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Chevron Environmental Management Company

Second Semi-Annual 2009 Groundwater Monitoring Report and Geochemical Parameter Monitoring Results

Former Chevron Facility 301726
Lot 5A, Block 10, West Ramp
Fairbanks International Airport
Fairbanks Alaska

January 18, 2010

ARCADIS

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Scientist I

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Second Semi-Annual 2009 Groundwater Monitoring Report and Geochemical Parameter Monitoring Results

Former Chevron Facility 301726
Lot 5A, Block 10, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Prepared for:
Chevron Environmental Management Company

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Date:
January 18, 2010

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Second Semi-Annual 2009 Groundwater Monitoring Report and Geochemical Parameter Monitoring Results

Former Chevron Facility
301726

1. Introduction

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS U.S., Inc. (ARCADIS) has prepared the Second Semi-Annual 2009 Groundwater Monitoring Report and Geochemical Parameter Monitoring Results for former Chevron facility 301726 located at Lot 5A, Block 10, West Ramp at the Fairbanks International Airport (the site). The site location is shown on **Figure 1**. This report summarizes the groundwater monitoring events conducted by ARCADIS on October 4, 2009. Work was conducted under the direction of a "qualified person" as defined in 18 Alaska Administrative Code (AAC) 75.990 (100), and 18 AAC 78.995 (118).

2. Site History and Background

The site is approximately one acre and located on the southwestern portion of the Fairbanks International Airport (FIA), west of Airport Industrial Road. The site was originally designated as Block 10, Lots 5A and 5B; however, the lots were subsequently combined and are now referred to as Block 10, Lot 5A.

The site is currently vacant with no features remaining associated with the previous land uses. An abandoned six-inch diameter fuel pipeline crosses through the southeast portion of the site, adjacent to Airport Industrial Road. The former Texaco Bulk Terminal occupied the southeastern portion of the site facing Airport Industrial Road. This portion of the site is now covered with dirt and gravel and is used for truck staging and as an access road for a business located adjacent to the northeast portion of the site. The northwestern portion of the site is primarily unimproved land that is covered with mature vegetation. The Chena River is located approximately 700 feet west of the site.

Land use in the site vicinity is mixed industrial and unimproved (vegetation). The nearest residential properties are located approximately 600 feet west of the site. Domestic water production wells have been reported at the residential properties. Airplane hangars, tarmacs, and other facilities associated with airport land uses are across Airport Industrial Road from the site are commercial businesses.

The former Texaco bulk fuel terminal began operation at the site in July 1969 and was closed in September 1989. There were three 25,000-gallon aboveground storage tanks (ASTs) and a warehouse. The three ASTs and structures were relocated to another

facility in 1989 by MAPCO Alaska Petroleum, Inc. and the parcel has since remained vacant.

Seven documented petroleum releases of aviation fuel and diesel fuel occurred at the site during operation. Petroleum hydrocarbons have been detected and observed during routine utility maintenance operations and site investigations since 1992 and in groundwater samples since 2004.

The site geology consists of fill materials and unconsolidated alluvium deposited by the Chena and Tanana Rivers. Based on observations made during well installation approximately 200 feet northeast of the site, the alluvium deposit is overlain by gravel fill material to depths of up to 5 feet below ground surface (bgs) and underlain by silty sand that becomes coarser with depth and grades into a gravelly sand (SAIC, 2005). Groundwater has historically been encountered between approximately seven and ten feet bgs.

3. Groundwater Monitoring

The second semi-annual 2009 groundwater and geochemical parameter monitoring event was conducted on October 4, 2009. Six groundwater monitoring wells (MW-1 through MW-6) were gauged using an oil/water interface probe to determine depth to water and to ascertain if light non-aqueous phase liquid [LNAPL] was present. LNAPL was detected in groundwater monitoring well MW-1 at a thickness of 0.01 feet. Groundwater samples were not collected from MW-1 during the October 2009 sampling event.

Groundwater samples were collected using disposable Teflon® lined polyethylene tubing with a YSI 556® water quality meter, a flow-through cell, and a peristaltic pump. Geochemical parameters measured include dissolved oxygen (DO), oxidation-reduction potential (ORP), conductivity, pH, turbidity, and temperature. Groundwater was purged until geochemical parameters stabilized to within ten percent of the value for pH, DO, and ORP, to within three percent of the value for conductivity, and to within one percent of the value for turbidity. These parameters were recorded on low-flow field data sheets presented in **Appendix A**.

3.1. Groundwater Elevation and Flow Direction

Depth to groundwater during the October 2009 event ranged from 10.48 feet below top of casing (btoc) in monitoring well MW-2 to 10.90 feet btoc in monitoring well

MW-3. Groundwater elevations ranged from 416.19 feet above sea level (asl) in monitoring well MW-6 to 416.30 feet asl in monitoring well MW-1. The groundwater elevation data obtained from the October 2009 event were used to construct a potentiometric surface map shown on **Figure 2**. These data indicate groundwater flow direction is toward the southwest. The historical groundwater flow direction has seasonally fluctuated from the east toward the southwest. Current and historical groundwater elevation data are included in **Table 1**.

3.2. Laboratory Analyses

Groundwater samples were collected in properly labeled, clean, laboratory-supplied containers. Samples were then stored in a cooler packed with ice and submitted to TestAmerica in Bothell, Washington under proper chain-of-custody procedures. Groundwater samples from monitoring wells MW-2 through MW-6 were analyzed in the field for the following analyses:

- Ferrous Iron by colorimetric (Hach®) field kit
- Nitrate as nitrogen by colorimetric (Hach®) field kit

Groundwater samples from monitoring wells MW-2 through MW-6 were submitted to the analytical laboratory for the following analyses:

- Gasoline range organics (GRO) by method AK101
- Diesel range organics (DRO) by method AK102
- Residual range organics (RRO) by method AK103
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA method 8021B
- Total alkalinity by EPA method 310.1
- Sulfate and nitrate as nitrogen by EPA method 300.0
- Methane by method RSK 175

3.3. Groundwater Analytical Results

GRO and BTEX concentrations were not detected at or above laboratory detection limits and applicable ADEC groundwater cleanup levels in groundwater samples collected during the October 2009 sampling event.

DRO concentrations reported in groundwater samples collected from monitoring wells MW-3 (1,290 µg/L) and MW-5 (559 µg/L) were below the ADEC GCL of 1,500 µg/L. A

DRO concentration was detected in the duplicate groundwater sample collected from monitoring well MW-3 (2,640 µg/L) greater than the GCL.

Concentrations of RRO detected in groundwater samples collected from monitoring wells MW-3 (438 µg/L) and in duplicate samples (559 µg/L) were below the ADEC GCL of 1,100 µg/L. Analytical results obtained from the second semi-annual 2009 groundwater monitoring event are summarized in **Table 1** and **Table 2** and are shown on **Figure 3.**

4. Geochemical Parameter Monitoring Results

Due to the relatively low concentrations of petroleum-related hydrocarbons currently detected in groundwater samples collected from monitoring wells at the site and relatively small area of the site, natural attenuation via bioremediation may be a viable remedial solution. To determine the potential for natural attenuation at the site, monitoring wells MW-2, MW-3, MW-4, MW-5 and MW-6 were monitored for geochemical parameters to characterize the potential bioremediation of petroleum-related hydrocarbons. Geochemical parameter monitoring was conducted in conjunction with groundwater monitoring activities on October 4, 2009. This was the third geochemical parameter monitoring event conducted at the site. A summary of geochemical parameter monitoring results is shown on **Table 2**.

On-site groundwater elevation measurements indicate little variation of groundwater elevations across the site. This suggests there is little hydrologic influence on the hydrocarbon plume present on site. Due to the low frequency of sampling conducted since monitoring began in 2004, it is difficult to assess the long term COC concentration trends in on-site monitoring wells, however, COC concentrations appear to be decreasing in samples collected from on-site monitoring wells since monitoring began in August 2004.

Temperature measurements ranged from 2.34 degrees Celsius (ºC) (MW-5) to 4.95 ºC (MW-6) and pH measurements ranged from 6.26 (MW-5) to 6.97 (MW-4). Temperature measurements are below the range generally associated with conditions consistent with natural attenuation. However, numerous published results suggest natural attenuation of petroleum hydrocarbons at low temperatures does occur (Filler, 2008). On-site temperature ranges may vary due to seasonal fluctuations related to freeze/thaw conditions of the local groundwater supply. DO concentrations indicate whether the subsurface is aerobic or anaerobic. DO concentrations detected outside the plume (monitoring wells MW-2 and MW-4) were 1.69 mg/L and 0.32 mg/L

respectively. ORP measurements outside of the plume ranged from 12.3 millivolts (mV) (MW-4) to 84.8 mV (MW-2). DO concentrations detected inside the plume (monitoring wells MW-3, MW-5, and MW-6) were 0.34 mg/L, 1.49 mg/L, and 3.12 mg/L respectively. ORP measurements inside of the plume ranged from 85.60 mV (MW-3) to 140.80 mV (MW-5). Generally, ORP measurements greater than zero (mV) and DO measurements greater than 1.0 mg/L are indicative of aerobic conditions.

Methane concentrations detected inside the plume ranged from 0.00335 mg/L (MW-6) to 0.0143 mg/L (MW-3). Methane concentrations detected outside of the plume were below the laboratory detection limits (MW-2) and 0.0168 mg/L (MW-4). A ferrous iron concentration of 1.0 mg/L was measured in the field during groundwater sampling at MW-4. Ferrous iron was not detected in the remaining wells. The total alkalinity concentrations (as calcium carbonate, or mg/L as $CaCO_3$) were relatively consistent across the site. Alkalinity ranged from 427 mg/L as $CaCO_3$ (MW-4) to 549 mg/L as $CaCO_3$ (MW-6) inside the plume. Total alkalinity concentrations outside of the plume ranged from 368 mg/L as $CaCO_3$ (MW-2) to 426 mg/L as $CaCO_3$ (MW-4).

Reported sulfate concentrations in the groundwater samples ranged from 25.2 mg/L (MW-2) to 62.5 (MW-5) in October 2009. These sulfate concentrations are higher than the in the range of sulfate concentrations reported in September 2008 (1.56 mg/L to 31.8 mg/L). This may be due to seasonal fluctuations in the groundwater related to the freeze/thaw cycle.

Nitrate concentrations were below detection limits outside of the plume (MW-2 and MW-4). Nitrate concentrations inside the plume ranged from 4.01 mg/L (MW-6) to 10.6 mg/L (MW-5). The variation in nitrate concentrations may suggest seasonal microbial consumption of nitrate within the hydrocarbon plume.

Due to the limited extent of the monitoring well network, it is difficult to assess groundwater flow and its potential contribution to natural attenuation.

Groundwater samples were not collected from monitoring well MW-1 during the October 2009 monitoring event to due the presence of LNAPL.

5. 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 each of the TestAmerica Laboratories reports during the second semi-annual 2009 reporting period. The

laboratory reports and data review checklists are included as **Appendix B**. The following quality assurance (QA) summary describes six parameters, related to the quality and usability of the data presented in this report.

5.1. Precision

The data meet precision objectives for laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) relative percent differences (RPDs).

5.2. Accuracy

The data meet accuracy objectives as indicated by the laboratory quality control samples, which were within method/laboratory limits. Analytes were not detected in the trip blanks submitted with the groundwater samples. The LCS recoveries were within respective limits.

5.3. Representativeness

The data appear to be representative of site conditions and are generally consistent with historical groundwater monitoring results and expected groundwater concentrations.

5.4. Comparability

The laboratory results are presented in the same units as previous reports to allow comparison.

5.5. Completeness

The results appear to be valid and usable, and thus, the laboratory results have 100% completeness.

