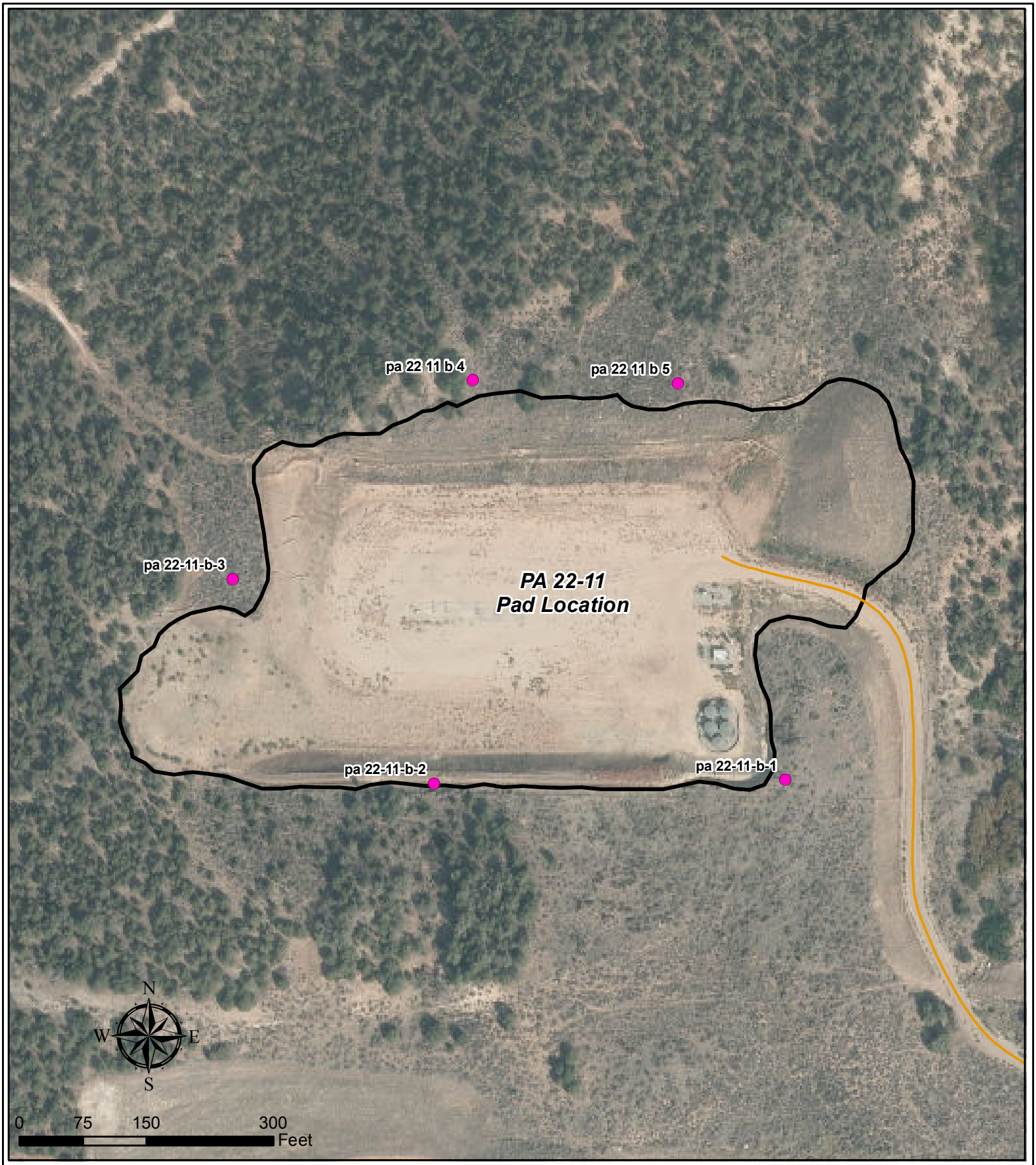

Legend

- Sample Location
- Existing Road
- Existing Pad Limit of Disturbance

PA 22-11
Arsenic Background Sample Location Map
T7S R95W, Section 11

January 9, 2014

WPXENERGY

T:\Projects\PIC_MultiProspect\Ongoing\ArsenicSampling\PA 22-11.mxd mreynold 1/9/2014 11:57:45 AM

