. If a chemical is not on this list, and not in Tables B of 18 AAC 75.345, the chemical has not been evaluated for volatility. Contact the ADEC risk assessor to determine if the chemical is volatile.
3. At this time, ADEC does not require evaluation of petroleum ranges GRO, DRO, or RRO for the indoor air inhalation (vapor intrusion) pathway.

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Former Chevron 306443
Gate 28, Blk 1, Lot 8, West Ramp, FIA, Fairbanks, AK

Completed By: Michael Strickler
Date Completed: December 15, 2010

***Instructions*: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.**

(1)
Check the media that could be directly affected by the release.

(2)
For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.

(3)
Check all exposure media identified in (2).

(4)
*Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5)
Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.

Current & Future Receptors

Media	Transport Mechanisms	Exposure Media	Exposure Pathway/Route	Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ Surface Soil (0-2 ft bgs)	☑ Direct release to surface soil — check soil	☑ soil	☑ Incidental Soil Ingestion		C/F	C/F	C/F			
	☑ Migration to subsurface — check soil		☐ Dermal Absorption of Contaminants from Soil							
	☑ Migration to groundwater — check groundwater		☐ Inhalation of Fugitive Dust							
	☑ Volatilization — check air									
	☐ Runoff or erosion — check surface water									
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☑ Subsurface Soil (2-15 ft bgs)	☑ Direct release to subsurface soil — check soil	☑ groundwater	☑ Ingestion of Groundwater		F	F	C/F			
	☑ Migration to groundwater — check groundwater		☐ Dermal Absorption of Contaminants in Groundwater							
	☑ Volatilization — check air		☐ Inhalation of Volatile Compounds in Tap Water							
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☑ Ground-water	☑ Direct release to groundwater — check groundwater	☑ air	☑ Inhalation of Outdoor Air		C/F	C/F	F			
	☑ Volatilization — check air		☑ Inhalation of Indoor Air		C/F	C/F	F			
	☐ Flow to surface water body — check surface water		☐ Inhalation of Fugitive Dust							
	☐ Flow to sediment — check sediment									
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☐ Surface Water	☐ Direct release to surface water — check surface water	☐ surface water	☐ Ingestion of Surface Water							
	☐ Volatilization — check air		☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Sedimentation — check sediment		☐ Inhalation of Volatile Compounds in Tap Water							
	☐ Uptake by plants or animals — check biota									
	☐ Other (list):									
☐ Sediment	☐ Direct release to sediment — check sediment	☐ sediment	☐ Direct Contact with Sediment							
	☐ Resuspension, runoff, or erosion — check surface water									
	☐ Uptake by plants or animals — check biota	☐ biota	☐ Ingestion of Wild or Farmed Foods							
	☐ Other (list):									

Revised, 10/01/2010