5.6. Sensitivity

The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCLs for compounds which were not detected.

6. Conclusions and Recommendations

The groundwater elevation data collected during the second semi-annual 2009 event indicate a groundwater flow direction toward the southwest. Seasonally fluctuating flow direction has been generally consistent with historical data.

A groundwater sample was not collected from monitoring well MW-1 due to the presence of LNAPL at the time of the October 2009 sampling event. A DRO concentration was detected in the duplicate groundwater sample collected from monitoring well MW-3 (2,640 µg/L) at a concentration greater than the ADEC GCL of 1,500 µg/L. GRO, BTEX, and DRO concentrations in groundwater samples collected from the remaining on-site monitoring wells were below their respective cleanup levels and/or below laboratory detection limits.

Based on geochemical parameter sampling data obtained from the second semi-annual 2009 groundwater monitoring event, anaerobic biodegradation activities within the hydrocarbon plume cannot be determined at this time. The first semi-annual 2010 sampling event will provide further evaluation on whether anaerobic biodegradation is currently occurring at the site. Based upon data obtained during geochemical parameter sampling events in 2008 and 2009, Variations of geochemical parameter concentrations and trends measured between the 2008 and 2009 groundwater monitoring events highlight the seasonality of groundwater conditions at the site. It is likely that biological natural attenuation process are almost non-existent during the winter and early spring while they speed up and become relatively more significant to the plume attenuation later in the summer and early fall.

If you have any questions or would like to discuss this further, please contact ARCADIS at 206.726.4742.

7. References

ASTM Standard E1943-98, 2004. *Standard Guide for Remediation of Ground Water by Natural Attenuation at Petroleum Release Sites*. ASTM International, West Conshohocken, PA. DOI:10.1520/E1943-98R04.

Filler, D.M., I. Snape, and D.L. Barnes, editors. 2008. *Bioremediation of Petroleum Hydrocarbons in Cold Regions*. Cambridge University Press, Cambridge, Great Britain.

SAIC, 2008. *Site Assessment Report – Former Texaco Bulk Terminal No. 301726*.

November 22, 2004. Science Applications International Corporation.

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Tables

TABLE 1
Groundwater Elevations and Analytical Results
Former Chevron Facility #301726
Lot 5A, Block 10, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well ID	Date Sampled	TOC (feet-amsl)	DTW (feet)	LNAPL Thickness (feet)	GWE (feet-amsl)	DRO[1] (µg/L)	RRO[2] (µg/L)	GRO[3] (µg/L)	BTEX[4]			
									Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
ADEC GCLs[5] (µg/L)						**1,500**	**1,100**	**2,200**	**5.0**	**1,000**	**700**	**10,000**
MW-1	08/19/04	426.84	6.37	--	420.47	33,400	<480	27,200	1,770	3,790	261	3,750
	03/30/05		10.09	--	416.75	436	<388	9,000	729	343	186	936
	09/19/05		8.12	--	418.72	8,660	<397	<2,500	153	150	<25	116
	09/11/08		8.63	--	418.21	12,000	<708	6,680	357	413	124	815
	05/10/09		8.56	--	418.28	980	<420	3,960	28	75.7	72.7	392
	10/04/09		**10.55**	**0.01**	**416.30**	**Not Sampled-LNAPL Detected**						
MW-2	08/19/04	426.73	6.29	--	420.44	-- [6]	-- [6]	<50.0	<0.200	<0.500	<0.500	<1.00
	03/30/05		9.98	--	416.75	4,040	427	<50.0	<0.500	<0.500	<0.500	<1.50
	09/19/05		8.02	--	418.71	<417	<417	<50.0	<0.500	<0.500	<0.500	<1.50
	09/11/08		8.52	--	418.21	<94.3	<708	<50.0	<0.200	<0.500	<0.500	<1.00
	09/11/08 [D]		--	--	--	<95.2	<714	<50.0	<0.200	<0.500	<0.500	<1.00
	05/10/09		8.43		418.30	<403	<403	<50.0	0.333	<0.500	<0.500	<1.00
	10/04/09		**10.48**	**--**	**416.25**	**<391**	**<391**	**<50.0**	**<0.500**	**<1.00**	**<1.00**	**<3.00**
MW-3	08/19/04	427.16	6.73	--	420.43	1,190	<480	89.4	0.774	<0.500	5.83	3.18
	03/30/05		10.42	--	416.74	<391	<391	181	0.979	<0.500	24.1	6.94
	09/19/05		8.47	--	418.69	6,730	2,120	<50.0	0.556	<0.500	1.73	<1.50
	09/11/08		8.96	--	418.20	12,000	<708	60.3	0.448	<0.500	0.653	1.96
	05/10/09					Not Sampled - Ice in well						
	10/04/09		**10.90**	**--**	**416.26**	**1,290**	**438**	**<50.0**	**<0.500**	**<1.00**	**<1.00**	**<3.00**
	10/04/09[D]		**--**	**--**	**--**	**2,640**	**459**	**<50.0**	**<0.500**	**<1.00**	**<1.00**	**<3.00**
MW-4	08/19/04	427.02	6.59	--	420.43	<400	<480	<50.0	0.3	<0.500	<0.500	<1.00
	03/30/05		10.29	--	416.73	<385	<385	<50.0	<0.500	<0.500	<0.500	<1.50
	09/19/05		8.34	--	418.68	1,310	815	<50.0	<0.500	<0.500	<0.500	<1.50
	09/11/08		8.71	--	418.31	<94.3	<708	<50.0	<0.200	<0.500	<0.500	<1.00
	05/10/09		8.71	--	418.31	<403	<403	<50.0	<0.200	<0.500	<0.500	<1.00
	05/10/09 [D]		8.71	--	418.31	<427	<427	<50.0	<0.200	<0.500	<0.500	<1.00
	10/04/09		**10.78**	**--**	**416.24**	**<385**	**<385**	**<50.0**	**<0.500**	**<1.00**	**<1.00**	**<3.00**

TABLE 1
Groundwater Elevations and Analytical Results
Former Chevron Facility #301726
Lot 5A, Block 10, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well ID	Date Sampled	TOC (feet-amsl)	DTW (feet)	LNAPL Thickness (feet)	GWE (feet-amsl)	DRO[1] (µg/L)	RRO[2] (µg/L)	GRO[3] (µg/L)	BTEX[4]			
									Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
ADEC GCLs[5] (µg/L)						**1,500**	**1,100**	**2,200**	**5.0**	**1,000**	**700**	**10,000**
MW-5	08/19/04	426.89	6.44	--	420.45	<400	<480	<50.0	<0.2	<0.500	<0.500	<1.00
	03/30/05		10.16	--	416.73	3,310	435	<50.0	<0.500	<0.500	<0.500	<1.50
	09/19/05		8.19	--	418.70	<431	782	<50.0	<0.5	<0.500	<0.500	<1.50
	09/11/08		8.70	--	418.19	150	<708	<50.0	<0.2	<0.500	<0.500	<1.00
	05/10/09					Not Sampled - Ice in well						
	10/04/09		**10.65**	**--**	**416.24**	**559**	**<403**	**<50.0**	**<0.500**	**<1.00**	**<1.00**	**<3.00**
MW-6	08/19/04	426.82	6.36	--	420.46	<400	<480	<50.0	0.351	<0.500	<0.500	<1.00
	03/30/05		10.08	--	416.74	<388	<388	<50.0	<0.5	<0.500	<0.500	<1.50
	09/19/05		8.12	--	418.70	<403	<403	<50.0	<0.5	<0.500	<0.500	<1.50
	09/11/08		8.66	--	418.16	<100	<750	<50.0	<0.2	<0.500	<0.500	<1.0
	05/10/09		8.55	--	418.27	<427	<427	<50.0	<0.200	<0.500	<0.500	<1.00
	10/04/09		**10.63**	**--**	**416.19**	**<385**	**<385**	**<50.0**	**<0.500**	**<1.00**	**<1.00**	**<3.00**

Notes:
[1]: Diesel range organics (DRO) was analyzed by AK Method 102.
[2]: Residual range organics (RRO) was analyzed by AK Method 103.
[3]: Gasoline range organics (GRO) was analyzed by AK Method 101.
[4]: Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were analyzed by EPA Method 8021B.
[5]: ADEC Groundwater Cleanup Levels (GCLs) per 18 AAC 75.345, Table C, Register 188, January 2009.
[6]: MW-2 was not analyzed for DRO or RRO because there was insufficient sample volume due to breakage during shipping.

feet-msl = feet above sea level
µg/L = micrograms per liter
"--" = Indicates analyte was not sampled or analyzed for or parameter was not measured.
Highlighted cell indicates concentration exceeds groundwater cleanup level
"<" = Indicates analyte not detected greater than laboratory reporting limit indicated.
[D] = Indicates sample is a duplicate
Data associated with current monitoring event in **bold**.
ADEC= Alaska Department of Environmental Conservation
TOC = Top of casing
DTW = Depth to water
GWE = Groundwater elevation

TABLE 2
Geochemical Parameter Monitoring Results
Former Chevron Facility #301726
Lot 5A, Block 10, West Ramp
Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well ID	Date Sampled	Temperature (ºC)[1]	pH[1]	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 by Field Measurement (mg/L)[5]	Nitrate by Field Measurement (mg/L)[5]
MW-1	10/04/09	Not Sampled-LNAPL Detected									
MW-2	10/04/09	4.13	6.40	1.69	84.8	368	25.2	<0.100	<0.00120	0.0	0.0
MW-3	10/04/09	4.31	6.46	0.34	85.6	428	60.4	9.31	0.0143	0.0	3.0
MW-4	10/04/09	4.31	6.97	0.32	12.3	426	32.0	<0.100	0.0168	1.0	0.0
MW-5	10/04/09	2.34	6.26	1.49	140.8	427	62.5	10.6	0.00534	0.0	1.25
MW-6	10/04/09	4.95	6.39	3.12	139.6	549	43.0	4.01	0.00335	0.0	0.25

[1]: Temperature, pH, DO and ORP were measured using an YSI 556 and flow cell
[2]: Total Alkalinity analyzed using EPA method 310.1
[3]: Sulfate and nitrate analyzed by EPA method 300.0
[4]: Methane analyzed by method RSK 175
[5]: Ferrous iron and nitrate field measurement analyzed using colorimetric field kits

ºC = Degrees Celsius
DO = Dissolved oxygen
mg/L = milligrams per liter
ORP = Oxidation-reduction potential
mV = millivolts
$CaCO_3$ = Calcium carbonate
"<" = Indicates analyte not detected greater than laboratory reporting limit indicated
EPA = Environmental Protection Agency
[D] = Indicates sample is a duplicate
"--" = Not measured

