AP - 051

ANNUAL MONITORING REPORT

03/27/2009

APOS1

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AECOM Environment
2409 Research Blvd., Suite 106, Fort Collins, CO 80526
T 970.493.3700 F 970.493.2328 www.aecom.com

March 27, 2009

Glenn von Gonten
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject: 2008 Annual Groundwater Report, Former Caribou Refinery, Kirtland, New Mexico

Dear Mr. von Gonten,

This report provides results of the 2008 groundwater monitoring event for the Maverik Country Stores site (former Caribou Refinery) in Kirtland, New Mexico (**Figure 1**). This monitoring event was completed during the week of December 8, 2008 to meet the annual monitoring requirements for the site. The scope of work completed included:

- Fluid level measurements of the site wells;
- Low-flow groundwater sampling of nine wells in and around the impoundment area;
- Analytical evaluation of volatile organic compounds (VOCs) in groundwater.

Field methods, results and conclusions from the 2008 groundwater sampling event are discussed below.

Groundwater Sampling

The groundwater sampling activities were completed on December 9 and 10, 2008. Prior to sampling site-wide fluid levels were measured using an oil/water interface probe to establish groundwater elevations (**Table 1**) for compilation of the site potentiometric surface map (**Figure 2**). Fluid levels were not obtainable from two of the site wells including:

- MW-06 (unable to locate, possibly abandoned or destroyed)
- MW-04 (has been converted to an irrigation well within a pump house by Mr. Roland Jackson)

None of the monitoring wells contained measurable thicknesses of light non-aqueous phase liquid (LNAPL) during this event. Based on the December 2008 groundwater elevations, the groundwater flow direction is to the south-southwest across the site under a horizontal gradient ranging from .005 near the site to .008 east of the site in the residential area (**Figure 2**). This flow direction is consistent with past monitoring events.

Nine monitoring wells were low-flow sampled using a peristaltic pump and flow-through cell. Field parameters measured during the sampling event included pH, specific conductance, dissolved oxygen, oxygen reduction potential (ORP) and temperature. Field measurements are provided on the groundwater sampling forms in **Attachment A**. Groundwater samples were shipped to Test America in Arvada, Colorado under chain of custody protocol and analyzed for volatile organic compounds (VOCs) EPA Method 8260. Laboratory deliverables and AECOM data validation reports are provided in **Attachment B**.

Results of the groundwater sampling are summarized in **Table 2**. The groundwater results show that benzene, toluene, ethyl benzene, and xylene (BTEX) concentrations are confined to the slurry wall impoundment area (**Figure 3**). Other detected compounds from within the slurry wall wells (MW-17 and MW-22) included 1,2,4 trimethylbenzene, 1,3,5 trimethylbenzene, isopropyl benzene, acetone, and naphthalene (**Table 2**). The VOC concentrations in the other downgradient wells (MW-10, MW-19 and MW-20) and cross gradient wells (MW-9, MW-16, and MW-21) were all reported at concentrations below the standard analytical detection limits for VOCs (**Table 2**). The upgradient well, MW-18, located on the northern edge of the impoundment had concentrations of acetone (150 µg/L) and 1,2,4 trimethylbenzene (3.4 µg/L). The precision, accuracy, method compliance, and completeness of the data set have been determined to be acceptable, based on the data submitted (**Attachment B**).

In addition to standard groundwater field parameters (pH, temperature, and conductivity), dissolved oxygen (DO) and oxidation reduction potential (ORP) were measured within a flow through cell during groundwater sampling. Both DO and ORP levels are lower within the impoundment area wells compared to surrounding wells (**Attachment A**). The depressed DO and ORP is attributable to biodegradation of hydrocarbons within the impoundment. Well MW-21 on the east side of the impoundment continues to have a conductivity level of greater than an order of magnitude above other site wells. The elevated conductivity is presumed to be from salt solutions that are used and stored by the current property tenant. Review of historic data indicates that conductivity levels in MW-21 spiked in between October 1999 and October 2000, and have since declined.

Conclusions

The annual groundwater sampling of the Former Caribou Refinery was completed in December 2008. Nine wells in and around the slurry wall impoundment areas were low-flow sampled for VOCs. Fluid levels were measured from 17 wells to establish groundwater flow conditions. Groundwater flow is to the south-southwest across the site toward the San Juan River. Groundwater results were below analytical reporting limits for all 8260 VOCs with the exception of wells located within the slurry wall impoundment area (MW-17 and MW-22) and one well on the northern upgradient margin of the impoundment (MW-18). Groundwater within the slurry wall contains a suite of VOCs, primarily benzene, ethyl benzene, xylenes and trimethylbenzene compounds. The maximum benzene concentration was 85 µg/L in MW-17.

Through time the groundwater VOC concentrations have declined appreciably likely through biodegradation processes. Evidence of natural attenuation of hydrocarbons in the slurry wall is supported by reduction of DO and ORP in groundwater within the impoundment. Compounds such as 1,2-DCA are no longer detected in site groundwater and VOCs such as benzene have decreased by

two orders of magnitude since the early 1990s. Overall, the slurry wall impoundment is functioning as designed and no off-site migration of hydrocarbons is occurring.

Sincerely,

Chris Jutting
Site Geologist

Jason Jayroe
Project Geologist

Enclosure

Table 1 Monitoring Well Construction Summary and December 2008 Fluid Levels, Maverik Country Stores, Inc. (Former Caribou Refinery)

Well ID	Completion Date	Total Depth (ft. BGS)	Well Diameter (in.)	Top of Steel Casing Elevation (ft. AMSL)	Top of PVC Casing Elevation (ft. AMSL)	Ground Surface Elevation (ft. AMSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Screen Length (ft.)	Top of Screen Elevation (ft. AMSL)	Bottom of Screen Elevation (ft. AMSL)	Depth to Groundwater (feet) December 2008	Product Thickness (feet)	Groundwater Elevation (ft. AMSL)	Comments
MW-1	1987	21.5	2	5207.79	5207.24	5205.75	11.5	21.5	10	5194.25	5184.25	9.46		5197.78	
MW-2	1987	15	2	5197.10	5196.93	5195.25	5	15	10	5190.25	5180.25	5.50		5191.43	
MW-3	1987	14.5	2	5183.00	5181.46	5181.06	4.5	14.5	10	5176.56	5166.56	3.93		5177.53	
MW-4	1987	15	2	5178.41	5177.1	5176.14	5	15	10	5171.14	5161.14	NM		NM	Converted to irrigation well
MW-5	1987	15	2	5175.62	5175.09	5173.67	5	15	10	5168.67	5158.67	6.26		5168.83	
MW-6	1987	15.5	2	5176.40	5176.01	5174.23	5.5	15.5	10	5168.73	5158.73	NM		NM	
MW-7	1987	15	2	5183.71	5182.84	5181.73	5	15	10	5176.73	5166.73	5.60		5177.24	
MW-8	1987	15	2	5186.00	5185.87	5184.02	5	15	10	5179.02	5169.02	4.73		5181.14	
MW-9	1987	15	2	5191.39	5191.22	5189.33	5	15	10	5184.33	5174.33	3.95		5187.27	
MW-10	1987	12.5	2	5189.80	5189.30	5187.47	2.5	12.5	10	5184.97	5174.97	3.80		5185.50	
MW-11	1987	33	2	5197.26	5197.15	5194.97	23	33	10	5171.97	5161.97	NM		NM	abandoned 1990
MW-12	1987	12	2	5196.66	5196.19	5194.80	2	12	10	5192.80	5182.80	NM		NM	abandoned 1990
MW-13	1987	5	2	5187.76	na	5187.56	0	5	5	5187.56	5182.56	NM		NM	destroyed
MW-14	1989	6	2	na	5194.47	5190.70	1	6	5	5189.70	5184.70	8.10		5186.37	
MW-15	1989	6	2	na	5188.80	5185.40	1	6	5	5184.40	5179.40	4.28		5184.52	
MW-16	1990	13	2	na	5194.98	5193.74	3	13	10	5190.74	5180.74	5.51		5189.47	
MW-17	1993	15	2	5196.49	5195.91	5193.43	5	15	10	5188.43	5178.43	8.16		5187.75	
MW-18	1993	15	2	5202.27	5201.75	5199.14	5	15	10	5194.14	5184.14	11.25		5190.50	
MW-19	1990	12.5	2	na	5189.54	5188.28	2.5	12.5	10	5185.78	5175.78	2.89		5186.65	
MW-20	1990	12	2	na	5191.05	5190.10	2	12	10	5188.10	5178.10	4.07		5186.98	
MW-21	1990	13	2	na	5194.81	5193.62	3	13	10	5190.62	5180.62	5.45		5189.36	
MW-22	1990	13	2	na	5195.86	5194.58	3	13	10	5191.58	5181.58	6.84		5189.02	
P-1	1993	8	2	na	5197.66	5195.74	3	8	5	5192.74	5187.74	7.37		5190.29	
P-2	1993	8	2	na	5192.32	5190.50	3	8	5	5187.50	5182.50	4.22		5188.10	
P-3	1993	8	2	na	5193.21	5191.44	3	8	5	5188.44	5183.44	5.15		5188.06	
P-4	1993	8	2	na	5198.82	5197.06	3	8	5	5194.06	5189.06	8.64		5190.18	

Notes:

AMSL = Above mean sea level

BGS = Below ground surface

NM = Not Measured

na = not applicable

Table 2 Groundwater Results, Maverik Country Stores, Inc. (Former Caribou Refinery)

Wells / Units	MW-9 (µg/L)	MW-10 (µg/L)	MW-16 (µg/L)	MW-17 (µg/L)	MW-18 (µg/L)	MW-19 (µg/L)	MW-20 (µg/L)	MW-20D (µg/L)	MW-21 (µg/L)	MW-22 (µg/L)
Chemical										
1,1,1,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	**0.22 J**	< 1.0	< 1.0	**35**	**4.6**	< 1.0	< 1.0	< 1.0	< 1.0	**16**
1,2-Dibromo-3-chloropropane (DBCP)	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane (EDB)	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	**0.17 J**	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	**0.21 J**	< 1.0	< 1.0	< 1.0
1,2-Dichloroethene (total)	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	< 1.0	< 1.0	< 1.0	**9.2**	**0.16 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	**0.3 J**	< 1.0	**0.29 J**	< 4.0	< 1.0	< 1.0	**0.25 J**	**0.23 J**	**0.22 J**	**0.21 J**
1,3-Dichloropropane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	< 6.0	< 6.0	< 6.0	< 24	**2.7 J**	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0
2-Chlorotoluene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Chlorotoluene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	< 1.0	< 1.0	< 1.0	**1.2 J**	**0.87 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.37 J**
4-Methyl-2-pentanone	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	**4.3 J**	**4.8 J**	**2.5 J**	< 40	**90.0**	**7.5 J**	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	**22**	**0.27 J**	< 1.0	< 1.0	< 1.0	< 1.0	**14**
Bromobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