13-Jan-2014

Mark Mumby
HRL Compliance Solutions
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **WPX PA 22-11 Pit Closure 12.23.13** Work Order: **1401056**

Dear Mark,

ALS Environmental received 1 sample on 03-Jan-2014 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 24.

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

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 13-Jan-14

Client: HRL Compliance Solutions
Project: WPX PA 22-11 Pit Closure 12.23.13
Work Order: **1401056**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401056-01	PA 22-11 Cuttings	Soil		12/23/2013 10:40	1/3/2014 10:00	☐

ALS Group USA, Corp

Date: 13-Jan-14

Client: HRL Compliance Solutions
Project: WPX PA 22-11 Pit Closure 12.23.13
Work Order: 1401056

Case Narrative

Batch 54669 sample 1401056-01 for pH was received after the holding time had expired. It was analyzed at the request of the client. Results should be considered estimated.

Batch 54703 sample 1401056-01 Metals' reporting limits are elevated due to dilution for high concentrations of non-target analytes. The MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 54821 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

The sample 1401056-01 for % Moisture was received after the holding time had expired. It was analyzed at the request of the client. Results should be considered estimated.

ALS Group USA, Corp

Date: 13-Jan-14

Client: HRL Compliance Solutions
Project: WPX PA 22-11 Pit Closure 12.23.13
WorkOrder: **1401056**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *13-Jan-14*

Client: HRL Compliance Solutions
Project: WPX PA 22-11 Pit Closure 12.23.13 **Work Order:** 1401056
Sample ID: PA 22-11 Cuttings **Lab ID:** 1401056-01
Collection Date: 12/23/2013 10:40 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **1/6/2014**	Analyst: **IT**
DRO (C10-C28)	**99**		**5.1**	**mg/Kg-dry**	1	1/7/2014 01:45 PM
Surr: 4-Terphenyl-d14	*63.7*		*39-115*	*%REC*	1	1/7/2014 01:45 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**		Prep Date: **12/23/2013**	Analyst: **CW**
GRO (C6-C10)	ND		3.1	mg/Kg-dry	1	1/6/2014 02:44 PM
Surr: Toluene-d8	*118*		*50-150*	*%REC*	1	1/6/2014 02:44 PM
MERCURY BY CVAA			**SW7471**		Prep Date: **1/6/2014**	Analyst: **LR**
Mercury	**0.031**		**0.017**	**mg/Kg-dry**	1	1/8/2014 12:12 PM
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/6/2014**	Analyst: **ML**
Arsenic	**5.7**		**2.4**	**mg/Kg-dry**	5	1/7/2014 12:28 AM
Barium	**5,600**		**24**	**mg/Kg-dry**	50	1/8/2014 01:26 AM
Cadmium	ND		0.95	mg/Kg-dry	5	1/7/2014 12:28 AM
Chromium	**17**		**2.4**	**mg/Kg-dry**	5	1/7/2014 12:28 AM
Copper	**17**		**2.4**	**mg/Kg-dry**	5	1/7/2014 12:28 AM
Lead	**14**		**2.4**	**mg/Kg-dry**	5	1/7/2014 12:28 AM
Nickel	**17**		**2.4**	**mg/Kg-dry**	5	1/7/2014 12:28 AM
Selenium	ND		2.4	mg/Kg-dry	5	1/7/2014 12:28 AM
Silver	ND		2.4	mg/Kg-dry	5	1/7/2014 12:28 AM
Zinc	**60**		**4.8**	**mg/Kg-dry**	5	1/7/2014 12:28 AM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep Date: **1/8/2014**	Analyst: **ML**
Calcium	**84**		**10**	**mg/L**	20	1/8/2014 10:58 PM
Magnesium	**15**		**4.0**	**mg/L**	20	1/8/2014 10:58 PM
Sodium	**700**		**4.0**	**mg/L**	20	1/8/2014 10:58 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep Date: **1/8/2014**	Analyst: **ML**
Sodium Adsorption Ratio	**19**		**0.010**	**none**	1	1/8/2014
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep Date: **1/6/2014**	Analyst: **HL**
Acenaphthene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Acenaphthylene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Anthracene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Benzo(a)anthracene	**23**		**8.2**	**µg/Kg-dry**	1	1/7/2014 03:13 PM
Benzo(a)pyrene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Benzo(b)fluoranthene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Benzo(g,h,i)perylene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Benzo(k)fluoranthene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Chrysene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Dibenzo(a,h)anthracene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Fluoranthene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *13-Jan-14*