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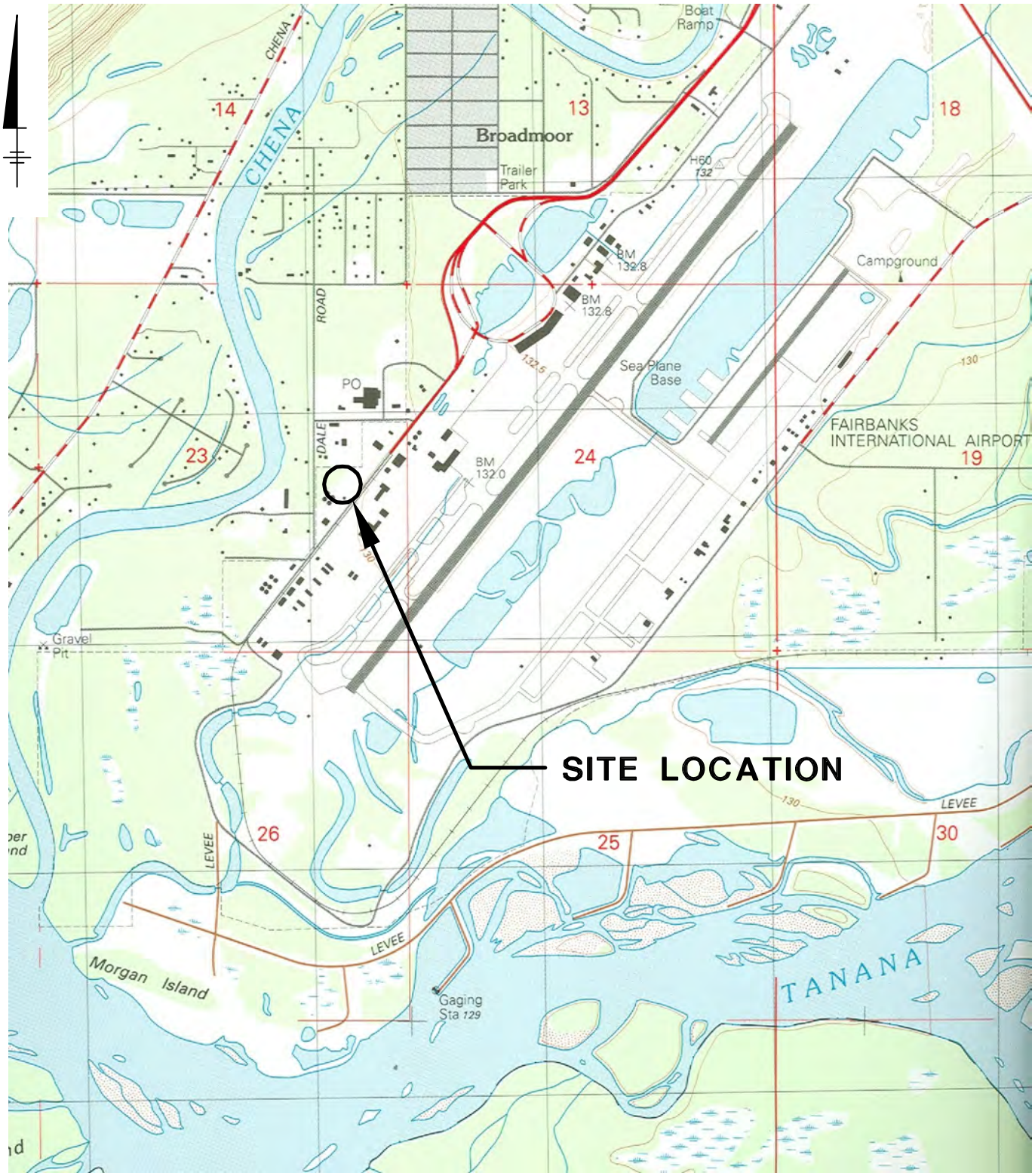
Figures



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

FORMER CHEVRON FACILITY NO. 301726
FAIRBANKS INT. AIRPORT, FAIRBANKS, ALASKA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT AND GEOCHEMICAL PARAMETER MONITORING REUSTLS

SITE LOCATION MAP

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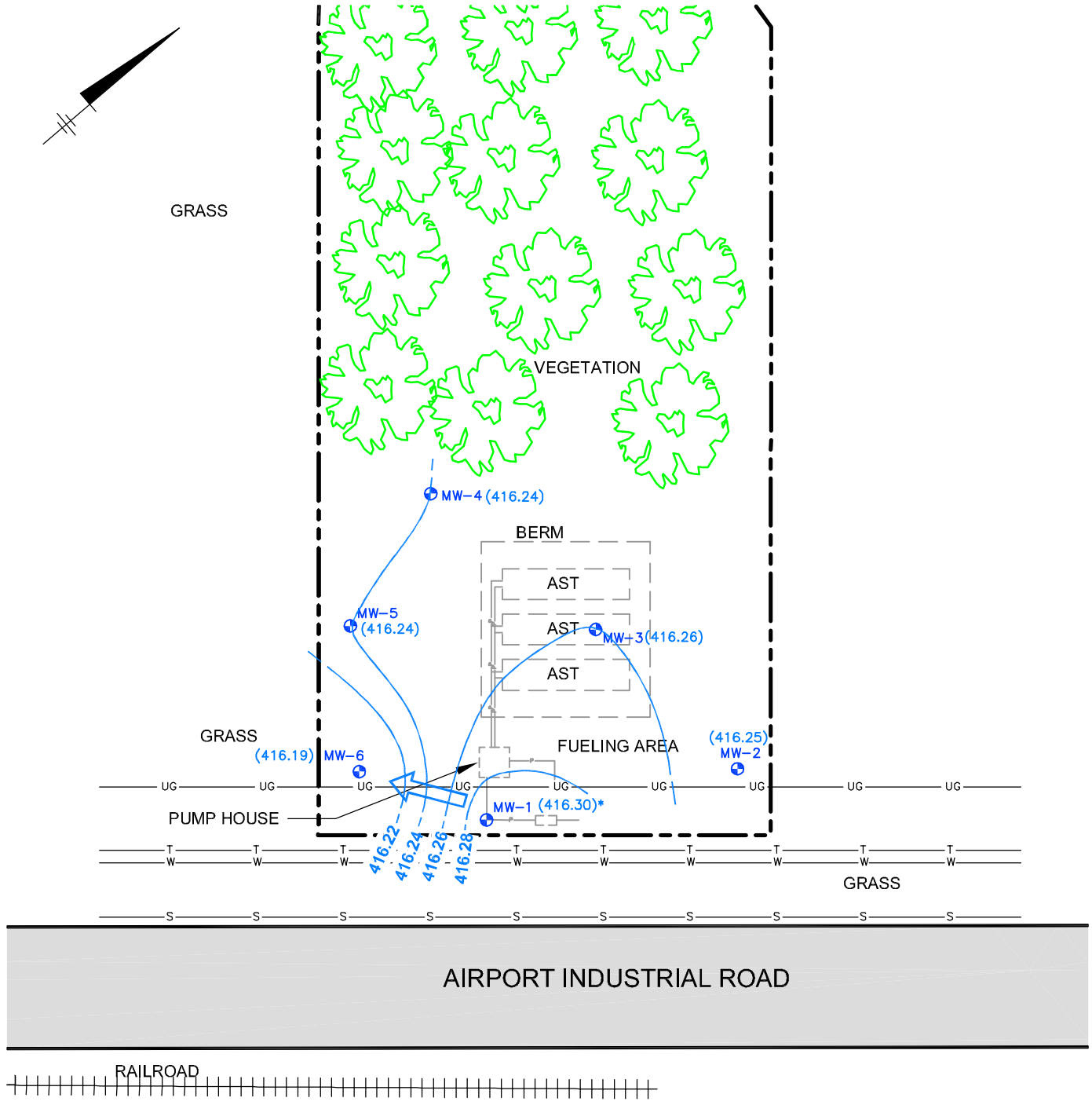
FIGURE 1

CITY:TMAPA,FL DIV/GROUP:85 DB:JAR LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Tampa-BVACT\B0046269\0001\000012SA GM GP 2009\B0046269N01.dwg LAYOUT: 1 SAVED: 12/7/2009 3:03 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/29/2009 11:33 AM BY: RICHARDS, JIM
XREFS: IMAGES: ALASKA.jpg FAIRBANKS-SW.jpg PROJECTNAME: ---



0 50' 100'

GRAPHIC SCALE

SOURCE: Base map digitized from "SAIC", Date 10/19/05, Scale 1"=30'

LEGEND

- MONITORING WELL
- BOUNDARY LINE
- 418.20 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED) CONTOUR INTERVAL = 0.02 FEET
- (418.19) GROUNDWATER ELEVATION (FEET)
- APPARENT DIRECTION OF GROUNDWATER FLOW
- * GROUNDWATER ELEVATION ADJUSTED FOR THE PRESENCE OF LNAPL (LIGHT NON-AQUEOUS PHASE LIQUID)

FORMER CHEVRON FACILITY NO. 301726
FAIRBANKS INT. AIRPORT, FAIRBANKS, ALASKA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT AND GEOCHEMICAL PARAMETER MONITORING REUSTLS

GROUNDWATER ELEVATION CONTOUR MAP - OCTOBER 4, 2009

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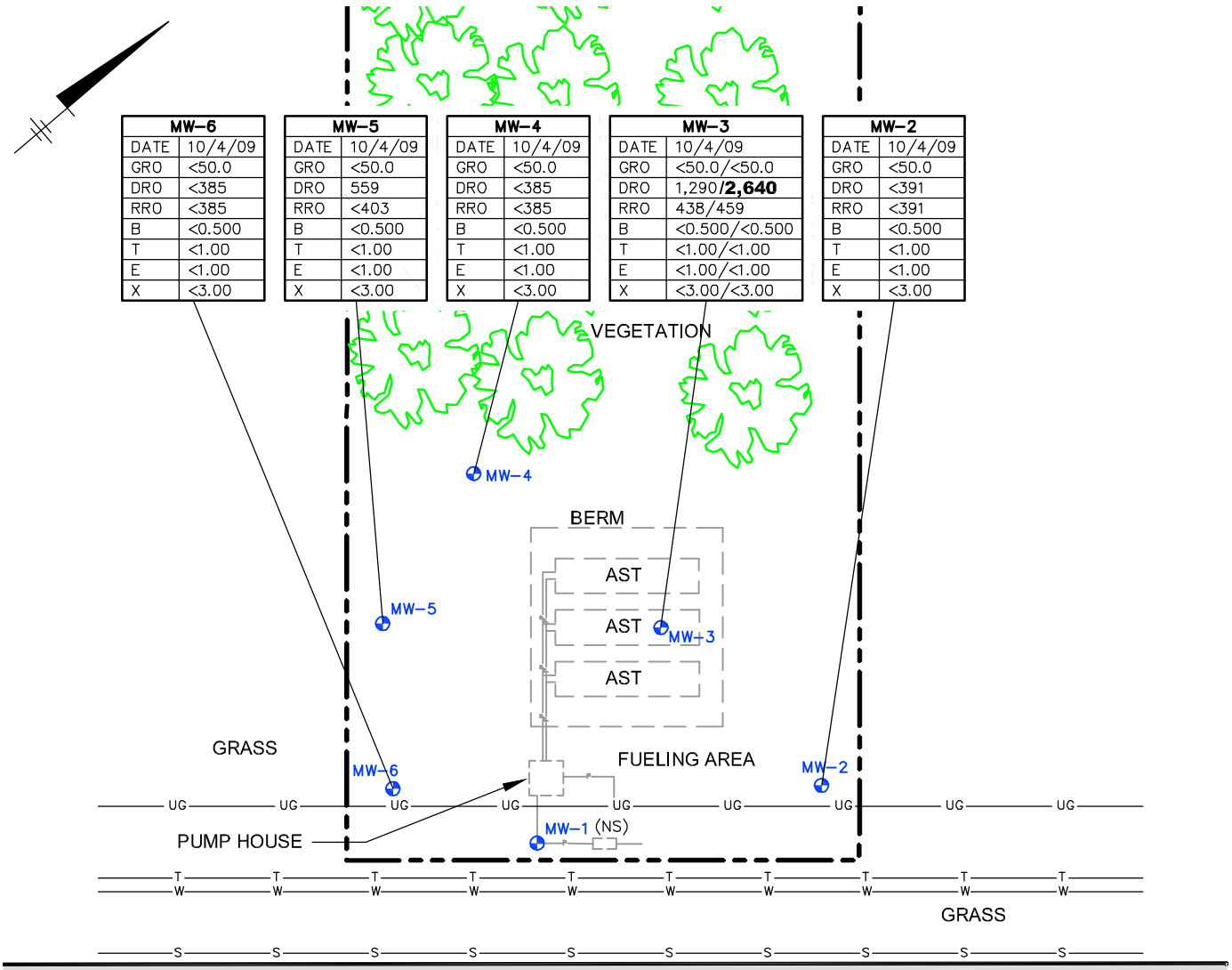
FIGURE 2