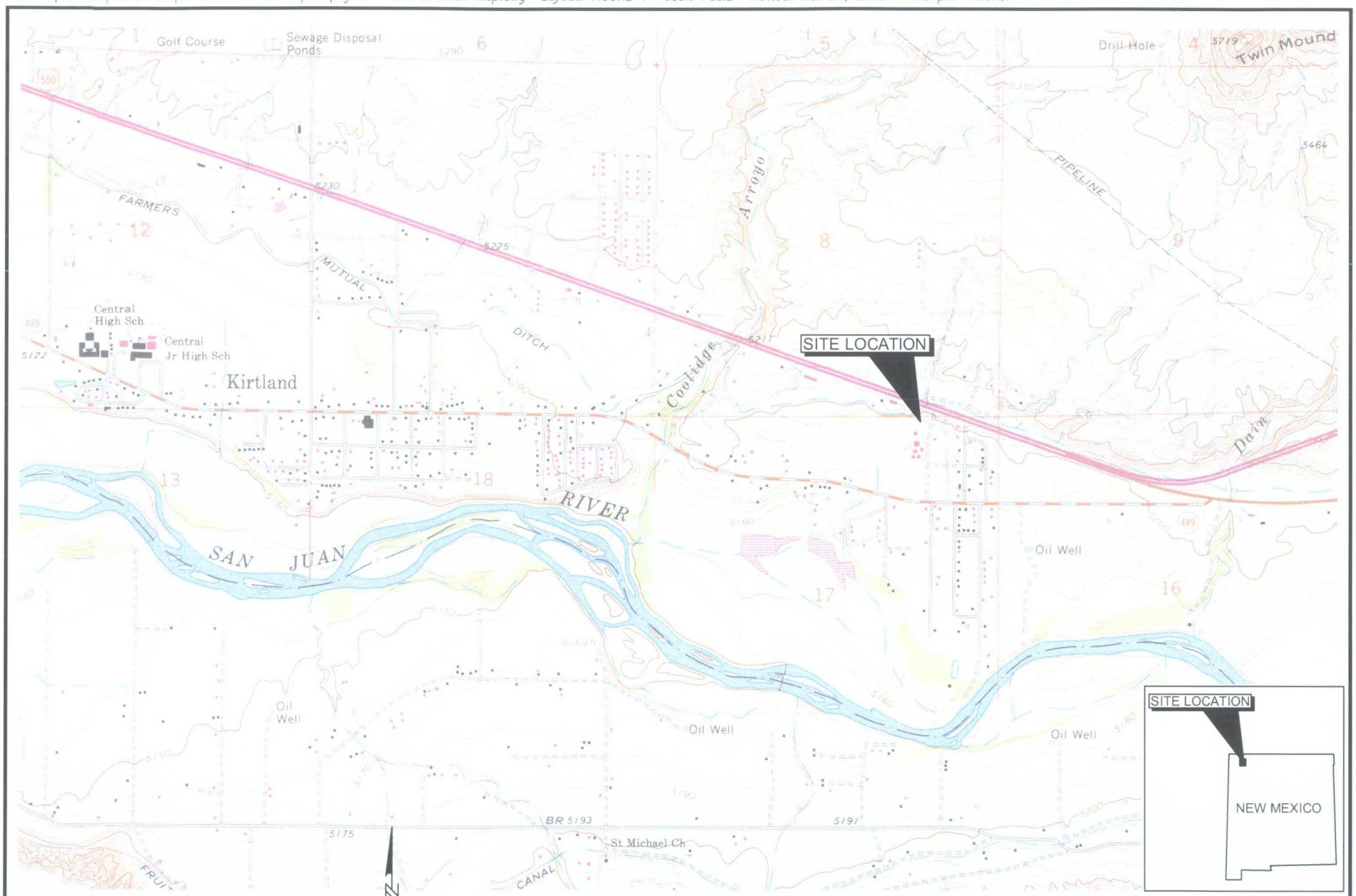
Table 2 Groundwater Results, Maverik Country Stores, Inc. (Former Caribou Refinery)

Wells / Units	MW-9 (µg/L)	MW-10 (µg/L)	MW-16 (µg/L)	MW-17 (µg/L)	MW-18 (µg/L)	MW-19 (µg/L)	MW-20 (µg/L)	MW-20D (µg/L)	MW-21 (µg/L)	MW-22 (µg/L)
Chemical										
cis-1,2-Dichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	**2.9 J**	**0.41 J**	< 1.0	< 1.0	< 1.0	< 1.0	**15**
Hexachlorobutadiene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	< 1.0	< 1.0	< 1.0	**1.2 J**	**1.0**	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**
Methyl tert-butyl ether	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
m-Xylene & p-Xylene	< 2.0	< 2.0	< 2.0	**28**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	**2.8**
Naphthalene	**0.25 J**	< 1.0	< 1.0	**2.8 J**	**0.24 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.67 J**
n-Butylbenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	< 1.0	< 1.0	< 1.0	**1.8 J**	**0.67 J**	< 1.0	< 1.0	< 1.0	< 1.0	**3.0**
o-Xylene	< 1.0	< 1.0	< 1.0	**3.1 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.81 J**
sec-Butylbenzene	< 1.0	< 1.0	< 1.0	**2.4 J**	**1.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	< 1.0	< 1.0	< 1.0	< 4.0	**0.31 J**	< 1.0	< 1.0	< 1.0	< 1.0	**1.8**
Tetrachloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.41 J**
trans-1,2-Dichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	< 3.0	< 3.0	< 3.0	< 12	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes (total)	< 2.0	< 2.0	< 2.0	**31**	**0.21 J**	< 2.0	< 2.0	< 2.0	< 2.0	**3.6**

Notes:

J - Estimated result. Result is less than RL

File: H:\Maverik\12501001\2008 Annual GW Report\Figure 1 Site Location Map.dwg Layout: FIGURE 1 User: PaulL Plotted: Mar 26, 2009 - 1:57pm Xref's:



AECOM

2008 Annual Groundwater Report
Maverik (Caribou) Former Refinery
Kirtland, New Mexico (12501001-210)

SITE LOCATION MAP

DATE: 03/10/09 | DRWN: LP/FTC

FIGURE 1

Co. Road 6261

Co. RoadD 6259

Co. RoadD 6263

Co. RoadD 6271

U.S. Highway 64

CO. Road 6100

5197 5195 5193 5191 5189 5187 5185 5183 5181 5179 5177

MW-1
5197.78

MW-2
5191.43

P4
5190.18

MW-21
5189.36

MW-20
5186.98

MW-18
5190.50

MW-22
5189.02

P3
5188.06

MW-10
5185.50

MW-15
5184.52

P2
5188.10

P1
5190.29

MW-17
5187.75

MW-19
5186.65

MW-3
5177.53

(Out of Service)

DITCH IS FILLED IN
AT THIS LOCATION

WESTSIDE
IRRIGATION DITCH

MW-16
5189.47

MW-14
5186.37

MW-9
5187.27

MW-7
5177.24

FARMER'S MUTUAL
IRRIGATION DITCH

MURRAY
PROPERTY
DITCH

MW-8
5181.14

MW-4
NM

MW-5
5168.83

G. Nelson

R. Jackson

Ryan

A. Jackson

M. Stone

WM. H. Walker

V. Murray

J. Bloomfield

C. Bloomfield

LEGEND

MW-4 5196.89	MONITORING WELL WITH DECEMBER 2008 GROUNDWATER ELEVATION
P1	PIEZOMETER
E. Gray	PRIVATE WELL
	APPROX. DIRECTION OF GROUNDWATER FLOW
	SLURRY WALL
	MAVERIK (CARIBOU) FORMER REFINERY BOUNDARY
*	ELEVATION ESTIMATED (WELL DAMAGED)

100 0 200

1"=200'

AECOM

2008 Annual Groundwater Report
Maverik (Caribou) Former Refinery
Kirtland, New Mexico (12501001-210)

DATE: 02/26/09 | DRWN: LP/FTC

**POTENTIOMETRIC SURFACE MAP
DECEMBER 2008**

FIGURE 2

File: H:\Maverik\12501001\2008 Annual GW Report\Figure 2 Potentiometric Surface Map_Dec 2008.dwg Layout: FIGURE 2 User: PaulL Plotted: Mar 26, 2009 - 1:52pm Xref's:

LEGEND

MW-4 — DECEMBER 2008 BTEX CONCENTRATIONS

Chemical (ug/L)	MW-22
Benzene	14
Toluene	0.41 J
Ethylbenzene	15
Xylenes (total)	3.6

J - Estimated result. Result is less than RL

P1 — PIEZOMETER

E. Gray — PRIVATE WELL

SLURRY WALL

MAVERIK (CARIBOU) FORMER REFINERY BOUNDARY

Chemical (ug/L)	MW-22
Benzene	**75**
Toluene	< 2.0
Ethylbenzene	**64**
Xylenes (total)	**0.73 J**

Chemical (ug/L)	MW-21
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-20
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-18
Benzene	**0.24 J**
Toluene	< 1.0
Ethylbenzene	**1.0**
Xylenes (total)	**0.66 J**

Chemical (ug/L)	MW-10
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-17
Benzene	**85**
Toluene	**1.9 J**
Ethylbenzene	**7.2**
Xylenes (total)	**35**

Chemical (ug/L)	MW-19
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-16
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-9
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

MW-4 MW-21 MW-20 MW-15 MW-10 MW-22 MW-18 P4 P3 MW-17 P2 P1 MW-19 WESTSIDE IRRIGATION DITCH MW-16 MW-14 MW-9 DITCH IS FILLED IN AT THIS LOCATION MURRAY PROPERTY DITCH

40 0 80

SCALE IN FEET

AECOM

2008 Annual Groundwater Report
Maverik (Caribou) Former Refinery
Kirtland, New Mexico (12501001-210)

DATE: 02/26/09 | DRWN: LP/FTC

BTEXCONCENTRATIONS IN GROUNDWATER DECEMBER 2008

FIGURE 3

File: H:\Maverik\12501001\2008 Annual GW Report\Figure 3 Btex Concentrations in GW_Dec 2008.dwg Layout: FIGURE 3 User: PaulL Plotted: Mar 26, 2009 - 1:55pm Xref's:

Attachment A

Field Forms

ENSR

Well ID: MW-09

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/9/08 Time: Start 1035 am/pm
Project No: Finish 1115 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 30° Collector(s): C. Suttles

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.65 c. Length of Water Column 12.70 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 3.95 d. Calculated System Volume (see back) 2.07

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make YSI Model 556 MPS Serial Number

Time (24hr)	Volume Removed (Liters) G	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1030	0.0	15.35	6.58	17801	1.95	260.1				Clear/None
1045	1.5	16.35	7.36	18475	2.1	196.3				" "
1100	3.0	16.67	7.36	18884	4.3	176.1				" "
1105	4.5	16.65	7.36	19007	4.1	169.7				" "
1110	6.0	16.85	7.36	19134	3.9	171.8				" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-09	4 unl Glass	3	HCl	8260 VOC	1115

Comments: Spec. Conductivity Doesn't appear to be reading properly problems calibrating

Signature: C. Suttles Date: 12/9/08

ENSR

Well ID: MW-10

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/10/08 Time: Start 1205 am/pm
Project No: Finish 1240 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 40° Collector(s): C. Jutting

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.21 c. Length of Water Column 11.41 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 3.80 d. Calculated System Volume (see back) 1.85

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make YSI Model 556 MPS Serial Number

Time (24hr)	Volume Removed ~~(Liters)~~ Gal	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1205	0.0	12.75	7.59	5936	1.25	220.1	X	X	X	Clear / None
1213	2.0	12.17	7.47	5855	0.70	181.7				" / "
1221	4.0	12.50	7.47	5926	0.82	161.1				" / "
1230	6.0	12.86	7.48	5999	0.67	173.0				" / "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below. DO moving some but close to 10%

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-10	40mL Glass	3	HCl	8260 VOC	1235

Comments

Signature [signature] Date 12/10/08

ENSR

Well ID: MW-16

Low Flow Ground Water Sample Collection Record

Client: Maverick - Caribou Refinery Date: 12/9/08 Time: Start 1135 am/pm
Project No: Finish 1210 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 30° Collector(s): C. Sutton

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.62 c. Length of Water Column 9.11 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 5.51 d. Calculated System Volume (see back) 1.48

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make YSI Model 556 MPS Serial Number 06J1594

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1137	0.0	14.58	7.48	21000	0.88	244.4	DO: 0.88			Clear
1142	1.5	14.24	7.19	20631	0.61	231.7				"
1150	3.0	14.74	7.16	20342	0.50	216.0				"
1156	4.5	14.88	7.14	20835	0.44	207.1				"
1203	6.0	14.82	7.13	20940	0.45	222.4				"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☒
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.
ORP was out of the ±10 range

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-16	40mL Glass	3	HCl	8260 VOC	1210

Comments

Signature [signature] Date 12/9/08

ENSR

Well ID: MW-17

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/10/08 Time: Start 1030 am/pm
Project No: Finish 1100 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 40° Collector(s): C. Sutting

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.65 c. Length of Water Column 8.49 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 8.16 d. Calculated System Volume (see back) 1.38

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1038	0.0									Black/Bio
1047	1.5									" / "
1051	3.0 7.0	Well Purged Dry								
	4.5									

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☐	☒

(continued on back)

If no or N/A - Explain below. Well purged dry

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-17	40 ml Glass	3	HCl	8260 VOC	1055

Comments: No Parameters were taken at MW-22 and MW-17 as directed on instruction sheet.

