AECOM Environment

Submitted to:
Encana Oil & Gas (USA) Inc.
Denver, Colorado

Submitted by:
AECOM
Fort Collins, Colorado
60221849.800
February 2012

Pavillion Natural Gas Field, Fremont County, Wyoming, Encana Oil & Gas (USA) Inc.

2011 Pit Investigation Report – Tribal Pavillion 22-12

DRAFT

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Prepared by
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Reviewed by
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List of Acronyms

AECOM	AECOM Technical Services, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DRO	diesel range organics
ENCANA	Encana Oil & Gas (USA) Inc.
ESC	Environmental Science Corporation
GRO	gasoline range organics
IME	Inberg Miller Engineers
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
OCSRRS	Oil Contaminated Soil Remediation Ranking System
PID	photoionization detector
ppm	parts per million
SHWD	Solid and Hazardous Waste Division
SVOC	semi-volatile organic compounds
TP 22-12	Tribal Pavillion 22-12
TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
WDEQ	Wyoming Department of Environmental Quality
WOGCC	Wyoming Oil and Gas Conservation Commission

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1.0 Introduction

This investigation report has been prepared by AECOM Technical Services, Inc. (AECOM) on behalf of Encana Oil and Gas (USA), Inc. (Encana). The purpose of this report is to summarize the results of the site investigation activities performed at the Tribal Pavillion 22-12 (TP 22-12) pit location within the Pavillion Natural Gas Field east of the town of Pavillion, Fremont County, Wyoming (see **Figure 1-1** for a site location map). The work activities completed at the pit site were detailed in the August 18, 2011 *Draft Pavillion Natural Gas Field, Fremont County, Wyoming, Field Work Plan for Site Investigations – August and September 2011* (AECOM 2011) (work plan).

The TP 22-12 site was previously investigated in December 2006. In March 2008, remediation activities involving the removal of approximately 40 to 60 cubic yards of soil were performed. Soil investigation and removal activities were conducted based on comparison of soil sample results to the cleanup guideline of 2,500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons (TPH). The cleanup guideline was determined by the Wyoming Oil and Gas Conservation Commission (WOGCC) "Guideline for Closure of Unlined Production Pits" Oil Contaminated Soil Remediation Ranking System (OCSRRS). The confirmation sampling results of the March 2008 excavation were not available for this site at the time of report preparation. Encana reevaluated the OCSRRS ranking in April 2011. It was determined that 1,000 mg/kg TPH was a more appropriate cleanup level based on a calculated distance to surface water, instead of the estimated distance that was used in the initial OCSRRS ranking. The TP 22-12 site was chosen for subsequent pit investigation by the Pavillion Field Working Group, Pit subgroup to evaluate current soil and groundwater conditions at the site. This report documents the investigation activities performed at the TP 22-12 pit location in accordance with the field work plan.

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2.0 Summary of Field Activities

The primary field activities conducted at TP 22-12 included: utility clearance; soil boring advancement and soil sampling; temporary monitoring well installation, development, and sampling; and final field surveying of all boreholes and temporary monitoring wells.

2.1 Ground Disturbance Activities

In accordance with Encana's Ground Disturbance Practice, all utilities within a 100 foot radius search area were marked. All utilities within 15 feet of a proposed ground disturbance location were positively identified using air and water excavation.

2.2 Soil Assessment

Five soil borings were advanced at the site using direct-push drilling technology following utility clearance. All soil borings SB-1-11 (TP 22-12) through SB-5-11 (TP 22-12) were advanced in the northern portion of the site in proximity to the previous remediation area as shown in **Figure 2-1**. Drilling activities were performed by Inberg Miller Engineers (IME) of Riverton, Wyoming. Each soil boring was logged by a field geologist. Photoionization detector (PID) headspace readings were collected and recorded at approximately two foot intervals. No additional soil borings were necessary based on lack of visual observations of impact and PID readings of less 100 parts per million (ppm) at SB-5-11 (TP 22-12). Copies of the soil boring logs are provided in **Appendix A**.

Boring depths ranged from 12 to 16 feet below ground surface (bgs). Groundwater was encountered at depths of 11 to 12.5 feet bgs. The maximum PID reading from the five borings was 20.6 ppm at soil boring SB-1-11 (TP 22-12) (10 to 12 feet bgs).

One soil sample was collected from each boring at an interval immediately above the water table for analysis of TPH as gasoline range organics (GRO) and diesel range organics (DRO). One soil sample was collected from the boring with the highest PID reading for analysis of benzene, toluene, ethylbenzene, and total xylene (BTEX) and semi-volatile organic compounds (SVOC). The sampling and analysis conducted on each boring is provided below:

- SB-1-11 (TP 22-12) – One sample was collected for TPH analysis and one sample was collected for BTEX and SVOC analyses;
- SB-2-11 (TP 22-12) – One sample was collected for TPH analysis;
- SB-3-11 (TP 22-12) – One sample was collected for TPH analysis;
- SB-4-11 (TP 22-12) – One sample was collected for TPH analysis; and
- SB-5-11 (TP 22-12) – One sample was collected for TPH analysis.

All soil samples were submitted to Environmental Science Corporation (ESC) of Mt. Juliet, Tennessee, for laboratory analysis. Analysis of TPH-GRO and DRO was completed using U.S. Environmental Protection Agency (USEPA) Method 8015. Analysis of BTEX was completed using USEPA Method 8260B. Analysis of SVOC was completed using USEPA Method 8270C. A discussion of analytical results is provided in Section 3.1.

All soil borings were surveyed and are shown on **Figure 2-1**. Soil borings and SB-1-11 (TP 22-12), SB-2-11 (TP 22-12), SB-3-11 (TP 22-12), and SB-4-11 (TP 22-12) were plugged and abandoned using hydrated bentonite chips.

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2.3 Groundwater Assessment

One temporary monitoring well was installed at boring location SB-5-11 (TP 22-12). The temporary monitoring well location is shown on **Figure 2-1**. The temporary monitoring well was constructed using 1-inch Schedule 40 polyvinyl chloride (PVC). The temporary monitoring well SB-5-11 (TP 22-12) was constructed approximately 4.5 feet below the water table at a depth of 16 feet bgs. Evidence of potential groundwater impacts was not identified in any borings at TP 22-12 based on PID readings and visual observations. The temporary monitoring well was installed at boring SB-5-11 (TP 22-12) near the presumed center of the previous excavation to evaluate current groundwater conditions beneath the former pit. The temporary monitoring well was developed using a hand bailer.

One groundwater sample was collected from the temporary monitoring well using low-flow sampling techniques. Prior to sample collection, the well was purged using a peristaltic pump until field parameter stability was maintained. Greater than one purge volume of groundwater was removed from the well. Field parameters recorded during well purging included dissolved oxygen, pH, temperature, specific conductance, and oxidation reduction potential. A copy of the groundwater sampling field form is provided in **Appendix B**. Groundwater samples were packed on ice and submitted to ESC for analysis of TPH-GRO and DRO using USEPA Method 8015, BTEX using USEPA Method 8260B, and SVOC using USEPA Method 8270C. One blind duplicate and one trip blank also were submitted for quality assurance/quality control purposes. A discussion of groundwater sampling results is provided in Section 3.2.

The temporary monitoring well was surveyed and is shown on **Figure 2-1**. The temporary monitoring well was left in place pending the TP 22-12 site evaluation.

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3.0 Analytical Sample Summary

3.1 Soil Sample Results

Five soil samples were submitted for analysis of TPH-GRO and DRO. One soil sample was submitted for analysis of BTEX and SVOCs. Soil sample TPH results were compared to a TPH concentration of 1,000 mg/kg, which represents the cleanup level based on WOGCC OCSRRS. Concentrations of BTEX and SVOC from all soil samples were compared to the residential soil cleanup level and the migration to groundwater cleanup level, both based on the Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division (WDEQ/SHWD) cleanup level spreadsheet effective June 30, 2009. Analytical soil sample results are summarized in **Table 3-1** and are shown in **Figure 3-1**. A copy of the laboratory report is provided in **Appendix C**.

TPH-DRO was detected in one soil sample collected at soil boring SB-1-11 (TP 22-12). The detected TPH-DRO concentration was below the cleanup level for TPH. Pyrene was detected in the soil sample SB-1-11 (TP 22-12) at 7 to 8 feet bgs. The detected pyrene concentration was below cleanup levels. BTEX and other SVOCs were not detected in the SB-1-11 (TP 22-12) soil sample.

3.2 Groundwater Sample Results

One groundwater sample was collected from temporary monitoring well SB-5-11 (TP 22-12). The sample was analyzed for TPH-GRO and DRO, BTEX, and SVOC. Groundwater sample results were compared to the WDEQ/SHWD current cleanup levels. Analytical groundwater sample results are summarized in **Table 3-2** and are shown on **Figure 3-2**. A copy of the laboratory report is provided in **Appendix C**.

TPH-DRO was detected in the groundwater. The detected concentration was below the applicable cleanup level of 10 milligrams per liter (mg/L). TPH-GRO, BTEX, and SVOC were not detected in the groundwater at the site.

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4.0 Discussion

Analytical results at the site indicate that soil and groundwater constituent concentrations are below applicable cleanup levels. No further soil or groundwater investigation is recommended at site TP 22-12.

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5.0 References

AECOM. 2011. Pavillion Natural Gas Field, Fremont County, Wyoming, Encana Oil and Gas (USA) Inc., Field Work Plan for Site Investigations – August and September 2011. August 2011.

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Tables

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Draft - Table 3-1 - Soil Sample Analytical Results, August 29, 2011
Tribal Pavillion 22-12, Pavillion Natural Gas Field, Wyoming

Sample Name					SB-1-11 [1]	SB-1-11	SB-2-11	SB-3-11	SB-4-11	SB-5-11
Sample Depth (feet)					7-8	10-12	11-12	12-13	10-12	10-12
Sample Date					8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011
Analyte	**Units**	**Method**	**Residential Soil Cleanup Level[3]**	**Migration to Groundwater Cleanup Level[3] (mg/kg)**	**Results**					
TPH (GC/FID) Low Fraction	mg/kg	GRO	1,000 (Combined)[2]		--	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
TPH (GC/FID) High Fraction (DRO Wyoming C10-C32)	mg/kg	8015			--	**41**	< 4.0	< 4.0	< 4.0	< 4.0
Benzene	mg/kg	8260B	1.1	0.00023	< 0.0050	--	--	--	--	--
Toluene	mg/kg	8260B	5,000	1.7	< 0.025	--	--	--	--	--
Ethylbenzene	mg/kg	8260B	5.7	0.0019	< 0.0050	--	--	--	--	--
Total Xylenes	mg/kg	8260B	600	0.23	< 0.015	--	--	--	--	--
Pyrene	mg/kg	8270C	1,700	150	**0.41**	--	--	--	--	--
Other Semi-Volatile Organic Compounds (SVOC)	mg/kg	8270C	--	--	Not Detected	--	--	--	--	--

Notes:

-- = not analyze; < = sample result is less than the laboratory detection limit; DRO = diesel range organics; FID = flame ionization detector; GC = gas chromatograph; GRO = gasoline range organics; mg/kg = milligrams per kilogram; NA = not available; TPH = total petroleum hydrocarbons

Bold = detection

[1] Sample SB-1-11 7-8 was analyzed for SVOCs using method 8270C. Detected SVOCs are identified in the table and all other SVOCs were below detection limits (see corresponding laboratory report).

[2] The TPH cleanup level of 1,000 mg/kg is based on the most stringent cleanup level identified in the Wyoming Oil and Gas Conservation Commission "Guideline for Closure of Unlined Production Pits". If TPH is detected at a level greater than 1,000 mg/kg then the appropriate cleanup level will be determined based on the Oil Contaminated Soil Remediation Ranking System (OCSRRS).

[3] Soil cleanup levels are based on the Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division (DEQ/SHWD) cleanup level spreadsheet effective June 30, 2009.

Draft - Table 3-2 - Groundwater Sample Analytical Results, September 9, 2011
Tribal Pavillion 22-12, Pavillion Natural Gas Field, Wyoming

Sample Name				SB-5-11[1]
Sample Date				9/9/2011
Analyte	**Units**	**Method**	**Water Cleanup Level[2] (mg/L)**	**Results**
TPH (GC/FID) Low Fraction	mg/L	GRO	7.3	< 0.10
TPH (GC/FID) High Fraction (DRO Wyoming C10-C32)	mg/L	8015	1.1[3]/10[4]	**2.2**
Benzene	mg/L	8260B	0.005	< 0.0010
Toluene	mg/L	8260B	1	< 0.0050
Ethylbenzene	mg/L	8260B	0.7	< 0.0010
Total Xylenes	mg/L	8260B	10	< 0.0030
Pyrene	mg/L	8270C	1.09	< 0.0010
Other Semi-Volatile Organic Compounds (SVOC)	mg/L	8270C	--	Not Detected

Notes:

< = sample result is less than the laboratory detection limit; DRO = diesel range organics; FID = flame ionization detector; GC = gas chromatograph; GRO = gasoline range organics; mg/L = milligrams per liter; NA = not available; TPH = total petroleum hydrocarbons

Bold = detection

[1] Sample SB-5-11 was analyzed for SVOCs using method 8270C. Detectable SVOCs in overlying soil samples are identified in the table. All SVOCs were below detection limits (see corresponding laboratory report).

[2] Groundwater cleanup levels are based on the Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division (DEQ/SHWD) cleanup level spreadsheet effective June 30, 2009.

[3] This level is applicable when naphthalene and/or methylnaphthalenes are detected in groundwater at measurable concentrations.

[4] This level is applicable when naphthalene and/or 2-Methylnaphthalene are below MCL/DWEL concentrations in groundwater along with the other chemicals of concern AND no free product is present on the groundwater table.

Figures

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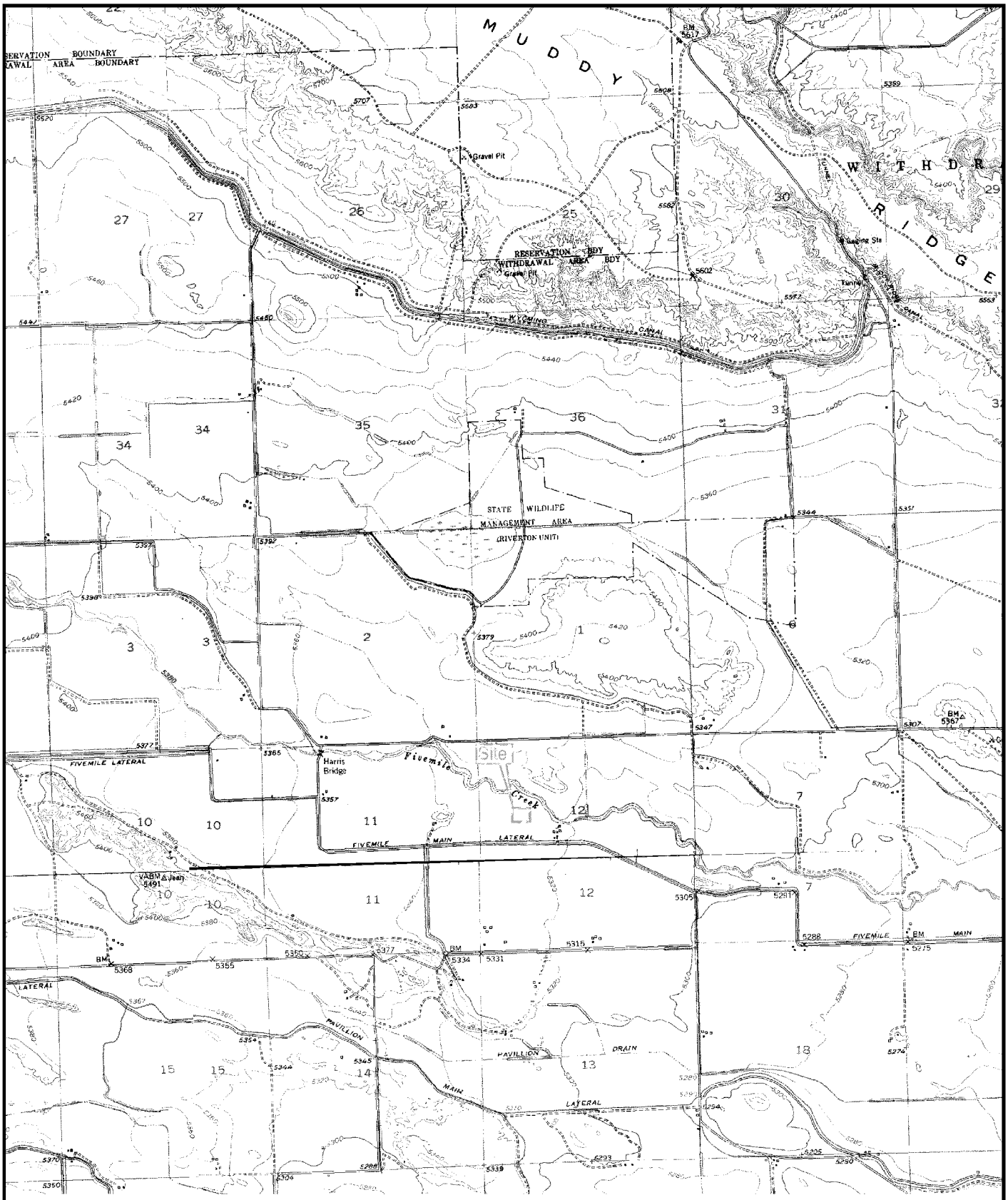
EPAPAV0045802



0 1000' 2000'

N

AECOM

ENCANA OIL & GAS (USA) INC. PAVILLION NATURAL GAS FIELD FREMONT COUNTY, WYOMING	TRIBAL PAVILLION 22-12 SITE LOCATION MAP
DATE: 1/4/12 DRWN: EM/FTC	FIGURE 1-1

File: Z:\Encana Pavillion Remediation\Pit Investigation Reports\TP 22-12\FIG 1-1_Site Location.dwg Layout: ANSI_Avl-CP User: marshalle Plotted: Jan 04, 2012 - 11:13am

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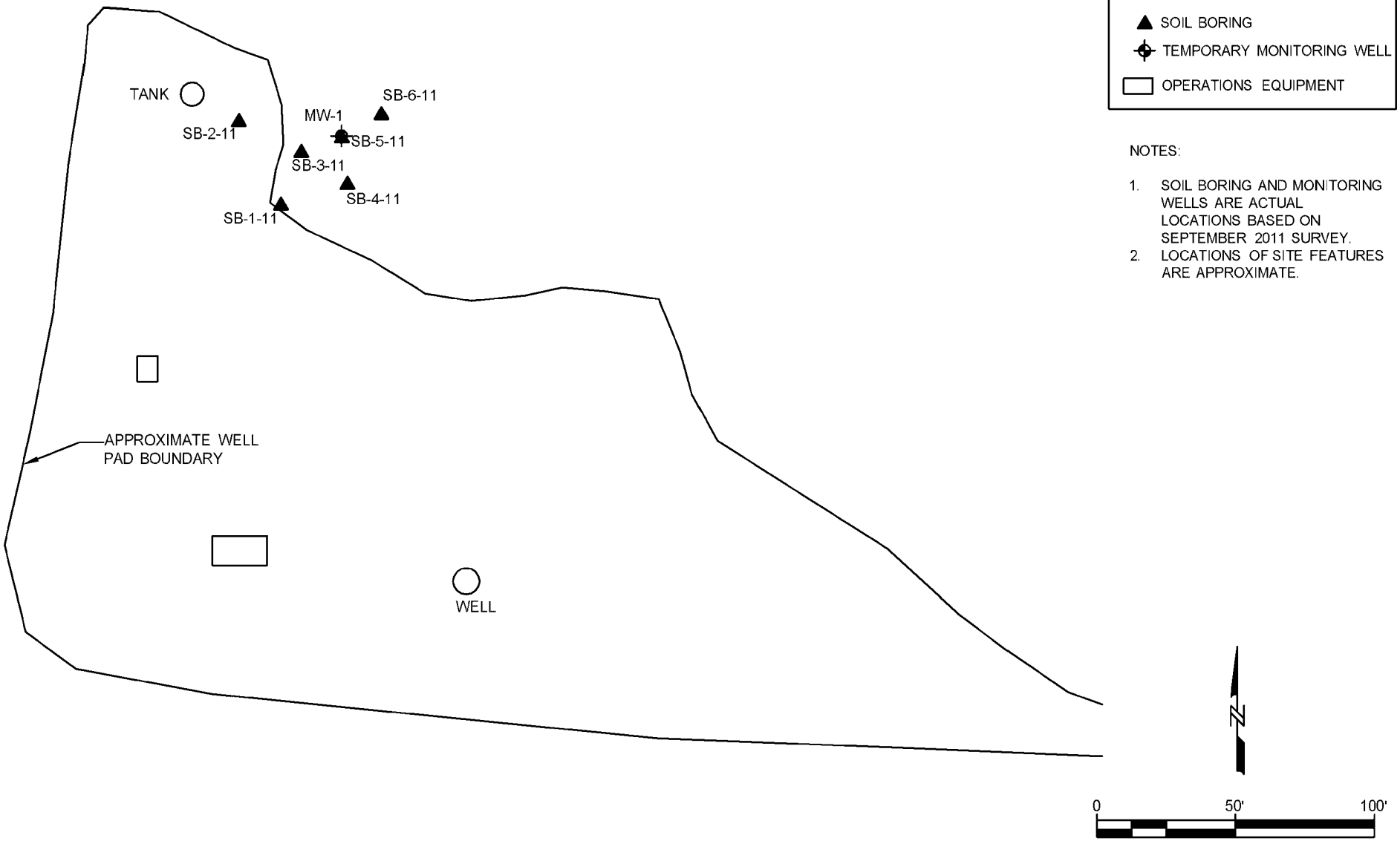

NOTES:

1. SOIL BORING AND MONITORING WELLS ARE ACTUAL LOCATIONS BASED ON SEPTEMBER 2011 SURVEY.
2. LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

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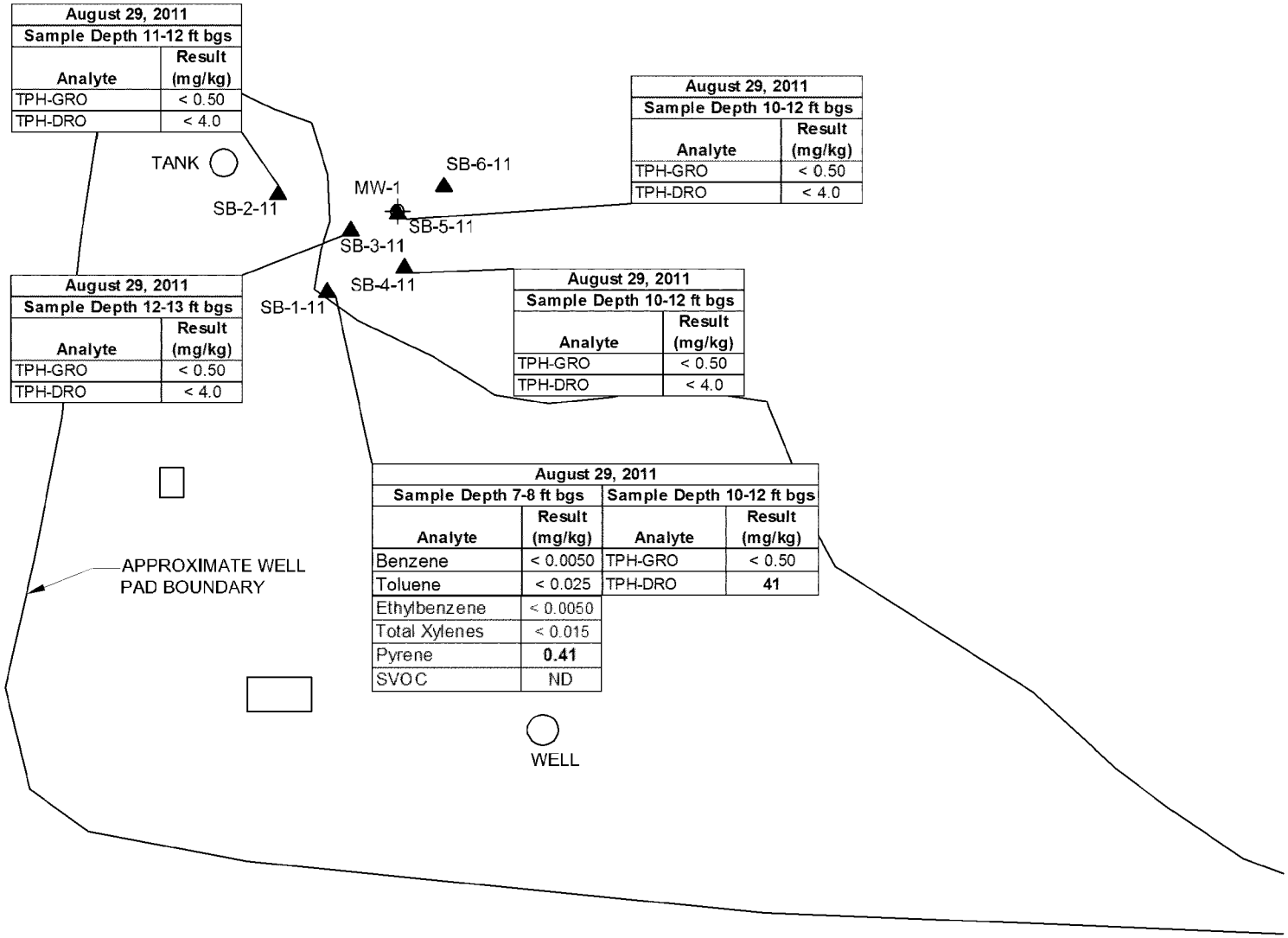
ENCANA OIL & GAS (USA) INC.
PAVILLION NATURAL GAS FIELD
FREMONT COUNTY, WYOMING