LEGEND

MONITORING WELL

BOUNDARY LINE

SAMPLE LOCATION	
DATE	Sample Date
GRO	Gasoline Range Organics
DRO	Diesel Range Organics
RRO	Residual Range Organics
B	Benzene
T	Toluene
E	Ethlybenzene
X	Total Xylenes

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

BOLD INDICATES CONCENTRATION EXCEEDS RESPECTIVE GROUNDWATER CLEANUP LEVEL

ADEC = ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NS = NOT SAMPLED

<1.00/<1.00 = DUPLICATE SAMPLE COLLECTED

SOURCE: Base map digitized from "SAIC", Date 10/19/05, Scale 1"=30'

0 50' 100'

GRAPHIC SCALE

FORMER CHEVRON FACILITY NO. 301726
FAIRBANKS INT. AIRPORT, FAIRBANKS, ALASKA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT AND GEOCHEMICAL PARAMETER MONITORING REUSTLS

GROUNDWATER ANALYTICAL RESULTS

ARCADIS

FIGURE 3

ARCADIS

Appendix A

Low-Flow Sampling Field Data Sheets and Field Notes

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0046269 | Well ID MW-2 | Date 10/4/09

Project Name/Location FIATexaco 301726 / Fairbanks, AK | Weather P. Sunny, 30s

Measuring Pt. Description TOC | Screen Setting (ft-bmp) | Casing Diameter (in.) 2" | Well Material ✓ PVC / SS

Static Water Level (ft-btoc) 10.48 | Total Depth (ft-btoc) | Water Column/ Gallons in Well | Initial PID Reading (ppm) 0.0

TOC Elevation | Pump Intake (ft-btoc) | Purge Method: Peristaltic / Centrifugal / Submersible / Other ✓ | Sample Method Peristaltic

Pump On/Off | Volumes Purged

Sample Time: Label 1220 / Start / End | Replicate/ Code No. N/A | Sampled by MLS

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
1151	0	200	10.48	0.1	6.43	0.721	6.89	4.28	4.41	89.4	Clear	None
1157	6	200	"	0.2	6.41	0.725	7.25	2.34	4.14	86.7	"	"
1201	4	200	"	0.5	6.38	0.727	5.45	2.17	4.08	87.2	"	"
1205	4	200	"	0.6	6.38	0.729	3.98	1.96	4.09	86.9	"	"
1209	4	200	"	0.8	6.39	0.731	3.68	.81	4.11	85.9	"	"
1214	5	200	"	1.0	6.39	0.734	3.69	1.72	4.11	85.0	"	"
1218	4	200	"	1.2	6.40	0.735	2.42	1.69	4.13	84.8	"	"
			Ferrous Iron = 0.0 ppm (no color)									
			Nitrate = 0.0 ppm (no color)									

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	VOA	3	HCl
DRO/RRO	Small Amber	2	HCl
Alkalinity	Poly	1	~~HCl~~
Sulfate/Nitrate/~~Chloride~~			
Methane	VOA	3	HCl

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location: Side by fence | 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: 3910

GW Samp Form 9/25/2009

ARCADIS Groundwater Sampling Form

Project No. B0046269 Well ID MW-3 Date 10/4/09

Project Name/Location FTA-Texaco 307726/Fairbanks, AK Weather Sunny, 30s

Measuring Pt. Description TOC | Screen Setting (ft-bmp) | Casing Diameter (in.) 2" | Well Material ✓ PVC ___ SS

Static Water Level (ft-btoc) 10.90 | Total Depth (ft-btoc) | Water Column/ Gallons in Well | Initial PID Reading (ppm) 0.0

TOC Elevation | Pump Intake (ft-btoc) | Purge Method: Peristaltic / Centrifugal / Submersible / Other ✓ | Sample Method Peristaltic

Pump On/Off | Volumes Purged

Sample Time: Label 1120 Start End | Replicate/ Code No. BD-1 | Sampled by MLS

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
1041	0	200	10.90	0.1	6.62	1.171	30.79	3.25	5.54	96.9	Clear	None
1052	11	200	"	0.5	6.48	1.163	6.35	0.85	5.15	93.6	"	"
1059	7	200	"	1.0	6.50	1.167	4.51	0.49	4.72	89.4	"	"
1103	4	200	"	1.2	6.46	1.164	4.05	0.38	4.47	90.2	"	"
1108	5	200	"	1.4	6.46	1.151	2.22	0.37	4.35	88.4	"	"
1113	5	200	"	1.6	6.46	1.141	1.29	0.34	4.31	85.6	"	"
			Ferrous Iron: 0.0					ppm (no color)				
			Nitrate: 3.0					ppm				

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	VOA	3	HCl
DRO/RRO	Small Amber	2	HCl
Alkalinity	Poly	1	—
Sulfate/Nitrate			
Methane	VOA	3	HCl

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location:	Dirt 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:	3910

GW Samp Form 9/25/2009

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. B0046269 | Well ID MW-4 | Date 10/4/09

Project Name/Location FIA Texaco 301726 / Fairbanks, AK | Weather P. Sunny, 30s

Measuring Pt. Description TOC | Screen Setting (ft-bmp) | Casing Diameter (in.) 2" | Well Material ✓ PVC / SS

Static Water Level (ft-btoc) 10.78 | Total Depth (ft-btoc) | Water Column/ Gallons in Well | Initial PID Reading (ppm) 0.0

TOC Elevation | Pump Intake (ft-btoc) | Purge Method: Peristaltic / Centrifugal / Submersible / Other ✓ | Sample Method Peristaltic

Pump On/Off | Volumes Purged

Sample Time: Label 1320 / Start / End | Replicate/ Code No. N/A | Sampled by MCS

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
1248	0	200	10.78	0.1	6.96	0.896	18.58	4.25	4.88	76.5	Clear	None
1252	4	200	"	0.2	6.99	0.898	13.16	1.28	4.53	71.9	"	"
1256	4	200	"	0.4	6.97	0.896	23.43	1.13	4.45	69.6	"	"
1300	4	200	"	0.6	6.97	0.881	21.25	0.62	4.32	51.1	"	"
1304	4	200	"	1.0	6.98	0.883	19.25	0.47	4.26	34.9	"	"
1308	4	200	"	1.1	6.97	0.871	21.57	0.35	4.18	27.5	"	"
1312	4	200	"	1.3	6.96	0.856	11.47	0.32	4.26	12.4	"	"
1316	4	200	"	1.4	6.97	0.851	9.89	0.32	4.31	12.3	"	"

Ferrous Iron: 1.0 ppm

Nitrate: 0.0 ppm (no color)

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	VOA	3	HCl
DRO/RRO	Small Amber	2	HCl
Alkalinity/Sulfate/Nitrate	Poly	1	—
Methane	VOA	3	HCl

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location: Near woods | 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: 3910

GW Samp Form 9/25/2009

ARCADIS Groundwater Sampling Form

Page 1 of 1

Project No. _____ Well ID MW-5 Date 10/04/09

Project Name/Location FIA Texaco Weather 42° Overcast

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) _____ Well Material X PVC ___ SS

Static Water Level (ft-btoc) 10.65 Total Depth (ft-btoc) _____ Water Column/ Gallons in Well _____ Initial PID Reading (ppm) _____

TOC Elevation _____ Pump Intake (ft-btoc) _____ Purge Method: Peri Centrifugal Submersible Other _____ Sample Method YSI/peri

Pump On/Off _____ Volumes Purged _____

Sample Time: Label _____ Start _____ End _____ 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
12:06	0	3.92	10.69	0	4.93	0.958	1.42	16.34	2.41	171.0	clear	NO
12:10	4	3.87	10.69	<0.5	6.08	1.054	1.17	1.42	2.27	148.7	"	"
12:15	9	3.88	10.69	<0.5	6.10	1.054	1.52	1.53	2.27	146.1	"	"
12:18	12	3.86	10.69	0.5	6.15	1.054	1.74	1.54	2.30	141.2	"	"
12:21	15	3.88	10.69	<0.75	6.24	1.059	1.68	1.55	2.31	143.7	"	"
12:25	21	3.87	10.64	0.75	6.25	1.058	1.59	1.49	2.34	140.3	"	"
12:30	26	3.87	10.69	<1	6.26	1.058	1.50	1.41	2.34	143.6	"	"
12:33	29	3.87	10.69	<1	6.26	1.057	1.23	1.49	2.34	140.8	"	"
				Sampled @ 12:40								
				Fe^{2+} = 0.0 mg/L								
				Nitrate = 1.25 mg/L								

Constituents Sampled	Container	Number	Preservative
BTEX/GRO			
Total AK/Sulfate/Nitrate			
Methane			
DRO/RRO			

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location: park 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: _____

GW Samp Form 9/25/2009

ARCADIS Groundwater Sampling Form

Project No. _____ Well ID MW-6 Date 10/4/09

Project Name/Location FIA Texaco Weather 40°

Measuring Pt. Description _____ Screen Setting (ft-bmp) _____ Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-btoc) 10.63 Total Depth (ft-btoc) _____ Water Column/ Gallons in Well _____ Initial PID Reading (ppm) _____

TOC Elevation _____ Pump Intake (ft-btoc) _____ Purge Method: Peri pump Centrifugal ___ Submersible ___ Other ___ Sample Method YSI/peri

Pump On/Off _____ Volumes Purged _____

Sample Time: Label _____ Start _____ End _____ 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	Odor
11:00	0	4.41	10.67	0	6.15	1.165	7.42	3.74	5.25	184.7	clear	ND
11:10	10	4.43	10.67	<0.5	6.15	1.173	1.32	4.07	4.96	157.6	"	"
11:13	13	4.43	10.67	<0.5	6.26	1.173	0.09	4.05	4.97	152.4	"	"
11:16	16	4.44	10.61	0.5	6.36	1.171	0.61	3.53	4.98	146.8	"	"
11:19	19	4.44	10.61	20.75	6.39	1.165	6.27	3.23	4.98	146.2	"	"
11:23	23	4.44	10.61	0.75	6.38	1.164	0.17	3.15	4.95	139.9	"	"
11:27	27	4.44	10.61	<1	6.39	1.163	0.09	3.12	4.95	139.6	"	"
				Sampled @ 11:35								
				Fe^{2+} = 0.0 mg/L								
				Nitrate = 0.25 mg/L								

Constituents Sampled	Container	Number	Preservative
BTEX/GRO	VOA	3	
DRO/RRO	amber	2	
Methane	VOA	3	
Sulfate Nitrate Total Alk	poly	1	

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location: grass 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: _____

Location _____ Date _____

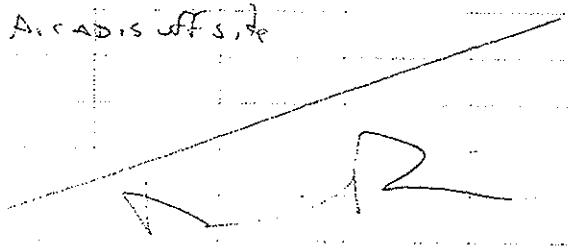
Project / Client _____

Well	Fe mg/L	Nitrate mg/L	Sampled @	
MW-6	0	0	9:20	
MW-2	0	0	9:10	
MW-1	2.0	0	10:25	strong odor
MW-4	0	0	10:30	/ Dup - 1
MW-3	NS			
PW-1	—	—	1110	

↳ purge water in drum labeled PW-1 sampled for BETX, GRO, DRO, ARO
- Drum is located at back of lot along tree line (near MW-4)
- Drum is approx 1/3 full

Did not sample MW-5 (blocked with ice) or MW-3 (blocked) as per Greg Montgomery direction.