Signature: Chris Sutting Date: 12/10/08

ENSR

Well ID: MW-18

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/9/08 Time: Start 1515 am/pm
Project No: Finish 1540 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 40° Collector(s): C. Jutting

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 15.78 c. Length of Water Column 4.53 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 11.25 d. Calculated System Volume (see back) 0.74

2. **WELL PURGE DATA**

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make YSI Model 556 MPS Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1515	0.0	15.59	6.50	151678	1.07	22.9	X	X	X	Black/Bio
1522	0.75	16.26	6.74	151823	1.03	-10.6				" "
	1.5									
	2.3			Well Purged	Dry					

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.

Well went dry while purging

3. **SAMPLE COLLECTION:** Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-18	40ml Glass	3	HCl	8260 VOC	1535

Comments: Well Lid needs to be replaced hinge broken must. d through

Signature: [signature] Date: 12/9/08

ENSR

Well ID: MW-19

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/4/08 Time: Start 1105 am/pm
Project No: Finish 1200 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 40° Collector(s): C. Suthling

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.17 c. Length of Water Column 11.28 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 2.89 d. Calculated System Volume (see back) 1.83

2. WELL PURGE DATA

a. Purge Method: Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1109	0.0	12.16	7.72	8339	2.52	142.1	X	X	X	Clear / Non
1118	2.0	12.85	7.48	6508	0.60	104.3				" / "
1128	4.0	13.01	7.31	6620	0.63	103.7				" / "
1136	6.0	13.19	7.27	6705	0.81	106.3				" / "
1144	8.0	13.39	7.24	6774	1.18	120.0				" / "
1152	10.0	13.47	7.31	6710	2.15	157.9				" / "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.

DO + ORP Did not Stabalize

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-19	40 mL Glass	3	HCl	8260 VOC	1155

Comments

Signature C. Suthling Date 12/10/08

ENSR

Well ID: MW-20

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/10/08 Time: Start 0800 am/pm
Project No: Finish 0855 am/pm
Site Location: Kirtland VM
Weather Conds: Sunny 25° Collector(s): C. Jutting

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 13.51 c. Length of Water Column 9.44 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 4.07 d. Calculated System Volume (see back) 1.54

2. **WELL PURGE DATA**
   a. Purge Method: Peristaltic

   b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

   c. Field Testing Equipment used: Make YSI Model 556 MPS Serial Number

Time (24hr)	Volume Removed ~~Gal~~ (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0825	0.0	12.72	6.72	6341	7.57	151.8	X	X	X	Gray/None
0832	1.5	14.59	7.38	6535	7.41	136.0				" "
0839	3.0	14.76	7.46	6535	4.05	130.6				" "
0844	4.5	14.79	7.47	6527	2.27	128.2				" "
0851	6.0	14.81	7.47	6524	1.31	125.1				Clear/None

   d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☒	☐

(continued on back)

   If no or N/A - Explain below.
   DO Dropping isn't leveling off

3. **SAMPLE COLLECTION:** Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-20	40ml Glass	3	HCl	8260 VOC	0855

Comments

Signature Date 12/10/08

ENSR

Well ID: MW-21

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/10 Time: Start 0900 am/pm
Project No: Finish 0945 am/pm
Site Location: Kirtland NM
Weather Conds: Sunny 30° Collector(s): C. Jutting

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.54 c. Length of Water Column 10.09 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 5.45 d. Calculated System Volume (see back) 1.65

2. WELL PURGE DATA

a. Purge Method: peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make: YSI Model: 556 MPS Serial Number:

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0902	0.0	15.22	6.04	174851	0.56	95.8	X	X	X	Clear/Clean
0909	1.6	14.00	6.54	61940	1.11	70.4	|	|	|	" "
0915	3.2	15.02	6.39	78246	0.84	70.6	|	|	|	Brown/rusty smell
				Purged Dry			|	|	|	
							|	|	|	
							|	|	|	
							|	|	|	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below. Well purged Dry

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-21	40ml Glass	3	HCl	8260 VOC	0935
MW-21 ms/msd	"	"	"	"	0940
~~MW-21~~ MW-Dupe	"	"	"	"	0945

Comments

Signature Date 12/10/08

ENSR

Well ID: MW-22

Low Flow Ground Water Sample Collection Record

Client: Maverick Date: 12/10/08 Time: Start 1000 am/pm
Project No: Finish 1030 am/pm
Site Location: Kirtland JDM
Weather Conds: Sunny 35° Collector(s): C. Jutting

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 13.98 c. Length of Water Column 7.14 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 6.84 d. Calculated System Volume (see back) 1.16

2. WELL PURGE DATA

a. Purge Method: peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1005	~~1.0~~ 0.90									
1015	1.2									
1020	2.0	Purged Dry								

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☒	☒

(continued on back)

If no or N/A - Explain below. Sheet said don't take parameters @ MW-22 & MW-17

3. SAMPLE COLLECTION: Method: peristaltic

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-22	40mL Glass	3	HCl	8260 VOC	1030

Comments

Signature C. Jutting Date 12/10/08

Attachment B

Laboratory Data and Data Validation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

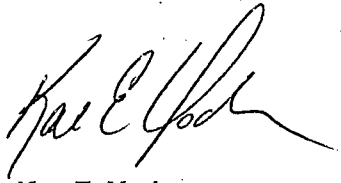
MAVERICK

Lot #: D8L110355

Ann Biegelsen

AECOM, Inc.
1601 Prospect Park Way
Fort Collins, CO 80525

TestAmerica Laboratories, Inc.



Kae E. Yoder
Project Manager

December 22, 2008

CASE NARRATIVE
D8L110355

The following report contains the analytical results for ten water samples and one trip blank submitted to TestAmerica by AECOM, Inc. from the Maverick site. The samples were received December 11, 2008, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter listed on the methods summary page in accordance with the methods indicated. A summary of QC data for these analyses is included. Dilution factors and footnotes have been provided on each datasheet to assist in the interpretation of the results.

The results apply only to the samples included in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have been found to be compliant with laboratory protocols, with the exception of any items noted below.

SUPPLEMENTAL QC INFORMATION

Sample Receipt

Samples were received in good condition at a temperature of 3.8°C. No anomalies were encountered during sample receipt, with the exception of the following items noted.

Sample Trip Blank was received at the laboratory, but was not listed on the associated chain-of-custody. Sample Trip Blank was logged for 8260B VOCs analysis, per the containers received. The client was notified on December 12, 2008.

Relinquished By information is not present on the chain-of-custody. The client was notified on December 12, 2008.

GC/MS Volatiles – SW846 8260B

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, samples MW-17 and MW-22 had to be analyzed at dilutions. The reporting limits have been adjusted relative to the dilutions required.

MS/MSD were performed on sample MW-21, as requested (QC batch 8353575). All spike parameters were within QC control limits.

No other anomalies were encountered.

EXECUTIVE SUMMARY - Detection Highlights

D8L110355

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-17 12/10/08 10:55 004				
Benzene	85	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	0.38 J	2.0	ug/L	SW846 8260B
Ethylbenzene	7.2	2.0	ug/L	SW846 8260B
Methylene chloride	0.94 J	10	ug/L	SW846 8260B
Toluene	1.9 J	2.0	ug/L	SW846 8260B
Xylenes (total)	35	4.0	ug/L	SW846 8260B
sec-Butylbenzene	6.1	2.0	ug/L	SW846 8260B
Isopropylbenzene	2.4	2.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	31	2.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	19	2.0	ug/L	SW846 8260B
n-Propylbenzene	3.7	2.0	ug/L	SW846 8260B
4-Isopropyltoluene	2.0	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	32	4.0	ug/L	SW846 8260B
o-Xylene	2.7	2.0	ug/L	SW846 8260B
Naphthalene	2.0	2.0	ug/L	SW846 8260B
MW-18 12/09/08 15:35 005				
Acetone	150	10	ug/L	SW846 8260B
Benzene	0.24 J	1.0	ug/L	SW846 8260B
Ethylbenzene	1.0	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	4.9 J	5.0	ug/L	SW846 8260B
Xylenes (total)	0.66 J	2.0	ug/L	SW846 8260B
sec-Butylbenzene	1.5	1.0	ug/L	SW846 8260B
Isopropylbenzene	1.5	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	3.4	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	0.34 J	1.0	ug/L	SW846 8260B
n-Propylbenzene	1.0	1.0	ug/L	SW846 8260B
tert-Butylbenzene	0.96 J	1.0	ug/L	SW846 8260B
4-Isopropyltoluene	0.39 J	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	0.66 J	2.0	ug/L	SW846 8260B
MW-19 12/10/08 11:55 006				
Acetone	9.7 J	10	ug/L	SW846 8260B
MW-21 12/10/08 09:35 008				
Acetone	8.7 J	10	ug/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D8L110355

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-22 12/10/08 10:30 009				
Acetone	140	20	ug/L	SW846 8260B
Benzene	75	2.0	ug/L	SW846 8260B
Ethylbenzene	64	2.0	ug/L	SW846 8260B
Methylene chloride	1.2 J	10	ug/L	SW846 8260B
Xylenes (total)	0.73 J	4.0	ug/L	SW846 8260B
n-Butylbenzene	4.7	2.0	ug/L	SW846 8260B
sec-Butylbenzene	3.6	2.0	ug/L	SW846 8260B
Isopropylbenzene	4.4	2.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	30	2.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	3.3	2.0	ug/L	SW846 8260B
n-Propylbenzene	9.6	2.0	ug/L	SW846 8260B
4-Isopropyltoluene	0.61 J	2.0	ug/L	SW846 8260B
o-Xylene	0.73 J	2.0	ug/L	SW846 8260B
Naphthalene	4.5	2.0	ug/L	SW846 8260B
MW-DUPE 12/10/08 09:45 010				
Acetone	13	10	ug/L	SW846 8260B
Benzene	0.19 J	1.0	ug/L	SW846 8260B
Ethylbenzene	0.36 J	1.0	ug/L	SW846 8260B
Methylene chloride	0.33 J	5.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	0.95 J	1.0	ug/L	SW846 8260B
n-Propylbenzene	0.20 J	1.0	ug/L	SW846 8260B
TRIP BLANK 12/10/08 011				
Methylene chloride	1.1 J	5.0	ug/L	SW846 8260B

METHODS SUMMARY

D8L110355

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D8L110355

ANALYTICAL METHOD	ANALYST	ANALYST ID
SW846 8260B	James Garcia	000538

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D8L110355

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
K4JV8	001	MW-09	12/09/08	11:15
K4JWC	002	MW-10	12/10/08	12:35
K4JWE	003	MW-16	12/09/08	12:10
K4JWG	004	MW-17	12/10/08	10:55
K4JWJ	005	MW-18	12/09/08	15:35
K4JWL	006	MW-19	12/10/08	11:55
K4JWN	007	MW-20	12/10/08	08:55
K4JWR	008	MW-21	12/10/08	09:35
K4JWV	009	MW-22	12/10/08	10:30
K4JWX	010	MW-DUPE	12/10/08	09:45
K4JX1	011	TRIP BLANK	12/10/08	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