DATE: 01/05/2012 | DRWN: EM/jk

TRIBAL PAVILLION 22-12
SITE LAYOUT

FIGURE 2-1

EPAPAV0045805



August 29, 2011	
Sample Depth 11-12 ft bgs	
Analyte	Result (mg/kg)
TPH-GRO	< 0.50
TPH-DRO	< 4.0

August 29, 2011	
Sample Depth 10-12 ft bgs	
Analyte	Result (mg/kg)
TPH-GRO	< 0.50
TPH-DRO	< 4.0

August 29, 2011	
Sample Depth 12-13 ft bgs	
Analyte	Result (mg/kg)
TPH-GRO	< 0.50
TPH-DRO	< 4.0

August 29, 2011	
Sample Depth 10-12 ft bgs	
Analyte	Result (mg/kg)
TPH-GRO	< 0.50
TPH-DRO	< 4.0

August 29, 2011			
Sample Depth 7-8 ft bgs		Sample Depth 10-12 ft bgs	
Analyte	Result (mg/kg)	Analyte	Result (mg/kg)
Benzene	< 0.0050	TPH-GRO	< 0.50
Toluene	< 0.025	TPH-DRO	**41**
Ethylbenzene	< 0.0050		
Total Xylenes	< 0.015		
Pyrene	**0.41**		
SVOC	ND		

LEGEND

- ▲ SOIL BORING
- TEMPORARY MONITORING WELL
- OPERATIONS EQUIPMENT

NOTES:

1. SOIL BORING AND MONITORING WELLS ARE ACTUAL LOCATIONS BASED ON SEPTEMBER 2011 SURVEY.
2. LOCATIONS OF SITE FEATURES ARE APPROXIMATE.
3. mg/kg = MILLIGRAMS PER KILOGRAM
4. TPH-GRO = TOTAL PETROLEUM HYDROCARBON GASOLINE RANGE ORGANIC COMPOUNDS
5. TPH-DRO = TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANIC COMPOUNDS
6. SVOC = SEMI-VOLATILE ORGANIC COMPOUNDS
7. ND = NOT DETECTED
8. ft = FEET
9. bgs = BELOW GROUND SURFACE
10. < = LESS THAN DETECTION LIMIT
11. **BOLD** = ANALYTE DETECTED

N

0 50' 100'

AECOM

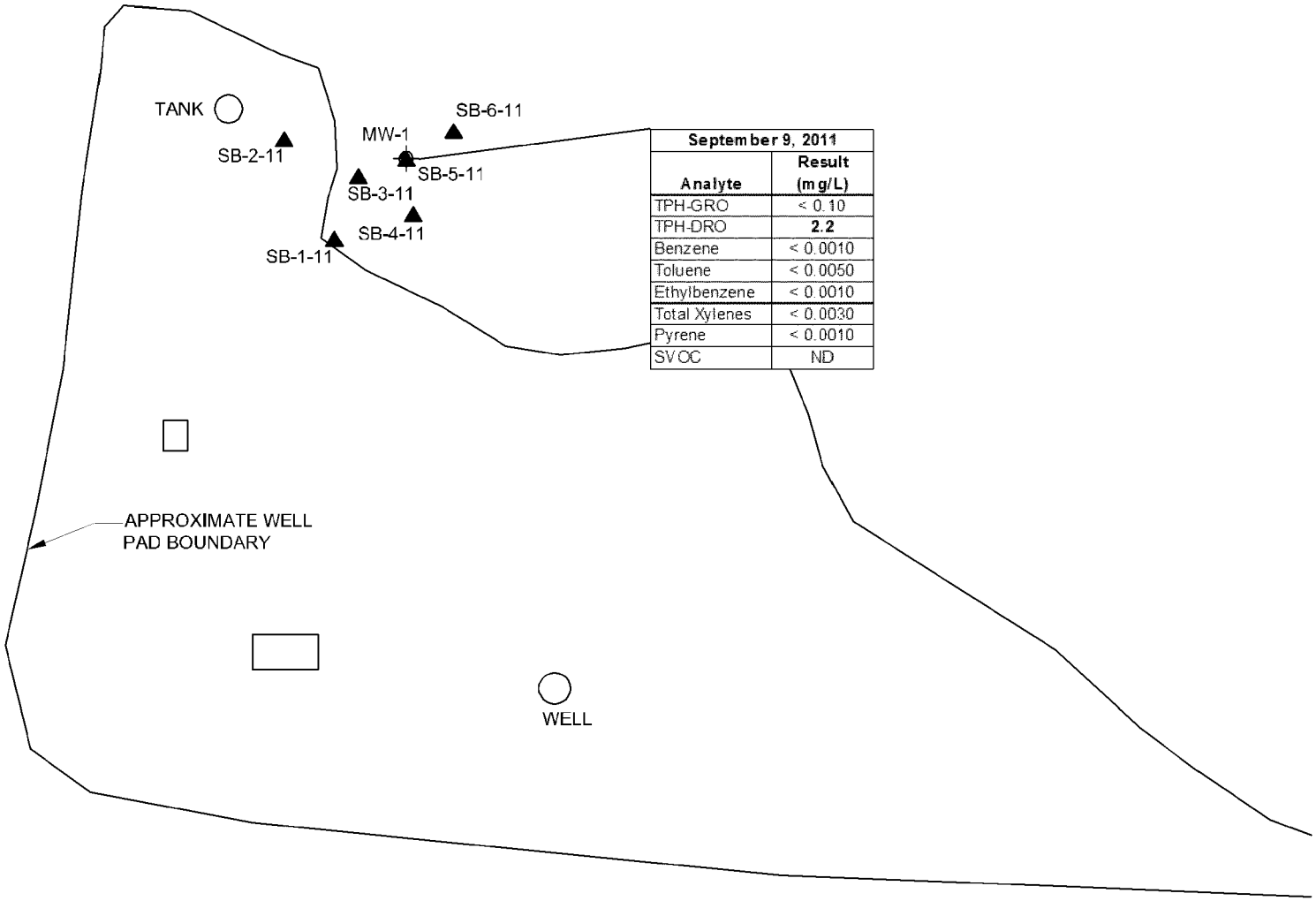
ENCANA OIL & GAS (USA) INC.
PAVILLION NATURAL GAS FIELD
FREMONT COUNTY, WYOMING

TRIBAL PAVILLION 22-12
SOIL ANALYTICAL RESULTS

DATE: 01/05/2012 | DRWN: EM/jk

FIGURE 3-1

EPAPAV0045806



September 9, 2011	
Analyte	**Result (mg/L)**
TPH-GRO	< 0.10
TPH-DRO	**2.2**
Benzene	< 0.0010
Toluene	< 0.0050
Ethylbenzene	< 0.0010
Total Xylenes	< 0.0030
Pyrene	< 0.0010
SVOC	ND

LEGEND

- ▲ SOIL BORING
- ⊕ TEMPORARY MONITORING WELL
- ▭ OPERATIONS EQUIPMENT

NOTES:

1. SOIL BORING AND MONITORING WELLS ARE ACTUAL LOCATIONS BASED ON SEPTEMBER 2011 SURVEY.
2. LOCATIONS OF SITE FEATURES ARE APPROXIMATE.
3. mg/L = MILLIGRAMS PER LITER
4. ND = NON DETECT (FOR ALL SVOC COMPOUNDS)
5. SVOC = SEMI-VOLATILE ORGANIC COMPOUNDS
6. TPH-GRO = TOTAL PETROLEUM HYDROCARBON GASOLINE RANGE ORGANIC COMPOUNDS
7. TPH-DRO = TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANIC COMPOUNDS
8. GROUNDWATER SAMPLES WERE NOT COLLECTED AT SB-1-11, SB-2-11, SB-3-11, SB-4-11 OR SB-6-11. TEMPORARY MONITORING WELL (MW-1) WAS INSTALLED AND SAMPLED AT SB-5-11
9. < = LESS THAN DETECTION LIMIT
10. **BOLD** = ANALYTE DETECTED

N

0 50' 100'

AECOM

ENCANA OIL & GAS (USA) INC.
PAVILLION NATURAL GAS FIELD
FREMONT COUNTY, WYOMING

TRIBAL PAVILLION 22-12
GROUNDWATER ANALYTICAL RESULTS

DATE: 01/05/2012 | DRWN: EM/jk

FIGURE 3-2

Appendix A

Soil Boring Logs

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EPAPAV0045807

AECOM	*Client:* Encana Oil & Gas (USA) Inc.		***BORING ID:*** SB-1-11(TP 22-12)
	Project Number: 60221849		
	Site Location: Pavillion, WY		
	Coordinates: TBD	*Elevation:* TBD	*Sheet:* 1 of 1
	Drilling Method: Geoprobe Direct Push		*Monitoring Well Installed:* No
	Sample Type(s): Soil	*Boring Diameter:* 2-inch	*Screened Interval:* NA
Drilling Contractor: Inberg-Miller Engineers	*Logged By:* J.Hurshman	*Date/Time Started:* 8/29/11 13:25	*Depth of Boring:* 12 ft
	Ground Elevation: TBD	*Date/Time Finished:* 8/29/11 13:40	*Water Level:* 11 ft

Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth (ft)
1	DP		60	NA	ML	Silts, dry, moderately sorted, no visual staining/odor, light tan at top, gray in middle, brown at base, little sand or clay	SB-1-11(TP-22-12)(7-8) - 15:05, SVOC, BTEX	7-8
2								
3				3.6				
4								
5	DP		25	NA		No recovery 4-7 ft		
6								
7								
8				20.2	SP	Brown, dry, fine grained sand, well sorted, homogeneous, light clay content, no odor, no staining		
9	DP		50	NA			SB-1-11(TP-22-12)(10-12) - 13:40, TPH	10-12
10								
11				20.6		Fine to medium grained sand continued as above, saturated at 11 ft, no odor, no staining		
12								
13						Total Depth = 12 ft		
14								
15								
16								
17								
18								
19								
20								

NOTES:

SB-1-11 moved 5 feet to south to make sure was clear of all utilities
Blow count not recorded for Geoprobe Rig
DP= direct Push, 4 foot acetate sleeve
Boring abandoned with bentonite chips
NA = not applicable

ppm = parts per million
TBD = to be determined
ft = feet
bgs = below ground surface

Checked By : Jeremy Hurshman Date: 11/23/11

AECOM	*Client:* Encana Oil & Gas (USA) Inc.	***BORING ID:*** SB-2-11(TP 22-12)
	Project Number: 60221849	
	Site Location: Pavillion, WY	
	Coordinates: TBD *Elevation:* TBD	*Sheet:* 1 of 1
	Drilling Method: Geoprobe Direct Push	*Monitoring Well Installed:* No
	Sample Type(s): Soil *Boring Diameter:* 2-inch	*Screened Interval:* NA
Drilling Contractor: Inberg-Miller Engineers	*Logged By:* J.Hurshman *Date/Time Started:* 8/29/11 14:00	*Depth of Boring:* 12 ft
	Ground Elevation: TBD *Date/Time Finished:* 8/29/11	*Water Level:* 11.75 ft

Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample	Depth (ft)
1	DP		50	NA	SM	No recovery 0-2 ft	SB-2-11(TP-22-12)(11 -12) - 14:15, TPH	11-12	
2									
3				7.4		Light tan to brown silt and very fine grained sand, medium sand lenses at 3.5 ft bgs, moderate sorting, dry, no visual impacts			
4									
5	DP		25	NA		Continued as above			
6						Medium sand throughout. moist near base. no visual contaminants			
7									
8				4.2					
9	DP		30	NA		Continued as above			
10						No staining. no odor			
11									
12				3.5					
13						Total Depth = 12 ft			
14									
15									
16									
17									
18									
19									
20									

NOTES:

Blow count not recorded for Geoprobe Rig
DP= direct Push, 4 foot acetate sleeve
Boring abandoned with bentonite chips
NA = not applicable

ppm = parts per million
TBD = to be determined
ft = feet
bgs = below ground surface

Checked by: Jeremy Hurshman Date: 11/28/11

AECOM	*Client:* Encana Oil & Gas (USA) Inc.		***BORING ID:*** SB-3-11(TP 22-12)
	Project Number: 60221849		
	Site Location: Pavillion, WY		
	Coordinates: TBD	*Elevation:* TBD	*Sheet:* 1 of 1
	Drilling Method: Geoprobe Direct Push		*Monitoring Well Installed:* No
	Sample Type(s): Soil	*Boring Diameter:* 2-inch	*Screened Interval:* NA
Drilling Contractor: Inberg-Miller Engineers	*Logged By:* J.Hurshman	*Date/Time Started* :8/29/11	*Depth of Boring:* 14 ft
	Ground Elevation: TBD	*Date/Time Finished* :8/29/11	*Water Level:* 12.5 ft

Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft)
1	DP		60	NA	-	No recovery 0-2 ft	SB-3-11(Tp-22-12)(12-13) - 14:35, TPH	12-13
2								
3				4.5	SM	Tan, silty and fine grained sand, dry, no visual contamination, moderate sorting, few pebbles mixed in.		
4								
5	DP		25	NA	-	No recovery 4-7.2 ft		
6								
7								
8				2.6	SM	Poorly sorted silts and sands, minor clay, no odor, no staining, dry, subrounded clasts mixed throughout		
9	DP		10	NA				
10						Little to no recovery		
11						As above		
12				3.8				
13	DP			3.2		Above, increased sand content with depth, saturated 12.5-14 ft, no odor, no staining		
14				NA				
15						Total Depth = 14 ft		
16								
17								
18								
19								
20								

NOTES:

Blow count not recorded for Geoprobe Rig
DP= direct Push, 4 foot acetate sleeve
Boring abandoned with bentonite chips
NA = not applicable

ppm = parts per million
TBD = to be determined
ft = feet
bgs = below ground surface

Checked by: Jeremy Hurshman Date: 11/28/11

AECOM	*Client:* Encana Oil and Gas (USA) Inc.		***BORING ID:*** SB-4-11(TP 22-12)
	Project Number: 60221849		
	Site Location: Pavillion, WY		
	Coordinates: TBD	*Elevation:* TBD	*Sheet:* 1 of 1
	Drilling Method: Geoprobe Direct Push		*Monitoring Well Installed:* No
	Sample Type(s): Soil	*Boring Diameter:* 2-inch	*Screened Interval* NA
Drilling Contractor: Inberg-Miller Engineers	*Logged By:* J.Hurshman	*Date/Time Started* :8/29/11 13:45	*Depth of Boring:* 12 ft
	Ground Elevation: TBD	*Date/Time Finished:* 8/29/11	*Water Level:* 11.5 ft

Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft)
1	DP		75	NA	SM	Light tan silts and fine grained sand, dry, no odor, no staining, moderately well sorted, no clay, no large clasts, homogeneous mix throughout	SB-4-11(TP-22-12)(10-12)-14:00, TPH	10-12
2								
3				4.3				
4								
5			50	NA		Continued as above to 6 ft.		
6						Increasing clay content at 6 ft. dark brown, moist, mixed thin silty clay lenses, no odor, no staining		
7				4.9	SC			
8	DP							
9	DP		45	NA	-	No recovery 8-10 ft		
10						Continued as above		
11				4.3	SM	Saturated at 11.5 ft bgs, little clay, sand and silty sand		
12								
13						Total Depth = 12 ft		
14								
15								
16								
17								
18								
19								
20								

NOTES:

Blow count not recorded for Geoprobe Rig
DP= direct Push, 4 foot acetate sleeve
Boring abandoned with bentonite chips
NA = not applicable

ppm = parts per million
TBD = to be determined
ft = feet
bgs = below ground surface

Checked by: Jeremy Hurshman Date: 11/28/11

AECOM	*Client:* Encana Oil & Gas (USA) Inc.	***BORING ID:*** SB-5-11(TP 22-12)
	Project Number: 60221849	
	Site Location: Pavillion, WY	
	Coordinates: TBD *Elevation:* TBD	*Sheet:* 1 of 1
	Drilling Method: Geoprobe Direct Push	*Monitoring Well Installed:* Yes
	Sample Type(s): Soil *Boring Diameter:* 2-inch	*Screened Interval:* 6-16 ft
Drilling Contractor: Inberg-Miller Engineers	*Logged By:* J.Hurshman *Date/Time Started:* 8/29/11 14:45	*Depth of Boring:* 16 ft
	Ground Elevation: TBD *Date/Time Finished:* 8/29/11 15:00	*Water Level:* 11.5 ft

Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft)
1	DP		75	2.8	SM	Light tan, silty sand, dry, moderate sorting, no visible contamination	SB-5-11(TP-22-12)(10-12) - 15:00 TPH	10-12
2								
3				2.7		Homogeneous clean sand 3.5 - 4 ft		
4					SP			
5	DP		85	4.3		Continued as above		
6					SC	Interbedded clay rich zones, moist in areas, no odor, no staining		
7				3.7	SP			
8								
9	DP		75	3.3				
10						Contined sand as above		
11				4.2				
12						Saturated at 11.5 ft, dark brown, no odor, no staining		
13	DP			no PID		Continued sand as above, saturated		
14								
15								
16			100		SW	Coarse sand lens at 16 ft		
17						Total Depth = 16 ft		
18								
19								
20								

NOTES:
Blow counts not recorded with Geoprobe rig
DP = direct push, 4 foot acetate sleeve
Boring abandoned with bentonite chips
ppm = parts per million
TBD = to be determined

ft = feet
bgs = below ground surface
NA = not applicable

WELL DETAILS:
MW-1(TP-22-12) installed
Screened 6-16 ft
Sandpack 5-16 ft, hydrated bentonite 0-5 ft

Checked by: Jeremy Hurshman Date: 11/28/11

Appendix B

Groundwater Sampling Forms

DRAFT

EPAPAV0045813

AECOM

Well/Piezo ID:
SB-5-11 (PF 22-12)

Ground Water Sample Collection Record

Client: Encana
Project No: 60221849
Site Location: TP 22-12
Weather Conds: Sunny 50°F Collector(s) D. Fairchild

Date: 09-09-11
Time: Start 07:48 am
Stop 08:10 am

WATER LEVEL DATA: (measured from Top of Casing) Well ☒ Piezometer ☐

a. Total Well Length 15.24 c. Casing Material Sch 40 PVC e. Length of Water Column 2.6 (a-b)

b. Water Table Depth 12.64 d. Casing Diameter 1" f. Calculated Well Volume (gallons) 0.11
1" - 0.043 2" - 0.171 4" - 0.652

WELL PURGING DATA

a. Purge Method (peristaltic, bailer, pump, etc.) Peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 1 well volumes) 0.11
- Maximum Allowable Turbidity -- NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
YSI	556	09B100196

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page #_____

Time (hr:min)	Volume Removed (gal)	Temp (°C)	pH	Spec. Cond (mS/cm)	DO (%)	DO (mg/l)	ORP (mV)	Color	Odor	Other
7:52	Initial	12.48	6.17	0.967	18.8	1.98	120.3	Cloudy	--	--
7:56	0.2	12.34	6.64	0.830	15.6	1.66	86.3	Cloudy	--	--
8:00	0.4	12.53	6.74	0.817	15.3	1.62	78.9	Clear	--	--
8:04	0.6	12.56	6.72	0.815	15.7	1.67	77.0	Clear	--	--

e. 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

SAMPLE COLLECTION: Method: Peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time	Date
SB-5-11 (TP 22-12)	1L Amber	2	None	SVOC	8:05	9/9/2011
SB-5-11 (TP 22-12)	40 mL VOA	2	HCL	BTEX	8:05	9/9/2011
SB-5-11 (TP 22-12)	40 mL VOA	2	HCL	TPH	8:05	9/9/2011
SB-5-11 (TP 22-12)	40 mL VOA	2	HCL	DRO C10-32	8:05	9/9/2011

Comments

Signature: Dawn Fairchild Date: September 9, 2011

Appendix C

Laboratory Analytical Reports

DRAFT

EPAPAV0045815

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Report Summary

Monday September 19, 2011

Report Number: L535398
Samples Received: 09/10/11
Client Project: 60196941

Description: EnCana Pavillion

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Alan Harvill

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 19, 2011

ESC Sample # : L535398-04

Date Received : September 10, 2011
Description : EnCana Pavillion

Site ID : PAVILLION

Sample ID : SB-5-11/TP-22-12

Project # : 60196941

Collected By : Dawn Fairchild
Collection Date : 09/09/11 09:33

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	GRO	09/10/11	1
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	GRO	09/10/11	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/11	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/11	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/11	1
Total Xylenes	BDL	0.0030	mg/l	8260B	09/11/11	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	09/11/11	1
Dibromofluoromethane	105.		% Rec.	8260B	09/11/11	1
a,a,a-Trifluorotoluene	98.8		% Rec.	8260B	09/11/11	1
4-Bromofluorobenzene	91.4		% Rec.	8260B	09/11/11	1
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	2.2	0.10	mg/l	8015	09/14/11	1
Surrogate recovery(%)						
o-Terphenyl	129.		% Rec.	8015	09/14/11	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Acenaphthylene	BDL	0.0010	mg/l	8270C	09/15/11	1
Anthracene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzidine	BDL	0.010	mg/l	8270C	09/15/11	1
Benzo(a)anthracene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(a)pyrene	BDL	0.0010	mg/l	8270C	09/15/11	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	8270C	09/15/11	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	8270C	09/15/11	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	8270C	09/15/11	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	8270C	09/15/11	1
2-Chloronaphthalene	BDL	0.0010	mg/l	8270C	09/15/11	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	8270C	09/15/11	1
Chrysene	BDL	0.0010	mg/l	8270C	09/15/11	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	8270C	09/15/11	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	8270C	09/15/11	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	8270C	09/15/11	1
Fluoranthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Fluorene	BDL	0.0010	mg/l	8270C	09/15/11	1
Hexachlorobenzene	BDL	0.0010	mg/l	8270C	09/15/11	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	8270C	09/15/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 19, 2011

ESC Sample # : L535398-04

Date Received : September 10, 2011
Description : EnCana Pavillion

Site ID : PAVILLION

Sample ID : SB-5-11/TP-22-12

Project # : 60196941

Collected By : Dawn Fairchild
Collection Date : 09/09/11 09:33

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachlorocyclopentadiene	BDL	0.010	mg/l	8270C	09/15/11	1
Hexachloroethane	BDL	0.010	mg/l	8270C	09/15/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	8270C	09/15/11	1
Isophorone	BDL	0.010	mg/l	8270C	09/15/11	1
Naphthalene	BDL	0.0010	mg/l	8270C	09/15/11	1
Nitrobenzene	BDL	0.010	mg/l	8270C	09/15/11	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	8270C	09/15/11	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	8270C	09/15/11	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	8270C	09/15/11	1
Phenanthrene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Diethyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Dimethyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Pyrene	BDL	0.0010	mg/l	8270C	09/15/11	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8270C	09/15/11	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	8270C	09/15/11	1
2-Chlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dichlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dimethylphenol	BDL	0.010	mg/l	8270C	09/15/11	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dinitrophenol	BDL	0.010	mg/l	8270C	09/15/11	1
2-Nitrophenol	BDL	0.010	mg/l	8270C	09/15/11	1
4-Nitrophenol	BDL	0.010	mg/l	8270C	09/15/11	1
Pentachlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
Phenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
Surrogate Recovery						
2-Fluorophenol	35.1		% Rec.	8270C	09/15/11	1
Phenol-d5	25.1		% Rec.	8270C	09/15/11	1
Nitrobenzene-d5	57.7		% Rec.	8270C	09/15/11	1
2-Fluorobiphenyl	64.7		% Rec.	8270C	09/15/11	1
2,4,6-Tribromophenol	86.2		% Rec.	8270C	09/15/11	1
p-Terphenyl-d14	95.0		% Rec.	8270C	09/15/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 09/19/11 15:23 Printed: 09/19/11 15:24

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L535398-01	WG554605	SAMP	o-Terphenyl	R1858592	J7
L535398-02	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
L535398-04	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
L535398-05	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
L535398-06	WG555370	SAMP	o-Terphenyl	R1861012	J1
L535398-07	WG555165	SAMP	Ferrous Iron	R1861275	T8
L535398-08	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
	WG554909	SAMP	Chloromethane	R1857732	J4
	WG554909	SAMP	1,2-Dichlorobenzene	R1857732	J4
	WG554909	SAMP	Styrene	R1857732	J4
	WG554909	SAMP	Vinyl chloride	R1857732	J4

EPAPAV0045819

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

EPAPAV0045820

Summary of Remarks For Samples Printed
09/19/11 at 15:24:20

TSR Signing Reports: 044
R5 - Desired TAT

Always run BTEX by 8260 unless noted otherwise. ln 9/2/11

Sample: L535398-01 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-02 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-03 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-04 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-05 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-06 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-07 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