Client: HRL Compliance Solutions
Project: WPX PA 22-11 Pit Closure 12.23.13 **Work Order:** 1401056
Sample ID: PA 22-11 Cuttings **Lab ID:** 1401056-01
Collection Date: 12/23/2013 10:40 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	**33**		**8.2**	**µg/Kg-dry**	1	1/7/2014 03:13 PM
Indeno(1,2,3-cd)pyrene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Naphthalene	**120**		**8.2**	**µg/Kg-dry**	1	1/7/2014 03:13 PM
Pyrene	ND		8.2	µg/Kg-dry	1	1/7/2014 03:13 PM
Surr: 2-Fluorobiphenyl	*67.5*		*12-100*	*%REC*	1	1/7/2014 03:13 PM
Surr: 4-Terphenyl-d14	*109*		*25-137*	*%REC*	1	1/7/2014 03:13 PM
Surr: Nitrobenzene-d5	*49.7*		*37-107*	*%REC*	1	1/7/2014 03:13 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep Date: **12/23/2013**	Analyst: **RS**
Benzene	**65**		**37**	**µg/Kg-dry**	1	1/3/2014 06:23 PM
Ethylbenzene	ND		37	µg/Kg-dry	1	1/3/2014 06:23 PM
m,p-Xylene	**200**		**75**	**µg/Kg-dry**	1	1/3/2014 06:23 PM
o-Xylene	ND		37	µg/Kg-dry	1	1/3/2014 06:23 PM
Toluene	**210**		**37**	**µg/Kg-dry**	1	1/3/2014 06:23 PM
Xylenes, Total	**200**		**110**	**µg/Kg-dry**	1	1/3/2014 06:23 PM
Surr: 1,2-Dichloroethane-d4	*92.4*		*70-130*	*%REC*	1	1/3/2014 06:23 PM
Surr: 4-Bromofluorobenzene	*101*		*70-130*	*%REC*	1	1/3/2014 06:23 PM
Surr: Dibromofluoromethane	*98.2*		*70-130*	*%REC*	1	1/3/2014 06:23 PM
Surr: Toluene-d8	*94.6*		*70-130*	*%REC*	1	1/3/2014 06:23 PM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep Date: **1/8/2014**	Analyst: **JB**
Electrical Conductivity @ Saturation	**4.0**		**0.050**	**mmhos/cm @25**	10	1/8/2014 02:45 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JJG**
Chromium, Trivalent	**17**		**0.62**	**mg/Kg-dry**	1	1/13/2014 07:47 AM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep Date: **1/9/2014**	Analyst: **MB**
Chromium, Hexavalent	ND		0.62	mg/Kg-dry	1	1/10/2014 02:00 PM
MOISTURE			**A2540 G**			Analyst: **MEB**
Moisture	**20**	H	**0.050**	**% of sample**	1	1/3/2014 04:52 PM
PH			**SW9045D**		Prep Date: **1/3/2014**	Analyst: **KF**
pH	**8.7**	H		**s.u.**	1	1/3/2014 05:45 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Jan-14