AECOM, Inc

Client Sample ID: MW-09

GC/MS Volatiles

Lot-Sample #...: D8L110355-001 Work Order #...: K4JV81AA Matrix.....: WG
Date Sampled...: 12/09/08 11:15 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 21:13
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-09

GC/MS Volatiles

Lot-Sample #...: D8L110355-001 Work Order #...: K4JV81AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(79 - 120)
1,2-Dichloroethane-d4	104	(65 - 126)
4-Bromofluorobenzene	93	(75 - 120)
Toluene-d8	99	(78 - 120)

AECOM, Inc

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...: D8L110355-002 **Work Order #...:** K4JWC1AA **Matrix.....:** WG
Date Sampled...: 12/10/08 12:35 **Date Received..:** 12/11/08
Prep Date.....: 12/17/08 **Analysis Date..:** 12/17/08
Prep Batch #...: 8353575 **Analysis Time..:** 21:33
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...: D8L110355-002 Work Order #...: K4JWC1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(79 - 120)
1,2-Dichloroethane-d4	101	(65 - 126)
4-Bromofluorobenzene	95	(75 - 120)
Toluene-d8	101	(78 - 120)

AECOM, Inc

Client Sample ID: MW-16

GC/MS Volatiles

Lot-Sample #...: D8L110355-003 Work Order #...: K4JWE1AA Matrix.....: WG
Date Sampled...: 12/09/08 12:10 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 21:53
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-16

GC/MS Volatiles

Lot-Sample #...: D8L110355-003 Work Order #...: K4JWE1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(79 - 120)
1,2-Dichloroethane-d4	102	(65 - 126)
4-Bromofluorobenzene	94	(75 - 120)
Toluene-d8	101	(78 - 120)

AECOM, Inc

Client Sample ID: MW-17

GC/MS Volatiles

Lot-Sample #...: D8L110355-004 Work Order #...: K4JWG1AA Matrix.....: WG
Date Sampled...: 12/10/08 10:55 Date Received..: 12/11/08
Prep Date.....: 12/18/08 Analysis Date..: 12/18/08
Prep Batch #...: 8354453 Analysis Time..: 20:43
Dilution Factor: 2

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	20	ug/L	3.8
Benzene	**85**	**2.0**	**ug/L**	**0.32**
Bromodichloromethane	ND	2.0	ug/L	0.34
Bromoform	ND	2.0	ug/L	0.38
Bromomethane	ND	4.0	ug/L	0.42
2-Butanone (MEK)	ND	12	ug/L	3.7
Carbon tetrachloride	ND	2.0	ug/L	0.38
Chlorobenzene	ND	2.0	ug/L	0.34
Chloroethane	ND	4.0	ug/L	0.82
Chloroform	ND	2.0	ug/L	0.32
Chloromethane	ND	4.0	ug/L	0.60
Dibromomethane	ND	2.0	ug/L	0.34
1,2-Dibromoethane (EDB)	ND	2.0	ug/L	0.36
1,2-Dichlorobenzene	**0.38 J**	**2.0**	**ug/L**	**0.26**
1,3-Dichlorobenzene	ND	2.0	ug/L	0.32
1,4-Dichlorobenzene	ND	2.0	ug/L	0.32
Dichlorodifluoromethane	ND	4.0	ug/L	0.62
1,1-Dichloroethane	ND	2.0	ug/L	0.32
1,2-Dichloroethane	ND	2.0	ug/L	0.26
1,1-Dichloroethene	ND	2.0	ug/L	0.28
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	2.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	2.0	ug/L	0.30
1,2-Dichloropropane	ND	2.0	ug/L	0.26
cis-1,3-Dichloropropene	ND	2.0	ug/L	0.32
trans-1,3-Dichloropropene	ND	6.0	ug/L	0.38
Ethylbenzene	**7.2**	**2.0**	**ug/L**	**0.32**
2-Hexanone	ND	10	ug/L	2.8
Methylene chloride	**0.94 J**	**10**	**ug/L**	**0.64**
4-Methyl-2-pentanone	ND	10	ug/L	2.1
Styrene	ND	2.0	ug/L	0.34
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L	0.34
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	0.40
Tetrachloroethene	ND	2.0	ug/L	0.40
Toluene	**1.9 J**	**2.0**	**ug/L**	**0.34**
1,2,4-Trichloro-benzene	ND	2.0	ug/L	0.64

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AECOM, Inc

Client Sample ID: MW-17

GC/MS Volatiles

Lot-Sample #...: D8L110355-004 Work Order #...: K4JWG1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	2.0	ug/L	0.32
1,1,2-Trichloroethane	ND	2.0	ug/L	0.64
Trichloroethene	ND	2.0	ug/L	0.32
Trichlorofluoromethane	ND	4.0	ug/L	0.58
1,2,3-Trichloropropane	ND	2.0	ug/L	1.5
Vinyl chloride	ND	2.0	ug/L	0.80
Xylenes (total)	**35**	**4.0**	**ug/L**	**0.38**
n-Butylbenzene	ND	2.0	ug/L	0.28
sec-Butylbenzene	**6.1**	**2.0**	**ug/L**	**0.34**
Isopropylbenzene	**2.4**	**2.0**	**ug/L**	**0.38**
1,2,4-Trimethylbenzene	**31**	**2.0**	**ug/L**	**0.28**
1,3,5-Trimethylbenzene	**19**	**2.0**	**ug/L**	**0.28**
n-Propylbenzene	**3.7**	**2.0**	**ug/L**	**0.32**
tert-Butylbenzene	ND	2.0	ug/L	0.32
Dibromochloromethane	ND	2.0	ug/L	0.34
2-Chlorotoluene	ND	2.0	ug/L	0.34
4-Chlorotoluene	ND	2.0	ug/L	0.34
1,2-Dibromo-3-chloropropane (DBCP)	ND	10	ug/L	3.0
1,3-Dichloropropane	ND	2.0	ug/L	0.30
2,2-Dichloropropane	ND	10	ug/L	0.40
1,1-Dichloropropene	ND	2.0	ug/L	0.30
Hexachlorobutadiene	ND	2.0	ug/L	0.24
4-Isopropyltoluene	**2.0**	**2.0**	**ug/L**	**0.34**
Methyl tert-butyl ether	ND	10	ug/L	0.50
1,2,3-Trichlorobenzene	ND	2.0	ug/L	0.36
m-Xylene & p-Xylene	**32**	**4.0**	**ug/L**	**0.68**
o-Xylene	**2.7**	**2.0**	**ug/L**	**0.38**
Bromobenzene	ND	2.0	ug/L	0.34
Bromochloromethane	ND	2.0	ug/L	0.20
Naphthalene	**2.0**	**2.0**	**ug/L**	**0.44**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(79 - 120)
1,2-Dichloroethane-d4	86	(65 - 126)
4-Bromofluorobenzene	118	(75 - 120)
Toluene-d8	106	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-18

GC/MS Volatiles

Lot-Sample #...: D8L110355-005 Work Order #...: K4JWJ1AA Matrix.....: WG
Date Sampled...: 12/09/08 15:35 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 22:32
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**150**	**10**	**ug/L**	**1.9**
Benzene	**0.24 J**	**1.0**	**ug/L**	**0.16**
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	**1.0**	**1.0**	**ug/L**	**0.16**
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	**4.9 J**	**5.0**	**ug/L**	**1.0**
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-18

GC/MS Volatiles

Lot-Sample #...: D8L110355-005 Work Order #...: K4JWJ1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	**0.66 J**	**2.0**	**ug/L**	**0.19**
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	**1.5**	**1.0**	**ug/L**	**0.17**
Isopropylbenzene	**1.5**	**1.0**	**ug/L**	**0.19**
1,2,4-Trimethylbenzene	**3.4**	**1.0**	**ug/L**	**0.14**
1,3,5-Trimethylbenzene	**0.34 J**	**1.0**	**ug/L**	**0.14**
n-Propylbenzene	**1.0**	**1.0**	**ug/L**	**0.16**
tert-Butylbenzene	**0.96 J**	**1.0**	**ug/L**	**0.16**
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	**0.39 J**	**1.0**	**ug/L**	**0.17**
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	**0.66 J**	**2.0**	**ug/L**	**0.34**
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(79 - 120)
1,2-Dichloroethane-d4	113	(65 - 126)
4-Bromofluorobenzene	106	(75 - 120)
Toluene-d8	100	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-19

GC/MS Volatiles

Lot-Sample #...: D8L110355-006 Work Order #...: K4JWL1AA Matrix.....: WG
Date Sampled...: 12/10/08 11:55 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 22:52
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**9.7 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-19

GC/MS Volatiles

Lot-Sample #...: D8L110355-006 Work Order #...: K4JWL1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(79 - 120)
1,2-Dichloroethane-d4	104	(65 - 126)
4-Bromofluorobenzene	95	(75 - 120)
Toluene-d8	98	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-20

GC/MS Volatiles

Lot-Sample #...: D8L110355-007 Work Order #...: K4JWN1AA Matrix.....: WG
Date Sampled...: 12/10/08 08:55 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 23:12
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-20

GC/MS Volatiles

Lot-Sample #...: D8L110355-007 Work Order #...: K4JWN1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(79 - 120)
1,2-Dichloroethane-d4	106	(65 - 126)
4-Bromofluorobenzene	100	(75 - 120)
Toluene-d8	101	(78 - 120)

AECOM, Inc

Client Sample ID: MW-21

GC/MS Volatiles

Lot-Sample #...: D8L110355-008 Work Order #...: K4JWR1AA Matrix.....: WG
Date Sampled...: 12/10/08 09:35 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 20:14
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**8.7 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-21

GC/MS Volatiles

Lot-Sample #...: D8L110355-008 Work Order #...: K4JWR1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(79 - 120)
1,2-Dichloroethane-d4	102	(65 - 126)
4-Bromofluorobenzene	92	(75 - 120)
Toluene-d8	100	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-22

GC/MS Volatiles

Lot-Sample #...: D8L110355-009 Work Order #...: K4JWV1AA Matrix.....: WG
Date Sampled...: 12/10/08 10:30 Date Received..: 12/11/08
Prep Date.....: 12/18/08 Analysis Date..: 12/19/08
Prep Batch #...: 8354453 Analysis Time..: 02:49
Dilution Factor: 2

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**140**	**20**	**ug/L**	**3.8**
Benzene	**75**	**2.0**	**ug/L**	**0.32**
Bromodichloromethane	ND	2.0	ug/L	0.34
Bromoform	ND	2.0	ug/L	0.38
Bromomethane	ND	4.0	ug/L	0.42
2-Butanone (MEK)	ND	12	ug/L	3.7
Carbon tetrachloride	ND	2.0	ug/L	0.38
Chlorobenzene	ND	2.0	ug/L	0.34
Chloroethane	ND	4.0	ug/L	0.82
Chloroform	ND	2.0	ug/L	0.32
Chloromethane	ND	4.0	ug/L	0.60
Dibromomethane	ND	2.0	ug/L	0.34
1,2-Dibromoethane (EDB)	ND	2.0	ug/L	0.36
1,2-Dichlorobenzene	ND	2.0	ug/L	0.26
1,3-Dichlorobenzene	ND	2.0	ug/L	0.32
1,4-Dichlorobenzene	ND	2.0	ug/L	0.32
Dichlorodifluoromethane	ND	4.0	ug/L	0.62
1,1-Dichloroethane	ND	2.0	ug/L	0.32
1,2-Dichloroethane	ND	2.0	ug/L	0.26
1,1-Dichloroethene	ND	2.0	ug/L	0.28
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	2.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	2.0	ug/L	0.30
1,2-Dichloropropane	ND	2.0	ug/L	0.26
cis-1,3-Dichloropropene	ND	2.0	ug/L	0.32
trans-1,3-Dichloropropene	ND	6.0	ug/L	0.38
Ethylbenzene	**64**	**2.0**	**ug/L**	**0.32**
2-Hexanone	ND	10	ug/L	2.8
Methylene chloride	**1.2 J**	**10**	**ug/L**	**0.64**
4-Methyl-2-pentanone	ND	10	ug/L	2.1
Styrene	ND	2.0	ug/L	0.34
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L	0.34
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	0.40
Tetrachloroethene	ND	2.0	ug/L	0.40
Toluene	ND	2.0	ug/L	0.34
1,2,4-Trichloro-benzene	ND	2.0	ug/L	0.64