Sample: L535398-08 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23

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AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Nitrate	< .1	mg/l			WG554558	09/10/11 21:08
TPH (GC/FID) Low Fraction	< .1	mg/l			WG554541	09/10/11 19:58
a,a,a-Trifluorotoluene(FID)		% Rec.	94.41	62-128	WG554541	09/10/11 19:58
Benzene	< .001	mg/l			WG554548	09/11/11 10:00
Ethylbenzene	< .001	mg/l			WG554548	09/11/11 10:00
Toluene	< .005	mg/l			WG554548	09/11/11 10:00
Total Xylenes	< .003	mg/l			WG554548	09/11/11 10:00
4-Bromofluorobenzene		% Rec.	90.90	82-120	WG554548	09/11/11 10:00
Dibromofluoromethane		% Rec.	108.2	82-126	WG554548	09/11/11 10:00
Toluene-d8		% Rec.	104.2	92-112	WG554548	09/11/11 10:00
a,a,a-Trifluorotoluene		% Rec.	99.72	90-116	WG554548	09/11/11 10:00
TPH (GC/FID) Low Fraction	< .1	mg/l			WG554738	09/12/11 16:11
a,a,a-Trifluorotoluene(FID)		% Rec.	103.9	62-128	WG554738	09/12/11 16:11
TPH (GC/FID) Low Fraction	< .1	mg/l			WG554885	09/13/11 16:03
a,a,a-Trifluorotoluene(FID)		% Rec.	97.29	62-128	WG554885	09/13/11 16:03
Benzene	< .001	mg/l			WG554911	09/13/11 12:58
Ethylbenzene	< .001	mg/l			WG554911	09/13/11 12:58
Toluene	< .005	mg/l			WG554911	09/13/11 12:58
Total Xylenes	< .003	mg/l			WG554911	09/13/11 12:58
4-Bromofluorobenzene		% Rec.	114.6	82-120	WG554911	09/13/11 12:58
Dibromofluoromethane		% Rec.	103.9	82-126	WG554911	09/13/11 12:58
Toluene-d8		% Rec.	103.5	92-112	WG554911	09/13/11 12:58
a,a,a-Trifluorotoluene		% Rec.	109.6	90-116	WG554911	09/13/11 12:58
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,1-Trichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,2-Trichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1-Dichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1-Dichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
1,1-Dichloropropene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,3-Trichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,3-Trichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
1,2,3-Trimethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,4-Trichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,4-Trimethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG554909	09/13/11 13:07
1,2-Dibromoethane	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
1,3,5-Trimethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,3-Dichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,3-Dichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
1,4-Dichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
2,2-Dichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
2-Butanone (MEK)	< .01	mg/l			WG554909	09/13/11 13:07

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Quality Assurance Report
Level II

L535398

September 19, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2-Chloroethyl vinyl ether	< .05	mg/l			WG554909	09/13/11 13:07
2-Chlorotoluene	< .001	mg/l			WG554909	09/13/11 13:07
4-Chlorotoluene	< .001	mg/l			WG554909	09/13/11 13:07
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG554909	09/13/11 13:07
Acetone	< .05	mg/l			WG554909	09/13/11 13:07
Acrylonitrile	< .01	mg/l			WG554909	09/13/11 13:07
Benzene	< .001	mg/l			WG554909	09/13/11 13:07
Bromobenzene	< .001	mg/l			WG554909	09/13/11 13:07
Bromodichloromethane	< .001	mg/l			WG554909	09/13/11 13:07
Bromoform	< .001	mg/l			WG554909	09/13/11 13:07
Bromomethane	< .005	mg/l			WG554909	09/13/11 13:07
Carbon tetrachloride	< .001	mg/l			WG554909	09/13/11 13:07
Chlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
Chlorodibromomethane	< .001	mg/l			WG554909	09/13/11 13:07
Chloroethane	< .005	mg/l			WG554909	09/13/11 13:07
Chloroform	< .005	mg/l			WG554909	09/13/11 13:07
Chloromethane	< .0025	mg/l			WG554909	09/13/11 13:07
cis-1,2-Dichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
cis-1,3-Dichloropropene	< .001	mg/l			WG554909	09/13/11 13:07
Di-isopropyl ether	< .001	mg/l			WG554909	09/13/11 13:07
Dibromomethane	< .001	mg/l			WG554909	09/13/11 13:07
Dichlorodifluoromethane	< .005	mg/l			WG554909	09/13/11 13:07
Ethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Hexachloro-1,3-butadiene	< .001	mg/l			WG554909	09/13/11 13:07
Isopropylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Methyl tert-butyl ether	< .001	mg/l			WG554909	09/13/11 13:07
Methylene Chloride	< .005	mg/l			WG554909	09/13/11 13:07
n-Butylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
n-Propylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Naphthalene	< .005	mg/l			WG554909	09/13/11 13:07
p-Isopropyltoluene	< .001	mg/l			WG554909	09/13/11 13:07
sec-Butylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Styrene	< .001	mg/l			WG554909	09/13/11 13:07
tert-Butylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Tetrachloroethene	< .001	mg/l			WG554909	09/13/11 13:07
Toluene	< .005	mg/l			WG554909	09/13/11 13:07
trans-1,2-Dichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
trans-1,3-Dichloropropene	< .001	mg/l			WG554909	09/13/11 13:07
Trichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
Trichlorofluoromethane	< .005	mg/l			WG554909	09/13/11 13:07
Vinyl chloride	< .001	mg/l			WG554909	09/13/11 13:07
Xylenes, Total	< .003	mg/l			WG554909	09/13/11 13:07
4-Bromofluorobenzene		% Rec.	104.5	82-120	WG554909	09/13/11 13:07
Dibromofluoromethane		% Rec.	97.14	82-126	WG554909	09/13/11 13:07
Toluene-d8		% Rec.	102.2	92-112	WG554909	09/13/11 13:07
TPH (GC/FID) High Fraction	< .1	ppm			WG554605	09/14/11 19:49
o-Terphenyl		% Rec.	102.8	50-150	WG554605	09/14/11 19:49
TPH (GC/FID) High Fraction	< .1	ppm			WG554921	09/14/11 14:18
o-Terphenyl		% Rec.	102.7	50-150	WG554921	09/14/11 14:18
Sulfate	< 5	mg/l			WG555298	09/15/11 07:07
Acrolein	< .025	mg/l			WG555253	09/15/11 13:47

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
		Laboratory Blank				
4-Bromofluorobenzene		% Rec.	109.5	82-120		09/15/11 13:47
Dibromofluoromethane		% Rec.	95.97	82-126		09/15/11 13:47
Toluene-d8		% Rec.	101.8	92-112		09/15/11 13:47
1,2,4-Trichlorobenzene	< .01	mg/l			WG555187	09/15/11 12:53
2,4,5-Trichlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4,6-Trichlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dichlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dimethylphenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dinitrophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dinitrotoluene	< .01	mg/l			WG555187	09/15/11 12:53
2,6-Dinitrotoluene	< .01	mg/l			WG555187	09/15/11 12:53
2-Chloronaphthalene	< .001	mg/l			WG555187	09/15/11 12:53
2-Chlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2-Methylphenol	< .01	mg/l			WG555187	09/15/11 12:53
2-Nitrophenol	< .01	mg/l			WG555187	09/15/11 12:53
3&4-methyl phenol	< .01	mg/l			WG555187	09/15/11 12:53
3,3-Dichlorobenzidine	< .01	mg/l			WG555187	09/15/11 12:53
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG555187	09/15/11 12:53
4-Bromophenyl-phenylether	< .01	mg/l			WG555187	09/15/11 12:53
4-Chloro-3-methylphenol	< .01	mg/l			WG555187	09/15/11 12:53
4-Chlorophenyl-phenylether	< .01	mg/l			WG555187	09/15/11 12:53
4-Nitrophenol	< .01	mg/l			WG555187	09/15/11 12:53
Acenaphthene	< .001	mg/l			WG555187	09/15/11 12:53
Acenaphthylene	< .001	mg/l			WG555187	09/15/11 12:53
Anthracene	< .001	mg/l			WG555187	09/15/11 12:53
Benzidine	< .01	mg/l			WG555187	09/15/11 12:53
Benzo(a)anthracene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(a)pyrene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(b)fluoranthene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(g,h,i)perylene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(k)fluoranthene	< .001	mg/l			WG555187	09/15/11 12:53
Benzylbutyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Bis(2-chlorethoxy)methane	< .01	mg/l			WG555187	09/15/11 12:53
Bis(2-chloroethyl)ether	< .01	mg/l			WG555187	09/15/11 12:53
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG555187	09/15/11 12:53
Bis(2-ethylhexyl)phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Chrysene	< .001	mg/l			WG555187	09/15/11 12:53
Di-n-butyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Di-n-octyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Dibenz(a,h)anthracene	< .001	mg/l			WG555187	09/15/11 12:53
Dibenzofuran	< .01	mg/l			WG555187	09/15/11 12:53
Diethyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Dimethyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Fluoranthene	< .001	mg/l			WG555187	09/15/11 12:53
Fluorene	< .001	mg/l			WG555187	09/15/11 12:53
Hexachloro-1,3-butadiene	< .01	mg/l			WG555187	09/15/11 12:53
Hexachlorobenzene	< .001	mg/l			WG555187	09/15/11 12:53
Hexachlorocyclopentadiene	< .01	mg/l			WG555187	09/15/11 12:53
Hexachloroethane	< .01	mg/l			WG555187	09/15/11 12:53
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG555187	09/15/11 12:53
Isophorone	< .01	mg/l			WG555187	09/15/11 12:53
n-Nitrosodi-n-propylamine	< .01	mg/l			WG555187	09/15/11 12:53
n-Nitrosodimethylamine	< .01	mg/l			WG555187	09/15/11 12:53
n-Nitrosodiphenylamine	< .01	mg/l			WG555187	09/15/11 12:53
Naphthalene	< .001	mg/l			WG555187	09/15/11 12:53
Nitrobenzene	< .01	mg/l			WG555187	09/15/11 12:53
Pentachlorophenol	< .001	mg/l			WG555187	09/15/11 12:53
Phenanthrene	< .001	mg/l			WG555187	09/15/11 12:53
Phenol	< .01	mg/l			WG555187	09/15/11 12:53

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Quality Assurance Report
Level II

L535398

September 19, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Pyrene	< .001	mg/l			WG555187	09/15/11 12:53
Pyridine	< .01	mg/l			WG555187	09/15/11 12:53
2,4,6-Tribromophenol		mg/l	74.01	16-147	WG555187	09/15/11 12:53
2-Fluorobiphenyl		mg/l	73.01	29-127	WG555187	09/15/11 12:53
2-Fluorophenol		mg/l	41.76	10-75	WG555187	09/15/11 12:53
Nitrobenzene-d5		mg/l	63.41	17-119	WG555187	09/15/11 12:53
Phenol-d5		mg/l	29.89	10-63	WG555187	09/15/11 12:53
p-Terphenyl-d14		mg/l	98.42	40-174	WG555187	09/15/11 12:53
TPH (GC/FID) High Fraction	< .1	ppm			WG555370	09/16/11 09:27
o-Terphenyl		% Rec.	92.92	50-150	WG555370	09/16/11 09:27
Ferrous Iron	< .05	mg/l			WG555165	09/16/11 13:20
1,2,4-Trichlorobenzene	< .01	mg/l			WG555542	09/18/11 09:56
2,4,6-Trichlorophenol	< .01	mg/l			WG555542	09/18/11 09:56
2,4-Dichlorophenol	< .01	mg/l			WG555542	09/18/11 09:56
2,4-Dimethylphenol	< .01	mg/l			WG555542	09/18/11 09:56
2,4-Dinitrophenol	< .01	mg/l			WG555542	09/18/11 09:56
2,4-Dinitrotoluene	< .01	mg/l			WG555542	09/18/11 09:56
2,6-Dinitrotoluene	< .01	mg/l			WG555542	09/18/11 09:56
2-Chloronaphthalene	< .001	mg/l			WG555542	09/18/11 09:56
2-Chlorophenol	< .01	mg/l			WG555542	09/18/11 09:56
2-Nitrophenol	< .01	mg/l			WG555542	09/18/11 09:56
3,3-Dichlorobenzidine	< .01	mg/l			WG555542	09/18/11 09:56
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG555542	09/18/11 09:56
4-Bromophenyl-phenylether	< .01	mg/l			WG555542	09/18/11 09:56
4-Chloro-3-methylphenol	< .01	mg/l			WG555542	09/18/11 09:56
4-Chlorophenyl-phenylether	< .01	mg/l			WG555542	09/18/11 09:56
4-Nitrophenol	< .01	mg/l			WG555542	09/18/11 09:56
Acenaphthene	< .001	mg/l			WG555542	09/18/11 09:56
Acenaphthylene	< .001	mg/l			WG555542	09/18/11 09:56
Anthracene	< .001	mg/l			WG555542	09/18/11 09:56
Benzidine	< .01	mg/l			WG555542	09/18/11 09:56
Benzo(a)anthracene	< .001	mg/l			WG555542	09/18/11 09:56
Benzo(a)pyrene	< .001	mg/l			WG555542	09/18/11 09:56
Benzo(b)fluoranthene	< .001	mg/l			WG555542	09/18/11 09:56
Benzo(g,h,i)perylene	< .001	mg/l			WG555542	09/18/11 09:56
Benzo(k)fluoranthene	< .001	mg/l			WG555542	09/18/11 09:56
Benzylbutyl phthalate	< .001	mg/l			WG555542	09/18/11 09:56
Bis(2-chlorethoxy)methane	< .01	mg/l			WG555542	09/18/11 09:56
Bis(2-chloroethyl)ether	< .01	mg/l			WG555542	09/18/11 09:56
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG555542	09/18/11 09:56
Bis(2-ethylhexyl)phthalate	< .001	mg/l			WG555542	09/18/11 09:56
Chrysene	< .001	mg/l			WG555542	09/18/11 09:56
Di-n-butyl phthalate	< .001	mg/l			WG555542	09/18/11 09:56
Di-n-octyl phthalate	< .001	mg/l			WG555542	09/18/11 09:56
Dibenz(a,h)anthracene	< .001	mg/l			WG555542	09/18/11 09:56
Diethyl phthalate	< .001	mg/l			WG555542	09/18/11 09:56
Dimethyl phthalate	< .001	mg/l			WG555542	09/18/11 09:56
Fluoranthene	< .001	mg/l			WG555542	09/18/11 09:56
Fluorene	< .001	mg/l			WG555542	09/18/11 09:56
Hexachloro-1,3-butadiene	< .01	mg/l			WG555542	09/18/11 09:56
Hexachlorobenzene	< .001	mg/l			WG555542	09/18/11 09:56
Hexachlorocyclopentadiene	< .01	mg/l			WG555542	09/18/11 09:56
Hexachloroethane	< .01	mg/l			WG555542	09/18/11 09:56

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Level II

L535398

September 19, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG555542	09/18/11 09:56
Isophorone	< .01	mg/l			WG555542	09/18/11 09:56
n-Nitrosodi-n-propylamine	< .01	mg/l			WG555542	09/18/11 09:56
n-Nitrosodimethylamine	< .01	mg/l			WG555542	09/18/11 09:56
n-Nitrosodiphenylamine	< .01	mg/l			WG555542	09/18/11 09:56
Naphthalene	< .001	mg/l			WG555542	09/18/11 09:56
Nitrobenzene	< .01	mg/l			WG555542	09/18/11 09:56
Pentachlorophenol	< .001	mg/l			WG555542	09/18/11 09:56
Phenanthrene	< .001	mg/l			WG555542	09/18/11 09:56
Phenol	< .01	mg/l			WG555542	09/18/11 09:56
Pyrene	< .001	mg/l			WG555542	09/18/11 09:56
2,4,6-Tribromophenol		mg/l	54.08	16-147	WG555542	09/18/11 09:56
2-Fluorobiphenyl		mg/l	64.30	29-127	WG555542	09/18/11 09:56
2-Fluorophenol		mg/l	20.82	10-75	WG555542	09/18/11 09:56
Nitrobenzene-d5		mg/l	64.36	17-119	WG555542	09/18/11 09:56
Phenol-d5		mg/l	14.47	10-63	WG555542	09/18/11 09:56
p-Terphenyl-d14		mg/l	86.17	40-174	WG555542	09/18/11 09:56

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Nitrate	mg/l	0	0	0	20	L534841-03	WG554558
Nitrate	mg/l	0	0	0	20	L535379-18	WG554558
Sulfate	mg/l	180.	180.	1.65	20	L535392-02	WG555298
Sulfate	mg/l	0	0	0	20	L535415-06	WG555298
Ferrous Iron	mg/l	0.500	0.450	10.9	20	L536199-06	WG555165

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Nitrate	mg/l	8	8.00	100.	90-110	WG554558
TPH (GC/FID) Low Fraction	mg/l	5.5	5.71	104.	70-124	WG554541
a,a,a-Trifluorotoluene(FID)				98.95	62-128	WG554541
Benzene	mg/l	.025	0.0262	105.	72-119	WG554548
Ethylbenzene	mg/l	.025	0.0235	94.1	77-124	WG554548
Toluene	mg/l	.025	0.0244	97.7	75-114	WG554548
Total Xylenes	mg/l	.075	0.0706	94.1	77-123	WG554548
4-Bromofluorobenzene				92.43	82-120	WG554548
Dibromofluoromethane				111.0	82-126	WG554548
Toluene-d8				104.0	92-112	WG554548
a,a,a-Trifluorotoluene				96.38	90-116	WG554548
TPH (GC/FID) Low Fraction	mg/l	5.5	5.93	108.	70-124	WG554738
a,a,a-Trifluorotoluene(FID)				110.5	62-128	WG554738
TPH (GC/FID) Low Fraction	mg/l	5.5	6.39	116.	70-124	WG554885
a,a,a-Trifluorotoluene(FID)				113.5	62-128	WG554885

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Est. 1970

AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.025	0.0227	90.8	72-119	WG554911
Ethylbenzene	mg/l	.025	0.0251	100.	77-124	WG554911
Toluene	mg/l	.025	0.0236	94.3	75-114	WG554911
Total Xylenes	mg/l	.075	0.0772	103.	77-123	WG554911
4-Bromofluorobenzene				110.3	82-120	WG554911
Dibromofluoromethane				103.2	82-126	WG554911
Toluene-d8				105.0	92-112	WG554911
a,a,a-Trifluorotoluene				111.6	90-116	WG554911
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0236	94.3	77-128	WG554909
1,1,1-Trichloroethane	mg/l	.025	0.0231	92.4	71-126	WG554909
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0211	84.6	78-130	WG554909
1,1,2-Trichloroethane	mg/l	.025	0.0228	91.4	81-121	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0233	93.2	53-143	WG554909
1,1-Dichloroethane	mg/l	.025	0.0220	87.8	73-123	WG554909
1,1-Dichloroethene	mg/l	.025	0.0225	89.9	54-134	WG554909
1,1-Dichloropropene	mg/l	.025	0.0179	71.4	67-127	WG554909
1,2,3-Trichlorobenzene	mg/l	.025	0.0201	80.3	77-130	WG554909
1,2,3-Trichloropropane	mg/l	.025	0.0216	86.6	68-130	WG554909
1,2,3-Trimethylbenzene	mg/l	.025	0.0202	80.8	70-127	WG554909
1,2,4-Trichlorobenzene	mg/l	.025	0.0203	81.0	76-127	WG554909
1,2,4-Trimethylbenzene	mg/l	.025	0.0213	85.4	77-129	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0157	62.7	55-142	WG554909
1,2-Dibromoethane	mg/l	.025	0.0207	83.0	78-124	WG554909
1,2-Dichlorobenzene	mg/l	.025	0.0206	82.4	82-121	WG554909
1,2-Dichloroethane	mg/l	.025	0.0208	83.3	69-128	WG554909
1,2-Dichloropropane	mg/l	.025	0.0214	85.8	77-121	WG554909
1,3,5-Trimethylbenzene	mg/l	.025	0.0219	87.7	78-127	WG554909
1,3-Dichlorobenzene	mg/l	.025	0.0219	87.5	77-127	WG554909
1,3-Dichloropropane	mg/l	.025	0.0209	83.7	78-117	WG554909
1,4-Dichlorobenzene	mg/l	.025	0.0212	84.9	79-117	WG554909
2,2-Dichloropropane	mg/l	.025	0.0226	90.5	63-130	WG554909
2-Butanone (MEK)	mg/l	.125	0.0790	63.2	58-144	WG554909
2-Chloroethyl vinyl ether	mg/l	.125	0.105	83.8	26-172	WG554909
2-Chlorotoluene	mg/l	.025	0.0217	86.7	78-123	WG554909
4-Chlorotoluene	mg/l	.025	0.0217	86.9	78-122	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.102	82.0	58-147	WG554909
Acetone	mg/l	.125	0.0703	56.3	49-153	WG554909
Acrylonitrile	mg/l	.125	0.0803	64.2	53-153	WG554909
Benzene	mg/l	.025	0.0195	77.9	72-119	WG554909
Bromobenzene	mg/l	.025	0.0209	83.8	76-121	WG554909
Bromodichloromethane	mg/l	.025	0.0228	91.3	75-127	WG554909
Bromoform	mg/l	.025	0.0188	75.1	61-136	WG554909
Bromomethane	mg/l	.025	0.0219	87.5	42-172	WG554909
Carbon tetrachloride	mg/l	.025	0.0210	83.9	63-129	WG554909
Chlorobenzene	mg/l	.025	0.0216	86.3	78-123	WG554909
Chlorodibromomethane	mg/l	.025	0.0234	93.6	73-128	WG554909
Chloroethane	mg/l	.025	0.0209	83.5	52-164	WG554909
Chloroform	mg/l	.025	0.0237	94.7	76-122	WG554909
Chloromethane	mg/l	.025	0.0129	51.8	50-141	WG554909
cis-1,2-Dichloroethene	mg/l	.025	0.0207	82.7	75-121	WG554909
cis-1,3-Dichloropropene	mg/l	.025	0.0220	87.8	74-124	WG554909
Di-isopropyl ether	mg/l	.025	0.0214	85.5	66-129	WG554909
Dibromomethane	mg/l	.025	0.0205	82.0	77-124	WG554909
Dichlorodifluoromethane	mg/l	.025	0.0162	64.6	33-173	WG554909
Ethylbenzene	mg/l	.025	0.0211	84.2	77-124	WG554909
Hexachloro-1,3-butadiene	mg/l	.025	0.0190	76.2	71-134	WG554909
Isopropylbenzene	mg/l	.025	0.0239	95.8	74-126	WG554909

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Methyl tert-butyl ether	mg/l	.025	0.0221	88.4	67-127	WG554909
Methylene Chloride	mg/l	.025	0.0215	85.9	67-122	WG554909
n-Butylbenzene	mg/l	.025	0.0209	83.6	74-130	WG554909
n-Propylbenzene	mg/l	.025	0.0219	87.7	77-125	WG554909
Naphthalene	mg/l	.025	0.0191	76.5	70-134	WG554909
p-Isopropyltoluene	mg/l	.025	0.0221	88.6	77-132	WG554909
sec-Butylbenzene	mg/l	.025	0.0222	88.7	77-130	WG554909
Styrene	mg/l	.025	0.0156	62.6*	69-145	WG554909
tert-Butylbenzene	mg/l	.025	0.0223	89.1	76-131	WG554909
Tetrachloroethene	mg/l	.025	0.0193	77.1	75-121	WG554909
Toluene	mg/l	.025	0.0209	83.5	75-114	WG554909
trans-1,2-Dichloroethene	mg/l	.025	0.0174	69.5	63-127	WG554909
trans-1,3-Dichloropropene	mg/l	.025	0.0198	79.2	69-124	WG554909
Trichloroethene	mg/l	.025	0.0194	77.8	69-131	WG554909
Trichlorofluoromethane	mg/l	.025	0.0206	82.4	53-161	WG554909
Vinyl chloride	mg/l	.025	0.0140	56.1	55-142	WG554909
Xylenes, Total	mg/l	.075	0.0628	83.8	77-123	WG554909
4-Bromofluorobenzene				100.3	82-120	WG554909
Dibromofluoromethane				100.6	82-126	WG554909
Toluene-d8				104.0	92-112	WG554909
Sulfate	mg/l	40	39.9	99.8	90-110	WG555298
Acrolein	mg/l	.125	0.0302	24.1	10-181	WG555253
4-Bromofluorobenzene				106.1	82-120	WG555253
Dibromofluoromethane				100.4	82-126	WG555253
Toluene-d8				104.6	92-112	WG555253
1,2,4-Trichlorobenzene	mg/l	.01	0.00602	60.2	34-97	WG555187
2,4,5-Trichlorophenol	mg/l	.01	0.00663	66.3	41-125	WG555187
2,4,6-Trichlorophenol	mg/l	.01	0.00659	65.9	38-113	WG555187
2,4-Dichlorophenol	mg/l	.01	0.00673	67.3	46-105	WG555187
2,4-Dimethylphenol	mg/l	.01	0.00675	67.5	47-108	WG555187
2,4-Dinitrophenol	mg/l	.01	0.00564	56.4	10-121	WG555187
2,4-Dinitrotoluene	mg/l	.01	0.00841	84.1	59-117	WG555187
2,6-Dinitrotoluene	mg/l	.01	0.00751	75.1	57-110	WG555187
2-Chloronaphthalene	mg/l	.01	0.00708	70.8	47-106	WG555187
2-Chlorophenol	mg/l	.01	0.00678	67.8	37-90	WG555187
2-Methylphenol	mg/l	.01	0.00569	56.9	35-84	WG555187
2-Nitrophenol	mg/l	.01	0.00660	66.0	40-112	WG555187
3&4-methyl phenol	mg/l	.01	0.00573	57.3	33-94	WG555187
3,3-Dichlorobenzidine	mg/l	.01	0.00637	63.7	58-116	WG555187
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00756	75.6	21-119	WG555187
4-Bromophenyl-phenylether	mg/l	.01	0.00741	74.1	63-120	WG555187
4-Chloro-3-methylphenol	mg/l	.01	0.00652	65.2	50-105	WG555187
4-Chlorophenyl-phenylether	mg/l	.01	0.00703	70.3	58-115	WG555187
4-Nitrophenol	mg/l	.01	0.00273	27.3	10-53	WG555187
Acenaphthene	mg/l	.01	0.00728	72.8	52-107	WG555187
Acenaphthylene	mg/l	.01	0.00773	77.3	55-119	WG555187
Anthracene	mg/l	.01	0.00822	82.2	65-114	WG555187
Benzidine	mg/l	.01	0.00191	19.1	10-55	WG555187
Benzo(a)anthracene	mg/l	.01	0.00867	86.7	68-113	WG555187
Benzo(a)pyrene	mg/l	.01	0.00784	78.4	68-115	WG555187
Benzo(b)fluoranthene	mg/l	.01	0.00766	76.6	67-114	WG555187
Benzo(g,h,i)perylene	mg/l	.01	0.00885	88.5	52-132	WG555187
Benzo(k)fluoranthene	mg/l	.01	0.00845	84.5	62-116	WG555187