Client: HRL Compliance Solutions

QC BATCH REPORT

Work Order: 1401056

Project: WPX PA 22-11 Pit Closure 12.23.13

Batch ID: **54690A** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-54690-54690A** Units: **mg/Kg** Analysis Date: **1/7/2014 12:46 PM**

Client ID: Run ID: **GC8_140107B** SeqNo: **2605646** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	*1.172*	0	*2*	0	*58.6*	*39-115*	0			

LCS Sample ID: **DLCSS1-54690-54690A** Units: **mg/Kg** Analysis Date: **1/7/2014 01:15 PM**

Client ID: Run ID: **GC8_140107B** SeqNo: **2605647** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	208.5	5.0	200	0	104	49-124	0			
Surr: 4-Terphenyl-d14	*1.233*	0	*2*	0	*61.6*	*39-115*	0			

MS Sample ID: **1401077-01B MS** Units: **mg/Kg** Analysis Date: **1/7/2014 03:15 PM**

Client ID: Run ID: **GC8_140107B** SeqNo: **2605650** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	369.1	8.1	325.7	38.45	102	49-130	0			
Surr: 4-Terphenyl-d14	*2.455*	0	*3.257*	0	*75.4*	*39-115*	0			

MSD Sample ID: **1401077-01B MSD** Units: **mg/Kg** Analysis Date: **1/7/2014 03:45 PM**

Client ID: Run ID: **GC8_140107B** SeqNo: **2605651** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	379	8.1	323.9	38.45	105	49-130	369.1	2.63	30	
Surr: 4-Terphenyl-d14	*2.455*	0	*3.239*	0	*75.8*	*39-115*	2.455	*0.0101*	*30*	

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54661** Instrument ID **GC10** Method: **SW8015**

MBLK Sample ID: **MBLK-54661-54661** Units: **µg/Kg** Analysis Date: **1/6/2014 01:56 PM**
Client ID: Run ID: **GC10_140106A** SeqNo: **2604610** Prep Date: **12/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	*5693*	0	*5000*	0	*114*	*50-150*	0			

LCS Sample ID: **LCS-54661-54661** Units: **µg/Kg** Analysis Date: **1/6/2014 12:18 PM**
Client ID: Run ID: **GC10_140106A** SeqNo: **2604608** Prep Date: **12/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	442400	2,500	500000	0	88.5	70-130	0			
Surr: Toluene-d8	*5362*	0	*5000*	0	*107*	*50-150*	0			

MS Sample ID: **1401058-05A MS** Units: **µg/Kg** Analysis Date: **1/6/2014 07:59 PM**
Client ID: Run ID: **GC10_140106A** SeqNo: **2604624** Prep Date: **12/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	416900	2,500	500000	0	83.4	70-130	0			
Surr: Toluene-d8	*5682*	0	*5000*	0	*114*	*50-150*	0			

MSD Sample ID: **1401058-05A MSD** Units: **µg/Kg** Analysis Date: **1/6/2014 08:24 PM**
Client ID: Run ID: **GC10_140106A** SeqNo: **2604625** Prep Date: **12/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	401800	2,500	500000	0	80.4	70-130	416900	3.69	30	
Surr: Toluene-d8	*5600*	0	*5000*	0	*112*	*50-150*	5682	*1.44*	*30*	

The following samples were analyzed in this batch: 1401056-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54698** Instrument ID **HG1** Method: **SW7471**

MBLK Sample ID: **MBLK-54698-54698** Units: **mg/Kg** Analysis Date: **1/6/2014 04:27 PM**
Client ID: Run ID: **HG1_140106A** SeqNo: **2604301** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS Sample ID: **LCS-54698-54698** Units: **mg/Kg** Analysis Date: **1/6/2014 04:29 PM**
Client ID: Run ID: **HG1_140106A** SeqNo: **2604302** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1717	0.020	0.1665	0	103	80-120	0			