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AECOM, Inc

Client Sample ID: MW-22

GC/MS Volatiles

Lot-Sample #...: D8L110355-009 Work Order #...: K4JWV1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	2.0	ug/L	0.32
1,1,2-Trichloroethane	ND	2.0	ug/L	0.64
Trichloroethene	ND	2.0	ug/L	0.32
Trichlorofluoromethane	ND	4.0	ug/L	0.58
1,2,3-Trichloropropane	ND	2.0	ug/L	1.5
Vinyl chloride	ND	2.0	ug/L	0.80
Xylenes (total)	**0.73 J**	**4.0**	**ug/L**	**0.38**
n-Butylbenzene	**4.7**	**2.0**	**ug/L**	**0.28**
sec-Butylbenzene	**3.6**	**2.0**	**ug/L**	**0.34**
Isopropylbenzene	**4.4**	**2.0**	**ug/L**	**0.38**
1,2,4-Trimethylbenzene	**30**	**2.0**	**ug/L**	**0.28**
1,3,5-Trimethylbenzene	**3.3**	**2.0**	**ug/L**	**0.28**
n-Propylbenzene	**9.6**	**2.0**	**ug/L**	**0.32**
tert-Butylbenzene	ND	2.0	ug/L	0.32
Dibromochloromethane	ND	2.0	ug/L	0.34
2-Chlorotoluene	ND	2.0	ug/L	0.34
4-Chlorotoluene	ND	2.0	ug/L	0.34
1,2-Dibromo-3-chloropropane (DBCP)	ND	10	ug/L	3.0
1,3-Dichloropropane	ND	2.0	ug/L	0.30
2,2-Dichloropropane	ND	10	ug/L	0.40
1,1-Dichloropropene	ND	2.0	ug/L	0.30
Hexachlorobutadiene	ND	2.0	ug/L	0.24
4-Isopropyltoluene	**0.61 J**	**2.0**	**ug/L**	**0.34**
Methyl tert-butyl ether	ND	10	ug/L	0.50
1,2,3-Trichlorobenzene	ND	2.0	ug/L	0.36
m-Xylene & p-Xylene	ND	4.0	ug/L	0.68
o-Xylene	**0.73 J**	**2.0**	**ug/L**	**0.38**
Bromobenzene	ND	2.0	ug/L	0.34
Bromochloromethane	ND	2.0	ug/L	0.20
Naphthalene	**4.5**	**2.0**	**ug/L**	**0.44**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(79 - 120)
1,2-Dichloroethane-d4	95	(65 - 126)
4-Bromofluorobenzene	105	(75 - 120)
Toluene-d8	102	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-DUPE

GC/MS Volatiles

Lot-Sample #...: D8L110355-010 Work Order #...: K4JWX1AA Matrix.....: WG
Date Sampled...: 12/10/08 09:45 Date Received..: 12/11/08
Prep Date.....: 12/18/08 Analysis Date..: 12/18/08
Prep Batch #...: 8354453 Analysis Time..: 21:23
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**13**	**10**	**ug/L**	**1.9**
Benzene	**0.19 J**	**1.0**	**ug/L**	**0.16**
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	**0.36 J**	**1.0**	**ug/L**	**0.16**
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	**0.33 J**	**5.0**	**ug/L**	**0.32**
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: MW-DUPE

GC/MS Volatiles

Lot-Sample #...: D8L110355-010 Work Order #...: K4JWX1AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	**0.95 J**	**1.0**	**ug/L**	**0.14**
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	**0.20 J**	**1.0**	**ug/L**	**0.16**
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(79 - 120)
1,2-Dichloroethane-d4	88	(65 - 126)
4-Bromofluorobenzene	98	(75 - 120)
Toluene-d8	101	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: D8L110355-011 **Work Order #...:** K4JX11AA **Matrix.....:** WQ
Date Sampled...: 12/10/08 **Date Received..:** 12/11/08
Prep Date.....: 12/18/08 **Analysis Date..:** 12/19/08
Prep Batch #...: 8354453 **Analysis Time..:** 02:29
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	**1.1 J**	**5.0**	**ug/L**	**0.32**
4-Methyl-2-pentanone	ND	5.0	ug/L	1.0
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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AECOM, Inc

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: D8L110355-011 Work Order #...: K4JX11AA Matrix.....: WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.77
Vinyl chloride	ND	1.0	ug/L	0.40
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(79 - 120)
1,2-Dichloroethane-d4	96	(65 - 126)
4-Bromofluorobenzene	99	(75 - 120)
Toluene-d8	103	(78 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

QC DATA ASSOCIATION SUMMARY

D8L110355

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 8260B		8353575	8353341
002	WG	SW846 8260B		8353575	8353341
003	WG	SW846 8260B		8353575	8353341
004	WG	SW846 8260B		8354453	8354263
005	WG	SW846 8260B		8353575	8353341
006	WG	SW846 8260B		8353575	8353341
007	WG	SW846 8260B		8353575	8353341
008	WG	SW846 8260B		8353575	8353341
009	WG	SW846 8260B		8354453	8354263
010	WG	SW846 8260B		8354453	8354263
011	WQ	SW846 8260B		8354453	8354263

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K40561AA Matrix.....: WATER
MB Lot-Sample #: D8L180000-575

Prep Date.....: 12/17/08 Analysis Time..: 19:08
Analysis Date..: 12/17/08 Prep Batch #...: 8353575
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	6.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	3.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 **Work Order #...:** K40561AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	SW846 8260B
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B
2,2-Dichloropropane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B
4-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	2.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Naphthalene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(79 - 120)
1,2-Dichloroethane-d4	101	(65 - 126)
4-Bromofluorobenzene	96	(75 - 120)
Toluene-d8	102	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 **Work Order #...:** K43RC1AA **Matrix.....:** WATER
MB Lot-Sample #: D8L190000-453