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzylbutyl phthalate	mg/l	.01	0.00778	77.8	12-166	WG555187
Bis(2-chlorethoxy)methane	mg/l	.01	0.00673	67.3	56-116	WG555187
Bis(2-chloroethyl)ether	mg/l	.01	0.00656	65.6	39-109	WG555187
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00658	65.8	43-108	WG555187
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00935	93.5	61-147	WG555187
Chrysene	mg/l	.01	0.00819	81.9	65-114	WG555187
Di-n-butyl phthalate	mg/l	.01	0.00807	80.7	56-133	WG555187
Di-n-octyl phthalate	mg/l	.01	0.00923	92.3	59-143	WG555187
Dibenz(a,h)anthracene	mg/l	.01	0.00825	82.5	54-130	WG555187
Dibenzofuran	mg/l	.01	0.00716	71.6	53-109	WG555187
Diethyl phthalate	mg/l	.01	0.00748	74.8	33-136	WG555187
Dimethyl phthalate	mg/l	.01	0.00567	56.7	10-152	WG555187
Fluoranthene	mg/l	.01	0.00851	85.1	66-120	WG555187
Fluorene	mg/l	.01	0.00704	70.4	58-110	WG555187
Hexachloro-1,3-butadiene	mg/l	.01	0.00706	70.6	34-115	WG555187
Hexachlorobenzene	mg/l	.01	0.00680	68.0	55-117	WG555187
Hexachlorocyclopentadiene	mg/l	.01	0.00940	94.0	20-121	WG555187
Hexachloroethane	mg/l	.01	0.00665	66.5	24-93	WG555187
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00832	83.2	56-129	WG555187
Isophorone	mg/l	.01	0.00587	58.7	55-108	WG555187
n-Nitrosodi-n-propylamine	mg/l	.01	0.00753	75.3	50-115	WG555187
n-Nitrosodimethylamine	mg/l	.01	0.00449	44.9	12-68	WG555187
n-Nitrosodiphenylamine	mg/l	.01	0.00747	74.7	55-98	WG555187
Naphthalene	mg/l	.01	0.00641	64.1	42-103	WG555187
Nitrobenzene	mg/l	.01	0.00663	66.3	39-102	WG555187
Pentachlorophenol	mg/l	.01	0.00581	58.1	10-101	WG555187
Phenanthrene	mg/l	.01	0.00777	77.7	61-110	WG555187
Phenol	mg/l	.01	0.00266	26.6	10-53	WG555187
Pyrene	mg/l	.01	0.00825	82.5	65-116	WG555187
Pyridine	mg/l	.01	0.00319	31.9	11-52	WG555187
2,4,6-Tribromophenol				75.86	16-147	WG555187
2-Fluorobiphenyl				71.71	29-127	WG555187
2-Fluorophenol				38.39	10-75	WG555187
Nitrobenzene-d5				63.33	17-119	WG555187
Phenol-d5				30.06	10-63	WG555187
p-Terphenyl-d14				85.31	40-174	WG555187
Ferrous Iron	mg/l	1	1.00	100.	85-115	WG555165
1,2,4-Trichlorobenzene	mg/l	.01	0.00596	59.6	34-97	WG555542
2,4,6-Trichlorophenol	mg/l	.01	0.00583	58.3	38-113	WG555542
2,4-Dichlorophenol	mg/l	.01	0.00665	66.5	46-105	WG555542
2,4-Dimethylphenol	mg/l	.01	0.00574	57.4	47-108	WG555542
2,4-Dinitrophenol	mg/l	.01	0.00397	39.7	10-121	WG555542
2,4-Dinitrotoluene	mg/l	.01	0.00787	78.7	59-117	WG555542
2,6-Dinitrotoluene	mg/l	.01	0.00800	80.0	57-110	WG555542
2-Chloronaphthalene	mg/l	.01	0.00700	70.0	47-106	WG555542
2-Chlorophenol	mg/l	.01	0.00521	52.1	37-90	WG555542
2-Nitrophenol	mg/l	.01	0.00670	67.0	40-112	WG555542
3,3-Dichlorobenzidine	mg/l	.01	0.00798	79.8	58-116	WG555542
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00514	51.4	21-119	WG555542
4-Bromophenyl-phenylether	mg/l	.01	0.00744	74.4	63-120	WG555542
4-Chloro-3-methylphenol	mg/l	.01	0.00627	62.7	50-105	WG555542
4-Chlorophenyl-phenylether	mg/l	.01	0.00696	69.6	58-115	WG555542
4-Nitrophenol	mg/l	.01	0.00121	12.1	10-53	WG555542
Acenaphthene	mg/l	.01	0.00747	74.7	52-107	WG555542
Acenaphthylene	mg/l	.01	0.00758	75.8	55-119	WG555542

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Anthracene	mg/l	.01	0.00750	75.0	65-114	WG555542
Benzidine	mg/l	.01	0.00361	36.1	10-55	WG555542
Benzo(a)anthracene	mg/l	.01	0.00811	81.1	68-113	WG555542
Benzo(a)pyrene	mg/l	.01	0.00812	81.2	68-115	WG555542
Benzo(b)fluoranthene	mg/l	.01	0.00785	78.5	67-114	WG555542
Benzo(g,h,i)perylene	mg/l	.01	0.00773	77.3	52-132	WG555542
Benzo(k)fluoranthene	mg/l	.01	0.00832	83.2	62-116	WG555542
Benzylbutyl phthalate	mg/l	.01	0.00664	66.4	12-166	WG555542
Bis(2-chlorethoxy)methane	mg/l	.01	0.00772	77.2	56-116	WG555542
Bis(2-chloroethyl)ether	mg/l	.01	0.00678	67.8	39-109	WG555542
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00692	69.2	43-108	WG555542
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00824	82.4	61-147	WG555542
Chrysene	mg/l	.01	0.00807	80.7	65-114	WG555542
Di-n-butyl phthalate	mg/l	.01	0.00729	72.9	56-133	WG555542
Di-n-octyl phthalate	mg/l	.01	0.00826	82.6	59-143	WG555542
Dibenz(a,h)anthracene	mg/l	.01	0.00771	77.1	54-130	WG555542
Diethyl phthalate	mg/l	.01	0.00695	69.5	33-136	WG555542
Dimethyl phthalate	mg/l	.01	0.00575	57.5	10-152	WG555542
Fluoranthene	mg/l	.01	0.00727	72.7	66-120	WG555542
Fluorene	mg/l	.01	0.00737	73.7	58-110	WG555542
Hexachloro-1,3-butadiene	mg/l	.01	0.00541	54.1	34-115	WG555542
Hexachlorobenzene	mg/l	.01	0.00659	65.9	55-117	WG555542
Hexachlorocyclopentadiene	mg/l	.01	0.00642	64.2	20-121	WG555542
Hexachloroethane	mg/l	.01	0.00546	54.6	24-93	WG555542
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00794	79.4	56-129	WG555542
Isophorone	mg/l	.01	0.00644	64.4	55-108	WG555542
n-Nitrosodi-n-propylamine	mg/l	.01	0.00775	77.5	50-115	WG555542
n-Nitrosodimethylamine	mg/l	.01	0.00376	37.6	12-68	WG555542
n-Nitrosodiphenylamine	mg/l	.01	0.00762	76.2	55-98	WG555542
Naphthalene	mg/l	.01	0.00678	67.8	42-103	WG555542
Nitrobenzene	mg/l	.01	0.00758	75.8	39-102	WG555542
Pentachlorophenol	mg/l	.01	0.00365	36.5	10-101	WG555542
Phenanthrene	mg/l	.01	0.00770	77.0	61-110	WG555542
Phenol	mg/l	.01	0.00224	22.4	10-53	WG555542
Pyrene	mg/l	.01	0.00779	77.9	65-116	WG555542
2,4,6-Tribromophenol				60.70	16-147	WG555542
2-Fluorobiphenyl				72.64	29-127	WG555542
2-Fluorophenol				29.96	10-75	WG555542
Nitrobenzene-d5				78.06	17-119	WG555542
Phenol-d5				20.73	10-63	WG555542
p-Terphenyl-d14				80.79	40-174	WG555542

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Nitrate	mg/l	7.99	8.00	100.	90-110	0.125	20	WG554558
TPH (GC/FID) Low Fraction	mg/l	5.72	5.71	104.	70-124	0.0600	20	WG554541
a,a,a-Trifluorotoluene(FID)				98.74	62-128			WG554541
Benzene	mg/l	0.0267	0.0262	107.	72-119	2.04	20	WG554548
Ethylbenzene	mg/l	0.0251	0.0235	100.	77-124	6.43	20	WG554548
Toluene	mg/l	0.0253	0.0244	101.	75-114	3.33	20	WG554548
Total Xylenes	mg/l	0.0754	0.0706	100.	77-123	6.57	20	WG554548
4-Bromofluorobenzene				94.41	82-120			WG554548
Dibromofluoromethane				110.3	82-126			WG554548
Toluene-d8				106.6	92-112			WG554548

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Est. 1970

AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Limit	Duplicate RPD	Limit	Batch
a,a,a-Trifluorotoluene				98.77	90-116			
TPH (GC/FID) Low Fraction	mg/l	6.18	5.93	112.	70-124	4.05	20	WG554738
a,a,a-Trifluorotoluene(FID)				112.1	62-128			WG554738
TPH (GC/FID) Low Fraction	mg/l	5.82	6.39	106.	70-124	9.42	20	WG554885
a,a,a-Trifluorotoluene(FID)				105.4	62-128			WG554885
Benzene	mg/l	0.0228	0.0227	91.0	72-119	0.230	20	WG554911
Ethylbenzene	mg/l	0.0251	0.0251	100.	77-124	0.180	20	WG554911
Toluene	mg/l	0.0239	0.0236	95.0	75-114	1.18	20	WG554911
Total Xylenes	mg/l	0.0760	0.0772	101.	77-123	1.61	20	WG554911
4-Bromofluorobenzene				110.4	82-120			WG554911
Dibromofluoromethane				101.2	82-126			WG554911
Toluene-d8				103.7	92-112			WG554911
a,a,a-Trifluorotoluene				108.6	90-116			WG554911
1,1,1,2-Tetrachloroethane	mg/l	0.0230	0.0236	92.0	77-128	2.65	20	WG554909
1,1,1-Trichloroethane	mg/l	0.0225	0.0231	90.0	71-126	2.38	20	WG554909
1,1,2,2-Tetrachloroethane	mg/l	0.0209	0.0211	84.0	78-130	0.980	20	WG554909
1,1,2-Trichloroethane	mg/l	0.0223	0.0228	89.0	81-121	2.29	20	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0223	0.0233	89.0	53-143	4.24	20	WG554909
1,1-Dichloroethane	mg/l	0.0214	0.0220	86.0	73-123	2.44	20	WG554909
1,1-Dichloroethene	mg/l	0.0221	0.0225	88.0	54-134	1.59	20	WG554909
1,1-Dichloropropene	mg/l	0.0174	0.0179	70.0	67-127	2.71	20	WG554909
1,2,3-Trichlorobenzene	mg/l	0.0195	0.0201	78.0	77-130	3.12	20	WG554909
1,2,3-Trichloropropane	mg/l	0.0218	0.0216	87.0	68-130	0.640	20	WG554909
1,2,3-Trimethylbenzene	mg/l	0.0197	0.0202	79.0	70-127	2.68	20	WG554909
1,2,4-Trichlorobenzene	mg/l	0.0200	0.0203	80.0	76-127	1.23	20	WG554909
1,2,4-Trimethylbenzene	mg/l	0.0207	0.0213	83.0	77-129	2.96	20	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	0.0163	0.0157	65.0	55-142	3.70	20	WG554909
1,2-Dibromoethane	mg/l	0.0206	0.0207	82.0	78-124	0.800	20	WG554909
1,2-Dichlorobenzene	mg/l	0.0205	0.0206	82.0	82-121	0.590	20	WG554909
1,2-Dichloroethane	mg/l	0.0202	0.0208	81.0	69-128	3.20	20	WG554909
1,2-Dichloropropane	mg/l	0.0207	0.0214	83.0	77-121	3.57	20	WG554909
1,3,5-Trimethylbenzene	mg/l	0.0212	0.0219	85.0	78-127	3.58	20	WG554909
1,3-Dichlorobenzene	mg/l	0.0214	0.0219	86.0	77-127	2.10	20	WG554909
1,3-Dichloropropane	mg/l	0.0208	0.0209	83.0	78-117	0.730	20	WG554909
1,4-Dichlorobenzene	mg/l	0.0209	0.0212	84.0	79-117	1.39	20	WG554909
2,2-Dichloropropane	mg/l	0.0223	0.0226	89.0	63-130	1.67	20	WG554909
2-Butanone (MEK)	mg/l	0.0769	0.0790	61.0	58-144	2.80	20	WG554909
2-Chloroethyl vinyl ether	mg/l	0.0996	0.105	80.0	26-172	4.98	22	WG554909
2-Chlorotoluene	mg/l	0.0212	0.0217	85.0	78-123	2.36	20	WG554909
4-Chlorotoluene	mg/l	0.0211	0.0217	84.0	78-122	3.00	20	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	0.102	0.102	82.0	58-147	0.530	20	WG554909
Acetone	mg/l	0.0698	0.0703	56.0	49-153	0.690	21	WG554909
Acrylonitrile	mg/l	0.0767	0.0803	61.0	53-153	4.59	20	WG554909
Benzene	mg/l	0.0190	0.0195	76.0	72-119	2.49	20	WG554909
Bromobenzene	mg/l	0.0205	0.0209	82.0	76-121	2.05	20	WG554909
Bromodichloromethane	mg/l	0.0223	0.0228	89.0	75-127	2.25	20	WG554909
Bromoform	mg/l	0.0186	0.0188	74.0	61-136	1.09	20	WG554909
Bromomethane	mg/l	0.0199	0.0219	80.0	42-172	9.35	20	WG554909
Carbon tetrachloride	mg/l	0.0203	0.0210	81.0	63-129	3.01	20	WG554909
Chlorobenzene	mg/l	0.0213	0.0216	85.0	78-123	1.51	20	WG554909
Chlorodibromomethane	mg/l	0.0230	0.0234	92.0	73-128	1.56	20	WG554909
Chloroethane	mg/l	0.0201	0.0209	80.0	52-164	3.65	20	WG554909
Chloroform	mg/l	0.0229	0.0237	92.0	76-122	3.27	20	WG554909

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Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chloromethane	mg/l	0.0123	0.0129	49*	50-141	5.42	20	WG554909
cis-1,2-Dichloroethene	mg/l	0.0203	0.0207	81.0	75-121	1.86	20	WG554909
cis-1,3-Dichloropropene	mg/l	0.0213	0.0220	85.0	74-124	2.93	20	WG554909
Di-isopropyl ether	mg/l	0.0208	0.0214	83.0	66-129	2.82	20	WG554909
Dibromomethane	mg/l	0.0201	0.0205	80.0	77-124	2.06	20	WG554909
Dichlorodifluoromethane	mg/l	0.0154	0.0162	62.0	33-173	4.51	20	WG554909
Ethylbenzene	mg/l	0.0206	0.0211	82.0	77-124	2.31	20	WG554909
Hexachloro-1,3-butadiene	mg/l	0.0187	0.0190	75.0	71-134	1.89	20	WG554909
Isopropylbenzene	mg/l	0.0233	0.0239	93.0	74-126	2.84	20	WG554909
Methyl tert-butyl ether	mg/l	0.0219	0.0221	87.0	67-127	1.06	20	WG554909
Methylene Chloride	mg/l	0.0210	0.0215	84.0	67-122	2.16	20	WG554909
n-Butylbenzene	mg/l	0.0206	0.0209	82.0	74-130	1.62	20	WG554909
n-Propylbenzene	mg/l	0.0214	0.0219	86.0	77-125	2.29	20	WG554909
Naphthalene	mg/l	0.0185	0.0191	74.0	70-134	3.29	20	WG554909
p-Isopropyltoluene	mg/l	0.0214	0.0221	86.0	77-132	3.46	20	WG554909
sec-Butylbenzene	mg/l	0.0214	0.0222	86.0	77-130	3.57	20	WG554909
Styrene	mg/l	0.0152	0.0156	61*	69-145	2.94	20	WG554909
tert-Butylbenzene	mg/l	0.0217	0.0223	87.0	76-131	2.64	20	WG554909
Tetrachloroethene	mg/l	0.0191	0.0193	76.0	75-121	0.980	20	WG554909
Toluene	mg/l	0.0201	0.0209	80.0	75-114	3.86	20	WG554909
trans-1,2-Dichloroethene	mg/l	0.0168	0.0174	67.0	63-127	3.28	20	WG554909
trans-1,3-Dichloropropene	mg/l	0.0192	0.0198	77.0	69-124	3.19	20	WG554909
Trichloroethene	mg/l	0.0192	0.0194	77.0	69-131	1.30	20	WG554909
Trichlorofluoromethane	mg/l	0.0198	0.0206	79.0	53-161	4.06	20	WG554909
Vinyl chloride	mg/l	0.0135	0.0140	54*	55-142	4.22	20	WG554909
Xylenes, Total	mg/l	0.0616	0.0628	82.0	77-123	1.93	20	WG554909
4-Bromofluorobenzene				99.89	82-120			WG554909
Dibromofluoromethane				99.78	82-126			WG554909
Toluene-d8				103.6	92-112			WG554909
Sulfate	mg/l	40.0	39.9	100.	90-110	0.250	20	WG555298
Acrolein	mg/l	0.0318	0.0302	25.0	10-181	5.21	30	WG555253
4-Bromofluorobenzene				107.1	82-120			WG555253
Dibromofluoromethane				100.6	82-126			WG555253
Toluene-d8				104.6	92-112			WG555253
1,2,4-Trichlorobenzene	mg/l	0.00635	0.00602	64.0	34-97	5.36	21	WG555187
2,4,5-Trichlorophenol	mg/l	0.00592	0.00663	59.0	41-125	11.3	27	WG555187
2,4,6-Trichlorophenol	mg/l	0.00565	0.00659	56.0	38-113	15.5	29	WG555187
2,4-Dichlorophenol	mg/l	0.00665	0.00673	66.0	46-105	1.18	20	WG555187
2,4-Dimethylphenol	mg/l	0.00673	0.00675	67.0	47-108	0.217	20	WG555187
2,4-Dinitrophenol	mg/l	0.00411	0.00564	41.0	10-121	31.4	40	WG555187
2,4-Dinitrotoluene	mg/l	0.00793	0.00841	79.0	59-117	5.81	20	WG555187
2,6-Dinitrotoluene	mg/l	0.00784	0.00751	78.0	57-110	4.33	20	WG555187
2-Chloronaphthalene	mg/l	0.00714	0.00708	71.0	47-106	0.782	20	WG555187
2-Chlorophenol	mg/l	0.00536	0.00678	54.0	37-90	23.5*	21	WG555187
2-Methylphenol	mg/l	0.00506	0.00569	50.0	35-84	11.9	20	WG555187
2-Nitrophenol	mg/l	0.00641	0.00660	64.0	40-112	2.98	22	WG555187
3&4-methyl phenol	mg/l	0.00541	0.00573	54.0	33-94	5.68	20	WG555187
3,3-Dichlorobenzidine	mg/l	0.00626	0.00637	63.0	58-116	1.68	20	WG555187
4,6-Dinitro-2-methylphenol	mg/l	0.00582	0.00756	58.0	21-119	26.0	40	WG555187
4-Bromophenyl-phenylether	mg/l	0.00779	0.00741	78.0	63-120	5.06	20	WG555187
4-Chloro-3-methylphenol	mg/l	0.00728	0.00652	73.0	50-105	11.0	20	WG555187
4-Chlorophenyl-phenylether	mg/l	0.00729	0.00703	73.0	58-115	3.64	20	WG555187
4-Nitrophenol	mg/l	0.00251	0.00273	25.0	10-53	8.26	40	WG555187

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Duplicate Limit	RPD	Limit	Batch
Acenaphthene	mg/l	0.00768	0.00728	77.0	52-107	5.34	20	WG555187
Acenaphthylene	mg/l	0.00797	0.00773	80.0	55-119	3.09	20	WG555187
Anthracene	mg/l	0.00811	0.00822	81.0	65-114	1.34	20	WG555187
Benzidine	mg/l	0.00202	0.00191	20.0	10-55	5.66	40	WG555187
Benzo(a)anthracene	mg/l	0.00848	0.00867	85.0	68-113	2.24	20	WG555187
Benzo(a)pyrene	mg/l	0.00840	0.00784	84.0	68-115	6.91	20	WG555187
Benzo(b)fluoranthene	mg/l	0.00833	0.00766	83.0	67-114	8.41	20	WG555187
Benzo(g,h,i)perylene	mg/l	0.00936	0.00885	94.0	52-132	5.57	20	WG555187
Benzo(k)fluoranthene	mg/l	0.00860	0.00845	86.0	62-116	1.74	20	WG555187
Benzylbutyl phthalate	mg/l	0.00749	0.00778	75.0	12-166	3.81	20	WG555187
Bis(2-chlorethoxy)methane	mg/l	0.00756	0.00673	76.0	56-116	11.7	20	WG555187
Bis(2-chloroethyl)ether	mg/l	0.00704	0.00656	70.0	39-109	7.12	23	WG555187
Bis(2-chloroisopropyl)ether	mg/l	0.00692	0.00658	69.0	43-108	5.04	20	WG555187
Bis(2-ethylhexyl)phthalate	mg/l	0.00928	0.00935	93.0	61-147	0.783	20	WG555187
Chrysene	mg/l	0.00863	0.00819	86.0	65-114	5.15	20	WG555187
Di-n-butyl phthalate	mg/l	0.00810	0.00807	81.0	56-133	0.412	20	WG555187
Di-n-octyl phthalate	mg/l	0.00929	0.00923	93.0	59-143	0.678	20	WG555187
Dibenz(a,h)anthracene	mg/l	0.00864	0.00825	86.0	54-130	4.59	20	WG555187
Dibenzofuran	mg/l	0.00708	0.00716	71.0	53-109	1.14	20	WG555187
Diethyl phthalate	mg/l	0.00725	0.00748	72.0	33-136	3.11	20	WG555187
Dimethyl phthalate	mg/l	0.00516	0.00567	52.0	10-152	9.40	22	WG555187
Fluoranthene	mg/l	0.00856	0.00851	86.0	66-120	0.503	20	WG555187
Fluorene	mg/l	0.00734	0.00704	73.0	58-110	4.19	20	WG555187
Hexachloro-1,3-butadiene	mg/l	0.00725	0.00706	72.0	34-115	2.55	22	WG555187
Hexachlorobenzene	mg/l	0.00696	0.00680	70.0	55-117	2.25	20	WG555187
Hexachlorocyclopentadiene	mg/l	0.00932	0.00940	93.0	20-121	0.827	27	WG555187
Hexachloroethane	mg/l	0.00648	0.00665	65.0	24-93	2.57	25	WG555187
Indeno(1,2,3-cd)pyrene	mg/l	0.00870	0.00832	87.0	56-129	4.55	20	WG555187
Isophorone	mg/l	0.00638	0.00587	64.0	55-108	8.27	20	WG555187
n-Nitrosodi-n-propylamine	mg/l	0.00768	0.00753	77.0	50-115	1.93	20	WG555187
n-Nitrosodimethylamine	mg/l	0.00441	0.00449	44.0	12-68	1.69	31	WG555187
n-Nitrosodiphenylamine	mg/l	0.00749	0.00747	75.0	55-98	0.247	20	WG555187
Naphthalene	mg/l	0.00672	0.00641	67.0	42-103	4.78	20	WG555187
Nitrobenzene	mg/l	0.00729	0.00663	73.0	39-102	9.59	20	WG555187
Pentachlorophenol	mg/l	0.00382	0.00581	38.0	10-101	41.3*	40	WG555187
Phenanthrene	mg/l	0.00806	0.00777	80.0	61-110	3.67	20	WG555187
Phenol	mg/l	0.00249	0.00266	25.0	10-53	6.62	20	WG555187
Pyrene	mg/l	0.00824	0.00825	82.0	65-116	0.0787	20	WG555187
Pyridine	mg/l	0.00313	0.00319	31.0	11-52	2.02	36	WG555187
2,4,6-Tribromophenol				68.05	16-147			WG555187
2-Fluorobiphenyl				71.08	29-127			WG555187
2-Fluorophenol				34.21	10-75			WG555187
Nitrobenzene-d5				63.72	17-119			WG555187
Phenol-d5				26.47	10-63			WG555187
p-Terphenyl-d14				75.37	40-174			WG555187
Ferrous Iron	mg/l	0.957	1.00	96.0	85-115	4.39	20	WG555165
1,2,4-Trichlorobenzene	mg/l	0.00573	0.00596	57.0	34-97	3.94	21	WG555542
2,4,6-Trichlorophenol	mg/l	0.00546	0.00583	54.0	38-113	6.66	29	WG555542
2,4-Dichlorophenol	mg/l	0.00569	0.00665	57.0	46-105	15.6	20	WG555542
2,4-Dimethylphenol	mg/l	0.00563	0.00574	56.0	47-108	1.86	20	WG555542
2,4-Dinitrophenol	mg/l	0.00361	0.00397	36.0	10-121	9.42	40	WG555542
2,4-Dinitrotoluene	mg/l	0.00801	0.00787	80.0	59-117	1.81	20	WG555542
2,6-Dinitrotoluene	mg/l	0.00742	0.00800	74.0	57-110	7.55	20	WG555542
2-Chloronaphthalene	mg/l	0.00758	0.00700	76.0	47-106	7.90	20	WG555542
2-Chlorophenol	mg/l	0.00483	0.00521	48.0	37-90	7.57	21	WG555542