MS Sample ID: **1401005-01BMS** Units: **mg/Kg** Analysis Date: **1/6/2014 04:33 PM**
Client ID: Run ID: **HG1_140106A** SeqNo: **2604304** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.153	0.013	0.1114	0.03838	103	75-125	0			

MSD Sample ID: **1401005-01BMSD** Units: **mg/Kg** Analysis Date: **1/6/2014 04:36 PM**
Client ID: Run ID: **HG1_140106A** SeqNo: **2604305** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1553	0.013	0.1116	0.03838	105	75-125	0.153	1.45	35	

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54668** Instrument ID **ICPMS1** Method: **SW6020A**

DUP Sample ID: **1401073-01BDUP** Units: **mg/L** Analysis Date: **1/9/2014 01:43 AM**
Client ID: Run ID: **ICPMS1_140108A** SeqNo: **2606474** Prep Date: **1/8/2014** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	124.9	10	0	0	0	0-0	116	7.41		
Magnesium	12.1	4.0	0	0	0	0-0	11.15	8.14		

DUP Sample ID: **1401073-01BDUP** Units: **none** Analysis Date: **1/8/2014**
Client ID: Run ID: **SAR_140108A** SeqNo: **2606775** Prep Date: **1/8/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.1864	0.010	0	0	0		0.1836	1.49	50	

DUP Sample ID: **1401073-01BDUP** Units: **mg/L** Analysis Date: **1/9/2014 05:49 PM**
Client ID: Run ID: **ICPMS1_140109A** SeqNo: **2607106** Prep Date: **1/8/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	8.145	0.20	0	0	0	0-0	7.729	5.24		

The following samples were analyzed in this batch: 1401056-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54703** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-54703-54703** Units: **mg/Kg** Analysis Date: **1/6/2014 11:12 PM**
Client ID: Run ID: **ICPMS1_140106B** SeqNo: **2604536** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	0.02831	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.1136	0.50								J

LCS Sample ID: **LCS-54703-54703** Units: **mg/Kg** Analysis Date: **1/6/2014 11:18 PM**
Client ID: Run ID: **ICPMS1_140106B** SeqNo: **2604537** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.616	0.25	5	0	92.3	80-120	0			
Barium	4.834	0.25	5	0	96.7	80-120	0			
Cadmium	4.733	0.10	5	0	94.7	80-120	0			
Chromium	4.792	0.25	5	0	95.8	80-120	0			
Copper	4.88	0.25	5	0	97.6	80-120	0			
Lead	4.986	0.25	5	0	99.7	80-120	0			
Nickel	4.84	0.25	5	0	96.8	80-120	0			
Selenium	4.458	0.25	5	0	89.2	80-120	0			
Silver	4.804	0.25	5	0	96.1	80-120	0			
Zinc	4.665	0.50	5	0	93.3	80-120	0			

MS Sample ID: **1401074-01BMS** Units: **mg/Kg** Analysis Date: **1/7/2014 01:39 AM**
Client ID: Run ID: **ICPMS1_140106B** SeqNo: **2604577** Prep Date: **1/6/2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	9.981	1.9	7.764	3.059	89.1	75-125	0			
Barium	281.3	1.9	7.764	275.5	74.6	75-125	0			SO
Cadmium	7.516	0.78	7.764	0.1758	94.5	75-125	0			
Chromium	18.52	1.9	7.764	9.616	115	75-125	0			
Copper	21.79	1.9	7.764	15.82	76.9	75-125	0			
Lead	21.76	1.9	7.764	15.79	76.9	75-125	0			
Nickel	15.86	1.9	7.764	8.656	92.8	75-125	0			
Selenium	7.589	1.9	7.764	0.9078	86.1	75-125	0			
Silver	7.147	1.9	7.764	0.03639	91.6	75-125	0			
Zinc	48.84	3.9	7.764	40.86	103	75-125	0			O

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54703** Instrument ID **ICPMS1** Method: **SW6020A**