Prep Date.....: 12/18/08 **Analysis Time..:** 18:06
Analysis Date..: 12/18/08 **Prep Batch #...:** 8354453
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	6.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	3.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K43RC1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	SW846 8260B
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B
2,2-Dichloropropane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B
4-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	2.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Naphthalene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(79 - 120)
1,2-Dichloroethane-d4	88	(65 - 126)
4-Bromofluorobenzene	97	(75 - 120)
Toluene-d8	107	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K40561AC Matrix.....: WATER
LCS Lot-Sample#: D8L180000-575
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 18:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	100	(77 - 118)	SW846 8260B
Bromodichloromethane	102	(78 - 118)	SW846 8260B
Carbon tetrachloride	106	(80 - 120)	SW846 8260B
Chlorobenzene	99	(78 - 118)	SW846 8260B
Chloroform	100	(78 - 118)	SW846 8260B
1,3-Dichlorobenzene	100	(75 - 115)	SW846 8260B
1,1-Dichloroethane	100	(77 - 117)	SW846 8260B
1,1-Dichloroethene	99	(68 - 133)	SW846 8260B
trans-1,2-Dichloroethene	104	(80 - 120)	SW846 8260B
1,2-Dichloropropane	99	(76 - 116)	SW846 8260B
Ethylbenzene	102	(78 - 118)	SW846 8260B
Methylene chloride	100	(71 - 119)	SW846 8260B
Tetrachloroethene	100	(77 - 117)	SW846 8260B
Toluene	100	(73 - 120)	SW846 8260B
1,1,1-Trichloroethane	103	(78 - 118)	SW846 8260B
Trichloroethene	102	(78 - 122)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(79 - 120)
1,2-Dichloroethane-d4	100	(65 - 126)
4-Bromofluorobenzene	95	(75 - 120)
Toluene-d8	105	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K40561AC Matrix.....: WATER
LCS Lot-Sample#: D8L180000-575
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 18:09
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**9.97**	**ug/L**	**100**	**SW846 8260B**
Bromodichloromethane	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
Carbon tetrachloride	**10.0**	**10.6**	**ug/L**	**106**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.94**	**ug/L**	**99**	**SW846 8260B**
Chloroform	**10.0**	**10.0**	**ug/L**	**100**	**SW846 8260B**
1,3-Dichlorobenzene	**10.0**	**9.96**	**ug/L**	**100**	**SW846 8260B**
1,1-Dichloroethane	**10.0**	**9.97**	**ug/L**	**100**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**9.92**	**ug/L**	**99**	**SW846 8260B**
trans-1,2-Dichloroethene	**10.0**	**10.4**	**ug/L**	**104**	**SW846 8260B**
1,2-Dichloropropane	**10.0**	**9.86**	**ug/L**	**99**	**SW846 8260B**
Ethylbenzene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
Methylene chloride	**10.0**	**10.0**	**ug/L**	**100**	**SW846 8260B**
Tetrachloroethene	**10.0**	**9.98**	**ug/L**	**100**	**SW846 8260B**
Toluene	**10.0**	**9.96**	**ug/L**	**100**	**SW846 8260B**
1,1,1-Trichloroethane	**10.0**	**10.3**	**ug/L**	**103**	**SW846 8260B**
Trichloroethene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(79 - 120)
1,2-Dichloroethane-d4	100	(65 - 126)
4-Bromofluorobenzene	95	(75 - 120)
Toluene-d8	105	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K43RC1AC Matrix.....: WATER
LCS Lot-Sample#: D8L190000-453
Prep Date.....: 12/18/08 Analysis Date..: 12/18/08
Prep Batch #...: 8354453 Analysis Time..: 17:10
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**97**	**(77 - 118)**	**SW846 8260B**
Bromodichloromethane	**88**	**(78 - 118)**	**SW846 8260B**
Carbon tetrachloride	**88**	**(80 - 120)**	**SW846 8260B**
Chlorobenzene	**96**	**(78 - 118)**	**SW846 8260B**
Chloroform	**92**	**(78 - 118)**	**SW846 8260B**
1,3-Dichlorobenzene	**97**	**(75 - 115)**	**SW846 8260B**
1,1-Dichloroethane	**94**	**(77 - 117)**	**SW846 8260B**
1,1-Dichloroethene	**86**	**(68 - 133)**	**SW846 8260B**
trans-1,2-Dichloroethene	**91**	**(80 - 120)**	**SW846 8260B**
1,2-Dichloropropane	**94**	**(76 - 116)**	**SW846 8260B**
Ethylbenzene	**97**	**(78 - 118)**	**SW846 8260B**
Methylene chloride	**93**	**(71 - 119)**	**SW846 8260B**
Tetrachloroethene	**102**	**(77 - 117)**	**SW846 8260B**
Toluene	**99**	**(73 - 120)**	**SW846 8260B**
1,1,1-Trichloroethane	**96**	**(78 - 118)**	**SW846 8260B**
Trichloroethene	**102**	**(78 - 122)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(79 - 120)
1,2-Dichloroethane-d4	88	(65 - 126)
4-Bromofluorobenzene	97	(75 - 120)
Toluene-d8	104	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K43RC1AC Matrix.....: WATER
LCS Lot-Sample#: D8L190000-453
Prep Date.....: 12/18/08 Analysis Date..: 12/18/08
Prep Batch #...: 8354453 Analysis Time..: 17:10
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	5.00	4.87	ug/L	97	SW846 8260B
Bromodichloromethane	5.00	4.39	ug/L	88	SW846 8260B
Carbon tetrachloride	5.00	4.40	ug/L	88	SW846 8260B
Chlorobenzene	5.00	4.79	ug/L	96	SW846 8260B
Chloroform	5.00	4.60	ug/L	92	SW846 8260B
1,3-Dichlorobenzene	5.00	4.86	ug/L	97	SW846 8260B
1,1-Dichloroethane	5.00	4.69	ug/L	94	SW846 8260B
1,1-Dichloroethene	5.00	4.29	ug/L	86	SW846 8260B
trans-1,2-Dichloroethene	5.00	4.54	ug/L	91	SW846 8260B
1,2-Dichloropropane	5.00	4.69	ug/L	94	SW846 8260B
Ethylbenzene	5.00	4.86	ug/L	97	SW846 8260B
Methylene chloride	5.00	4.65	ug/L	93	SW846 8260B
Tetrachloroethene	5.00	5.12	ug/L	102	SW846 8260B
Toluene	5.00	4.94	ug/L	99	SW846 8260B
1,1,1-Trichloroethane	5.00	4.78	ug/L	96	SW846 8260B
Trichloroethene	5.00	5.12	ug/L	102	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(79 - 120)
1,2-Dichloroethane-d4	88	(65 - 126)
4-Bromofluorobenzene	97	(75 - 120)
Toluene-d8	104	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K4JWR1AC-MS Matrix.....: WG
MS Lot-Sample #: D8L110355-008 K4JWR1AD-MSD
Date Sampled...: 12/10/08 09:35 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 20:34
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	107	(77 - 118)			SW846 8260B
	108	(77 - 118)	1.3	(0-20)	SW846 8260B
Bromodichloromethane	105	(78 - 118)			SW846 8260B
	108	(78 - 118)	3.2	(0-20)	SW846 8260B
Carbon tetrachloride	109	(80 - 120)			SW846 8260B
	109	(80 - 120)	0.32	(0-21)	SW846 8260B
Chlorobenzene	104	(78 - 118)			SW846 8260B
	103	(78 - 118)	0.81	(0-20)	SW846 8260B
Chloroform	106	(78 - 118)			SW846 8260B
	108	(78 - 118)	1.4	(0-20)	SW846 8260B
1,3-Dichlorobenzene	100	(75 - 115)			SW846 8260B
	99	(75 - 115)	0.83	(0-20)	SW846 8260B
1,1-Dichloroethane	107	(77 - 117)			SW846 8260B
	107	(77 - 117)	0.20	(0-21)	SW846 8260B
1,1-Dichloroethene	100	(68 - 133)			SW846 8260B
	95	(68 - 133)	5.1	(0-20)	SW846 8260B
trans-1,2-Dichloroethene	101	(80 - 120)			SW846 8260B
	103	(80 - 120)	2.0	(0-24)	SW846 8260B
1,2-Dichloropropane	107	(76 - 116)			SW846 8260B
	108	(76 - 116)	1.6	(0-20)	SW846 8260B
Ethylbenzene	108	(78 - 118)			SW846 8260B
	106	(78 - 118)	1.4	(0-26)	SW846 8260B
Methylene chloride	109	(71 - 119)			SW846 8260B
	110	(71 - 119)	1.2	(0-20)	SW846 8260B
Tetrachloroethene	105	(77 - 117)			SW846 8260B
	99	(77 - 117)	5.8	(0-20)	SW846 8260B
Toluene	104	(73 - 120)			SW846 8260B
	98	(73 - 120)	5.5	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(78 - 118)			SW846 8260B
	108	(78 - 118)	0.15	(0-20)	SW846 8260B
Trichloroethene	113	(78 - 122)			SW846 8260B
	114	(78 - 122)	0.32	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(79 - 120)
	104	(79 - 120)
1,2-Dichloroethane-d4	104	(65 - 126)
	112	(65 - 126)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 **Work Order #...:** K4JWR1AC-MS **Matrix.....:** WG
MS Lot-Sample #: D8L110355-008 K4JWR1AD-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(75 - 120)
	97	(75 - 120)
Toluene-d8	101	(78 - 120)
	97	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K4JWR1AC-MS Matrix.....: WG
MS Lot-Sample #: D8L110355-008 K4JWR1AD-MSD
Date Sampled...: 12/10/08 09:35 Date Received..: 12/11/08
Prep Date.....: 12/17/08 Analysis Date..: 12/17/08
Prep Batch #...: 8353575 Analysis Time..: 20:34
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	5.00	5.33	ug/L	107		SW846 8260B
	ND	5.00	5.40	ug/L	108	1.3	SW846 8260B
Bromodichloromethane	ND	5.00	5.24	ug/L	105		SW846 8260B
	ND	5.00	5.41	ug/L	108	3.2	SW846 8260B
Carbon tetrachloride	ND	5.00	5.43	ug/L	109		SW846 8260B
	ND	5.00	5.44	ug/L	109	0.32	SW846 8260B
Chlorobenzene	ND	5.00	5.20	ug/L	104		SW846 8260B
	ND	5.00	5.15	ug/L	103	0.81	SW846 8260B
Chloroform	ND	5.00	5.32	ug/L	106		SW846 8260B
	ND	5.00	5.39	ug/L	108	1.4	SW846 8260B
1,3-Dichlorobenzene	ND	5.00	5.01	ug/L	100		SW846 8260B
	ND	5.00	4.97	ug/L	99	0.83	SW846 8260B
1,1-Dichloroethane	ND	5.00	5.36	ug/L	107		SW846 8260B
	ND	5.00	5.37	ug/L	107	0.20	SW846 8260B
1,1-Dichloroethene	ND	5.00	4.99	ug/L	100		SW846 8260B
	ND	5.00	4.74	ug/L	95	5.1	SW846 8260B
trans-1,2-Dichloroethene	ND	5.00	5.03	ug/L	101		SW846 8260B
	ND	5.00	5.13	ug/L	103	2.0	SW846 8260B
1,2-Dichloropropane	ND	5.00	5.33	ug/L	107		SW846 8260B
	ND	5.00	5.42	ug/L	108	1.6	SW846 8260B
Ethylbenzene	ND	5.00	5.38	ug/L	108		SW846 8260B
	ND	5.00	5.31	ug/L	106	1.4	SW846 8260B
Methylene chloride	ND	5.00	5.44	ug/L	109		SW846 8260B
	ND	5.00	5.51	ug/L	110	1.2	SW846 8260B
Tetrachloroethene	ND	5.00	5.24	ug/L	105		SW846 8260B
	ND	5.00	4.95	ug/L	99	5.8	SW846 8260B
Toluene	ND	5.00	5.20	ug/L	104		SW846 8260B
	ND	5.00	4.92	ug/L	98	5.5	SW846 8260B
1,1,1-Trichloroethane	ND	5.00	5.39	ug/L	108		SW846 8260B
	ND	5.00	5.40	ug/L	108	0.15	SW846 8260B
Trichloroethene	ND	5.00	5.66	ug/L	113		SW846 8260B
	ND	5.00	5.68	ug/L	114	0.32	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(79 - 120)
	104	(79 - 120)
1,2-Dichloroethane-d4	104	(65 - 126)
	112	(65 - 126)

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 **Work Order #...:** K4JWR1AC-MS **Matrix.....:** WG
MS Lot-Sample #: D8L110355-008 K4JWR1AD-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(75 - 120)
	97	(75 - 120)
Toluene-d8	101	(78 - 120)
	97	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K4HLC1DE-MS Matrix.....: WATER
MS Lot-Sample #: D8L110232-001 K4HLC1DF-MSD
Date Sampled...: 12/10/08 07:20 Date Received..: 12/11/08
Prep Date.....: 12/18/08 Analysis Date..: 12/18/08
Prep Batch #...: 8354453 Analysis Time..: 20:02
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	92	(77 - 118)			SW846 8260B
	101	(77 - 118)	9.8	(0-20)	SW846 8260B
Bromodichloromethane	83	(78 - 118)			SW846 8260B
	91	(78 - 118)	10	(0-20)	SW846 8260B
Carbon tetrachloride	84	(80 - 120)			SW846 8260B
	94	(80 - 120)	11	(0-21)	SW846 8260B
Chlorobenzene	90	(78 - 118)			SW846 8260B
	101	(78 - 118)	12	(0-20)	SW846 8260B
Chloroform	87	(78 - 118)			SW846 8260B
	97	(78 - 118)	10	(0-20)	SW846 8260B
1,3-Dichlorobenzene	91	(75 - 115)			SW846 8260B
	104	(75 - 115)	13	(0-20)	SW846 8260B
1,1-Dichloroethane	89	(77 - 117)			SW846 8260B
	98	(77 - 117)	9.2	(0-21)	SW846 8260B
1,1-Dichloroethene	82	(68 - 133)			SW846 8260B
	94	(68 - 133)	14	(0-20)	SW846 8260B
trans-1,2-Dichloroethene	89	(80 - 120)			SW846 8260B
	97	(80 - 120)	8.9	(0-24)	SW846 8260B
1,2-Dichloropropane	87	(76 - 116)			SW846 8260B
	97	(76 - 116)	10	(0-20)	SW846 8260B
Ethylbenzene	89	(78 - 118)			SW846 8260B
	101	(78 - 118)	12	(0-26)	SW846 8260B
Methylene chloride	82	(71 - 119)			SW846 8260B
	92	(71 - 119)	9.7	(0-20)	SW846 8260B
Tetrachloroethene	95	(77 - 117)			SW846 8260B
	107	(77 - 117)	12	(0-20)	SW846 8260B
Toluene	92	(73 - 120)			SW846 8260B
	103	(73 - 120)	12	(0-20)	SW846 8260B
1,1,1-Trichloroethane	89	(78 - 118)			SW846 8260B
	101	(78 - 118)	12	(0-20)	SW846 8260B
Trichloroethene	96	(78 - 122)			SW846 8260B
	106	(78 - 122)	10	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(79 - 120)
	100	(79 - 120)
1,2-Dichloroethane-d4	89	(65 - 126)
	90	(65 - 126)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 **Work Order #...:** K4HLC1DE-MS **Matrix.....:** WATER
MS Lot-Sample #: D8L110232-001 K4HLC1DF-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(75 - 120)
	99	(75 - 120)
Toluene-d8	103	(78 - 120)
	107	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 Work Order #...: K4HLC1DE-MS Matrix.....: WATER
MS Lot-Sample #: D8L110232-001 K4HLC1DF-MSD
Date Sampled...: 12/10/08 07:20 Date Received..: 12/11/08
Prep Date.....: 12/18/08 Analysis Date..: 12/18/08
Prep Batch #...: 8354453 Analysis Time..: 20:02
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	5.00	4.58	ug/L	92		SW846 8260B
	ND	5.00	5.05	ug/L	101	9.8	SW846 8260B
Bromodichloromethane	ND	5.00	4.13	ug/L	83		SW846 8260B
	ND	5.00	4.57	ug/L	91	10	SW846 8260B
Carbon tetrachloride	ND	5.00	4.22	ug/L	84		SW846 8260B
	ND	5.00	4.70	ug/L	94	11	SW846 8260B
Chlorobenzene	ND	5.00	4.51	ug/L	90		SW846 8260B
	ND	5.00	5.07	ug/L	101	12	SW846 8260B
Chloroform	ND	5.00	4.35	ug/L	87		SW846 8260B
	ND	5.00	4.83	ug/L	97	10	SW846 8260B
1,3-Dichlorobenzene	ND	5.00	4.56	ug/L	91		SW846 8260B
	ND	5.00	5.21	ug/L	104	13	SW846 8260B
1,1-Dichloroethane	ND	5.00	4.46	ug/L	89		SW846 8260B
	ND	5.00	4.90	ug/L	98	9.2	SW846 8260B
1,1-Dichloroethene	ND	5.00	4.08	ug/L	82		SW846 8260B
	ND	5.00	4.68	ug/L	94	14	SW846 8260B
trans-1,2-Dichloroethene	ND	5.00	4.45	ug/L	89		SW846 8260B
	ND	5.00	4.86	ug/L	97	8.9	SW846 8260B
1,2-Dichloropropane	ND	5.00	4.35	ug/L	87		SW846 8260B
	ND	5.00	4.83	ug/L	97	10	SW846 8260B
Ethylbenzene	ND	5.00	4.47	ug/L	89		SW846 8260B
	ND	5.00	5.07	ug/L	101	12	SW846 8260B
Methylene chloride	0.35	5.00	4.47	ug/L	82		SW846 8260B
	0.35	5.00	4.92	ug/L	92	9.7	SW846 8260B
Tetrachloroethene	ND	5.00	4.77	ug/L	95		SW846 8260B
	ND	5.00	5.37	ug/L	107	12	SW846 8260B
Toluene	ND	5.00	4.59	ug/L	92		SW846 8260B
	ND	5.00	5.17	ug/L	103	12	SW846 8260B
1,1,1-Trichloroethane	ND	5.00	4.47	ug/L	89		SW846 8260B
	ND	5.00	5.03	ug/L	101	12	SW846 8260B
Trichloroethene	ND	5.00	4.80	ug/L	96		SW846 8260B
	ND	5.00	5.32	ug/L	106	10	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(79 - 120)
	100	(79 - 120)
1,2-Dichloroethane-d4	89	(65 - 126)
	90	(65 - 126)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D8L110355 **Work Order #...:** K4HLC1DE-MS **Matrix.....:** WATER
MS Lot-Sample #: D8L110232-001 K4HLC1DF-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(75 - 120)
	99	(75 - 120)
Toluene-d8	103	(78 - 120)
	107	(78 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