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
2-Nitrophenol	mg/l	0.00623	0.00670	62.0	40-112	7.23	22	WG555542
3,3-Dichlorobenzidine	mg/l	0.00773	0.00798	77.0	58-116	3.17	20	WG555542
4,6-Dinitro-2-methylphenol	mg/l	0.00445	0.00514	44.0	21-119	14.5	40	WG555542
4-Bromophenyl-phenylether	mg/l	0.00794	0.00744	79.0	63-120	6.50	20	WG555542
4-Chloro-3-methylphenol	mg/l	0.00543	0.00627	54.0	50-105	14.4	20	WG555542
4-Chlorophenyl-phenylether	mg/l	0.00679	0.00696	68.0	58-115	2.45	20	WG555542
4-Nitrophenol	mg/l	0.00102	0.00121	10.0	10-53	17.1	40	WG555542
Acenaphthene	mg/l	0.00748	0.00747	75.0	52-107	0.138	20	WG555542
Acenaphthylene	mg/l	0.00762	0.00758	76.0	55-119	0.546	20	WG555542
Anthracene	mg/l	0.00791	0.00750	79.0	65-114	5.26	20	WG555542
Benzidine	mg/l	0.00401	0.00361	40.0	10-55	10.3	40	WG555542
Benzo(a)anthracene	mg/l	0.00807	0.00811	81.0	68-113	0.455	20	WG555542
Benzo(a)pyrene	mg/l	0.00847	0.00812	85.0	68-115	4.28	20	WG555542
Benzo(b)fluoranthene	mg/l	0.00804	0.00785	80.0	67-114	2.36	20	WG555542
Benzo(g,h,i)perylene	mg/l	0.00822	0.00773	82.0	52-132	6.14	20	WG555542
Benzo(k)fluoranthene	mg/l	0.00870	0.00832	87.0	62-116	4.45	20	WG555542
Benzylbutyl phthalate	mg/l	0.00745	0.00664	74.0	12-166	11.6	20	WG555542
Bis(2-chlorethoxy)methane	mg/l	0.00782	0.00772	78.0	56-116	1.33	20	WG555542
Bis(2-chloroethyl)ether	mg/l	0.00647	0.00678	65.0	39-109	4.75	23	WG555542
Bis(2-chloroisopropyl)ether	mg/l	0.00760	0.00692	76.0	43-108	9.35	20	WG555542
Bis(2-ethylhexyl)phthalate	mg/l	0.00830	0.00824	83.0	61-147	0.705	20	WG555542
Chrysene	mg/l	0.00841	0.00807	84.0	65-114	4.11	20	WG555542
Di-n-butyl phthalate	mg/l	0.00794	0.00729	79.0	56-133	8.56	20	WG555542
Di-n-octyl phthalate	mg/l	0.00841	0.00826	84.0	59-143	1.74	20	WG555542
Dibenz(a,h)anthracene	mg/l	0.00829	0.00771	83.0	54-130	7.30	20	WG555542
Diethyl phthalate	mg/l	0.00763	0.00695	76.0	33-136	9.27	20	WG555542
Dimethyl phthalate	mg/l	0.00675	0.00575	68.0	10-152	16.1	22	WG555542
Fluoranthene	mg/l	0.00786	0.00727	79.0	66-120	7.80	20	WG555542
Fluorene	mg/l	0.00747	0.00737	75.0	58-110	1.34	20	WG555542
Hexachloro-1,3-butadiene	mg/l	0.00563	0.00541	56.0	34-115	3.99	22	WG555542
Hexachlorobenzene	mg/l	0.00709	0.00659	71.0	55-117	7.31	20	WG555542
Hexachlorocyclopentadiene	mg/l	0.00635	0.00642	64.0	20-121	1.14	27	WG555542
Hexachloroethane	mg/l	0.00540	0.00546	54.0	24-93	1.06	25	WG555542
Indeno(1,2,3-cd)pyrene	mg/l	0.00834	0.00794	83.0	56-129	4.97	20	WG555542
Isophorone	mg/l	0.00631	0.00644	63.0	55-108	1.94	20	WG555542
n-Nitrosodi-n-propylamine	mg/l	0.00867	0.00775	87.0	50-115	11.2	20	WG555542
n-Nitrosodimethylamine	mg/l	0.00376	0.00376	38.0	12-68	0.0415	31	WG555542
n-Nitrosodiphenylamine	mg/l	0.00810	0.00762	81.0	55-98	6.14	20	WG555542
Naphthalene	mg/l	0.00645	0.00678	64.0	42-103	4.98	20	WG555542
Nitrobenzene	mg/l	0.00746	0.00758	74.0	39-102	1.72	20	WG555542
Pentachlorophenol	mg/l	0.00323	0.00365	32.0	10-101	12.3	40	WG555542
Phenanthrene	mg/l	0.00785	0.00770	78.0	61-110	1.96	20	WG555542
Phenol	mg/l	0.00223	0.00224	22.0	10-53	0.0413	20	WG555542
Pyrene	mg/l	0.00777	0.00779	78.0	65-116	0.231	20	WG555542
2,4,6-Tribromophenol				60.10	16-147			WG555542
2-Fluorobiphenyl				70.64	29-127			WG555542
2-Fluorophenol				27.79	10-75			WG555542
Nitrobenzene-d5				73.94	17-119			WG555542
Phenol-d5				20.44	10-63			WG555542
p-Terphenyl-d14				79.14	40-174			WG555542

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Nitrate	mg/l	11.0	6.10	5	98.0	80-120	L535062-02	WG554558
TPH (GC/FID) Low Fraction	mg/l	5.54	0.400	5.5	93.4	55-109	L534636-02	WG554541
a,a,a-Trifluorotoluene(FID)					110.5	62-128		WG554541

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Est. 1970

AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0261	0	.025	104.	51-134	L535404-04	WG554548
Ethylbenzene	mg/l	0.0239	0	.025	95.8	64-135	L535404-04	WG554548
Toluene	mg/l	0.0241	0	.025	96.4	61-126	L535404-04	WG554548
Total Xylenes	mg/l	0.0713	0	.075	95.0	64-133	L535404-04	WG554548
4-Bromofluorobenzene					96.74	82-120		WG554548
Dibromofluoromethane					113.9	82-126		WG554548
Toluene-d8					103.6	92-112		WG554548
a,a,a-Trifluorotoluene					97.29	90-116		WG554548
TPH (GC/FID) Low Fraction	mg/l	5.85	0.140	5.5	104.	55-109	L535398-01	WG554738
a,a,a-Trifluorotoluene(FID)					110.8	62-128		WG554738
TPH (GC/FID) Low Fraction	mg/l	5.67	0	5.5	103.	55-109	L535576-03	WG554885
a,a,a-Trifluorotoluene(FID)					103.4	62-128		WG554885
Benzene	mg/l	0.320	0.110	.025	84.1	51-134	L535457-02	WG554911
Ethylbenzene	mg/l	0.424	0.240	.025	73.5	64-135	L535457-02	WG554911
Toluene	mg/l	0.436	0.250	.025	74.4	61-126	L535457-02	WG554911
Total Xylenes	mg/l	1.59	1.20	.075	52.6*	64-133	L535457-02	WG554911
4-Bromofluorobenzene					114.9	82-120		WG554911
Dibromofluoromethane					103.9	82-126		WG554911
Toluene-d8					104.4	92-112		WG554911
a,a,a-Trifluorotoluene					111.2	90-116		WG554911
1,1,1,2-Tetrachloroethane	mg/l	0.0235	0	.025	94.1	71-130	L535641-17	WG554909
1,1,1-Trichloroethane	mg/l	0.0297	0	.025	119.	58-137	L535641-17	WG554909
1,1,2,2-Tetrachloroethane	mg/l	0.0210	0	.025	84.1	64-149	L535641-17	WG554909
1,1,2-Trichloroethane	mg/l	0.0221	0	.025	88.4	73-128	L535641-17	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0329	0	.025	132.	36-159	L535641-17	WG554909
1,1-Dichloroethane	mg/l	0.0251	0	.025	100.	58-133	L535641-17	WG554909
1,1-Dichloroethene	mg/l	0.0344	0	.025	138.	32-152	L535641-17	WG554909
1,1-Dichloropropene	mg/l	0.0256	0	.025	102.	50-140	L535641-17	WG554909
1,2,3-Trichlorobenzene	mg/l	0.0195	0	.025	77.9	68-135	L535641-17	WG554909
1,2,3-Trichloropropane	mg/l	0.0218	0	.025	87.3	74-137	L535641-17	WG554909
1,2,3-Trimethylbenzene	mg/l	0.0202	0	.025	80.7	67-133	L535641-17	WG554909
1,2,4-Trichlorobenzene	mg/l	0.0203	0	.025	81.1	67-133	L535641-17	WG554909
1,2,4-Trimethylbenzene	mg/l	0.0220	0	.025	88.2	62-141	L535641-17	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	0.0158	0	.025	63.1	55-148	L535641-17	WG554909
1,2-Dibromoethane	mg/l	0.0216	0	.025	86.3	71-129	L535641-17	WG554909
1,2-Dichlorobenzene	mg/l	0.0203	0	.025	81.0	75-125	L535641-17	WG554909
1,2-Dichloroethane	mg/l	0.0222	0	.025	88.7	59-135	L535641-17	WG554909
1,2-Dichloropropane	mg/l	0.0222	0	.025	88.9	68-126	L535641-17	WG554909
1,3,5-Trimethylbenzene	mg/l	0.0234	0	.025	93.5	67-136	L535641-17	WG554909
1,3-Dichlorobenzene	mg/l	0.0220	0	.025	88.0	69-131	L535641-17	WG554909
1,3-Dichloropropane	mg/l	0.0213	0	.025	85.0	70-122	L535641-17	WG554909
1,4-Dichlorobenzene	mg/l	0.0213	0	.025	85.4	70-123	L535641-17	WG554909
2,2-Dichloropropane	mg/l	0.0265	0	.025	106.	51-141	L535641-17	WG554909
2-Butanone (MEK)	mg/l	0.0749	0	.125	59.9	51-149	L535641-17	WG554909
2-Chloroethyl vinyl ether	mg/l	0.0127	0	.125	10.2	10-161	L535641-17	WG554909
2-Chlorotoluene	mg/l	0.0225	0	.025	90.2	65-133	L535641-17	WG554909
4-Chlorotoluene	mg/l	0.0224	0	.025	89.4	67-129	L535641-17	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	0.104	0	.125	83.1	53-154	L535641-17	WG554909
Acetone	mg/l	0.0579	0	.125	46.3	34-146	L535641-17	WG554909
Acrylonitrile	mg/l	0.0795	0	.125	63.6	49-162	L535641-17	WG554909
Benzene	mg/l	0.0233	0	.025	93.2	51-134	L535641-17	WG554909

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Bromobenzene	mg/l	0.0212	0	.025	84.9	64-130	L535641-17	WG554909
Bromodichloromethane	mg/l	0.0234	0	.025	93.7	67-132	L535641-17	WG554909
Bromoform	mg/l	0.0182	0	.025	72.9	59-137	L535641-17	WG554909
Bromomethane	mg/l	0.0309	0	.025	124.	23-177	L535641-17	WG554909
Carbon tetrachloride	mg/l	0.0286	0	.025	114.	49-140	L535641-17	WG554909
Chlorobenzene	mg/l	0.0225	0	.025	90.0	69-126	L535641-17	WG554909
Chlorodibromomethane	mg/l	0.0231	0	.025	92.4	68-130	L535641-17	WG554909
Chloroethane	mg/l	0.0298	0	.025	119.	32-177	L535641-17	WG554909
Chloroform	mg/l	0.0249	0	.025	99.4	64-130	L535641-17	WG554909
Chloromethane	mg/l	0.0199	0	.025	79.5	27-155	L535641-17	WG554909
cis-1,2-Dichloroethene	mg/l	0.0292	0.00610	.025	92.5	54-137	L535641-17	WG554909
cis-1,3-Dichloropropene	mg/l	0.0223	0	.025	89.3	63-127	L535641-17	WG554909
Di-isopropyl ether	mg/l	0.0214	0	.025	85.7	58-133	L535641-17	WG554909
Dibromomethane	mg/l	0.0217	0	.025	87.0	68-131	L535641-17	WG554909
Dichlorodifluoromethane	mg/l	0.0277	0	.025	111.	16-188	L535641-17	WG554909
Ethylbenzene	mg/l	0.0239	0	.025	95.8	64-135	L535641-17	WG554909
Hexachloro-1,3-butadiene	mg/l	0.0214	0	.025	85.6	64-140	L535641-17	WG554909
Isopropylbenzene	mg/l	0.0268	0	.025	107.	62-134	L535641-17	WG554909
Methyl tert-butyl ether	mg/l	0.0219	0	.025	87.8	55-136	L535641-17	WG554909
Methylene Chloride	mg/l	0.0245	0	.025	98.1	52-130	L535641-17	WG554909
n-Butylbenzene	mg/l	0.0234	0	.025	93.7	62-142	L535641-17	WG554909
n-Propylbenzene	mg/l	0.0244	0	.025	97.6	62-137	L535641-17	WG554909
Naphthalene	mg/l	0.0182	0	.025	72.9	65-140	L535641-17	WG554909
p-Isopropyltoluene	mg/l	0.0242	0	.025	96.9	64-142	L535641-17	WG554909
sec-Butylbenzene	mg/l	0.0251	0	.025	100.	67-139	L535641-17	WG554909
Styrene	mg/l	0.0157	0	.025	62.8	58-152	L535641-17	WG554909
tert-Butylbenzene	mg/l	0.0248	0	.025	99.3	66-139	L535641-17	WG554909
Tetrachloroethene	mg/l	0.0282	0.00330	.025	99.5	56-139	L535641-17	WG554909
Toluene	mg/l	0.0244	0	.025	97.5	61-126	L535641-17	WG554909
trans-1,2-Dichloroethene	mg/l	0.0251	0.000420	.025	98.7	45-137	L535641-17	WG554909
trans-1,3-Dichloropropene	mg/l	0.0205	0	.025	81.8	59-130	L535641-17	WG554909
Trichloroethene	mg/l	0.0339	0.0110	.025	91.5	40-155	L535641-17	WG554909
Trichlorofluoromethane	mg/l	0.0306	0	.025	122.	35-177	L535641-17	WG554909
Vinyl chloride	mg/l	0.0233	0.000410	.025	91.5	32-159	L535641-17	WG554909
Xylenes, Total	mg/l	0.0686	0	.075	91.5	64-133	L535641-17	WG554909
4-Bromofluorobenzene					98.38	82-120		WG554909
Dibromofluoromethane					99.31	82-126		WG554909
Toluene-d8					103.1	92-112		WG554909
Sulfate	mg/l	68.7	19.0	50	99.4	80-120	L535415-03	WG555298
Acrolein	mg/l	0.0204	0	.125	16.3	10-189	L535847-01	WG555253
4-Bromofluorobenzene					103.4	82-120		WG555253
Dibromofluoromethane					99.35	82-126		WG555253
Toluene-d8					104.3	92-112		WG555253
Ferrous Iron	mg/l	1.88	0.460	1.5	94.7	80-120	L536199-04	WG555165

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Nitrate	mg/l	10.9	11.0	96.0	80-120	0.913	20	L535062-02	WG554558
TPH (GC/FID) Low Fraction	mg/l	6.04	5.54	103.	55-109	8.74	20	L534636-02	WG554541
a,a,a-Trifluorotoluene(FID)				110.9	62-128				WG554541

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0255	0.0261	102.	51-134	2.02	20	L535404-04	WG554548
Ethylbenzene	mg/l	0.0240	0.0239	95.9	64-135	0.130	20	L535404-04	WG554548
Toluene	mg/l	0.0249	0.0241	99.6	61-126	3.20	20	L535404-04	WG554548
Total Xylenes	mg/l	0.0711	0.0713	94.8	64-133	0.310	20	L535404-04	WG554548
4-Bromofluorobenzene				91.99	82-120				WG554548
Dibromofluoromethane				108.7	82-126				WG554548
Toluene-d8				106.7	92-112				WG554548
a,a,a-Trifluorotoluene				98.04	90-116				WG554548
TPH (GC/FID) Low Fraction	mg/l	5.64	5.85	99.9	55-109	3.75	20	L535398-01	WG554738
a,a,a-Trifluorotoluene(FID)				109.2	62-128				WG554738
TPH (GC/FID) Low Fraction	mg/l	5.64	5.67	103.	55-109	0.460	20	L535576-03	WG554885
a,a,a-Trifluorotoluene(FID)				102.6	62-128				WG554885
Benzene	mg/l	0.319	0.320	83.5	51-134	0.470	20	L535457-02	WG554911
Ethylbenzene	mg/l	0.424	0.424	73.8	64-135	0.190	20	L535457-02	WG554911
Toluene	mg/l	0.445	0.436	77.9	61-126	1.96	20	L535457-02	WG554911
Total Xylenes	mg/l	1.61	1.59	54.2*	64-133	0.710	20	L535457-02	WG554911
4-Bromofluorobenzene				112.5	82-120				WG554911
Dibromofluoromethane				103.1	82-126				WG554911
Toluene-d8				104.4	92-112				WG554911
a,a,a-Trifluorotoluene				110.4	90-116				WG554911
1,1,1,2-Tetrachloroethane	mg/l	0.0245	0.0235	97.9	71-130	4.04	20	L535641-17	WG554909
1,1,1-Trichloroethane	mg/l	0.0313	0.0297	125.	58-137	5.08	20	L535641-17	WG554909
1,1,2,2-Tetrachloroethane	mg/l	0.0229	0.0210	91.7	64-149	8.63	20	L535641-17	WG554909
1,1,2-Trichloroethane	mg/l	0.0233	0.0221	93.3	73-128	5.41	20	L535641-17	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0355	0.0329	142.	36-159	7.57	21	L535641-17	WG554909
1,1-Dichloroethane	mg/l	0.0267	0.0251	107.	58-133	5.96	20	L535641-17	WG554909
1,1-Dichloroethene	mg/l	0.0363	0.0344	145.	32-152	5.40	20	L535641-17	WG554909
1,1-Dichloropropene	mg/l	0.0272	0.0256	109.	50-140	6.33	20	L535641-17	WG554909
1,2,3-Trichlorobenzene	mg/l	0.0214	0.0195	85.4	68-135	9.21	20	L535641-17	WG554909
1,2,3-Trichloropropane	mg/l	0.0241	0.0218	96.2	74-137	9.71	20	L535641-17	WG554909
1,2,3-Trimethylbenzene	mg/l	0.0214	0.0202	85.6	67-133	5.86	20	L535641-17	WG554909
1,2,4-Trichlorobenzene	mg/l	0.0219	0.0203	87.8	67-133	7.90	20	L535641-17	WG554909
1,2,4-Trimethylbenzene	mg/l	0.0228	0.0220	91.2	62-141	3.34	20	L535641-17	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	0.0185	0.0158	74.2	55-148	16.2	22	L535641-17	WG554909
1,2-Dibromoethane	mg/l	0.0226	0.0216	90.6	71-129	4.79	20	L535641-17	WG554909
1,2-Dichlorobenzene	mg/l	0.0217	0.0203	86.8	75-125	6.85	20	L535641-17	WG554909
1,2-Dichloroethane	mg/l	0.0240	0.0222	95.9	59-135	7.81	20	L535641-17	WG554909
1,2-Dichloropropane	mg/l	0.0235	0.0222	94.0	68-126	5.48	20	L535641-17	WG554909
1,3,5-Trimethylbenzene	mg/l	0.0244	0.0234	97.4	67-136	4.15	20	L535641-17	WG554909
1,3-Dichlorobenzene	mg/l	0.0230	0.0220	91.9	69-131	4.30	20	L535641-17	WG554909
1,3-Dichloropropane	mg/l	0.0224	0.0213	89.6	70-122	5.29	20	L535641-17	WG554909
1,4-Dichlorobenzene	mg/l	0.0225	0.0213	89.8	70-123	5.06	20	L535641-17	WG554909
2,2-Dichloropropane	mg/l	0.0299	0.0265	120.	51-141	11.9	20	L535641-17	WG554909
2-Butanone (MEK)	mg/l	0.0951	0.0749	76.1	51-149	23.8*	22	L535641-17	WG554909
2-Chloroethyl vinyl ether	mg/l	0.00146	0.0127	1.17*	10-161	159.*	40	L535641-17	WG554909
2-Chlorotoluene	mg/l	0.0236	0.0225	94.6	65-133	4.76	20	L535641-17	WG554909
4-Chlorotoluene	mg/l	0.0232	0.0224	92.7	67-129	3.57	20	L535641-17	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	0.119	0.104	95.4	53-154	13.8	21	L535641-17	WG554909
Acetone	mg/l	0.0703	0.0579	56.2	34-146	19.4	22	L535641-17	WG554909
Acrylonitrile	mg/l	0.0982	0.0795	78.6	49-162	21.1*	20	L535641-17	WG554909
Benzene	mg/l	0.0245	0.0233	98.1	51-134	5.20	20	L535641-17	WG554909

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Bromobenzene	mg/l	0.0220	0.0212	88.0	64-130	3.64	20	L535641-17	WG554909
Bromodichloromethane	mg/l	0.0247	0.0234	98.7	67-132	5.18	20	L535641-17	WG554909
Bromoform	mg/l	0.0197	0.0182	78.8	59-137	7.78	20	L535641-17	WG554909
Bromomethane	mg/l	0.0319	0.0309	128.	23-177	3.06	21	L535641-17	WG554909
Carbon tetrachloride	mg/l	0.0305	0.0286	122.	49-140	6.33	20	L535641-17	WG554909
Chlorobenzene	mg/l	0.0233	0.0225	93.1	69-126	3.37	20	L535641-17	WG554909
Chlorodibromomethane	mg/l	0.0242	0.0231	96.7	68-130	4.56	20	L535641-17	WG554909
Chloroethane	mg/l	0.0314	0.0298	125.	32-177	5.20	21	L535641-17	WG554909
Chloroform	mg/l	0.0264	0.0249	105.	64-130	5.89	20	L535641-17	WG554909
Chloromethane	mg/l	0.0208	0.0199	83.2	27-155	4.53	20	L535641-17	WG554909
cis-1,2-Dichloroethene	mg/l	0.0305	0.0292	97.6	54-137	4.29	20	L535641-17	WG554909
cis-1,3-Dichloropropene	mg/l	0.0229	0.0223	91.5	63-127	2.46	20	L535641-17	WG554909
Di-isopropyl ether	mg/l	0.0229	0.0214	91.4	58-133	6.53	20	L535641-17	WG554909
Dibromomethane	mg/l	0.0239	0.0217	95.6	68-131	9.51	20	L535641-17	WG554909
Dichlorodifluoromethane	mg/l	0.0296	0.0277	118.	16-188	6.94	22	L535641-17	WG554909
Ethylbenzene	mg/l	0.0245	0.0239	97.9	64-135	2.19	20	L535641-17	WG554909
Hexachloro-1,3-butadiene	mg/l	0.0229	0.0214	91.5	64-140	6.63	20	L535641-17	WG554909
Isopropylbenzene	mg/l	0.0280	0.0268	112.	62-134	4.22	20	L535641-17	WG554909
Methyl tert-butyl ether	mg/l	0.0244	0.0219	97.7	55-136	10.7	20	L535641-17	WG554909
Methylene Chloride	mg/l	0.0262	0.0245	105.	52-130	6.40	20	L535641-17	WG554909
n-Butylbenzene	mg/l	0.0252	0.0234	101.	62-142	7.13	20	L535641-17	WG554909
n-Propylbenzene	mg/l	0.0256	0.0244	102.	62-137	4.86	20	L535641-17	WG554909
Naphthalene	mg/l	0.0210	0.0182	84.0	65-140	14.1	20	L535641-17	WG554909
p-Isopropyltoluene	mg/l	0.0254	0.0242	101.	64-142	4.51	20	L535641-17	WG554909
sec-Butylbenzene	mg/l	0.0260	0.0251	104.	67-139	3.63	20	L535641-17	WG554909
Styrene	mg/l	0.0157	0.0157	62.9	58-152	0.160	20	L535641-17	WG554909
tert-Butylbenzene	mg/l	0.0257	0.0248	103.	66-139	3.40	20	L535641-17	WG554909
Tetrachloroethene	mg/l	0.0291	0.0282	103.	56-139	3.32	20	L535641-17	WG554909
Toluene	mg/l	0.0252	0.0244	101.	61-126	3.43	20	L535641-17	WG554909
trans-1,2-Dichloroethene	mg/l	0.0262	0.0251	103.	45-137	4.44	20	L535641-17	WG554909
trans-1,3-Dichloropropene	mg/l	0.0211	0.0205	84.4	59-130	3.07	20	L535641-17	WG554909
Trichloroethene	mg/l	0.0361	0.0339	100.	40-155	6.27	20	L535641-17	WG554909
Trichlorofluoromethane	mg/l	0.0330	0.0306	132.	35-177	7.50	23	L535641-17	WG554909
Vinyl chloride	mg/l	0.0244	0.0233	96.0	32-159	4.77	21	L535641-17	WG554909
Xylenes, Total	mg/l	0.0713	0.0686	95.1	64-133	3.84	20	L535641-17	WG554909
4-Bromofluorobenzene				97.99	82-120				WG554909
Dibromofluoromethane				101.8	82-126				WG554909
Toluene-d8				102.9	92-112				WG554909
Sulfate	mg/l	67.3	68.7	96.6	80-120	2.06	20	L535415-03	WG555298
Acrolein	mg/l	0.0223	0.0204	17.8	10-189	8.80	30	L535847-01	WG555253
4-Bromofluorobenzene				104.4	82-120				WG555253
Dibromofluoromethane				102.9	82-126				WG555253
Toluene-d8				102.6	92-112				WG555253
Ferrous Iron	mg/l	1.92	1.88	97.3	80-120	2.11	20	L536199-04	WG555165

Batch number /Run number / Sample number cross reference

WG554558: R1853333: L535398-07
WG554541: R1853932: L535398-02 03 04 05 07
WG554548: R1855772: L535398-01 02 03 04 05 07
WG554738: R1856312: L535398-01 06
WG554885: R1856492: L535398-08