MSD Sample ID: **1401074-01BMSD** Units: **mg/Kg** Analysis Date: **1/7/2014 01:44 AM**
Client ID: Run ID: **ICPMS1_140106B** SeqNo: **2604580** Prep Date: **1/6/2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.13	1.9	7.645	3.059	92.4	75-125	9.981	1.45	25	
Barium	312.9	1.9	7.645	275.5	488	75-125	281.3	10.6	25	SO
Cadmium	7.515	0.76	7.645	0.1758	96	75-125	7.516	0.00316	25	
Chromium	18.62	1.9	7.645	9.616	118	75-125	18.52	0.533	25	
Copper	22.52	1.9	7.645	15.82	87.7	75-125	21.79	3.29	25	
Lead	20.77	1.9	7.645	15.79	65.2	75-125	21.76	4.64	25	S
Nickel	16.49	1.9	7.645	8.656	103	75-125	15.86	3.94	25	
Selenium	8.054	1.9	7.645	0.9078	93.5	75-125	7.589	5.94	25	
Silver	7.064	1.9	7.645	0.03639	91.9	75-125	7.147	1.16	25	
Zinc	48.7	3.8	7.645	40.86	103	75-125	48.84	0.277	25	O

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54689** Instrument ID **SVMS4** Method: **SW8270**

MBLK Sample ID: **SBLKS1-54689-54689** Units: **µg/Kg** Analysis Date: **1/7/2014 06:48 PM**
Client ID: Run ID: **SVMS4_140107A** SeqNo: **2605699** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Acenaphthylene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	*1203*	0	*1667*	0	*72.2*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1410*	0	*1667*	0	*84.6*	*25-137*	0			
Surr: Nitrobenzene-d5	*1268*	0	*1667*	0	*76.1*	*37-107*	0			

LCS Sample ID: **SLCSS1-54689-54689** Units: **µg/Kg** Analysis Date: **1/7/2014 03:50 PM**
Client ID: Run ID: **SVMS4_140107A** SeqNo: **2605696** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	579.7	6.7	666.7	0	86.9	45-110	0			
Acenaphthylene	575.3	6.7	666.7	0	86.3	45-105	0			
Anthracene	629.7	6.7	666.7	0	94.4	55-105	0			
Benzo(a)anthracene	683.7	6.7	666.7	0	103	50-110	0			
Benzo(a)pyrene	658	6.7	666.7	0	98.7	50-110	0			
Benzo(b)fluoranthene	662.3	6.7	666.7	0	99.3	45-115	0			
Benzo(g,h,i)perylene	685.7	6.7	666.7	0	103	40-125	0			
Benzo(k)fluoranthene	600.3	6.7	666.7	0	90	45-115	0			
Chrysene	626	6.7	666.7	0	93.9	55-110	0			
Dibenzo(a,h)anthracene	691	6.7	666.7	0	104	40-125	0			
Fluoranthene	648.3	6.7	666.7	0	97.2	55-115	0			
Fluorene	618.3	6.7	666.7	0	92.7	50-110	0			
Indeno(1,2,3-cd)pyrene	685.3	6.7	666.7	0	103	40-120	0			
Naphthalene	577.7	6.7	666.7	0	86.6	40-105	0			
Pyrene	616.7	6.7	666.7	0	92.5	45-125	0			
Surr: 2-Fluorobiphenyl	*1339*	0	*1667*	0	*80.3*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1568*	0	*1667*	0	*94.1*	*25-137*	0			
Surr: Nitrobenzene-d5	*1350*	0	*1667*	0	*81*	*37-107*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54689** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: **1401077-01B MS** Units: **µg/Kg** Analysis Date: **1/7/2014 05:36 PM**
Client ID: Run ID: **SVMS4_140107A** SeqNo: **2605697** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1037	13	1256	8.091	82	45-110	0			
Acenaphthylene	966.9	13	1256	0	77	45-105	0			
Anthracene	1148	13	1256	34.95	88.6	55-105	0			
Benzo(a)anthracene	1381	13	1256	110	101	50-110	0			
Benzo(a)pyrene	1283	13	1256	117.5	92.8	50-110	0			
Benzo(b)fluoranthene	1269	13	1256	144.7	89.5	45-115	0			
Benzo(g,h,i)perylene	1098	13	1256	52.43	83.2	40-125	0			
Benzo(k)fluoranthene	1254	13	1256	69.91	94.3	45-115	0			
Chrysene	1258	13	1256	127.2	90	55-110	0			
Dibenzo(a,h)anthracene	1119	13	1256	17.15	87.8	40-125	0			
Fluoranthene	1529	13	1256	270.6	100	55-115	0			
Fluorene	1116	13	1256	8.091	88.2	50-110	0			
Indeno(1,2,3-cd)pyrene	1144	13	1256	54.69	86.7	40-120	0			
Naphthalene	835.7	13	1256	8.091	65.9	40-105	0			
Pyrene	1360	13	1256	221	90.7	45-125	0			
Surr: 2-Fluorobiphenyl	*2132*	0	*3139*	0	*67.9*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2737*	0	*3139*	0	*87.2*	*25-137*	0			
Surr: Nitrobenzene-d5	*1990*	0	*3139*	0	*63.4*	*37-107*	0			