TAL-4124-280 (0508)

Sampler ID ________
Temperature on Receipt 3.8 [R] Am 12/11/08
Drinking Water? Yes ☐ No ☒

Client: Maverick - AECOM/ENSR	Project Manager: Jenny Phillips
Address: 1601 Prospect Pkwy	Telephone Number (Area Code)/Fax Number:
City: Fort Collins; State: CO; Zip Code: 80525	Site Contact: ; Lab Contact:
Project Name and Location (State): Maverick - Caribou Refinery	Carrier/Waybill Number:
Contract/Purchase Order/Quote No.:	

Date: 12/10/08
Chain of Custody Number: 110142
Lab Number:
Page ____ of ____

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): 8260B VOC	Special Instructions/Conditions of Receipt
MW-09	12/9/08	1115		X						X			X	
MW-10	12/10/08	1235		↓						↓			↓	
MW-16	12/9/08	1210		↓						↓			↓	
MW-17	12/10/08	1055		↓						↓			↓	
MW-18	12/9/08	1535		↓						↓			↓	
MW-19	12/10/08	1155		↓						↓			↓	
MW-20	12/10/08	0855		↓						↓			↓	
MW-21	12/10/08	0935		↓						↓			↓	
MW-21 MS/MSD	12/10/08	0940		↓						↓			↓	
MW-22	12/10/08	1030		↓						↓			↓	
MW-Dupe	12/10/08	0945		↓						↓			↓	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other ____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By			1. Received By [illegible]	12/11/08	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica Denver

Sample Receiving Checklist

Lot #: D8L110355 Date/Time Received: 12/4/08 0900

Company Name & Sampling Site: AECOM Maverick

PM to Complete This Section: *Yes* *No*
Residual chlorine check required: ☐ ☑ Quarantined : *Yes* ☐ *No* ☑

Quote #: 68961 - B

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures (°C): 3.8

N/A	*Yes*	*No*		*Initials*
☐	☑	☐	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	
	☑	☐	2. Coolers scanned for radiation. Is the reading ≤ to background levels? Yes: ✓ No:	
	☑	☐	3. Chain of custody present? If no, document on CUR.	
	☐	☑	4. Bottles broken and/or are leaking? If yes, document on CUR.	
	☑	☐	5. Multiphasic samples obvious? If yes, document on CUR.	
	☑	☐	6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.	
☑	☐	☐	7. pH of all samples checked and meet requirements? If no, document on CUR.	
	☑	☐	8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
	☐	☑	9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
☐	☑	☐	10. Were VOA samples without headspace? If no, document on CUR.	
☐	☑	☐	11. Were VOA vials preserved? Preservative ☑HCl ☐4±2°C ☐Sodium Thiosulfate ☐ Ascorbic Acid	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
☐	☑	☐	15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☐	☑	16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☐	☑	17. Are analyses with short holding times requested?	
	☐	☑	18. Was a quick Turn Around (TAT) requested?	

TestAmerica Denver

Sample Receiving Checklist

Lot # D8L110355

Login Checks:

N/A	Yes	No		Initials
	☑	☐	19. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
☒	☑ YES!	☐	20. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☑	☐	21. Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?	
☐	☑	☐	22. Were special log in instructions read and followed?	
☑	☐	☐	23. Were AFCEE metals logged for refrigerated storage?	
	☑	☐	24. Were tests logged checked against the COC? Which samples were confirmed? 1	
☑	☐	☐	25. Was a Rush form completed for quick TAT?	
☑	☐	☐	26. Was a Short Hold form completed for any short holds?	
	☐	☑	27. Were special archiving instructions indicated in the General Comments? If so, what were they?	

Labeling and Storage Checks:

Initials

☑	☐	☐	28. Was the subcontract COC signed and sent with samples to bottle prep?
	☑	☐	29. Were sample labels double-checked by a second person?
☑	☐	☐	30. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
	☑	☐	31. Did the sample ID, Date, and Time from label match what was logged?
☑	☐	☐	32. Were stickers for special archiving instructions affixed to each box? See #27
☑	☐	☐	33. Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

Prepared for:
Maverick Country Stores
Former Caribou Refinery

March 13, 2009

Organic Limited Data Validation Report

Maverick Country Stores
Former Caribou Refinery
Groundwater and Water QC Samples
TestAmerica of Arvada, Colorado Laboratory Data
December 2008 Sampling

Prepared By Ann Biegelsen
Environmental Quality Assurance Chemist

AECOM Inc.
March 2009
Document No.: 12501-001-210

AECOM

Overview

The samples analyzed for the Maverick Country Stores Groundwater sampling event from December 2008 are listed in the Table of Samples Analyzed (page 2). Data validation was performed on ten groundwater samples, and one trip blank sample.

The samples were analyzed by TestAmerica of Arvada, Colorado. Limited data validation was performed on the following analyses: Volatile Organic Compounds (VOCs) by SW846 method 8260B.

The Analytical Limited Data Validation Checklist is presented as pages 4-8. Data were evaluated based on validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999, as they applied to the reported methodology. Field duplicate RPD control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1988, upheld in DRAFT 1993.

The following data components were reviewed during the data validation procedure:

Submitted Deliverables
Case Narratives
Chain-of-Custody form(s) and sample integrity
Sample results, reporting detection limits, method detection limits, dilution factors
Holding times
Method blank results
Trip blank results
LCS/LCSD (blank spike) results
MS/MSD (matrix spike) results
Laboratory duplicate results
Organic surrogate recoveries
Blind field duplicate results
Electronic data deliverables (EDDs)

Data Validation Qualifiers Assigned During this Review

J detected result, estimated concentration

U result has been evaluated to be undetected at the reporting limit or at the reported concentration; result is considered to be a false positive

Assigned qualifiers are detailed in the Analytical Limited Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 3).

Overall Data Assessment

Precision, accuracy, method compliance, and completeness of the data set have been determined to be acceptable, based on the data submitted. The data are suitable for their intended use.

Table of Samples Analyzed
Maverick Country Stores
Groundwater with Water QC Samples
TestAmerica of Arvada, Colorado Laboratory SDG D8L110355
December 2008 Sampling

Matrix	Sample ID	Parent Sample ID	Sample Date and Time		Lab SDG	Lab Sample ID	COC Reference
Groundwater	MW-09		12/9/2008	11:15	D8L110355	D8L110355001	110142
Groundwater	MW-10		12/10/2008	12:35	D8L110355	D8L110355002	110142
Groundwater	MW-16		12/9/2008	12:10	D8L110355	D8L110355003	110142
Groundwater	MW-17		12/10/2008	10:55	D8L110355	D8L110355004	110142
Groundwater	MW-18		12/9/2008	15:35	D8L110355	D8L110355005	110142
Groundwater	MW-19		12/10/2008	11:55	D8L110355	D8L110355006	110142
Groundwater	MW-20		12/10/2008	08:55	D8L110355	D8L110355007	110142
Groundwater	MW-21		12/10/2008	09:35	D8L110355	D8L110355008	110142
Groundwater	MW-22		12/10/2008	10:30	D8L110355	D8L110355009	110142
Groundwater	MW-Dupe	MW-18	12/10/2008	09:45	D8L110355	D8L110355010	110142
Water QC	Trip Blank		12/10/2008	00:00	D8L110355	D8L110355011	110142

Table of Qualified Analytical Results
Maverick Country Stores
Groundwater with Water QC Samples
TestAmerica of Arvada, Colorado Laboratory SDG D8L110355
December 2008 Sampling

Lab SDG	Sample ID	Method	Analyte	Concentration		Qualifier	Reason Code
D8L110355	MW-17	SW8260B	1,2-Dichlorobenzene	0.38	ug/l	J	<PQL
D8L110355	MW-17	SW8260B	Methylene chloride	< 10	ug/l	U	TB, <PQL, original result was 0.94 ug/L
D8L110355	MW-17	SW8260B	Toluene	1.9	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	1,2,4-Trimethylbenzene	3.4	ug/l	J	FD
D8L110355	MW-18	SW8260B	1,3,5-Trimethylbenzene	0.34	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	4-Isopropyltoluene	0.39	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	4-Methyl-2-pentanone	4.9	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	Acetone	150	ug/l	J	FD
D8L110355	MW-18	SW8260B	Benzene	0.24	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	m-Xylene & p-Xylene	0.66	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	tert-Butylbenzene	0.96	ug/l	J	<PQL
D8L110355	MW-18	SW8260B	Xylenes (total)	0.66	ug/l	J	<PQL
D8L110355	MW-19	SW8260B	Acetone	9.7	ug/l	J	<PQL
D8L110355	MW-21	SW8260B	Acetone	8.7	ug/l	J	<PQL
D8L110355	MW-22	SW8260B	4-Isopropyltoluene	0.61	ug/l	J	<PQL
D8L110355	MW-22	SW8260B	Methylene chloride	< 10	ug/l	U	TB, <PQL, original result was 1.2 ug/L
D8L110355	MW-22	SW8260B	o-Xylene	0.73	ug/l	J	<PQL
D8L110355	MW-22	SW8260B	Xylenes (total)	0.73	ug/l	J	<PQL
D8L110355	MW-DUPE	SW8260B	1,2,4-Trimethylbenzene	0.95	ug/l	J	<PQL, FD
D8L110355	MW-DUPE	SW8260B	Acetone	13	ug/l	J	FD
D8L110355	MW-DUPE	SW8260B	Benzene	0.19	ug/l	J	<PQL
D8L110355	MW-DUPE	SW8260B	Ethylbenzene	0.36	ug/l	J	<PQL
D8L110355	MW-DUPE	SW8260B	Methylene chloride	< 5.0	ug/l	U	TB, <PQL, original result was 0.33 ug/L
D8L110355	MW-DUPE	SW8260B	n-Propylbenzene	0.20	ug/l	J	<PQL
D8L110355	TRIP BLANK	SW8260B	Methylene chloride	1.1	ug/l	J	<PQL

Qualifier Definitions
J – Estimated concentration
U – Undetected at the reporting limit or at the reported concentration; result is considered to be a false positive

Reason Code Definitions
< PQL – Reported concentration is greater than the MDL but less than the PQL.
FD – Field duplicate RPD outside limits.
TB – Trip blank contamination.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Maverick Country Stores	Laboratory: TestAmerica of Arvada, Colorado
Project Reference: Former Caribou Refinery	Sample Matrix: Groundwater with Water QC
AECOM Project No.: 12501-001-210	Sample Start Date: 12/09/2008
Validated By/Date Validated: Ann Biegelsen / 03/12/2009	Sample End Date: 12/10/2008
Samples Analyzed: Refer to the Table of Samples Analyzed (page 2).	
Parameters Volatile Organic Compounds (VOCs) by SW846 method 8260B	
Laboratory Sample Delivery Group (SDG) IDs: D8L110355	

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	X	Acceptable		Unacceptable	AB	Initials

Comments: Precision is the measure of variability of individual sample measurements. Field precision was determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of both field and laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD QC limits were set at 0-30% for water samples. Laboratory RPD limits referenced EPA published QC limits. Although some data require qualification based on field duplicate RPDs (see item 21), overall field and laboratory precision is acceptable. Precision measurements are reviewed in items 17, 20, and 21.