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

WG554911: R1856715: L535398-06
WG554909: R1857732: L535398-08
WG554605: R1858592: L535398-01 02
WG554921: R1858593: L535398-03 04 05 07 08
WG555298: R1860032: L535398-07
WG555253: R1860293: L535398-08
WG555187: R1860474: L535398-02 04 05 08
WG555370: R1861012: L535398-06
WG555165: R1861275: L535398-07
WG555542: R1862793: L535398-03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Fort Collins, CO 80525

Quality Assurance Report
Level II

L535398

September 19, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

EPAPAV0045840

AECOM, Inc.
1601 Prospect Pkwy.
Fort Collins, CO 80525

Alternate billing information:

Report to: Dustin Krajewski
Email to: dustin.krajewski@aecom.com

Project Description: EnCana Pavillion
City/Sate Collected: WY

Phone: 970-493-8878
FAX:

Client Project #: 60196941
ESC Key: ENSRFCCO-ENCANAPA

Collected by: Dawn Fairchild
Site/Facility ID#: Pavillion
P.O.#:

Collected by (signature): Dawn Fairchild
Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No X Yes
FAX? X No __Yes

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

E150

CoCode ENSRFCCO (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BTEX (8260)	TPH	DRO C10-32	SVOC	Ferrous Iron	Nitrate and Sulfate		Remarks/Contaminant	Sample # (lab only)
SB-5-11 (TP-18-4)	Grab	GW	—	09.09.11	1440	8	X	X	X					sheen	L535398-01
SB-3-11 (TP-14-12)			—	09.09.11	0900	8	X	X	X	X					-02
SB-1-11 (TP-14-12)			—	09.09.11	0805	8	X	X	X	X					-03
SB-5-11 (TP-22-12)			—	09.09.11	0933	8	X	X	X	X					-04
SB-2-11 (TP-31-3)			—	09.09.11	1105	8	X	X	X	X					-05
WT ~~SB~~-1-11 (TP-42-11)			—	09.09.11	1255	8	X	X	X					sheen	-06
MW-6 (TP-42-11)			—	09.09.11	1218	10	X	X	X		X	X			-07
~~1~~			~~—~~	~~09.09.11~~		~~8~~	~~X~~	~~X~~							
~~Dup~~						~~8~~									~~-08~~

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

8734 3433 0306
8734 3433 0328

pH _____ Temp _____
Flow _____ Other _____

Remarks: Ice @ coolers

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐	Condition: (lab use only)
Dawn Fairchild	09.09.11	1700			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0 3.4°C / Bottles Received: 52+3TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9-10-11 / Time: 1130	pH Checked: / NCF: ✓

EPAPAV0045841

AECOM, Inc.
1601 Prospect Pkwy.
Fort Collins, CO 80525

Alternate billing information:

Report to: Dustin Krajewski
Email to: dustin.krajewski@AECOM.com

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
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Phone (800) 767-5859
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Project Description:	EnCana Pavillion	City/Sate Collected	WY
Phone: 970-493-8878 FAX:	Client Project #:	ESC Key:	ENSRFCCO-ENCANAPA
Collected by: D. Fairchild	Site/Facility ID#:	P.O.#:	

Collected by (signature): D. Fairchild
Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? X No __ Yes
FAX? __ No X Yes

CoCode: ENSRFCCO (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	GRO/BTEX (8260)	TPH	DRO C10-32	SVOC			Remarks/Contaminant	Sample # (lab only)
Dup (TP-31-3)	Grab	GW	—	09.09.11	—	8	X	X	X	X			1535398 -08	

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: Count=52+3TB

Flow _____ Other _____

Relinquished by: (Signature) D. Fairchild	Date: 09.09.11	Time: 1700	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐		Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature) 31°C	Temp:	Bottles Received:	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9-10-11	Time: 1130	pH Checked: NCF: X

EPAPAV0045842

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Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Report Summary

Monday September 26, 2011

Report Number: L533934
Samples Received: 09/01/11
Client Project:

Description: EnCana Pavillion

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Leslie Newton

Leslie Newton , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915, PA - 68-02979

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-05

Site ID :

Project # :

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Sample ID : SB1-11TP-22-12 10-12

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 13:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	GRO	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	41.	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%)						
o-Terphenyl	78.3		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 09/13/11 12:46 Revised: 09/26/11 09:44

EPAPAV0045844

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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-06

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Site ID :

Sample ID : SB1-11TP-22-12 7-8

Project # :

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 15:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0050	mg/kg	8260B	09/02/11	5
Toluene	BDL	0.025	mg/kg	8260B	09/02/11	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/02/11	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/02/11	5
Surrogate Recovery						
Toluene-d8	95.7		% Rec.	8260B	09/02/11	5
Dibromofluoromethane	114.		% Rec.	8260B	09/02/11	5
a,a,a-Trifluorotoluene	88.0		% Rec.	8260B	09/02/11	5
4-Bromofluorobenzene	90.1		% Rec.	8260B	09/02/11	5
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	09/03/11	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	09/03/11	10
Anthracene	BDL	0.33	mg/kg	8270C	09/03/11	10
Benzidine	BDL	3.3	mg/kg	8270C	09/03/11	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	09/03/11	10
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	09/03/11	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	09/03/11	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	09/03/11	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	09/03/11	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	09/03/11	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	09/03/11	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	09/03/11	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	09/03/11	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	09/03/11	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	09/03/11	10
Chrysene	BDL	0.33	mg/kg	8270C	09/03/11	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	09/03/11	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	09/03/11	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	09/03/11	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	09/03/11	10
Fluoranthene	BDL	0.33	mg/kg	8270C	09/03/11	10
Fluorene	BDL	0.33	mg/kg	8270C	09/03/11	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	09/03/11	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	09/03/11	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	09/03/11	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	09/03/11	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	09/03/11	10
Isophorone	BDL	3.3	mg/kg	8270C	09/03/11	10
Naphthalene	BDL	0.33	mg/kg	8270C	09/03/11	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	09/03/11	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	09/03/11	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	09/03/11	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	09/03/11	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-06

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Site ID :

Sample ID : SB1-11TP-22-12 7-8

Project # :

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 15:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenanthrene	BDL	0.33	mg/kg	8270C	09/03/11	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	09/03/11	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	09/03/11	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	09/03/11	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	09/03/11	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	09/03/11	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	09/03/11	10
Pyrene	0.41	0.33	mg/kg	8270C	09/03/11	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	09/03/11	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	09/03/11	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	09/03/11	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	09/03/11	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
2-Nitrophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
Phenol	BDL	3.3	mg/kg	8270C	09/03/11	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	09/03/11	10
Surrogate Recovery						
2-Fluorophenol	80.0		% Rec.	8270C	09/03/11	10
Phenol-d5	88.7		% Rec.	8270C	09/03/11	10
Nitrobenzene-d5	70.4		% Rec.	8270C	09/03/11	10
2-Fluorobiphenyl	73.6		% Rec.	8270C	09/03/11	10
2,4,6-Tribromophenol	90.8		% Rec.	8270C	09/03/11	10
p-Terphenyl-d14	120.		% Rec.	8270C	09/03/11	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Est. 1970

REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-07

Site ID :

Project # :

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Sample ID : SB4-11TP-22-12 10-12

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.5		% Rec.	GRO	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%)						
o-Terphenyl	78.9		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-08

Site ID :

Project # :

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Sample ID : SB2-11TP-22-12 11-12

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 14:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.9		% Rec.	GRO	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%)						
o-Terphenyl	81.9		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Mr. Dustin Krajewski
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1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-09

Site ID :

Project # :

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Sample ID : SB3-11TP-22-12 12-13

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 14:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	GRO	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015	09/07/11	1
Surrogate recovery(%)						
o-Terphenyl	79.1		% Rec.	8015	09/07/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Mr. Dustin Krajewski
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September 26, 2011

ESC Sample # : L533934-10

Site ID :

Project # :

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Sample ID : SB5-11TP-22-12 10-12

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	GRO	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%)						
o-Terphenyl	75.9		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

September 26, 2011

ESC Sample # : L533934-18

Site ID :

Project # :

Date Received : September 01, 2011
Description : EnCana Pavillion W7

Sample ID : TRIP BLANK

Collected By : Jeremy Hurshman
Collection Date : 08/29/11 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0010	mg/l	8260B	09/01/11	1
Toluene	BDL	0.0050	mg/l	8260B	09/01/11	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/01/11	1
Total Xylenes	BDL	0.0030	mg/l	8260B	09/01/11	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	09/01/11	1
Dibromofluoromethane	97.3		% Rec.	8260B	09/01/11	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	09/01/11	1
4-Bromofluorobenzene	97.9		% Rec.	8260B	09/01/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L533934-01	WG553588	SAMP	Isophorone	R1845992	J4
L533934-02	WG553588	SAMP	Isophorone	R1845992	J4
L533934-03	WG553588	SAMP	Isophorone	R1845992	J4
	WG553588	SAMP	2-Fluorophenol	R1845992	J7
	WG553588	SAMP	Phenol-d5	R1845992	J7
	WG553588	SAMP	Nitrobenzene-d5	R1845992	J7
	WG554163	SAMP	Toluene-d8	R1849954	J1
	WG554163	SAMP	4-Bromofluorobenzene	R1849954	J1
L533934-04	WG553588	SAMP	Isophorone	R1845992	J4
	WG553908	SAMP	4-Bromofluorobenzene	R1848792	J1
L533934-15	WG553588	SAMP	Isophorone	R1845992	J4
L533934-24	WG553587	SAMP	TPH (GC/FID) High Fraction	R1844814	J5
L533934-25	WG553588	SAMP	Isophorone	R1845992	J4
	WG553588	SAMP	Nitrobenzene-d5	R1845992	J1
L533934-26	WG553588	SAMP	Isophorone	R1845992	J4
	WG553588	SAMP	2-Fluorophenol	R1845992	J7
	WG553588	SAMP	Phenol-d5	R1845992	J7
	WG553588	SAMP	Nitrobenzene-d5	R1845992	J7
	WG553588	SAMP	2-Fluorobiphenyl	R1845992	J7
	WG553588	SAMP	2,4,6-Tribromophenol	R1845992	J7
	WG553588	SAMP	p-Terphenyl-d14	R1845992	J7
	WG553867	SAMP	o-Terphenyl	R1847632	J7
L533934-27	WG553867	SAMP	o-Terphenyl	R1847632	J7

EPAPAV0045852

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L533934

September 26, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .001	mg/l			WG553360	09/01/11 22:59
Ethylbenzene	< .001	mg/l			WG553360	09/01/11 22:59
Toluene	< .005	mg/l			WG553360	09/01/11 22:59
Total Xylenes	< .003	mg/l			WG553360	09/01/11 22:59
4-Bromofluorobenzene		% Rec.	97.13	75-128	WG553360	09/01/11 22:59
Dibromofluoromethane		% Rec.	95.26	79-125	WG553360	09/01/11 22:59
Toluene-d8		% Rec.	101.9	87-114	WG553360	09/01/11 22:59
a,a,a-Trifluorotoluene		% Rec.	104.8	84-114	WG553360	09/01/11 22:59
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG553414	09/02/11 06:33
a,a,a-Trifluorotoluene(FID)		% Rec.	99.53	59-128	WG553414	09/02/11 06:33
Benzene	< .001	mg/kg			WG553359	09/02/11 16:43
Ethylbenzene	< .001	mg/kg			WG553359	09/02/11 16:43
Toluene	< .005	mg/kg			WG553359	09/02/11 16:43
Total Xylenes	< .003	mg/kg			WG553359	09/02/11 16:43
4-Bromofluorobenzene		% Rec.	113.2	59-140	WG553359	09/02/11 16:43
Dibromofluoromethane		% Rec.	106.3	63-139	WG553359	09/02/11 16:43
Toluene-d8		% Rec.	103.9	84-116	WG553359	09/02/11 16:43
a,a,a-Trifluorotoluene		% Rec.	105.5	80-118	WG553359	09/02/11 16:43
TPH (GC/FID) High Fraction	< 4	ppm			WG553399	09/03/11 10:40
o-Terphenyl		% Rec.	91.44	50-150	WG553399	09/03/11 10:40
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG553474	09/02/11 16:54
a,a,a-Trifluorotoluene(FID)		% Rec.	97.36	59-128	WG553474	09/02/11 16:54
TPH (GC/FID) High Fraction	< 4	ppm			WG553587	09/05/11 11:48
o-Terphenyl		% Rec.	95.48	50-150	WG553587	09/05/11 11:48
1,2,4-Trichlorobenzene	< .333	mg/kg			WG553395	09/03/11 09:34
2,4,6-Trichlorophenol	< .333	mg/kg			WG553395	09/03/11 09:34
2,4-Dichlorophenol	< .333	mg/kg			WG553395	09/03/11 09:34
2,4-Dimethylphenol	< .333	mg/kg			WG553395	09/03/11 09:34
2,4-Dinitrophenol	< .333	mg/kg			WG553395	09/03/11 09:34
2,4-Dinitrotoluene	< .333	mg/kg			WG553395	09/03/11 09:34
2,6-Dinitrotoluene	< .333	mg/kg			WG553395	09/03/11 09:34
2-Chloronaphthalene	< .033	mg/kg			WG553395	09/03/11 09:34
2-Chlorophenol	< .333	mg/kg			WG553395	09/03/11 09:34
2-Nitrophenol	< .333	mg/kg			WG553395	09/03/11 09:34
3,3-Dichlorobenzidine	< .333	mg/kg			WG553395	09/03/11 09:34
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG553395	09/03/11 09:34
4-Bromophenyl-phenylether	< .333	mg/kg			WG553395	09/03/11 09:34
4-Chloro-3-methylphenol	< .333	mg/kg			WG553395	09/03/11 09:34
4-Chlorophenyl-phenylether	< .333	mg/kg			WG553395	09/03/11 09:34
4-Nitrophenol	< .333	mg/kg			WG553395	09/03/11 09:34
Acenaphthene	< .033	mg/kg			WG553395	09/03/11 09:34
Acenaphthylene	< .033	mg/kg			WG553395	09/03/11 09:34
Anthracene	< .033	mg/kg			WG553395	09/03/11 09:34
Benzidine	< .333	mg/kg			WG553395	09/03/11 09:34
Benzo(a)anthracene	< .033	mg/kg			WG553395	09/03/11 09:34
Benzo(a)pyrene	< .033	mg/kg			WG553395	09/03/11 09:34
Benzo(b)fluoranthene	< .033	mg/kg			WG553395	09/03/11 09:34

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L533934

September 26, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzo(g,h,i)perylene	< .033	mg/kg			WG553395	09/03/11 09:34
Benzo(k)fluoranthene	< .033	mg/kg			WG553395	09/03/11 09:34
Benzylbutyl phthalate	< .333	mg/kg			WG553395	09/03/11 09:34
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG553395	09/03/11 09:34
Bis(2-chloroethyl)ether	< .333	mg/kg			WG553395	09/03/11 09:34
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG553395	09/03/11 09:34
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG553395	09/03/11 09:34
Chrysene	< .033	mg/kg			WG553395	09/03/11 09:34
Di-n-butyl phthalate	< .333	mg/kg			WG553395	09/03/11 09:34
Di-n-octyl phthalate	< .333	mg/kg			WG553395	09/03/11 09:34
Dibenz(a,h)anthracene	< .033	mg/kg			WG553395	09/03/11 09:34
Diethyl phthalate	< .333	mg/kg			WG553395	09/03/11 09:34
Dimethyl phthalate	< .333	mg/kg			WG553395	09/03/11 09:34
Fluoranthene	< .033	mg/kg			WG553395	09/03/11 09:34
Fluorene	< .033	mg/kg			WG553395	09/03/11 09:34
Hexachloro-1,3-butadiene	< .333	mg/kg			WG553395	09/03/11 09:34
Hexachlorobenzene	< .333	mg/kg			WG553395	09/03/11 09:34
Hexachlorocyclopentadiene	< .333	mg/kg			WG553395	09/03/11 09:34
Hexachloroethane	< .333	mg/kg			WG553395	09/03/11 09:34
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG553395	09/03/11 09:34
Isophorone	< .333	mg/kg			WG553395	09/03/11 09:34
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG553395	09/03/11 09:34
n-Nitrosodimethylamine	< .333	mg/kg			WG553395	09/03/11 09:34
n-Nitrosodiphenylamine	< .333	mg/kg			WG553395	09/03/11 09:34
Naphthalene	< .033	mg/kg			WG553395	09/03/11 09:34
Nitrobenzene	< .333	mg/kg			WG553395	09/03/11 09:34
Pentachlorophenol	< .333	mg/kg			WG553395	09/03/11 09:34
Phenanthrene	< .033	mg/kg			WG553395	09/03/11 09:34
Phenol	< .333	mg/kg			WG553395	09/03/11 09:34
Pyrene	< .033	mg/kg			WG553395	09/03/11 09:34
2,4,6-Tribromophenol		mg/kg	78.97	16-136	WG553395	09/03/11 09:34
2-Fluorobiphenyl		mg/kg	80.09	37-119	WG553395	09/03/11 09:34
2-Fluorophenol		mg/kg	80.32	22-114	WG553395	09/03/11 09:34
Nitrobenzene-d5		mg/kg	68.88	20-114	WG553395	09/03/11 09:34
Phenol-d5		mg/kg	93.22	26-127	WG553395	09/03/11 09:34
p-Terphenyl-d14		mg/kg	80.99	15-174	WG553395	09/03/11 09:34
1,2,4-Trichlorobenzene	< .333	mg/kg			WG553588	09/04/11 09:08
2,4,6-Trichlorophenol	< .333	mg/kg			WG553588	09/04/11 09:08
2,4-Dichlorophenol	< .333	mg/kg			WG553588	09/04/11 09:08
2,4-Dimethylphenol	< .333	mg/kg			WG553588	09/04/11 09:08
2,4-Dinitrophenol	< .333	mg/kg			WG553588	09/04/11 09:08
2,4-Dinitrotoluene	< .333	mg/kg			WG553588	09/04/11 09:08
2,6-Dinitrotoluene	< .333	mg/kg			WG553588	09/04/11 09:08
2-Chloronaphthalene	< .033	mg/kg			WG553588	09/04/11 09:08
2-Chlorophenol	< .333	mg/kg			WG553588	09/04/11 09:08
2-Nitrophenol	< .333	mg/kg			WG553588	09/04/11 09:08
3,3-Dichlorobenzidine	< .333	mg/kg			WG553588	09/04/11 09:08
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG553588	09/04/11 09:08
4-Bromophenyl-phenylether	< .333	mg/kg			WG553588	09/04/11 09:08
4-Chloro-3-methylphenol	< .333	mg/kg			WG553588	09/04/11 09:08
4-Chlorophenyl-phenylether	< .333	mg/kg			WG553588	09/04/11 09:08
4-Nitrophenol	< .333	mg/kg			WG553588	09/04/11 09:08
Acenaphthene	< .033	mg/kg			WG553588	09/04/11 09:08
Acenaphthylene	< .033	mg/kg			WG553588	09/04/11 09:08
Anthracene	< .033	mg/kg			WG553588	09/04/11 09:08
Benzidine	< .333	mg/kg			WG553588	09/04/11 09:08
Benzo(a)anthracene	< .033	mg/kg			WG553588	09/04/11 09:08

* Performance of this Analyte is outside of established criteria.
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Est. 1970

AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L533934

September 26, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzo(a)pyrene	< .033	mg/kg			WG553588	09/04/11 09:08
Benzo(b)fluoranthene	< .033	mg/kg			WG553588	09/04/11 09:08
Benzo(g,h,i)perylene	< .033	mg/kg			WG553588	09/04/11 09:08
Benzo(k)fluoranthene	< .033	mg/kg			WG553588	09/04/11 09:08
Benzylbutyl phthalate	< .333	mg/kg			WG553588	09/04/11 09:08
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG553588	09/04/11 09:08
Bis(2-chloroethyl)ether	< .333	mg/kg			WG553588	09/04/11 09:08
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG553588	09/04/11 09:08
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG553588	09/04/11 09:08
Chrysene	< .033	mg/kg			WG553588	09/04/11 09:08
Di-n-butyl phthalate	< .333	mg/kg			WG553588	09/04/11 09:08
Di-n-octyl phthalate	< .333	mg/kg			WG553588	09/04/11 09:08
Dibenz(a,h)anthracene	< .033	mg/kg			WG553588	09/04/11 09:08
Diethyl phthalate	< .333	mg/kg			WG553588	09/04/11 09:08
Dimethyl phthalate	< .333	mg/kg			WG553588	09/04/11 09:08
Fluoranthene	< .033	mg/kg			WG553588	09/04/11 09:08
Fluorene	< .033	mg/kg			WG553588	09/04/11 09:08
Hexachloro-1,3-butadiene	< .333	mg/kg			WG553588	09/04/11 09:08
Hexachlorobenzene	< .333	mg/kg			WG553588	09/04/11 09:08
Hexachlorocyclopentadiene	< .333	mg/kg			WG553588	09/04/11 09:08
Hexachloroethane	< .333	mg/kg			WG553588	09/04/11 09:08
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG553588	09/04/11 09:08
Isophorone	< .333	mg/kg			WG553588	09/04/11 09:08
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG553588	09/04/11 09:08
n-Nitrosodimethylamine	< .333	mg/kg			WG553588	09/04/11 09:08
n-Nitrosodiphenylamine	< .333	mg/kg			WG553588	09/04/11 09:08
Naphthalene	< .033	mg/kg			WG553588	09/04/11 09:08
Nitrobenzene	< .333	mg/kg			WG553588	09/04/11 09:08
Pentachlorophenol	< .333	mg/kg			WG553588	09/04/11 09:08
Phenanthrene	< .033	mg/kg			WG553588	09/04/11 09:08
Phenol	< .333	mg/kg			WG553588	09/04/11 09:08
Pyrene	< .033	mg/kg			WG553588	09/04/11 09:08
2,4,6-Tribromophenol		mg/kg	87.56	16-136	WG553588	09/04/11 09:08
2-Fluorobiphenyl		mg/kg	82.64	37-119	WG553588	09/04/11 09:08
2-Fluorophenol		mg/kg	70.27	22-114	WG553588	09/04/11 09:08
Nitrobenzene-d5		mg/kg	61.30	20-114	WG553588	09/04/11 09:08
Phenol-d5		mg/kg	82.28	26-127	WG553588	09/04/11 09:08
p-Terphenyl-d14		mg/kg	81.48	15-174	WG553588	09/04/11 09:08
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG553535	09/04/11 02:56
a,a,a-Trifluorotoluene(FID)		% Rec.	93.80	59-128	WG553535	09/04/11 02:56
Benzene	< .001	mg/kg			WG553769	09/06/11 12:14
Ethylbenzene	< .001	mg/kg			WG553769	09/06/11 12:14
Toluene	< .005	mg/kg			WG553769	09/06/11 12:14
Total Xylenes	< .003	mg/kg			WG553769	09/06/11 12:14
4-Bromofluorobenzene		% Rec.	101.0	59-140	WG553769	09/06/11 12:14
Dibromofluoromethane		% Rec.	100.7	63-139	WG553769	09/06/11 12:14
Toluene-d8		% Rec.	104.2	84-116	WG553769	09/06/11 12:14
a,a,a-Trifluorotoluene		% Rec.	106.0	80-118	WG553769	09/06/11 12:14
TPH (GC/FID) High Fraction	< 4	ppm			WG553867	09/07/11 10:47
o-Terphenyl		% Rec.	79.97	50-150	WG553867	09/07/11 10:47
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG553784	09/06/11 20:33

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Laboratory Blank						
a,a,a-Trifluorotoluene(FID)		% Rec.	100.9	59-128		09/06/11 20:33
Benzene	< .001	mg/kg			WG553908	09/07/11 06:18
Ethylbenzene	< .001	mg/kg			WG553908	09/07/11 06:18
Toluene	< .005	mg/kg			WG553908	09/07/11 06:18
Total Xylenes	< .003	mg/kg			WG553908	09/07/11 06:18
4-Bromofluorobenzene		% Rec.	101.4	59-140	WG553908	09/07/11 06:18
Dibromofluoromethane		% Rec.	111.1	63-139	WG553908	09/07/11 06:18
Toluene-d8		% Rec.	100.8	84-116	WG553908	09/07/11 06:18
a,a,a-Trifluorotoluene		% Rec.	115.2	80-118	WG553908	09/07/11 06:18
Benzene	< .001	mg/kg			WG554163	09/08/11 11:54
Ethylbenzene	< .001	mg/kg			WG554163	09/08/11 11:54
Toluene	< .005	mg/kg			WG554163	09/08/11 11:54
Total Xylenes	< .003	mg/kg			WG554163	09/08/11 11:54
4-Bromofluorobenzene		% Rec.	95.70	59-140	WG554163	09/08/11 11:54
Dibromofluoromethane		% Rec.	104.4	63-139	WG554163	09/08/11 11:54
Toluene-d8		% Rec.	101.6	84-116	WG554163	09/08/11 11:54
a,a,a-Trifluorotoluene		% Rec.	112.0	80-118	WG554163	09/08/11 11:54