11:30 Arcadis off site



Location FIA Texaco Date 10/4/09

Project / Client # 301726

Weather: 29° Sunny
Activity: GW Sampling
Personnel: M. Strickler / D. Berube

0:8:45 Arrive on site. H2S meeting. JE tenants
Hand safety / Haz ID Bio: wildlife
Motion: lifting
Gravity: working w/ tools
Pressure: isobutylene
Temp: cold temps

9:20 Gauge wells

Well ID	Time	DTW	DTP	DTB	PID Comment
MW-3	9:25	10.9	—	14.1	0.0 just condition
MW-2	9:30	10.48	—	—	0.0
MW-1	9:35	10.55	10.54	—	1205

visible product / strong odor in MW-1 confirm w/ bailer. < 1" thickness, globules

MW-6	9:41	10.63	—	—	0.0
MW-5	9:46	10.65		14.2	0.0
MW-4	9:50	10.78	—	—	0.0

FIA Texaco 10/4/09
CVX# 301726

1015: Calibrate both YSI meters. Call Greg Montgomery about LNAPL in MW-1. Confirm MRA sampling of wells (discrepancy in task order).

1030: Begin setting up at MW-6 and MW-3.

MW-3 @ 1120
Nitrate 3.0 Fe^{2+} 0.0 (no odor)
BD-1 collected from MW-3
MW-6 @ 1135
Nitrate 0.25 Fe^{2+} 0.0

1150: Begin setting up at MW-2 and MW-5.

MW-2 @ 1220
Nitrate 0.0 Fe^{2+} 0.0

MW-5 @ 1240
Nitrate 1.25 Fe^{2+} 0.0

FIA Texaco 10/4/09
CVX# 301726

1240: Setup at MW-4.

MW-4 @ 1320
Nitrate 0.0 Fe^{2+} 1.0

1330: PW-1 @ 1330

Appx. 15 gal. of purge water in 55 gal. steel drum. Drum is at edge of woods, just within the woods.

1345: Site secure, ARCADIS offsite.

ARCADIS

Appendix B

Laboratory Analytical Report, Chain-of-Custody, and ADEC Laboratory Checklist

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

October 21, 2009

Greg Montgomery
Arcadis - Seattle
2300 East Lake Ave East Suite 100
Seattle, WA 98102

RE: FIA Texaco

Enclosed are the results of analyses for samples received by the laboratory on 10/06/09 12:45. The following list is a summary of the Work Orders contained in this report, generated on 10/21/09 17:08.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
ASJ0032	FIA Texaco	301726

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

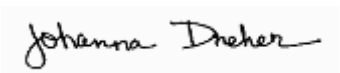
ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	ASJ0032-01	Water	10/04/09 12:20	10/06/09 12:45
MW-3	ASJ0032-02	Water	10/04/09 11:20	10/06/09 12:45
MW-4	ASJ0032-03	Water	10/04/09 13:20	10/06/09 12:45
MW-5	ASJ0032-04	Water	10/04/09 12:40	10/06/09 12:45
MW-6	ASJ0032-05	Water	10/04/09 11:35	10/06/09 12:45
BD-1	ASJ0032-06	Water	10/04/09 00:00	10/06/09 12:45
Trip Blank	ASJ0032-07	Water	10/04/09 00:00	10/06/09 12:45
PW-1	ASJ0032-08	Water	10/04/09 13:30	10/06/09 12:45
Trip Blank	ASJ0032-09	Water	10/04/09 00:00	10/06/09 12:45

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-01 (MW-2)			**Water**				**Sampled: 10/04/09 12:20**				
Diesel Range Organics	AK102/103	ND	-----	0.391	mg/l	1x	9100079	10/16/09 10:30	10/17/09 15:58	JN	
Residual Range Organics	"	ND	-----	0.391	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*99.8%*		*50 - 150 %*	"			"		
Triacontane			*91.9%*		*50 - 150 %*	"			"		
ASJ0032-02 (MW-3)			**Water**				**Sampled: 10/04/09 11:20**				
Diesel Range Organics	AK102/103	**1.29**	-----	0.394	mg/l	1x	9100079	10/16/09 10:30	10/17/09 16:29	JN	
Residual Range Organics	"	**0.438**	-----	0.394	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*101%*		*50 - 150 %*	"			"		
Triacontane			*97.2%*		*50 - 150 %*	"			"		
ASJ0032-03 (MW-4)			**Water**				**Sampled: 10/04/09 13:20**				
Diesel Range Organics	AK102/103	ND	-----	0.385	mg/l	1x	9100079	10/16/09 10:30	10/17/09 17:01	JN	
Residual Range Organics	"	ND	-----	0.385	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*108%*		*50 - 150 %*	"			"		
Triacontane			*101%*		*50 - 150 %*	"			"		
ASJ0032-04 (MW-5)			**Water**				**Sampled: 10/04/09 12:40**				
Diesel Range Organics	AK102/103	**0.559**	-----	0.403	mg/l	1x	9100079	10/16/09 10:30	10/17/09 17:32	JN	
Residual Range Organics	"	ND	-----	0.403	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*98.9%*		*50 - 150 %*	"			"		
Triacontane			*92.8%*		*50 - 150 %*	"			"		
ASJ0032-05 (MW-6)			**Water**				**Sampled: 10/04/09 11:35**				
Diesel Range Organics	AK102/103	ND	-----	0.385	mg/l	1x	9100079	10/16/09 10:30	10/17/09 18:04	JN	
Residual Range Organics	"	ND	-----	0.385	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*97.5%*		*50 - 150 %*	"			"		
Triacontane			*91.0%*		*50 - 150 %*	"			"		
ASJ0032-06 (BD-1)			**Water**				**Sampled: 10/04/09 00:00**				
Diesel Range Organics	AK102/103	**2.64**	-----	0.391	mg/l	1x	9100079	10/16/09 10:30	10/17/09 18:35	JN	
Residual Range Organics	"	**0.459**	-----	0.391	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*99.1%*		*50 - 150 %*	"			"		
Triacontane			*93.2%*		*50 - 150 %*	"			"		

TestAmerica Anchorage

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Johanna L Dreher, Client Services Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

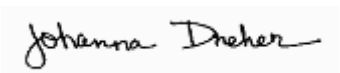
Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-08 (PW-1)		**Water**				**Sampled: 10/04/09 13:30**					
Diesel Range Organics	AK102/103	**0.534**	-----	0.391	mg/l	1x	9100079	10/16/09 10:30	10/17/09 19:38	JN	
Residual Range Organics	"	ND	-----	0.391	"	"	"	"	"	JN	
Surrogate(s): 1-Chlorooctadecane			*97.8%*		*50 - 150 %*	"				"	
Triacontane			*92.9%*		*50 - 150 %*	"				"	

TestAmerica Anchorage



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THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Hydrocarbons by GC/FID Headspace

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-01 (MW-2)			**Water**				**Sampled: 10/04/09 12:20**				
Methane	GC/FID	ND	-----	1.20	ug/l	1x	9100075	10/16/09 07:59	10/16/09 11:30	DS	
ASJ0032-02 (MW-3)			**Water**				**Sampled: 10/04/09 11:20**				
Methane	GC/FID	**14.3**	-----	1.20	ug/l	1x	9100075	10/16/09 07:59	10/16/09 11:52	DS	
ASJ0032-03 (MW-4)			**Water**				**Sampled: 10/04/09 13:20**				
Methane	GC/FID	**16.8**	-----	1.20	ug/l	1x	9100075	10/16/09 07:59	10/16/09 11:56	DS	
ASJ0032-04 (MW-5)			**Water**				**Sampled: 10/04/09 12:40**				
Methane	GC/FID	**5.34**	-----	1.20	ug/l	1x	9100075	10/16/09 07:59	10/16/09 12:04	DS	
ASJ0032-05 (MW-6)			**Water**				**Sampled: 10/04/09 11:35**				
Methane	GC/FID	**3.35**	-----	1.20	ug/l	1x	9100075	10/16/09 07:59	10/16/09 12:07	DS	

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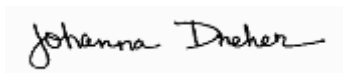

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ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name: **FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number: 301726	Report Created:
Seattle, WA 98102	Project Manager: Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-01 (MW-2)		**Water**					**Sampled: 10/04/09 12:20**				
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100042	10/09/09 08:53	10/10/09 17:31	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	ds	
Toluene	"	ND	-----	1.00	"	"	"	"	"	ds	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	ds	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	ds	
Surrogate(s): 4-BFB			*97.6%*		*85 - 115 %*	"				"	
Dibromofluoromethane			*120%*		*65 - 125 %*	"				"	
Toluene-d8			*88.4%*		*78 - 115 %*	"				"	
ASJ0032-02 (MW-3)		**Water**					**Sampled: 10/04/09 11:20**				
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100042	10/09/09 08:53	10/10/09 18:00	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	ds	
Toluene	"	ND	-----	1.00	"	"	"	"	"	ds	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	ds	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	ds	
Surrogate(s): 4-BFB			*93.8%*		*85 - 115 %*	"				"	
Dibromofluoromethane			*122%*		*65 - 125 %*	"				"	
Toluene-d8			*88.8%*		*78 - 115 %*	"				"	
ASJ0032-03 (MW-4)		**Water**					**Sampled: 10/04/09 13:20**				
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100042	10/09/09 08:53	10/10/09 18:29	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	ds	
Toluene	"	ND	-----	1.00	"	"	"	"	"	ds	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	ds	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	ds	
Surrogate(s): 4-BFB			*96.8%*		*85 - 115 %*	"				"	
Dibromofluoromethane			*121%*		*65 - 125 %*	"				"	
Toluene-d8			*88.5%*		*78 - 115 %*	"				"	
ASJ0032-04 (MW-5)		**Water**					**Sampled: 10/04/09 12:40**				
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100042	10/09/09 08:53	10/10/09 18:58	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	ds	
Toluene	"	ND	-----	1.00	"	"	"	"	"	ds	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	ds	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	ds	
Surrogate(s): 4-BFB			*97.0%*		*85 - 115 %*	"				"	

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ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-04 (MW-5)		**Water**				**Sampled: 10/04/09 12:40**					
Dibromofluoromethane		*121%*		*65 - 125 %*		*1x*			*10/10/09 18:58*		
Toluene-d8		*88.7%*		*78 - 115 %*		*"*			*"*		
ASJ0032-05 (MW-6)		**Water**				**Sampled: 10/04/09 11:35**					
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100047	10/12/09 07:00	10/12/09 14:28	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	kc	
Toluene	"	ND	-----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	kc	
Surrogate(s): 4-BFB		*99.8%*		*85 - 115 %*		*"*			*"*		
Dibromofluoromethane		*112%*		*65 - 125 %*		*"*			*"*		
Toluene-d8		*97.3%*		*78 - 115 %*		*"*			*"*		
ASJ0032-06 (BD-1)		**Water**				**Sampled: 10/04/09 00:00**					
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100047	10/12/09 07:00	10/12/09 14:58	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	kc	
Toluene	"	ND	-----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	kc	
Surrogate(s): 4-BFB		*94.8%*		*85 - 115 %*		*"*			*"*		
Dibromofluoromethane		*113%*		*65 - 125 %*		*"*			*"*		
Toluene-d8		*95.9%*		*78 - 115 %*		*"*			*"*		
ASJ0032-07 (Trip Blank)		**Water**				**Sampled: 10/04/09 00:00**					
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100047	10/12/09 07:00	10/12/09 12:01	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	kc	
Toluene	"	ND	-----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	kc	
Surrogate(s): 4-BFB		*101%*		*85 - 115 %*		*"*			*"*		
Dibromofluoromethane		*110%*		*65 - 125 %*		*"*			*"*		
Toluene-d8		*96.8%*		*78 - 115 %*		*"*			*"*		