MSD Sample ID: **1401077-01B MSD** Units: **µg/Kg** Analysis Date: **1/7/2014 06:12 PM**
Client ID: Run ID: **SVMS4_140107A** SeqNo: **2605698** Prep Date: **1/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1146	13	1302	8.091	87.4	45-110	1037	10	30	
Acenaphthylene	1096	13	1302	0	84.1	45-105	966.9	12.5	30	
Anthracene	1226	13	1302	34.95	91.5	55-105	1148	6.63	30	
Benzo(a)anthracene	1488	13	1302	110	106	50-110	1381	7.41	30	
Benzo(a)pyrene	1358	13	1302	117.5	95.3	50-110	1283	5.65	30	
Benzo(b)fluoranthene	1310	13	1302	144.7	89.5	45-115	1269	3.22	30	
Benzo(g,h,i)perylene	985.6	13	1302	52.43	71.7	40-125	1098	10.7	30	
Benzo(k)fluoranthene	1141	13	1302	69.91	82.2	45-115	1254	9.51	30	
Chrysene	1245	13	1302	127.2	85.9	55-110	1258	0.979	30	
Dibenzo(a,h)anthracene	1084	13	1302	17.15	81.9	40-125	1119	3.23	30	
Fluoranthene	1569	13	1302	270.6	99.7	55-115	1529	2.55	30	
Fluorene	1208	13	1302	8.091	92.2	50-110	1116	7.96	30	
Indeno(1,2,3-cd)pyrene	1083	13	1302	54.69	79	40-120	1144	5.45	30	
Naphthalene	993.4	13	1302	8.091	75.7	40-105	835.7	17.2	30	
Pyrene	1376	13	1302	221	88.7	45-125	1360	1.19	30	
Surr: 2-Fluorobiphenyl	*2521*	0	*3255*	0	*77.4*	*12-100*	2132	*16.7*	*40*	
Surr: 4-Terphenyl-d14	*3008*	0	*3255*	0	*92.4*	*25-137*	2737	*9.45*	*40*	
Surr: Nitrobenzene-d5	*2450*	0	*3255*	0	*75.3*	*37-107*	1990	*20.7*	*40*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54689** Instrument ID **SVMS4** Method: **SW8270**

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54655** Instrument ID **VMS8** Method: **SW8260B**

MBLK Sample ID: **MBLK-54655-54655** Units: **µg/Kg** Analysis Date: **1/3/2014 04:45 PM**
Client ID: Run ID: **VMS8_140103A** SeqNo: **2603776** Prep Date: **12/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*925*	0	*1000*	0	*92.5*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*998.5*	0	*1000*	0	*99.8*	*70-130*	0			
Surr: Dibromofluoromethane	*974.5*	0	*1000*	0	*97.4*	*70-130*	0			
Surr: Toluene-d8	*941*	0	*1000*	0	*94.1*	*70-130*	0			