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.025	0.0225	89.9	67-126	WG553360
Ethylbenzene	mg/l	.025	0.0250	100.	76-129	WG553360
Toluene	mg/l	.025	0.0218	87.0	72-122	WG553360
Total Xylenes	mg/l	.075	0.0734	97.9	75-128	WG553360
4-Bromofluorobenzene				99.89	75-128	WG553360
Dibromofluoromethane				93.94	79-125	WG553360
Toluene-d8				98.78	87-114	WG553360
a,a,a-Trifluorotoluene				105.6	84-114	WG553360
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.82	106.	67-135	WG553414
a,a,a-Trifluorotoluene(FID)				112.3	59-128	WG553414
Benzene	mg/kg	.025	0.0250	99.9	65-128	WG553359
Ethylbenzene	mg/kg	.025	0.0255	102.	74-128	WG553359
Toluene	mg/kg	.025	0.0235	93.9	70-120	WG553359
Total Xylenes	mg/kg	.075	0.0755	101.	74-127	WG553359
4-Bromofluorobenzene				106.9	59-140	WG553359
Dibromofluoromethane				105.8	63-139	WG553359
Toluene-d8				103.8	84-116	WG553359
a,a,a-Trifluorotoluene				105.2	80-118	WG553359
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.74	122.	67-135	WG553474
a,a,a-Trifluorotoluene(FID)				101.0	59-128	WG553474
1,2,4-Trichlorobenzene	mg/kg	.333	0.213	64.0	48-87	WG553395
2,4,6-Trichlorophenol	mg/kg	.333	0.234	70.4	50-98	WG553395
2,4-Dichlorophenol	mg/kg	.333	0.241	72.3	56-96	WG553395
2,4-Dimethylphenol	mg/kg	.333	0.254	76.3	52-101	WG553395
2,4-Dinitrophenol	mg/kg	.333	0.221	66.4	10-109	WG553395
2,4-Dinitrotoluene	mg/kg	.333	0.218	65.5	54-103	WG553395
2,6-Dinitrotoluene	mg/kg	.333	0.226	67.8	53-99	WG553395
2-Chloronaphthalene	mg/kg	.333	0.222	66.7	55-96	WG553395

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EPAPAV0045857

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2-Chlorophenol	mg/kg	.333	0.229	68.7	52-88	WG553395
2-Nitrophenol	mg/kg	.333	0.245	73.5	55-106	WG553395
3,3-Dichlorobenzidine	mg/kg	.333	0.183	54.8	36-84	WG553395
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.216	64.7	24-98	WG553395
4-Bromophenyl-phenylether	mg/kg	.333	0.221	66.4	58-111	WG553395
4-Chloro-3-methylphenol	mg/kg	.333	0.250	75.1	58-98	WG553395
4-Chlorophenyl-phenylether	mg/kg	.333	0.220	66.1	59-103	WG553395
4-Nitrophenol	mg/kg	.333	0.215	64.5	34-101	WG553395
Acenaphthene	mg/kg	.333	0.222	66.7	55-96	WG553395
Acenaphthylene	mg/kg	.333	0.239	71.7	61-107	WG553395
Anthracene	mg/kg	.333	0.235	70.6	58-105	WG553395
Benzidine	mg/kg	.333	0.0486	14.6	10-21	WG553395
Benzo(a)anthracene	mg/kg	.333	0.232	69.6	56-103	WG553395
Benzo(a)pyrene	mg/kg	.333	0.236	71.0	57-103	WG553395
Benzo(b)fluoranthene	mg/kg	.333	0.243	72.9	52-106	WG553395
Benzo(g,h,i)perylene	mg/kg	.333	0.259	77.7	47-112	WG553395
Benzo(k)fluoranthene	mg/kg	.333	0.242	72.6	53-104	WG553395
Benzylbutyl phthalate	mg/kg	.333	0.253	75.9	61-118	WG553395
Bis(2-chlorethoxy)methane	mg/kg	.333	0.239	71.7	58-104	WG553395
Bis(2-chloroethyl)ether	mg/kg	.333	0.234	70.1	51-103	WG553395
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.241	72.5	56-95	WG553395
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.249	74.9	56-120	WG553395
Chrysene	mg/kg	.333	0.222	66.5	55-102	WG553395
Di-n-butyl phthalate	mg/kg	.333	0.230	69.2	59-114	WG553395
Di-n-octyl phthalate	mg/kg	.333	0.252	75.8	51-119	WG553395
Dibenz(a,h)anthracene	mg/kg	.333	0.255	76.5	49-111	WG553395
Diethyl phthalate	mg/kg	.333	0.225	67.7	61-105	WG553395
Dimethyl phthalate	mg/kg	.333	0.221	66.2	60-106	WG553395
Fluoranthene	mg/kg	.333	0.229	68.9	59-108	WG553395
Fluorene	mg/kg	.333	0.217	65.1	59-100	WG553395
Hexachloro-1,3-butadiene	mg/kg	.333	0.237	71.1	53-106	WG553395
Hexachlorobenzene	mg/kg	.333	0.218	65.3	50-108	WG553395
Hexachlorocyclopentadiene	mg/kg	.333	0.164	49.3	36-117	WG553395
Hexachloroethane	mg/kg	.333	0.230	69.2	45-83	WG553395
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.252	75.8	50-110	WG553395
Isophorone	mg/kg	.333	0.208	62.5	51-99	WG553395
n-Nitrosodi-n-propylamine	mg/kg	.333	0.250	75.0	52-103	WG553395
n-Nitrosodimethylamine	mg/kg	.333	0.221	66.4	31-107	WG553395
n-Nitrosodiphenylamine	mg/kg	.333	0.241	72.3	57-121	WG553395
Naphthalene	mg/kg	.333	0.234	70.4	55-91	WG553395
Nitrobenzene	mg/kg	.333	0.246	73.8	47-92	WG553395
Pentachlorophenol	mg/kg	.333	0.203	61.0	10-89	WG553395
Phenanthrene	mg/kg	.333	0.235	70.5	55-103	WG553395
Phenol	mg/kg	.333	0.239	71.8	49-99	WG553395
Pyrene	mg/kg	.333	0.231	69.3	54-104	WG553395
2,4,6-Tribromophenol				82.23	16-136	WG553395
2-Fluorobiphenyl				82.72	37-119	WG553395
2-Fluorophenol				88.63	22-114	WG553395
Nitrobenzene-d5				85.92	20-114	WG553395
Phenol-d5				97.86	26-127	WG553395
p-Terphenyl-d14				83.58	15-174	WG553395
1,2,4-Trichlorobenzene	mg/kg	.333	0.195	58.7	48-87	WG553588
2,4,6-Trichlorophenol	mg/kg	.333	0.229	68.9	50-98	WG553588
2,4-Dichlorophenol	mg/kg	.333	0.226	67.8	56-96	WG553588
2,4-Dimethylphenol	mg/kg	.333	0.224	67.2	52-101	WG553588
2,4-Dinitrophenol	mg/kg	.333	0.205	61.7	10-109	WG553588
2,4-Dinitrotoluene	mg/kg	.333	0.230	69.0	54-103	WG553588

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2,6-Dinitrotoluene	mg/kg	.333	0.223	66.9	53-99	WG553588
2-Chloronaphthalene	mg/kg	.333	0.202	60.5	55-96	WG553588
2-Chlorophenol	mg/kg	.333	0.203	60.9	52-88	WG553588
2-Nitrophenol	mg/kg	.333	0.212	63.6	55-106	WG553588
3,3-Dichlorobenzidine	mg/kg	.333	0.207	62.3	36-84	WG553588
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.234	70.2	24-98	WG553588
4-Bromophenyl-phenylether	mg/kg	.333	0.232	69.6	58-111	WG553588
4-Chloro-3-methylphenol	mg/kg	.333	0.215	64.6	58-98	WG553588
4-Chlorophenyl-phenylether	mg/kg	.333	0.217	65.1	59-103	WG553588
4-Nitrophenol	mg/kg	.333	0.173	52.0	34-101	WG553588
Acenaphthene	mg/kg	.333	0.225	67.6	55-96	WG553588
Acenaphthylene	mg/kg	.333	0.232	69.6	61-107	WG553588
Anthracene	mg/kg	.333	0.217	65.2	58-105	WG553588
Benzidine	mg/kg	.333	0.0373	11.2	10-21	WG553588
Benzo(a)anthracene	mg/kg	.333	0.233	69.8	56-103	WG553588
Benzo(a)pyrene	mg/kg	.333	0.226	68.0	57-103	WG553588
Benzo(b)fluoranthene	mg/kg	.333	0.221	66.4	52-106	WG553588
Benzo(g,h,i)perylene	mg/kg	.333	0.233	70.0	47-112	WG553588
Benzo(k)fluoranthene	mg/kg	.333	0.230	69.2	53-104	WG553588
Benzylbutyl phthalate	mg/kg	.333	0.217	65.1	61-118	WG553588
Bis(2-chlorethoxy)methane	mg/kg	.333	0.203	60.8	58-104	WG553588
Bis(2-chloroethyl)ether	mg/kg	.333	0.194	58.4	51-103	WG553588
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.213	63.9	56-95	WG553588
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.220	66.1	56-120	WG553588
Chrysene	mg/kg	.333	0.235	70.6	55-102	WG553588
Di-n-butyl phthalate	mg/kg	.333	0.228	68.4	59-114	WG553588
Di-n-octyl phthalate	mg/kg	.333	0.221	66.4	51-119	WG553588
Dibenz(a,h)anthracene	mg/kg	.333	0.222	66.6	49-111	WG553588
Diethyl phthalate	mg/kg	.333	0.224	67.3	61-105	WG553588
Dimethyl phthalate	mg/kg	.333	0.231	69.5	60-106	WG553588
Fluoranthene	mg/kg	.333	0.241	72.5	59-108	WG553588
Fluorene	mg/kg	.333	0.214	64.3	59-100	WG553588
Hexachloro-1,3-butadiene	mg/kg	.333	0.232	69.6	53-106	WG553588
Hexachlorobenzene	mg/kg	.333	0.221	66.3	50-108	WG553588
Hexachlorocyclopentadiene	mg/kg	.333	0.153	45.8	36-117	WG553588
Hexachloroethane	mg/kg	.333	0.204	61.2	45-83	WG553588
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.225	67.7	50-110	WG553588
Isophorone	mg/kg	.333	0.159	47.8*	51-99	WG553588
n-Nitrosodi-n-propylamine	mg/kg	.333	0.203	60.9	52-103	WG553588
n-Nitrosodimethylamine	mg/kg	.333	0.189	56.8	31-107	WG553588
n-Nitrosodiphenylamine	mg/kg	.333	0.206	61.8	57-121	WG553588
Naphthalene	mg/kg	.333	0.204	61.3	55-91	WG553588
Nitrobenzene	mg/kg	.333	0.210	63.1	47-92	WG553588
Pentachlorophenol	mg/kg	.333	0.210	63.0	10-89	WG553588
Phenanthrene	mg/kg	.333	0.218	65.4	55-103	WG553588
Phenol	mg/kg	.333	0.189	56.9	49-99	WG553588
Pyrene	mg/kg	.333	0.212	63.7	54-104	WG553588
2,4,6-Tribromophenol				93.19	16-136	WG553588
2-Fluorobiphenyl				80.22	37-119	WG553588
2-Fluorophenol				71.63	22-114	WG553588
Nitrobenzene-d5				71.55	20-114	WG553588
Phenol-d5				83.74	26-127	WG553588
p-Terphenyl-d14				79.52	15-174	WG553588
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.65	103.	67-135	WG553535
a,a,a-Trifluorotoluene(FID)				99.15	59-128	WG553535

* Performance of this Analyte is outside of established criteria.
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Tax I.D. 62-0814289

Est. 1970

AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzene	mg/kg	.025	0.0208	83.1	65-128	WG553769
Ethylbenzene	mg/kg	.025	0.0219	87.7	74-128	WG553769
Toluene	mg/kg	.025	0.0206	82.3	70-120	WG553769
Total Xylenes	mg/kg	.075	0.0655	87.3	74-127	WG553769
4-Bromofluorobenzene				100.1	59-140	WG553769
Dibromofluoromethane				101.7	63-139	WG553769
Toluene-d8				105.0	84-116	WG553769
a,a,a-Trifluorotoluene				106.6	80-118	WG553769
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.69	103.	67-135	WG553784
a,a,a-Trifluorotoluene(FID)				106.7	59-128	WG553784
Benzene	mg/kg	.025	0.0257	103.	65-128	WG553908
Ethylbenzene	mg/kg	.025	0.0283	113.	74-128	WG553908
Toluene	mg/kg	.025	0.0269	107.	70-120	WG553908
Total Xylenes	mg/kg	.075	0.0851	113.	74-127	WG553908
4-Bromofluorobenzene				102.4	59-140	WG553908
Dibromofluoromethane				104.8	63-139	WG553908
Toluene-d8				104.0	84-116	WG553908
a,a,a-Trifluorotoluene				110.8	80-118	WG553908
Benzene	mg/kg	.025	0.0216	86.3	65-128	WG554163
Ethylbenzene	mg/kg	.025	0.0230	92.2	74-128	WG554163
Toluene	mg/kg	.025	0.0217	86.7	70-120	WG554163
Total Xylenes	mg/kg	.075	0.0697	93.0	74-127	WG554163
4-Bromofluorobenzene				100.3	59-140	WG554163
Dibromofluoromethane				107.3	63-139	WG554163
Toluene-d8				101.8	84-116	WG554163
a,a,a-Trifluorotoluene				108.2	80-118	WG554163

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/l	0.0219	0.0225	88.0	67-126	2.63	20	WG553360
Ethylbenzene	mg/l	0.0235	0.0250	94.0	76-129	6.18	20	WG553360
Toluene	mg/l	0.0215	0.0218	86.0	72-122	1.13	20	WG553360
Total Xylenes	mg/l	0.0718	0.0734	96.0	75-128	2.28	20	WG553360
4-Bromofluorobenzene				100.5	75-128			WG553360
Dibromofluoromethane				95.60	79-125			WG553360
Toluene-d8				102.2	87-114			WG553360
a,a,a-Trifluorotoluene				107.0	84-114			WG553360
TPH (GC/FID) Low Fraction	mg/kg	5.43	5.82	99.0	67-135	6.85	20	WG553414
a,a,a-Trifluorotoluene(FID)				110.0	59-128			WG553414
Benzene	mg/kg	0.0263	0.0250	105.	65-128	4.98	20	WG553359
Ethylbenzene	mg/kg	0.0268	0.0255	107.	74-128	5.18	20	WG553359
Toluene	mg/kg	0.0249	0.0235	99.0	70-120	5.71	20	WG553359
Total Xylenes	mg/kg	0.0794	0.0755	106.	74-127	5.14	20	WG553359
4-Bromofluorobenzene				107.8	59-140			WG553359
Dibromofluoromethane				106.2	63-139			WG553359
Toluene-d8				103.8	84-116			WG553359
a,a,a-Trifluorotoluene				105.9	80-118			WG553359

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Duplicate Limit	RPD	Limit	Batch
TPH (GC/FID) Low Fraction	mg/kg	6.91	6.74	126.	67-135	2.58	20	WG553474
a,a,a-Trifluorotoluene(FID)				99.28	59-128			WG553474
1,2,4-Trichlorobenzene	mg/kg	0.191	0.213	57.0	48-87	10.8	20	WG553395
2,4,6-Trichlorophenol	mg/kg	0.220	0.234	66.0	50-98	6.25	20	WG553395
2,4-Dichlorophenol	mg/kg	0.224	0.241	67.0	56-96	7.15	20	WG553395
2,4-Dimethylphenol	mg/kg	0.226	0.254	68.0	52-101	11.9	20	WG553395
2,4-Dinitrophenol	mg/kg	0.220	0.221	66.0	10-109	0.427	39	WG553395
2,4-Dinitrotoluene	mg/kg	0.225	0.218	67.0	54-103	2.97	20	WG553395
2,6-Dinitrotoluene	mg/kg	0.219	0.226	66.0	53-99	2.94	20	WG553395
2-Chloronaphthalene	mg/kg	0.209	0.222	63.0	55-96	6.24	20	WG553395
2-Chlorophenol	mg/kg	0.214	0.229	64.0	52-88	6.61	20	WG553395
2-Nitrophenol	mg/kg	0.218	0.245	65.0	55-106	11.6	20	WG553395
3,3-Dichlorobenzidine	mg/kg	0.183	0.183	55.0	36-84	0.197	20	WG553395
4,6-Dinitro-2-methylphenol	mg/kg	0.223	0.216	67.0	24-98	3.50	32	WG553395
4-Bromophenyl-phenylether	mg/kg	0.232	0.221	70.0	58-111	4.93	20	WG553395
4-Chloro-3-methylphenol	mg/kg	0.236	0.250	71.0	58-98	5.81	20	WG553395
4-Chlorophenyl-phenylether	mg/kg	0.213	0.220	64.0	59-103	3.16	20	WG553395
4-Nitrophenol	mg/kg	0.217	0.215	65.0	34-101	1.26	26	WG553395
Acenaphthene	mg/kg	0.218	0.222	65.0	55-96	1.83	20	WG553395
Acenaphthylene	mg/kg	0.227	0.239	68.0	61-107	5.18	20	WG553395
Anthracene	mg/kg	0.219	0.235	66.0	58-105	7.09	20	WG553395
Benzidine	mg/kg	0.0493	0.0486	15.0	10-21	1.54	40	WG553395
Benzo(a)anthracene	mg/kg	0.222	0.232	67.0	56-103	4.15	20	WG553395
Benzo(a)pyrene	mg/kg	0.224	0.236	67.0	57-103	5.23	20	WG553395
Benzo(b)fluoranthene	mg/kg	0.215	0.243	65.0	52-106	12.0	20	WG553395
Benzo(g,h,i)perylene	mg/kg	0.230	0.259	69.0	47-112	11.8	20	WG553395
Benzo(k)fluoranthene	mg/kg	0.219	0.242	66.0	53-104	10.0	20	WG553395
Benzylbutyl phthalate	mg/kg	0.238	0.253	72.0	61-118	5.90	20	WG553395
Bis(2-chlorethoxy)methane	mg/kg	0.220	0.239	66.0	58-104	8.31	20	WG553395
Bis(2-chloroethyl)ether	mg/kg	0.225	0.234	67.0	51-103	3.92	20	WG553395
Bis(2-chloroisopropyl)ether	mg/kg	0.223	0.241	67.0	56-95	8.03	20	WG553395
Bis(2-ethylhexyl)phthalate	mg/kg	0.243	0.249	73.0	56-120	2.75	20	WG553395
Chrysene	mg/kg	0.218	0.222	66.0	55-102	1.52	20	WG553395
Di-n-butyl phthalate	mg/kg	0.235	0.230	70.0	59-114	1.88	20	WG553395
Di-n-octyl phthalate	mg/kg	0.244	0.252	73.0	51-119	3.20	22	WG553395
Dibenz(a,h)anthracene	mg/kg	0.238	0.255	72.0	49-111	6.73	20	WG553395
Diethyl phthalate	mg/kg	0.223	0.225	67.0	61-105	1.23	20	WG553395
Dimethyl phthalate	mg/kg	0.219	0.221	66.0	60-106	0.702	20	WG553395
Fluoranthene	mg/kg	0.227	0.229	68.0	59-108	0.926	20	WG553395
Fluorene	mg/kg	0.222	0.217	67.0	59-100	2.35	20	WG553395
Hexachloro-1,3-butadiene	mg/kg	0.211	0.237	63.0	53-106	11.7	20	WG553395
Hexachlorobenzene	mg/kg	0.211	0.218	63.0	50-108	3.11	20	WG553395
Hexachlorocyclopentadiene	mg/kg	0.168	0.164	50.0	36-117	2.54	20	WG553395
Hexachloroethane	mg/kg	0.206	0.230	62.0	45-83	11.3	20	WG553395
Indeno(1,2,3-cd)pyrene	mg/kg	0.233	0.252	70.0	50-110	7.86	20	WG553395
Isophorone	mg/kg	0.178	0.208	53.0	51-99	15.5	20	WG553395
n-Nitrosodi-n-propylamine	mg/kg	0.224	0.250	67.0	52-103	10.8	20	WG553395
n-Nitrosodimethylamine	mg/kg	0.197	0.221	59.0	31-107	11.7	23	WG553395
n-Nitrosodiphenylamine	mg/kg	0.235	0.241	70.0	57-121	2.52	20	WG553395
Naphthalene	mg/kg	0.212	0.234	64.0	55-91	9.94	20	WG553395
Nitrobenzene	mg/kg	0.214	0.246	64.0	47-92	13.9	20	WG553395
Pentachlorophenol	mg/kg	0.190	0.203	57.0	10-89	6.88	28	WG553395
Phenanthrene	mg/kg	0.221	0.235	66.0	55-103	5.89	20	WG553395
Phenol	mg/kg	0.224	0.239	67.0	49-99	6.45	20	WG553395
Pyrene	mg/kg	0.217	0.231	65.0	54-104	6.21	20	WG553395
2,4,6-Tribromophenol				84.93	16-136			WG553395

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EPAPAV0045861

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Duplicate Limit	RPD	Limit	Batch
2-Fluorobiphenyl				76.23	37-119			
2-Fluorophenol				76.28	22-114			
Nitrobenzene-d5				74.60	20-114			
Phenol-d5				89.97	26-127			
p-Terphenyl-d14				72.90	15-174			
1,2,4-Trichlorobenzene	mg/kg	0.218	0.195	66.0	48-87	11.0	20	WG553588
2,4,6-Trichlorophenol	mg/kg	0.254	0.229	76.0	50-98	10.2	20	WG553588
2,4-Dichlorophenol	mg/kg	0.236	0.226	71.0	56-96	4.50	20	WG553588
2,4-Dimethylphenol	mg/kg	0.232	0.224	70.0	52-101	3.50	20	WG553588
2,4-Dinitrophenol	mg/kg	0.230	0.205	69.0	10-109	11.4	39	WG553588
2,4-Dinitrotoluene	mg/kg	0.251	0.230	76.0	54-103	9.09	20	WG553588
2,6-Dinitrotoluene	mg/kg	0.248	0.223	74.0	53-99	10.8	20	WG553588
2-Chloronaphthalene	mg/kg	0.224	0.202	67.0	55-96	10.4	20	WG553588
2-Chlorophenol	mg/kg	0.206	0.203	62.0	52-88	1.49	20	WG553588
2-Nitrophenol	mg/kg	0.238	0.212	72.0	55-106	11.7	20	WG553588
3,3-Dichlorobenzidine	mg/kg	0.224	0.207	67.0	36-84	7.90	20	WG553588
4,6-Dinitro-2-methylphenol	mg/kg	0.241	0.234	72.0	24-98	3.09	32	WG553588
4-Bromophenyl-phenylether	mg/kg	0.253	0.232	76.0	58-111	8.71	20	WG553588
4-Chloro-3-methylphenol	mg/kg	0.229	0.215	69.0	58-98	6.16	20	WG553588
4-Chlorophenyl-phenylether	mg/kg	0.234	0.217	70.0	59-103	7.72	20	WG553588
4-Nitrophenol	mg/kg	0.215	0.173	65.0	34-101	21.8	26	WG553588
Acenaphthene	mg/kg	0.240	0.225	72.0	55-96	6.31	20	WG553588
Acenaphthylene	mg/kg	0.241	0.232	72.0	61-107	4.04	20	WG553588
Anthracene	mg/kg	0.243	0.217	73.0	58-105	11.3	20	WG553588
Benzidine	mg/kg	0.0430	0.0373	13.0	10-21	14.2	40	WG553588
Benzo(a)anthracene	mg/kg	0.248	0.233	74.0	56-103	6.51	20	WG553588
Benzo(a)pyrene	mg/kg	0.237	0.226	71.0	57-103	4.54	20	WG553588
Benzo(b)fluoranthene	mg/kg	0.227	0.221	68.0	52-106	2.73	20	WG553588
Benzo(g,h,i)perylene	mg/kg	0.245	0.233	73.0	47-112	4.80	20	WG553588
Benzo(k)fluoranthene	mg/kg	0.252	0.230	76.0	53-104	9.14	20	WG553588
Benzylbutyl phthalate	mg/kg	0.228	0.217	68.0	61-118	4.97	20	WG553588
Bis(2-chlorethoxy)methane	mg/kg	0.221	0.203	66.0	58-104	8.83	20	WG553588
Bis(2-chloroethyl)ether	mg/kg	0.197	0.194	59.0	51-103	1.39	20	WG553588
Bis(2-chloroisopropyl)ether	mg/kg	0.196	0.213	59.0	56-95	8.28	20	WG553588
Bis(2-ethylhexyl)phthalate	mg/kg	0.237	0.220	71.0	56-120	7.54	20	WG553588
Chrysene	mg/kg	0.244	0.235	73.0	55-102	3.58	20	WG553588
Di-n-butyl phthalate	mg/kg	0.243	0.228	73.0	59-114	6.69	20	WG553588
Di-n-octyl phthalate	mg/kg	0.239	0.221	72.0	51-119	7.61	22	WG553588
Dibenz(a,h)anthracene	mg/kg	0.232	0.222	70.0	49-111	4.53	20	WG553588
Diethyl phthalate	mg/kg	0.245	0.224	74.0	61-105	8.79	20	WG553588
Dimethyl phthalate	mg/kg	0.236	0.231	71.0	60-106	1.97	20	WG553588
Fluoranthene	mg/kg	0.246	0.241	74.0	59-108	1.77	20	WG553588
Fluorene	mg/kg	0.237	0.214	71.0	59-100	10.0	20	WG553588
Hexachloro-1,3-butadiene	mg/kg	0.244	0.232	73.0	53-106	5.00	20	WG553588
Hexachlorobenzene	mg/kg	0.239	0.221	72.0	50-108	7.77	20	WG553588
Hexachlorocyclopentadiene	mg/kg	0.170	0.153	51.0	36-117	10.9	20	WG553588
Hexachloroethane	mg/kg	0.201	0.204	60.0	45-83	1.52	20	WG553588
Indeno(1,2,3-cd)pyrene	mg/kg	0.239	0.225	72.0	50-110	5.80	20	WG553588
Isophorone	mg/kg	0.187	0.159	56.0	51-99	16.0	20	WG553588
n-Nitrosodi-n-propylamine	mg/kg	0.199	0.203	60.0	52-103	2.05	20	WG553588
n-Nitrosodimethylamine	mg/kg	0.201	0.189	60.0	31-107	6.23	23	WG553588
n-Nitrosodiphenylamine	mg/kg	0.222	0.206	66.0	57-121	7.32	20	WG553588
Naphthalene	mg/kg	0.219	0.204	66.0	55-91	6.93	20	WG553588
Nitrobenzene	mg/kg	0.227	0.210	68.0	47-92	7.60	20	WG553588
Pentachlorophenol	mg/kg	0.228	0.210	68.0	10-89	8.37	28	WG553588
Phenanthrene	mg/kg	0.236	0.218	71.0	55-103	8.06	20	WG553588
Phenol	mg/kg	0.194	0.189	58.0	49-99	2.29	20	WG553588
Pyrene	mg/kg	0.230	0.212	69.0	54-104	8.34	20	WG553588
2,4,6-Tribromophenol				95.14	16-136			WG553588