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CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-08 (PW-1)		**Water**				**Sampled: 10/04/09 13:30**					**A-01**
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100047	10/12/09 07:00	10/12/09 15:27	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	kc	
Toluene	"	ND	-----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	kc	
Surrogate(s): 4-BFB			*97.3%*		*85 - 115 %*	"			"		
Dibromofluoromethane			*114%*		*65 - 125 %*	"			"		
Toluene-d8			*96.8%*		*78 - 115 %*	"			"		
ASJ0032-09 (Trip Blank)		**Water**				**Sampled: 10/04/09 00:00**					
Gasoline Range Organics	EPA 8260B	ND	-----	50.0	ug/l	1x	9100047	10/12/09 07:00	10/12/09 12:31	ds	
Benzene	"	ND	-----	0.500	"	"	"	"	"	kc	
Toluene	"	ND	-----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	-----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	-----	3.00	"	"	"	"	"	kc	
Surrogate(s): 4-BFB			*99.4%*		*85 - 115 %*	"			"		
Dibromofluoromethane			*110%*		*65 - 125 %*	"			"		
Toluene-d8			*98.4%*		*78 - 115 %*	"			"		

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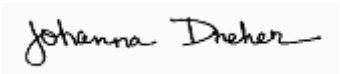

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ANCHORAGE, AK 99502-1119
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CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Anions per EPA Method 300.0

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-01 (MW-2)			**Water**			**Sampled: 10/04/09 12:20**					
Nitrate-Nitrogen	EPA 300.0	ND	-----	0.100	mg/l	1x	9100305	10/09/09 08:13	10/09/09 12:00	SW	**H3**
Sulfate	"	**25.2**	-----	1.00	"	"	"	"	"	SW	
ASJ0032-02 (MW-3)			**Water**			**Sampled: 10/04/09 11:20**					
Nitrate-Nitrogen	EPA 300.0	**9.31**	-----	0.100	mg/l	1x	9100305	10/09/09 08:13	10/09/09 12:14	SW	**H3**
Sulfate	"	**60.4**	-----	1.00	"	"	"	"	"	SW	
ASJ0032-03 (MW-4)			**Water**			**Sampled: 10/04/09 13:20**					
Nitrate-Nitrogen	EPA 300.0	ND	-----	0.100	mg/l	1x	9100305	10/09/09 08:13	10/09/09 12:28	SW	**H3**
Sulfate	"	**32.0**	-----	1.00	"	"	"	"	"	SW	
ASJ0032-04 (MW-5)			**Water**			**Sampled: 10/04/09 12:40**					
Nitrate-Nitrogen	EPA 300.0	**10.6**	-----	0.100	mg/l	1x	9100305	10/09/09 08:13	10/09/09 12:42	SW	**H3**
Sulfate	"	**62.5**	-----	1.00	"	"	"	"	"	SW	
ASJ0032-05 (MW-6)			**Water**			**Sampled: 10/04/09 11:35**					
Nitrate-Nitrogen	EPA 300.0	**4.01**	-----	0.100	mg/l	1x	9100305	10/09/09 08:13	10/09/09 12:56	SW	**H3**
Sulfate	"	**43.0**	-----	1.00	"	"	"	"	"	SW	

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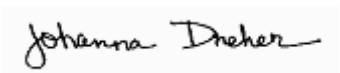

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ANCHORAGE, AK 99502-1119
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CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Total Alkalinity by Conventional Chemistry Parameters per APHA/EPA Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASJ0032-01 (MW-2)			**Water**			**Sampled: 10/04/09 12:20**					
Total Alkalinity	EPA 310.1	**368**	-----	5.00	mg/L as CaCO3	1x	9100504	10/15/09 07:45	10/15/09 12:52	SVW	
ASJ0032-02 (MW-3)			**Water**			**Sampled: 10/04/09 11:20**					
Total Alkalinity	EPA 310.1	**428**	-----	5.00	mg/L as CaCO3	1x	9100457	10/14/09 10:05	10/14/09 17:37	SVW	
ASJ0032-03 (MW-4)			**Water**			**Sampled: 10/04/09 13:20**					
Total Alkalinity	EPA 310.1	**426**	-----	5.00	mg/L as CaCO3	1x	9100457	10/14/09 10:05	10/14/09 17:45	SVW	
ASJ0032-04 (MW-5)			**Water**			**Sampled: 10/04/09 12:40**					
Total Alkalinity	EPA 310.1	**427**	-----	5.00	mg/L as CaCO3	1x	9100457	10/14/09 10:05	10/14/09 17:53	SVW	
ASJ0032-05 (MW-6)			**Water**			**Sampled: 10/04/09 11:35**					
Total Alkalinity	EPA 310.1	**549**	-----	5.00	mg/L as CaCO3	1x	9100457	10/14/09 10:05	10/14/09 18:16	SVW	

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Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9100079 **Water Preparation Method: EPA 3510**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100079-BLK1)							**Extracted: 10/16/09 10:30**							
Diesel Range Organics	AK102/103	ND	---	0.500	mg/l	1x	--	--	--	--	--	--	10/17/09 13:52	
Residual Range Organics	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 85.0%*			*Limits: 50-150%*	"							*10/17/09 13:52*	
Triacontane		*78.1%*			*50-150%*	"							"	
LCS (9100079-BS1)							**Extracted: 10/16/09 10:30**							
Diesel Range Organics	AK102/103	9.66	---	0.500	mg/l	1x	--	10.3	93.8%	(75-125)	--	--	10/17/09 14:24	
Residual Range Organics	"	12.0	---	0.500	"	"	--	10.2	117%	(60-120)	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 104%*			*Limits: 60-120%*	"							*10/17/09 14:24*	
Triacontane		*101%*			*60-120%*	"							"	
LCS Dup (9100079-BSD1)							**Extracted: 10/16/09 10:30**							
Diesel Range Organics	AK102/103	10.1	---	0.500	mg/l	1x	--	10.3	98.3%	(75-125)	4.70%	(20)	10/17/09 14:55	
Residual Range Organics	"	12.1	---	0.500	"	"	--	10.2	118%	(60-120)	0.735%	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 109%*			*Limits: 60-120%*	"							*10/17/09 14:55*	
Triacontane		*105%*			*60-120%*	"							"	
Duplicate (9100079-DUP1)					**QC Source: ASJ0032-01**		**Extracted: 10/16/09 10:30**							
Diesel Range Organics	AK102/103	ND	---	0.391	mg/l	1x	ND	--	--	--	36.0%	(20)	10/17/09 15:27	R4
Residual Range Organics	"	ND	---	0.391	"	"	ND	--	--	--	18.2%	(50)	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 98.1%*			*Limits: 50-150%*	"							*10/17/09 15:27*	
Triacontane		*92.7%*			*50-150%*	"							"	

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Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Hydrocarbons by GC/FID Headspace - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9100075 **Water Preparation Method: RSK 175**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100075-BLK1)								**Extracted: 10/16/09 07:59**						
Methane	GC/FID	ND	---	1.20	ug/l	1x	--	--	--	--	--	--	10/16/09 11:15	
LCS (9100075-BS1)								**Extracted: 10/16/09 07:59**						
Methane	GC/FID	58.1	---	1.20	ug/l	1x	--	56.4	103%	(85-115)	--	--	10/16/09 11:08	
LCS Dup (9100075-BSD1)								**Extracted: 10/16/09 07:59**						
Methane	GC/FID	55.8	---	1.20	ug/l	1x	--	56.4	98.9%	(85-115)	4.13%	(25)	10/16/09 11:48	
Duplicate (9100075-DUP1)					**QC Source: ASJ0032-01**				**Extracted: 10/16/09 07:59**					
Methane	GC/FID	ND	---	1.20	ug/l	1x	ND	--	--	--	NR	(20)	10/16/09 11:20	

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Johanna L Dreher, Client Services Manager

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ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name: **FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number: 301726	Report Created:
Seattle, WA 98102	Project Manager: Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9100042 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100042-BLK1)							**Extracted: 10/09/09 08:53**							
Gasoline Range Organics	EPA 8260B	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	10/09/09 13:48	
Benzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	3.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 98.2%*			*Limits: 85-115%*	"							*10/09/09 13:48*	
Dibromofluoromethane		*115%*			*65-125%*	"							"	
Toluene-d8		*89.4%*			*78-115%*	"							"	
LCS (9100042-BS1)							**Extracted: 10/09/09 08:53**							
Benzene	EPA 8260B	19.3	---	0.500	ug/l	1x	--	20.0	96.6%	(67-125)	--	--	10/09/09 11:43	
Toluene	"	17.9	---	1.00	"	"	--	"	89.4%	(80-120)	--	--	"	
Ethylbenzene	"	19.1	---	1.00	"	"	--	"	95.4%	"	--	--	"	
Xylenes (total)	"	56.0	---	3.00	"	"	--	60.0	93.3%	"	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 94.1%*			*Limits: 85-115%*	"							*10/09/09 11:43*	
Dibromofluoromethane		*118%*			*65-125%*	"							"	
Toluene-d8		*91.4%*			*78-115%*	"							"	
LCS (9100042-BS2)							**Extracted: 10/09/09 08:53**							
Gasoline Range Organics	EPA 8260B	562	---	50.0	ug/l	1x	--	550	102%	(60-120)	--	--	10/09/09 12:13	
Surrogate(s): 4-BFB		*Recovery: 94.4%*			*Limits: 85-115%*	"							*10/09/09 12:13*	
Dibromofluoromethane		*115%*			*65-125%*	"							"	
Toluene-d8		*89.5%*			*78-115%*	"							"	
LCS Dup (9100042-BSD1)							**Extracted: 10/09/09 08:53**							
Benzene	EPA 8260B	20.0	---	0.500	ug/l	1x	--	20.0	100%	(67-125)	3.71%	(20)	10/09/09 12:42	
Toluene	"	18.6	---	1.00	"	"	--	"	93.0%	(80-120)	4.00%	"	"	
Ethylbenzene	"	19.4	---	1.00	"	"	--	"	97.0%	"	1.56%	"	"	
Xylenes (total)	"	57.0	---	3.00	"	"	--	60.0	95.0%	"	1.88%	"	"	
Surrogate(s): 4-BFB		*Recovery: 95.6%*			*Limits: 85-115%*	"							*10/09/09 12:42*	
Dibromofluoromethane		*118%*			*65-125%*	"							"	
Toluene-d8		*91.2%*			*78-115%*	"							"	

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Johanna L Dreher, Client Services Manager

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ANCHORAGE, AK 99502-1119
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CS Approval Number: UST-067