Accuracy:	X	Acceptable		Unacceptable	AB	Initials

Comments: Field accuracy, a measure of the sampling bias, was determined by reviewing trip blank results for evidence of sample contamination stemming from sample transport. Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), and organic system monitoring compounds (surrogate) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analysis, were compared to EPA published QC limits. MS/MSD %Rs, which provided information on sample matrix interferences, were compared to EPA published QC limits or laboratory control charted limits. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to EPA published QC limits or laboratory control charted limits. Although some data require qualification based on trip blank contamination (see item 12), overall field and laboratory accuracy is acceptable. Accuracy measurements are reviewed in items 12, 14, 15 and 16.

Method Compliance:	X	Acceptable		Unacceptable	AB	Initials

Comments: Method compliance was determined by evaluating sample integrity, holding time, and laboratory blanks against method specified requirements, while applying EPA data validation guidelines. Although some data require qualification based on the detection of analytes with concentrations outside the calibration range of the instrument (see item 6), overall method compliance is acceptable based on the supplied data. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20 and 22.

Completeness:	X	Acceptable		Unacceptable	AB	Initials

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with validated analyses. Completeness goals are set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods and detection limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). All of the data received from the laboratory are useable with qualification. Completeness of the data is calculated to be 100% and is acceptable.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

VALIDATION CRITERIA CHECK						
Data validation qualifiers used in this review: J – detected result, estimated concentration U – result has been evaluated to be undetected at the reporting limit or at the reported concentration; result is considered to be a false positive The following comments requiring qualification are in bold type. The other comments are of interest, but qualification of the samples was not necessary. Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						
1. Did the laboratory identify any non-conformances related to the analytical results?	**X**	Yes		No	AB	Initials
Explanation by laboratory: Sample Receipt: Sample Trip Blank was received at the laboratory, but was not listed on the associated chain-of-custody (COC). Sample Trip Blank was logged for 8260B VOCs analysis, per the containers received. The client was notified on December 12, 2008 Method 8260B: Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, samples MW-17 and MW-22 had to be analyzed at dilutions. The reporting limits have been adjusted relative to the dilutions required. Data qualification, if any, related to the laboratory observations are discussed in the following sections.						
2. Were sample Chain-of-Custody forms complete?		Yes	**X**	No	AB	Initials
Comments: COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt, with the following exceptions. A trip blank was included in this sampling set, but was not listed on the COC. The laboratory correctly logged in and analyzed the trip blank for VOCs by method 8260B. The COC does not include a relinquished by signature or date and time relinquished.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	**X**	Yes		No	AB	Initials
Comments: All requested analyses as documented on original COC records were completed by the laboratory.						
4. Were samples received in good condition and at the appropriate temperature?	**X**	Yes		No	AB	Initials
Comments: Samples were received on ice, intact, and in good condition with cooler temperatures within the 4°C ± 2°C acceptance range at 3.8°C as noted on COCs and Sample Receiving Checklist forms.						
5. Were the requested analytical methods in compliance with WP/QAPP, permit, or COC?	**X**	Yes		No	AB	Initials
Comments: Reported methods and target analyte lists were in compliance with COC records.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

6. Were detection limits in accordance with WP/QAPP, permit, or method?	X	Yes		No	AB	Initials
Comments: Reported detection limits are achievable by the quoted methods. Some samples required dilution due to high concentrations of target analytes or interference. The reporting limits for diluted results were raised appropriately. **Analytes reported with concentrations below the practical quantitation limits (PQLs), but above the laboratory method detection limits (MDLs), were qualified as J to indicate that the concentrations are estimated. The quantitation of analytes with concentrations outside the calibration range of the instrument is inherently less reliable.** Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	X	Yes		No	AB	Initials
Comments: Only the requested target analytes were reported.						
8. Were sample holding times met?	X	Yes		No	AB	Initials
Comments: Extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	X	Yes		No	AB	Initials
Comments: Correct concentration units were reported. All target analytes are reported in units of µg/L (ppb).						
10. Were the reporting requirements for flagged data met?	X	Yes		No	AB	Initials
Comments: Data validation qualifiers override assigned laboratory flags.						
11. Were laboratory blank samples free of target analyte contamination?	X	Yes		No	AB	Initials
Comments: All laboratory blanks were free of target analyte contamination.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?		Yes	X	No	AB	Initials
Comments: There were no target analytes detected in the trip blank sample with the following exception. **<u>Method 8260B</u>: Target analyte methylene chloride was detected in the trip blank sample with a concentration below the reporting limit at 1.1 µg/L. This analyte was also detected below the reporting limit in associated field samples MW-17, MW-22, and MW-Dupe and has been qualified as U at the reporting limit in these samples to indicate the analyte was undetected at the reporting limit and is considered to be a false positive below the reporting limit due to contamination in transit.** Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						
13. Were instrument calibrations within method control limits?	NA	Yes	NA	No	AB	Initials
Comments: Not applicable for this level of data validation – Instrument calibration data were not supplied in analytical laboratory reports and were therefore not included in this data review.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

14. Were surrogate recoveries within control limits?	X	Yes		No	AB	Initials
Comments: Surrogate percent recoveries (%Rs) for organic analyses were within data validation QC criteria for all samples.						
15. Were laboratory control sample recoveries within control limits?	X	Yes		No	AB	Initials
Comments: LCS and LCSD (blank spike) recoveries were within data validation or laboratory control-charted QC limits for all target analytes.						
16. Were matrix spike recoveries within control limits?	X	Yes		No	AB	Initials
Comments: Project specific MS and MSD recoveries for target analytes were within data validation QC limits. MS and MSD spike recoveries for non-project samples were not considered since matrix similarity to project samples could not be guaranteed.						
17. Were RPDs within control limits?	X	Yes		No	AB	Initials
Comments: Laboratory RPDs for target analytes in LCS/LCSD and project-specific MS/MSD samples were within data validation control limits.						
18. Were organic system performance criteria met?	NA	Yes	NA	No	AB	Initials
Comments: Not applicable for this level of data validation – Organic system performance data were not supplied in the analytical laboratory reports and were therefore not included in this data review.						
19. Were internal standards within method criteria for GC/MS sample analyses?	NA	Yes	NA	No	AB	Initials
Comments: Not applicable for this level of data validation – GC/MS internal standard data were not supplied in the analytical laboratory reports and were therefore not included in this data review.						
20. Were inorganic system performance criteria met?	NA	Yes	NA	No	AB	Initials
Comments: Not applicable for this data set – there were no Inorganic analyses requested for these field samples.						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	X	Yes		No	AB	Initials

Duplicate Sample No.	MW-Dupe	Primary Sample No.	MW-18

Comments: The RPDs for the duplicates were within the 0-30% data validation QC limits for water samples, or RPDs were not applicable due to results that were ± the detection limit or were undetected in both samples except as indicated in bold type in the table below. Field duplicate and native sample concentrations that were both undetected are not reflected in the table below since RPDs are not applicable.

The following RPDs were calculated:

Method	Analyte	MW-18	MW-Dupe	RPD	Qualifier	Samp RL	Dup RL	Units
SW8260B	**1,2,4-Trimethylbenzene**	**3.4**	**0.95**	**112.64**	**J**	**1.0**	**1.0**	**ug/l**
SW8260B	1,3,5-Trimethylbenzene	0.34	ND	200.00	NA <2XRL	1.0	1.0	ug/l
SW8260B	4-Isopropyltoluene	0.39	ND	200.00	NA <2XRL	1.0	1.0	ug/l
SW8260B	4-Methyl-2-pentanone	4.9	ND	200.00	NA <2XRL	5.0	5.0	ug/l
SW8260B	**Acetone**	**150**	**13**	**168.10**	**J**	**10**	**10**	**ug/l**
SW8260B	Benzene	0.24	0.19	23.26	NA <2XRL	1.0	1.0	ug/l

Continued on following page

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments (continued):

Calculated RPD table continued:

Method	Analyte	MW-18	MW-Dupe	RPD	Qualifier	Samp RL	Dup RL	Units
SW8260B	Ethylbenzene	1.0	0.36	94.12	NA <2XRL	1.0	1.0	ug/l
SW8260B	Isopropylbenzene	1.5	ND	200.00	NA <2XRL	1.0	1.0	ug/l
SW8260B	Methylene chloride	ND	5.0	200.00	NA <2XRL	5.0	5.0	ug/l
SW8260B	m-Xylene & p-Xylene	0.66	ND	200.00	NA <2XRL	2.0	2.0	ug/l
SW8260B	n-Propylbenzene	1.0	0.20	133.33	NA <2XRL	1.0	1.0	ug/l
SW8260B	sec-Butylbenzene	1.5	ND	200.00	NA <2XRL	1.0	1.0	ug/l
SW8260B	tert-Butylbenzene	0.96	ND	200.00	NA <2XRL	1.0	1.0	ug/l
SW8260B	Xylenes (total)	0.66	ND	200.00	NA <2XRL	2.0	2.0	ug/l

Target analytes highlighted in bold type in the table above require J qualification to indicate the concentrations are estimated.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).

22. Were qualitative criteria for organic target analyte identification met?	NA	Yes	NA	No	AB	Initials

Comments: Not applicable for this level of data validation –GC/MS quantitation reports and chromatograms were not supplied in analytical laboratory reports and were therefore not included in this data review. However, retention times and chromatography were reviewed by trained laboratory personnel in accordance with the laboratory's internal QA/QC program.

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	X	Yes		No	AB	Initials

Comments: There were no discrepancies between the EDD concentrations and reporting limits and the hardcopy data reports. The *method_detection_limit* field and the *quantitation_limit* field entries were corrected following standard EQuIS format in preparation for upload to the database. Qualifiers and Reason Codes were added to the EDD files. The EDD files were formatted for upload and uploaded to the database by the data validator.

24. General Comments: Data were evaluated based on validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008 with additional reference to *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, document number EPA 540/R-99-008 of October 1999, as they applied to the reported methodology. Field duplicate RPD control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1988, upheld in DRAFT 1993.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).