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
2-Fluorobiphenyl				81.21	37-119			
2-Fluorophenol				63.93	22-114			
Nitrobenzene-d5				74.68	20-114			
Phenol-d5				77.01	26-127			
p-Terphenyl-d14				81.38	15-174			
TPH (GC/FID) Low Fraction	mg/kg	5.67	5.65	103.	67-135	0.480	20	WG553535
a,a,a-Trifluorotoluene(FID)				97.86	59-128			WG553535
Benzene	mg/kg	0.0212	0.0208	85.0	65-128	1.99	20	WG553769
Ethylbenzene	mg/kg	0.0220	0.0219	88.0	74-128	0.530	20	WG553769
Toluene	mg/kg	0.0207	0.0206	83.0	70-120	0.500	20	WG553769
Total Xylenes	mg/kg	0.0659	0.0655	88.0	74-127	0.600	20	WG553769
4-Bromofluorobenzene				99.91	59-140			WG553769
Dibromofluoromethane				101.5	63-139			WG553769
Toluene-d8				103.9	84-116			WG553769
a,a,a-Trifluorotoluene				104.3	80-118			WG553769
TPH (GC/FID) Low Fraction	mg/kg	5.29	5.69	96.0	67-135	7.18	20	WG553784
a,a,a-Trifluorotoluene(FID)				106.2	59-128			WG553784
Benzene	mg/kg	0.0240	0.0257	96.0	65-128	6.76	20	WG553908
Ethylbenzene	mg/kg	0.0261	0.0283	104.	74-128	8.14	20	WG553908
Toluene	mg/kg	0.0248	0.0269	99.0	70-120	7.97	20	WG553908
Total Xylenes	mg/kg	0.0805	0.0851	107.	74-127	5.45	20	WG553908
4-Bromofluorobenzene				102.4	59-140			WG553908
Dibromofluoromethane				107.0	63-139			WG553908
Toluene-d8				102.5	84-116			WG553908
a,a,a-Trifluorotoluene				111.4	80-118			WG553908
Benzene	mg/kg	0.0226	0.0216	90.0	65-128	4.85	20	WG554163
Ethylbenzene	mg/kg	0.0246	0.0230	98.0	74-128	6.70	20	WG554163
Toluene	mg/kg	0.0224	0.0217	90.0	70-120	3.41	20	WG554163
Total Xylenes	mg/kg	0.0751	0.0697	100.	74-127	7.40	20	WG554163
4-Bromofluorobenzene				101.9	59-140			WG554163
Dibromofluoromethane				106.5	63-139			WG554163
Toluene-d8				100.2	84-116			WG554163
a,a,a-Trifluorotoluene				111.4	80-118			WG554163

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0243	0	.025	97.4	16-158	L533963-01	WG553360
Ethylbenzene	mg/l	0.0258	0	.025	103.	29-150	L533963-01	WG553360
Toluene	mg/l	0.0230	0	.025	91.9	22-152	L533963-01	WG553360
Total Xylenes	mg/l	0.0780	0	.075	104.	27-151	L533963-01	WG553360
4-Bromofluorobenzene					100.9	75-128		WG553360
Dibromofluoromethane					97.99	79-125		WG553360
Toluene-d8					99.37	87-114		WG553360
a,a,a-Trifluorotoluene					103.6	84-114		WG553360
TPH (GC/FID) Low Fraction	mg/kg	21.7	0	5.5	78.8	55-109	L533934-05	WG553414
a,a,a-Trifluorotoluene(FID)					101.2	59-128		WG553414

* Performance of this Analyte is outside of established criteria.
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EPAPAV0045863

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Tax I.D. 62-0814289

Est. 1970

AECOM Inc. - Fort Collins, CO
Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/kg	0.134	0	.025	107.	16-143	L533934-23	WG553359
Ethylbenzene	mg/kg	0.131	0	.025	105.	12-137	L533934-23	WG553359
Toluene	mg/kg	0.122	0	.025	97.8	12-136	L533934-23	WG553359
Total Xylenes	mg/kg	0.383	0	.075	102.	10-138	L533934-23	WG553359
4-Bromofluorobenzene					106.3	59-140		WG553359
Dibromofluoromethane					107.7	63-139		WG553359
Toluene-d8					104.0	84-116		WG553359
a,a,a-Trifluorotoluene					105.9	80-118		WG553359
TPH (GC/FID) Low Fraction	mg/kg	24.3	0	5.5	88.2	55-109	L533854-27	WG553474
a,a,a-Trifluorotoluene(FID)					96.91	59-128		WG553474
1,2,4-Trichlorobenzene	mg/kg	0.249	0	.333	74.9	27-118	L533676-02	WG553395
2,4,6-Trichlorophenol	mg/kg	0.268	0	.333	80.5	18-140	L533676-02	WG553395
2,4-Dichlorophenol	mg/kg	0.257	0	.333	77.3	30-134	L533676-02	WG553395
2,4-Dimethylphenol	mg/kg	0.174	0	.333	52.3	13-147	L533676-02	WG553395
2,4-Dinitrophenol	mg/kg	0.267	0	.333	80.1	10-110	L533676-02	WG553395
2,4-Dinitrotoluene	mg/kg	0.273	0	.333	81.9	12-146	L533676-02	WG553395
2,6-Dinitrotoluene	mg/kg	0.278	0	.333	83.4	10-150	L533676-02	WG553395
2-Chloronaphthalene	mg/kg	0.270	0	.333	81.1	31-127	L533676-02	WG553395
2-Chlorophenol	mg/kg	0.252	0	.333	75.6	26-120	L533676-02	WG553395
2-Nitrophenol	mg/kg	0.285	0	.333	85.6	10-156	L533676-02	WG553395
3,3-Dichlorobenzidine	mg/kg	0.00370	0	.333	1.11*	10-127	L533676-02	WG553395
4,6-Dinitro-2-methylphenol	mg/kg	0.268	0	.333	80.4	10-124	L533676-02	WG553395
4-Bromophenyl-phenylether	mg/kg	0.264	0	.333	79.3	27-150	L533676-02	WG553395
4-Chloro-3-methylphenol	mg/kg	0.279	0	.333	83.8	24-140	L533676-02	WG553395
4-Chlorophenyl-phenylether	mg/kg	0.259	0	.333	77.8	27-142	L533676-02	WG553395
4-Nitrophenol	mg/kg	0.279	0	.333	83.6	10-166	L533676-02	WG553395
Acenaphthene	mg/kg	0.271	0	.333	81.5	30-132	L533676-02	WG553395
Acenaphthylene	mg/kg	0.287	0	.333	86.1	31-144	L533676-02	WG553395
Anthracene	mg/kg	0.270	0	.333	81.0	27-140	L533676-02	WG553395
Benzidine	mg/kg	0.0209	0	.333	6.28*	10-55	L533676-02	WG553395
Benzo(a)anthracene	mg/kg	0.272	0	.333	81.6	22-139	L533676-02	WG553395
Benzo(a)pyrene	mg/kg	0.282	0	.333	84.6	16-148	L533676-02	WG553395
Benzo(b)fluoranthene	mg/kg	0.280	0	.333	84.0	13-152	L533676-02	WG553395
Benzo(g,h,i)perylene	mg/kg	0.182	0	.333	54.6	10-137	L533676-02	WG553395
Benzo(k)fluoranthene	mg/kg	0.293	0	.333	87.9	15-152	L533676-02	WG553395
Benzylbutyl phthalate	mg/kg	0.315	0	.333	94.6	20-168	L533676-02	WG553395
Bis(2-chlorethoxy)methane	mg/kg	0.281	0	.333	84.3	32-141	L533676-02	WG553395
Bis(2-chloroethyl)ether	mg/kg	0.323	0	.333	97.1	25-139	L533676-02	WG553395
Bis(2-chloroisopropyl)ether	mg/kg	0.264	0	.333	79.3	32-128	L533676-02	WG553395
Bis(2-ethylhexyl)phthalate	mg/kg	0.317	0	.333	95.2	20-163	L533676-02	WG553395
Chrysene	mg/kg	0.261	0	.333	78.4	20-139	L533676-02	WG553395
Di-n-butyl phthalate	mg/kg	0.289	0	.333	86.7	24-149	L533676-02	WG553395
Di-n-octyl phthalate	mg/kg	0.331	0	.333	99.5	14-164	L533676-02	WG553395
Dibenz(a,h)anthracene	mg/kg	0.203	0	.333	60.8	10-137	L533676-02	WG553395
Diethyl phthalate	mg/kg	0.279	0	.333	83.9	28-142	L533676-02	WG553395
Dimethyl phthalate	mg/kg	0.267	0	.333	80.2	31-142	L533676-02	WG553395
Fluoranthene	mg/kg	0.282	0	.333	84.6	24-145	L533676-02	WG553395
Fluorene	mg/kg	0.274	0	.333	82.3	30-138	L533676-02	WG553395
Hexachloro-1,3-butadiene	mg/kg	0.271	0	.333	81.5	29-136	L533676-02	WG553395
Hexachlorobenzene	mg/kg	0.237	0	.333	71.1	26-136	L533676-02	WG553395
Hexachlorocyclopentadiene	mg/kg	0.125	0	.333	37.5	10-124	L533676-02	WG553395
Hexachloroethane	mg/kg	0.263	0	.333	79.0	21-107	L533676-02	WG553395
Indeno(1,2,3-cd)pyrene	mg/kg	0.203	0	.333	61.1	10-139	L533676-02	WG553395
Isophorone	mg/kg	0.234	0	.333	70.4	26-134	L533676-02	WG553395
n-Nitrosodi-n-propylamine	mg/kg	0.289	0	.333	86.8	24-141	L533676-02	WG553395

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Level II

L533934

September 26, 2011

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
n-Nitrosodimethylamine	mg/kg	0.270	0	.333	81.2	18-126	L533676-02	WG553395
n-Nitrosodiphenylamine	mg/kg	0.272	0	.333	81.6	16-128	L533676-02	WG553395
Naphthalene	mg/kg	0.263	0	.333	78.9	31-124	L533676-02	WG553395
Nitrobenzene	mg/kg	0.286	0	.333	85.8	22-122	L533676-02	WG553395
Pentachlorophenol	mg/kg	0.247	0	.333	74.1	10-124	L533676-02	WG553395
Phenanthrene	mg/kg	0.279	0	.333	83.7	25-139	L533676-02	WG553395
Phenol	mg/kg	0.247	0	.333	74.0	22-129	L533676-02	WG553395
Pyrene	mg/kg	0.275	0	.333	82.6	23-145	L533676-02	WG553395
2,4,6-Tribromophenol					93.60	16-136		WG553395
2-Fluorobiphenyl					100.2	37-119		WG553395
2-Fluorophenol					88.07	22-114		WG553395
Nitrobenzene-d5					97.17	20-114		WG553395
Phenol-d5					102.4	26-127		WG553395
p-Terphenyl-d14					84.44	15-174		WG553395
TPH (GC/FID) Low Fraction	mg/kg	25.5	0	5.5	92.7	55-109	L533941-01	WG553535
a,a,a-Trifluorotoluene(FID)					97.50	59-128		WG553535
Benzene	mg/kg	0.101	0	.025	81.0	16-143	L533854-23	WG553769
Ethylbenzene	mg/kg	0.103	0	.025	82.6	12-137	L533854-23	WG553769
Toluene	mg/kg	0.0976	0	.025	78.1	12-136	L533854-23	WG553769
Total Xylenes	mg/kg	0.298	0	.075	79.6	10-138	L533854-23	WG553769
4-Bromofluorobenzene					99.52	59-140		WG553769
Dibromofluoromethane					102.5	63-139		WG553769
Toluene-d8					105.4	84-116		WG553769
a,a,a-Trifluorotoluene					103.7	80-118		WG553769
TPH (GC/FID) Low Fraction	mg/kg	21.5	0	5.5	78.2	55-109	L533934-14	WG553784
a,a,a-Trifluorotoluene(FID)					102.4	59-128		WG553784
Benzene	mg/kg	0.126	0	.025	101.	16-143	L533988-02	WG553908
Ethylbenzene	mg/kg	0.143	0	.025	114.	12-137	L533988-02	WG553908
Toluene	mg/kg	0.137	0	.025	110.	12-136	L533988-02	WG553908
Total Xylenes	mg/kg	0.435	0	.075	116.	10-138	L533988-02	WG553908
4-Bromofluorobenzene					104.5	59-140		WG553908
Dibromofluoromethane					106.0	63-139		WG553908
Toluene-d8					104.0	84-116		WG553908
a,a,a-Trifluorotoluene					112.7	80-118		WG553908
Benzene	mg/kg	0.118	0	.025	94.4	16-143	L534436-16	WG554163
Ethylbenzene	mg/kg	0.126	0	.025	101.	12-137	L534436-16	WG554163
Toluene	mg/kg	0.116	0	.025	93.1	12-136	L534436-16	WG554163
Total Xylenes	mg/kg	0.376	0	.075	100.	10-138	L534436-16	WG554163
4-Bromofluorobenzene					100.0	59-140		WG554163
Dibromofluoromethane					109.2	63-139		WG554163
Toluene-d8					102.1	84-116		WG554163
a,a,a-Trifluorotoluene					107.6	80-118		WG554163

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0239	0.0243	95.5	16-158	1.95	21	L533963-01	WG553360
Ethylbenzene	mg/l	0.0270	0.0258	108.	29-150	4.66	24	L533963-01	WG553360
Toluene	mg/l	0.0235	0.0230	94.0	22-152	2.17	22	L533963-01	WG553360

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Total Xylenes	mg/l	0.0789	0.0780	105.	27-151	1.16	23	L533963-01	WG553360
4-Bromofluorobenzene				103.4	75-128				WG553360
Dibromofluoromethane				96.76	79-125				WG553360
Toluene-d8				102.1	87-114				WG553360
a,a,a-Trifluorotoluene				105.3	84-114				WG553360
TPH (GC/FID) Low Fraction	mg/kg	18.3	21.7	66.4	55-109	17.2	20	L533934-05	WG553414
a,a,a-Trifluorotoluene(FID)				99.98	59-128				WG553414
Benzene	mg/kg	0.141	0.134	112.	16-143	5.14	31	L533934-23	WG553359
Ethylbenzene	mg/kg	0.138	0.131	110.	12-137	5.16	36	L533934-23	WG553359
Toluene	mg/kg	0.127	0.122	101.	12-136	3.68	32	L533934-23	WG553359
Total Xylenes	mg/kg	0.405	0.383	108.	10-138	5.41	36	L533934-23	WG553359
4-Bromofluorobenzene				107.8	59-140				WG553359
Dibromofluoromethane				107.4	63-139				WG553359
Toluene-d8				103.3	84-116				WG553359
a,a,a-Trifluorotoluene				104.3	80-118				WG553359
TPH (GC/FID) Low Fraction	mg/kg	26.6	24.3	96.6	55-109	9.06	20	L533854-27	WG553474
a,a,a-Trifluorotoluene(FID)				96.97	59-128				WG553474
1,2,4-Trichlorobenzene	mg/kg	0.249	0.249	74.7	27-118	0.293	23	L533676-02	WG553395
2,4,6-Trichlorophenol	mg/kg	0.268	0.268	80.4	18-140	0.0825	26	L533676-02	WG553395
2,4-Dichlorophenol	mg/kg	0.278	0.257	83.6	30-134	7.84	23	L533676-02	WG553395
2,4-Dimethylphenol	mg/kg	0.168	0.174	50.4	13-147	3.69	27	L533676-02	WG553395
2,4-Dinitrophenol	mg/kg	0.256	0.267	77.0	10-110	4.00	40	L533676-02	WG553395
2,4-Dinitrotoluene	mg/kg	0.284	0.273	85.4	12-146	4.16	25	L533676-02	WG553395
2,6-Dinitrotoluene	mg/kg	0.274	0.278	82.3	10-150	1.34	23	L533676-02	WG553395
2-Chloronaphthalene	mg/kg	0.267	0.270	80.2	31-127	1.12	23	L533676-02	WG553395
2-Chlorophenol	mg/kg	0.270	0.252	81.1	26-120	7.05	21	L533676-02	WG553395
2-Nitrophenol	mg/kg	0.280	0.285	84.2	10-156	1.67	24	L533676-02	WG553395
3,3-Dichlorobenzidine	mg/kg	0.00353	0.00370	1.06*	10-127	4.57	40	L533676-02	WG553395
4,6-Dinitro-2-methylphenol	mg/kg	0.240	0.268	72.0	10-124	11.0	40	L533676-02	WG553395
4-Bromophenyl-phenylether	mg/kg	0.261	0.264	78.4	27-150	1.08	20	L533676-02	WG553395
4-Chloro-3-methylphenol	mg/kg	0.277	0.279	83.1	24-140	0.770	22	L533676-02	WG553395
4-Chlorophenyl-phenylether	mg/kg	0.251	0.259	75.4	27-142	3.13	21	L533676-02	WG553395
4-Nitrophenol	mg/kg	0.279	0.279	83.9	10-166	0.341	35	L533676-02	WG553395
Acenaphthene	mg/kg	0.285	0.271	85.7	30-132	5.02	21	L533676-02	WG553395
Acenaphthylene	mg/kg	0.285	0.287	85.7	31-144	0.479	24	L533676-02	WG553395
Anthracene	mg/kg	0.267	0.270	80.0	27-140	1.25	20	L533676-02	WG553395
Benzidine	mg/kg	0	0.0209	0*	10-55	200.*	36	L533676-02	WG553395
Benzo(a)anthracene	mg/kg	0.274	0.272	82.2	22-139	0.720	22	L533676-02	WG553395
Benzo(a)pyrene	mg/kg	0.298	0.282	89.5	16-148	5.60	21	L533676-02	WG553395
Benzo(b)fluoranthene	mg/kg	0.294	0.280	88.4	13-152	5.03	24	L533676-02	WG553395
Benzo(g,h,i)perylene	mg/kg	0.179	0.182	53.8	10-137	1.42	32	L533676-02	WG553395
Benzo(k)fluoranthene	mg/kg	0.306	0.293	91.8	15-152	4.28	22	L533676-02	WG553395
Benzylbutyl phthalate	mg/kg	0.313	0.315	93.9	20-168	0.710	23	L533676-02	WG553395
Bis(2-chlorethoxy)methane	mg/kg	0.290	0.281	87.0	32-141	3.16	20	L533676-02	WG553395
Bis(2-chloroethyl)ether	mg/kg	0.305	0.323	91.4	25-139	6.04	26	L533676-02	WG553395
Bis(2-chloroisopropyl)ether	mg/kg	0.282	0.264	84.7	32-128	6.57	22	L533676-02	WG553395
Bis(2-ethylhexyl)phthalate	mg/kg	0.316	0.317	94.9	20-163	0.338	24	L533676-02	WG553395
Chrysene	mg/kg	0.269	0.261	80.9	20-139	3.13	23	L533676-02	WG553395
Di-n-butyl phthalate	mg/kg	0.296	0.289	88.8	24-149	2.35	24	L533676-02	WG553395
Di-n-octyl phthalate	mg/kg	0.340	0.331	102.	14-164	2.47	24	L533676-02	WG553395
Dibenz(a,h)anthracene	mg/kg	0.199	0.203	59.6	10-137	1.94	29	L533676-02	WG553395

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Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Diethyl phthalate	mg/kg	0.280	0.279	84.1	28-142	0.237	23	L533676-02	WG553395
Dimethyl phthalate	mg/kg	0.272	0.267	81.7	31-142	1.83	22	L533676-02	WG553395
Fluoranthene	mg/kg	0.268	0.282	80.5	24-145	4.93	29	L533676-02	WG553395
Fluorene	mg/kg	0.259	0.274	77.9	30-138	5.52	22	L533676-02	WG553395
Hexachloro-1,3-butadiene	mg/kg	0.280	0.271	84.0	29-136	2.98	22	L533676-02	WG553395
Hexachlorobenzene	mg/kg	0.237	0.237	71.2	26-136	0.0746	20	L533676-02	WG553395
Hexachlorocyclopentadiene	mg/kg	0.116	0.125	34.8	10-124	7.43	33	L533676-02	WG553395
Hexachloroethane	mg/kg	0.280	0.263	84.2	21-107	6.36	27	L533676-02	WG553395
Indeno(1,2,3-cd)pyrene	mg/kg	0.200	0.203	60.1	10-139	1.59	32	L533676-02	WG553395
Isophorone	mg/kg	0.236	0.234	71.0	26-134	0.864	20	L533676-02	WG553395
n-Nitrosodi-n-propylamine	mg/kg	0.294	0.289	88.2	24-141	1.52	20	L533676-02	WG553395
n-Nitrosodimethylamine	mg/kg	0.291	0.270	87.4	18-126	7.47	27	L533676-02	WG553395
n-Nitrosodiphenylamine	mg/kg	0.264	0.272	79.4	16-128	2.72	25	L533676-02	WG553395
Naphthalene	mg/kg	0.266	0.263	80.0	31-124	1.36	25	L533676-02	WG553395
Nitrobenzene	mg/kg	0.283	0.286	85.0	22-122	0.963	20	L533676-02	WG553395
Pentachlorophenol	mg/kg	0.243	0.247	72.8	10-124	1.74	34	L533676-02	WG553395
Phenanthrene	mg/kg	0.274	0.279	82.4	25-139	1.55	25	L533676-02	WG553395
Phenol	mg/kg	0.258	0.247	77.6	22-129	4.64	25	L533676-02	WG553395
Pyrene	mg/kg	0.273	0.275	82.1	23-145	0.538	30	L533676-02	WG553395
2,4,6-Tribromophenol				93.48	16-136				WG553395
2-Fluorobiphenyl				93.40	37-119				WG553395
2-Fluorophenol				91.68	22-114				WG553395
Nitrobenzene-d5				98.83	20-114				WG553395
Phenol-d5				106.7	26-127				WG553395
p-Terphenyl-d14				84.21	15-174				WG553395
TPH (GC/FID) Low Fraction	mg/kg	21.8	25.5	79.4	55-109	15.4	20	L533941-01	WG553535
a,a,a-Trifluorotoluene(FID)				95.91	59-128				WG553535
Benzene	mg/kg	0.109	0.101	86.9	16-143	7.01	31	L533854-23	WG553769
Ethylbenzene	mg/kg	0.117	0.103	93.8	12-137	12.7	36	L533854-23	WG553769
Toluene	mg/kg	0.105	0.0976	84.0	12-136	7.37	32	L533854-23	WG553769
Total Xylenes	mg/kg	0.338	0.298	90.2	10-138	12.5	36	L533854-23	WG553769
4-Bromofluorobenzene				101.3	59-140				WG553769
Dibromofluoromethane				101.4	63-139				WG553769
Toluene-d8				103.4	84-116				WG553769
a,a,a-Trifluorotoluene				105.0	80-118				WG553769
TPH (GC/FID) Low Fraction	mg/kg	24.9	21.5	90.5	55-109	14.6	20	L533934-14	WG553784
a,a,a-Trifluorotoluene(FID)				103.8	59-128				WG553784
Benzene	mg/kg	0.124	0.126	99.2	16-143	1.54	31	L533988-02	WG553908
Ethylbenzene	mg/kg	0.134	0.143	107.	12-137	6.09	36	L533988-02	WG553908
Toluene	mg/kg	0.127	0.137	102.	12-136	7.60	32	L533988-02	WG553908
Total Xylenes	mg/kg	0.402	0.435	107.	10-138	7.82	36	L533988-02	WG553908
4-Bromofluorobenzene				101.8	59-140				WG553908
Dibromofluoromethane				108.5	63-139				WG553908
Toluene-d8				102.3	84-116				WG553908
a,a,a-Trifluorotoluene				108.1	80-118				WG553908
Benzene	mg/kg	0.126	0.118	101.	16-143	6.70	31	L534436-16	WG554163
Ethylbenzene	mg/kg	0.133	0.126	106.	12-137	4.95	36	L534436-16	WG554163
Toluene	mg/kg	0.127	0.116	102.	12-136	8.90	32	L534436-16	WG554163
Total Xylenes	mg/kg	0.399	0.376	106.	10-138	5.95	36	L534436-16	WG554163

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Mr. Dustin Krajewski
1601 Prospect Parkway

Fort Collins, CO 80525

Quality Assurance Report
Level II

L533934

September 26, 2011

Analyte	Units	MSD	Ref	Matrix Spike Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
4-Bromofluorobenzene				97.56	59-140				
Dibromofluoromethane				106.8	63-139				
Toluene-d8				101.7	84-116				
a,a,a-Trifluorotoluene				107.7	80-118				

Batch number /Run number / Sample number cross reference

WG553360: R1841175: L533934-18
WG553414: R1844012: L533934-05 07 08 09 10 19 20 21 22 23
WG553359: R1844112: L533934-02 06 19 23 24 25 26
WG553399: R1844514: L533934-05 07 08 10 19 20 21 22 23
WG553355: R1844533: L533934-11 13 16 28
WG553474: R1844752: L533934-01 02 03 12
WG553587: R1844814: L533934-01 02 03 04 12 14 17 24
WG553395: R1845212: L533934-06
WG553588: R1845992: L533934-01 02 03 04 15 25 26
WG553535: R1846273: L533934-25 26 27
WG553769: R1846572: L533934-01 21 27
WG553867: R1847632: L533934-09 25 26 27
WG553784: R1848293: L533934-04 14 17 24
WG553908: R1848792: L533934-04
WG554163: R1849954: L533934-03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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