Arcadis - Seattle	Project Name: **FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number: 301726	Report Created:
Seattle, WA 98102	Project Manager: Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9100042 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS Dup (9100042-BSD2)							**Extracted: 10/09/09 08:53**							
Gasoline Range Organics	EPA 8260B	609	---	50.0	ug/l	1x	--	550	111%	(60-120)	8.14%	(20)	10/09/09 13:19	
Surrogate(s): 4-BFB		*Recovery: 94.0%*			*Limits: 85-115%*	"							*10/09/09 13:19*	
Dibromofluoromethane		*122%*			*65-125%*	"							"	
Toluene-d8		*86.2%*			*78-115%*	"							"	
Duplicate (9100042-DUP1)					**QC Source: ASJ0018-06**		**Extracted: 10/09/09 08:53**							
Gasoline Range Organics	EPA 8260B	ND	---	50.0	ug/l	1x	ND	--	--	--	18.4%	(12)	10/10/09 19:28	R4
Surrogate(s): 4-BFB		*Recovery: 93.6%*			*Limits: 85-115%*	"							*10/10/09 19:28*	
Dibromofluoromethane		*120%*			*65-125%*	"							"	
Toluene-d8		*88.2%*			*78-115%*	"							"	
Matrix Spike (9100042-MS1)					**QC Source: ASJ0032-03**		**Extracted: 10/09/09 08:53**							
Benzene	EPA 8260B	23.7	---	0.500	ug/l	1x	ND	20.0	118%	(65-138)	--	--	10/10/09 19:57	
Toluene	"	20.4	---	1.00	"	"	ND	"	102%	(80-120)	--	--	"	
Ethylbenzene	"	21.6	---	1.00	"	"	ND	"	108%	(76-130)	--	--	"	
Xylenes (total)	"	62.5	---	3.00	"	"	ND	60.0	104%	(65-140)	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 93.2%*			*Limits: 85-115%*	"							*10/10/09 19:57*	
Dibromofluoromethane		*121%*			*65-125%*	"							"	
Toluene-d8		*89.4%*			*78-115%*	"							"	
Matrix Spike Dup (9100042-MSD1)					**QC Source: ASJ0032-03**		**Extracted: 10/09/09 08:53**							
Benzene	EPA 8260B	24.1	---	0.500	ug/l	1x	ND	20.0	120%	(65-138)	1.68%	(20)	10/10/09 20:26	
Toluene	"	20.6	---	1.00	"	"	ND	"	103%	(80-120)	1.12%	"	"	
Ethylbenzene	"	21.9	---	1.00	"	"	ND	"	110%	(76-130)	1.56%	"	"	
Xylenes (total)	"	63.3	---	3.00	"	"	ND	60.0	105%	(65-140)	1.18%	"	"	
Surrogate(s): 4-BFB		*Recovery: 93.2%*			*Limits: 85-115%*	"							*10/10/09 20:26*	
Dibromofluoromethane		*121%*			*65-125%*	"							"	
Toluene-d8		*87.8%*			*78-115%*	"							"	

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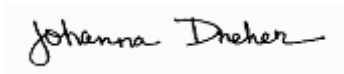

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ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name: **FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number: 301726	Report Created:
Seattle, WA 98102	Project Manager: Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9100047 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100047-BLK1)							**Extracted: 10/12/09 07:00**							
Gasoline Range Organics	EPA 8260B	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	10/12/09 10:26	
Benzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	3.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 99.0%*			*Limits: 85-115%*	"							*10/12/09 10:26*	
Dibromofluoromethane		*113%*			*65-125%*	"							"	
Toluene-d8		*92.7%*			*78-115%*	"							"	
LCS (9100047-BS1)							**Extracted: 10/12/09 07:00**							
Benzene	EPA 8260B	20.2	---	0.500	ug/l	1x	--	20.0	101%	(67-125)	--	--	10/12/09 09:28	
Toluene	"	18.0	---	1.00	"	"	--	"	89.8%	(80-120)	--	--	"	
Ethylbenzene	"	19.5	---	1.00	"	"	--	"	97.3%	"	--	--	"	
Xylenes (total)	"	56.6	---	3.00	"	"	--	60.0	94.4%	"	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 93.4%*			*Limits: 85-115%*	"							*10/12/09 09:28*	
Dibromofluoromethane		*125%*			*65-125%*	"							"	
Toluene-d8		*86.6%*			*78-115%*	"							"	
LCS (9100047-BS2)							**Extracted: 10/12/09 07:00**							
Gasoline Range Organics	EPA 8260B	597	---	50.0	ug/l	1x	--	550	109%	(60-120)	--	--	10/12/09 09:57	
Surrogate(s): 4-BFB		*Recovery: 94.2%*			*Limits: 85-115%*	"							*10/12/09 09:57*	
Dibromofluoromethane		*121%*			*65-125%*	"							"	
Toluene-d8		*85.8%*			*78-115%*	"							"	
LCS Dup (9100047-BSD1)							**Extracted: 10/12/09 07:00**							
Benzene	EPA 8260B	19.2	---	0.500	ug/l	1x	--	20.0	95.8%	(67-125)	5.18%	(20)	10/12/09 11:03	
Toluene	"	18.7	---	1.00	"	"	--	"	93.4%	(80-120)	3.93%	"	"	
Ethylbenzene	"	19.8	---	1.00	"	"	--	"	99.2%	"	1.88%	"	"	
Xylenes (total)	"	58.6	---	3.00	"	"	--	60.0	97.6%	"	3.33%	"	"	
Surrogate(s): 4-BFB		*Recovery: 93.7%*			*Limits: 85-115%*	"							*10/12/09 11:03*	
Dibromofluoromethane		*120%*			*65-125%*	"							"	
Toluene-d8		*92.8%*			*78-115%*	"							"	

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Johanna L Dreher, Client Services Manager

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ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9100047 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS Dup (9100047-BSD2)							**Extracted: 10/12/09 07:00**							
Gasoline Range Organics	EPA 8260B	491	---	50.0	ug/l	1x	--	550	89.3%	(60-120)	19.5%	(20)	10/12/09 11:32	
Surrogate(s): 4-BFB		*Recovery: 96.8%*			*Limits: 85-115%*	"							*10/12/09 11:32*	
Dibromofluoromethane		*110%*			*65-125%*	"							"	
Toluene-d8		*95.1%*			*78-115%*	"							"	
Duplicate (9100047-DUP1)							**QC Source: ASJ0032-06**						**Extracted: 10/12/09 07:00**	
Gasoline Range Organics	EPA 8260B	ND	---	50.0	ug/l	1x	ND	--	--	--	12.8%	(12)	10/13/09 01:16	R4
Surrogate(s): 4-BFB		*Recovery: 96.8%*			*Limits: 85-115%*	"							*10/13/09 01:16*	
Dibromofluoromethane		*111%*			*65-125%*	"							"	
Toluene-d8		*96.6%*			*78-115%*	"							"	
Matrix Spike (9100047-MS1)							**QC Source: ASJ0032-05**						**Extracted: 10/12/09 07:00**	
Benzene	EPA 8260B	19.1	---	0.500	ug/l	1x	ND	20.0	95.4%	(65-138)	--	--	10/14/09 05:07	
Toluene	"	19.1	---	1.00	"	"	ND	"	95.5%	(80-120)	--	--	"	
Ethylbenzene	"	20.2	---	1.00	"	"	ND	"	101%	(76-130)	--	--	"	
Xylenes (total)	"	58.0	---	3.00	"	"	ND	60.0	96.6%	(65-140)	--	--	"	
Surrogate(s): 4-BFB		*Recovery: 95.9%*			*Limits: 85-115%*	"							*10/14/09 05:07*	
Dibromofluoromethane		*112%*			*65-125%*	"							"	
Toluene-d8		*98.2%*			*78-115%*	"							"	
Matrix Spike Dup (9100047-MSD1)							**QC Source: ASJ0032-05**						**Extracted: 10/12/09 07:00**	
Benzene	EPA 8260B	19.8	---	0.500	ug/l	1x	ND	20.0	98.8%	(65-138)	3.45%	(20)	10/14/09 05:38	
Toluene	"	20.0	---	1.00	"	"	ND	"	100%	(80-120)	4.55%	"	"	
Ethylbenzene	"	21.0	---	1.00	"	"	ND	"	105%	(76-130)	3.88%	"	"	
Xylenes (total)	"	61.5	---	3.00	"	"	ND	60.0	103%	(65-140)	5.93%	"	"	
Surrogate(s): 4-BFB		*Recovery: 96.1%*			*Limits: 85-115%*	"							*10/14/09 05:38*	
Dibromofluoromethane		*111%*			*65-125%*	"							"	
Toluene-d8		*99.4%*			*78-115%*	"							"	

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CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Anions per EPA Method 300.0 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9100305 **Water Preparation Method: Wet Chem**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100305-BLK1)								**Extracted: 10/09/09 08:13**						
Nitrate-Nitrogen	EPA 300.0	ND	---	0.100	mg/l	1x	--	--	--	--	--	--	10/09/09 09:51	
Sulfate	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
LCS (9100305-BS1)								**Extracted: 10/09/09 08:13**						
Sulfate	EPA 300.0	30.9	---	1.00	mg/l	1x	--	30.0	103%	(90-110)	--	--	10/09/09 10:06	
Nitrate-Nitrogen	"	4.96	---	0.100	"	"	--	5.00	99.2%	"	--	--	"	
Duplicate (9100305-DUP1)					**QC Source: ASJ0032-01**			**Extracted: 10/09/09 08:13**						
Sulfate	EPA 300.0	25.1	---	1.00	mg/l	1x	25.2	--	--	--	0.557%	(20)	10/09/09 11:17	
Nitrate-Nitrogen	"	ND	---	0.100	"	"	ND	--	--	--		"	"	
Matrix Spike (9100305-MS1)					**QC Source: ASJ0032-01**			**Extracted: 10/09/09 08:13**						
Nitrate-Nitrogen	EPA 300.0	2.31	---	0.111	mg/l	1x	ND	2.22	104%	(80-120)	--	--	10/09/09 11:31	
Sulfate	"	29.8	---	1.11	"	"	25.2	4.44	105%	"	--	--	"	
Matrix Spike (9100305-MS2)					**QC Source: PSJ0329-02**			**Extracted: 10/09/09 08:13**						
Sulfate	EPA 300.0	4.63	---	1.11	mg/l	1x	ND	4.44	104%	(80-120)	--	--	10/09/09 17:13	
Nitrate-Nitrogen	"	2.24	---	0.111	"	"	ND	2.22	101%	"	--	--	"	
Matrix Spike Dup (9100305-MSD1)					**QC Source: ASJ0032-01**			**Extracted: 10/09/09 08:13**						
Sulfate	EPA 300.0	29.9	---	1.11	mg/l	1x	25.2	4.44	106%	(80-120)	0.186%	(20)	10/09/09 11:45	
Nitrate-Nitrogen	"	2.32	---	0.111	"	"	ND	2.22	104%	"	0.480%	"	"	

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CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Total Alkalinity by Conventional Chemistry Parameters per APHA/EPA Methods - Laboratory Quality Control Results

TestAmerica Portland

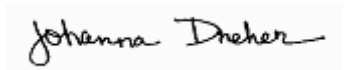
QC Batch: 9100457 **Water Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100457-BLK1)									**Extracted: 10/14/09 10:05**					
Total Alkalinity	EPA 310.1	ND	---	5.00	mg/L as CaCO3	1x	--	--	--	--	--	--	10/14/09 15:27	
LCS (9100457-BS1)									**Extracted: 10/14/09 10:05**					
Total Alkalinity	EPA 310.1	193	---	5.00	mg/L as CaCO3	1x	--	200	96.4%	(90-110)	--	--	10/14/09 15:35	
Duplicate (9100457-DUP1)					**QC Source: PSJ0178-01**				**Extracted: 10/14/09 10:05**					
Total Alkalinity	EPA 310.1	135	---	5.00	mg/L as CaCO3	1x		--	--	--		(20)	10/14/09 15:41	

QC Batch: 9100504 **Water Preparation Method: Wet Chem**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9100504-BLK1)									**Extracted: 10/15/09 07:45**					
Total Alkalinity	EPA 310.1	ND	---	5.00	mg/L as CaCO3	1x	--	--	--	--	--	--	10/15/09 10:39	
LCS (9100504-BS1)									**Extracted: 10/15/09 07:45**					
Total Alkalinity	EPA 310.1	191	---	5.00	mg/L as CaCO3	1x	--	200	95.3%	(90-110)	--	--	10/15/09 10:47	
Duplicate (9100504-DUP1)					**QC Source: PSJ0204-01**				**Extracted: 10/15/09 07:45**					
Total Alkalinity	EPA 310.1	104	---	5.00	mg/L as CaCO3	1x	104	--	--	--	0.0385%	(20)	10/15/09 10:54	

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Arcadis - Seattle	Project Name:	**FIA Texaco**	
2300 East Lake Ave East Suite 100	Project Number:	301726	Report Created:
Seattle, WA 98102	Project Manager:	Greg Montgomery	10/21/09 17:08

Notes and Definitions

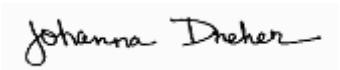
Report Specific Notes:

A-01	-	pH>2
H3	-	Sample was received and analyzed past holding time.
R4	-	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.

Laboratory Reporting Conventions:

DET	-	Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
ND	-	Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
NR/NA	-	Not Reported / Not Available
dry	-	Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
wet	-	Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
RPD	-	RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
MRL	-	METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
MDL*	-	METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
Dil	-	Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
Reporting Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210 [X]

CHAIN OF CUSTODY REPORT

Work Order #: ASJ0032

CLIENT: Chevron EMC

INVOICE TO: Chevron EMC

REPORT TO: ARCADIS
ADDRESS: 2300 Eastlake Ave. E, Ste 200
Seattle, WA 98102
PHONE: 206-726-4742 FAX: 206-325-8218

P.O. NUMBER: NWRTB-0301726-1-LAB

PROJECT NAME: FIA Texaco
PROJECT NUMBER: 301726
SAMPLED BY: MLS/DMB

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10 STD.] [7] [5] [4] [3] [2] [1] [<1]
Petroleum Hydrocarbon Analyses: [5 STD.] [4] [3] [2] [1] [<1]
[OTHER] Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	BETX 8021B	GRO AK101	DRO AK102	RRO AK103	Alkalinity 310.1	Sulfate/Nitrate 300.0	Methane RSK175	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	MW-2	10/4/09 / 1220	HCl	X	X	X	X	X	X	X	W	9		01
2	MW-3	10/4/09 / 1120	HCl	X	X	X	X	X	X	X	W	9		02
3	MW-4	10/4/09 / 1320	HCl	X	X	X	X	X	X	X	W	9		03
4	MW-5	10/4/09 / 1240	HCl	X	X	X	X	X	X	X	W	9		04
5	MW-6	10/4/09 / 1135	HCl	X	X	X	X	X	X	X	W	9		05
6	BD-1	10/4/09 / —	HCl	X	X	X	X				W	5		06
7	Trip Blank	—	—	X	X						O	3		07
8														
9														
10														

REQUESTED ANALYSES

RELEASED BY: [signature] DATE: 10/5/09
PRINT NAME: Michael Strickler FIRM: ARCADIS TIME: 0800

RECEIVED BY: [signature] DATE: 10-6-09
PRINT NAME: Troy Engstrom FIRM: TAL-ANC TIME: 12:45

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

Cooler #1 Temp 3.0/TB TEMP: 2.6°C PAGE 1 OF 1
Cooler #2 Temp 5.8°C — ~~No TB~~ 3.8°C 10-6-09

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: ~~A550035~~ A550032

CLIENT: Chevron EMC

INVOICE TO: Chevron EMC

REPORT TO: ARCADIS
ADDRESS: 2300 Eastlake Ave. E., Ste. 200
Seattle, WA 98102
PHONE: 206-726-4742 FAX: 206-325-8218

P.O. NUMBER: NWRTB-0301726-1-LAB

PROJECT NAME: FIA-Texaco
PROJECT NUMBER: 301726
SAMPLED BY: MLS/DMB

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ~~10~~ STD | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* *Turnaround Requests less than standard may incur Rush Charges.*

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: BTEX 8021B	GRO AK101	DRO AK102	RRO AK103	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
			HCl HCl HCl HCl								
1	PW-1	10/4/09 1330		X	X	X	X	W	5		01 08
2	Trip Blank			X	X			O	2		02 09
3											
4											
5											
6											
7											
8											
9											
10											

RELEASED BY: [signature] DATE: 10/5/09
PRINT NAME: Michael Strickler FIRM: ARCADIS TIME: 0800

RECEIVED BY: [signature] DATE: 10-6-09
PRINT NAME: Troy Engstrom FIRM: TAL-ANC TIME: 12:45

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

Cooler #1 Temp 3.0°C / TB- TEMP: 2.6°C PAGE 1 OF 1
Cooler #2 Temp 5.8°C - ~~No Temp blank~~ 3.8°C TDE 10-6-09

TAL-1000(0408)

Cooler #1
TestAmerica
Coleman

Test America Anchorage Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # ASJ0032 CLIENT: Arcadis PROJECT: FIA Texaco

Date /Time Cooler Arrived 10 / 6 / 09 10 : 45 Cooler signed for by: Troy Engstrom (Print name)

Preliminary Examination Phase:

Date cooler opened: ☑ same as date received or ____/____/____

Cooler opened by (print) Troy Engstrom (sign) [signature]

1. Delivered by ☐ ALASKA AIRLINES ☒ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☐ CLIENT ☐ Other:

Shipment Tracking # if applicable 8688 9248 0168 (include copy of shipping papers in file)

2. Number of Custody Seals 1 Signed by Michael Strickler Date 10 / 4 / 09

Were custody seals unbroken and intact on arrival? ☑ Yes ☐ No

3. Were custody papers sealed in a plastic bag? ☒ Yes ☐ No

4. Were custody papers filled out properly (ink, signed, etc.)? ☒ Yes ☐ No

5. Did you sign the custody papers in the appropriate place? ☒ Yes ☐ No

6. Was ice used? ☒ Yes ☐ No Type of ice: ☐ blue ice ☐ gel ice ☒ real ice ☐ dry ice Condition of Ice: melting

Temperature by Digi-Thermo Probe 2.6 °C Thermometer # 5

Acceptance Criteria: 0 - 6°C Cooler Temp 3.0°c

7. Packing in Cooler: ☒ bubble wrap ☐ styrofoam ☐ cardboard ☒ Other:

8. Did samples arrive in plastic bags? ☐ Yes ☒ No

9. Did all bottles arrive unbroken, and with labels in good condition? ☒ Yes ☐ No

10. Are all bottle labels complete (ID, date, time, etc.) ☒ Yes ☐ No

11. Do bottle labels and Chain of Custody agree? ☒ Yes ☐ No

12. Are the containers and preservatives correct for the tests indicated? ☒ Yes ☐ No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2? ☐ Yes ☐ No ☒ N/A

14. Is there adequate volume for the tests requested? ☒ Yes ☐ No

15. Were VOA vials free of bubbles? ☐ N/A ☒ Yes ☐ No

If "NO" which containers contained "head space" or bubbles? ____

Log-in Phase:

Date of sample log-in 10 / 6 / 09

Samples logged in by (print) Kelsey Gerbrandt (sign) [signature]

1. Was project identifiable from custody papers? ☑ Yes ☐ No
2. Do Turn Around Times and Due Dates agree? ☑ Yes ☐ No
3. Was the Project Manager notified of status? ☑ Yes ☐ No
4. Was the Lab notified of status? ☑ Yes ☐ No
5. Was the COC scanned and copied? ☑ Yes ☐ No

Cooler #2
blue extreme
Coleman

Test America Anchorage Cooler Receipt Form

(Army Corps. Compliant)

A&S0032-09

WORK ORDER # ~~A&S0032~~ CLIENT: Arcadis PROJECT: FIA Texaco

Date /Time Cooler Arrived 10 / 6 / 09 12 : 45 Cooler signed for by: Troy Engstrom (Print name)

Preliminary Examination Phase:

Date cooler opened: ☑ same as date received or ____/____/____

Cooler opened by (print) Troy Engstrom (sign) [signature]

1. Delivered by ☐ ALASKA AIRLINES ☑ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☐ CLIENT ☐ Other:

Shipment Tracking # if applicable 7995 0461 4516 (include copy of shipping papers in file)

2. Number of Custody Seals 1 Signed by Michael Strickler Date 10/5/09

Were custody seals unbroken and intact on arrival? ☐ Yes ☐ No

3. Were custody papers sealed in a plastic bag? ☐ Yes ☐ No

4. Were custody papers filled out properly (ink, signed, etc.)? ☐ Yes ☐ No – No COC in Cooler See Cooler #1 for COC

5. Did you sign the custody papers in the appropriate place? ☐ Yes ☐ No

6. Was ice used? ☑ Yes ☐ No Type of ice: ☐ blue ice ☐ gel ice ☑ real ice ☐ dry ice Condition of Ice: melting

Temperature by Digi-Thermo Probe 5.8 °C Thermometer # 5

Acceptance Criteria: 0 - 6°C – ~~no Temp blank~~ TBE 10-6-09; Cooler temp taken found TB in ICE Bag - Temp 3.8°C

7. Packing in Cooler: ☑ bubble wrap ☐ styrofoam ☐ cardboard ☒ Other:

8. Did samples arrive in plastic bags? ☐ Yes ☒ No

9. Did all bottles arrive unbroken, and with labels in good condition? ☑ Yes ☐ No

10. Are all bottle labels complete (ID, date, time, etc.) ☒ Yes ☐ No

11. Do bottle labels and Chain of Custody agree? ☒ Yes ☐ No

12. Are the containers and preservatives correct for the tests indicated? ☒ Yes ☐ No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2? ☐ Yes ☐ No ☒ N/A

14. Is there adequate volume for the tests requested? ☒ Yes ☐ No

15. Were VOA vials free of bubbles? ☐ N/A ☒ Yes ☐ No

If "NO" which containers contained "head space" or bubbles? ____

Log-in Phase:

Date of sample log-in 10 / 6 / 09

Samples logged in by (print) Kelsey Gerbrandt (sign) [signature]

1. Was project identifiable from custody papers? ☑ Yes ☐ No
2. Do Turn Around Times and Due Dates agree? ☑ Yes ☐ No
3. Was the Project Manager notified of status? ☑ Yes ☐ No
4. Was the Lab notified of status? ☑ Yes ☐ No
5. Was the COC scanned and copied? ☑ Yes ☐ No

cooler #1 contents

ASJ0032

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
460833

Custody Seal 10/4/09

DATE

SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
460833

A500032
~~A500033~~ 34

Cooler #2
Contents

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
46C831

Custody Seal

DATE 10/5/09

SIGNATURE 20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
46C831

AS500132

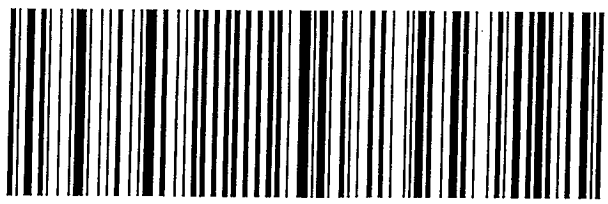
FedEx 0002/0002 TUE - 06 OCT A4

PRIORITY OVERNIGHT

MPS#
0681 7955 0461 4516
Mstr# 8688 9248 0168 0200

Q1 ANCA

99503
AK-US
ANC



emp# 232833 050CT09 08:33

Part # 156297-435 RIT 06/09

Laboratory Data Review Checklist

Completed by:	Dawn Berube
Title:	Scientist I
Date:	11/18/09
CS Report Name:	Second Semi-annual Groundwater Monitoring Report and Geochemical Parameter Monitoring Results
Report Date:	11/18/09
Consultant Firm:	ARCADIS
Laboratory Name:	Test America
Laboratory Report Number:	ASJ0032
ADEC File Number:	100.38.066
ADEC RecKey Number:	1992310119101

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:

3.0° 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:

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:

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:

The holding time for nitrate was 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:

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:

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:

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:

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:

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:

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:

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:

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:

Low levels of analyte were detected in the laboratory duplicate sample.