LCS Sample ID: **LCS-54655-54655** Units: **µg/Kg** Analysis Date: **1/3/2014 03:08 PM**
Client ID: Run ID: **VMS8_140103A** SeqNo: **2603773** Prep Date: **12/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	886	30	1000	0	88.6	75-125	0			
Ethylbenzene	941.5	30	1000	0	94.2	75-125	0			
m,p-Xylene	1902	60	2000	0	95.1	80-125	0			
o-Xylene	942	30	1000	0	94.2	75-125	0			
Toluene	850.5	30	1000	0	85	70-125	0			
Xylenes, Total	2844	90	3000	0	94.8	75-125	0			
Surr: 1,2-Dichloroethane-d4	*936.5*	0	*1000*	0	*93.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1011*	0	*1000*	0	*101*	*70-130*	0			
Surr: Dibromofluoromethane	*996.5*	0	*1000*	0	*99.6*	*70-130*	0			
Surr: Toluene-d8	*916.5*	0	*1000*	0	*91.6*	*70-130*	0			

MS Sample ID: **1401078-02A MS** Units: **µg/Kg** Analysis Date: **1/3/2014 09:04 PM**
Client ID: Run ID: **VMS7_140103A** SeqNo: **2603809** Prep Date: **12/31/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1064	30	1000	41.5	102	75-125	0			
Ethylbenzene	997.5	30	1000	0	99.8	75-125	0			
m,p-Xylene	1844	60	2000	58	89.3	80-125	0			
o-Xylene	972	30	1000	0	97.2	75-125	0			
Toluene	1038	30	1000	7.5	103	70-125	0			
Xylenes, Total	2816	90	3000	58	91.9	75-125	0			
Surr: 1,2-Dichloroethane-d4	*975*	0	*1000*	0	*97.5*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1040*	0	*1000*	0	*104*	*70-130*	0			
Surr: Dibromofluoromethane	*994*	0	*1000*	0	*99.4*	*70-130*	0			
Surr: Toluene-d8	*949.5*	0	*1000*	0	*95*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54655** Instrument ID **VMS8** Method: **SW8260B**

MSD Sample ID: **1401078-02A MSD** Units: **µg/Kg** Analysis Date: **1/3/2014 09:29 PM**
Client ID: Run ID: **VMS7_140103A** SeqNo: **2603811** Prep Date: **12/31/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1038	30	1000	41.5	99.6	75-125	1064	2.43	30	
Ethylbenzene	991	30	1000	0	99.1	75-125	997.5	0.654	30	
m,p-Xylene	1846	60	2000	58	89.4	80-125	1844	0.163	30	
o-Xylene	970	30	1000	0	97	75-125	972	0.206	30	
Toluene	1033	30	1000	7.5	103	70-125	1038	0.531	30	
Xylenes, Total	2816	90	3000	58	92	75-125	2816	0.0355	30	
Surr: 1,2-Dichloroethane-d4	*981*	0	*1000*	0	*98.1*	*70-130*	975	*0.613*	*30*	
Surr: 4-Bromofluorobenzene	*1042*	0	*1000*	0	*104*	*70-130*	1040	*0.192*	*30*	
Surr: Dibromofluoromethane	*1006*	0	*1000*	0	*101*	*70-130*	994	*1.15*	*30*	
Surr: Toluene-d8	*961.5*	0	*1000*	0	*96.2*	*70-130*	949.5	*1.26*	*30*	

The following samples were analyzed in this batch: 1401056-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54668** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1401073-01B DUP** Units: **mmhos/cm @25°C** Analysis Date: **1/8/2014 02:45 PM**

Client ID: Run ID: **WETCHEM_140108E** SeqNo: **2605990** Prep Date: **1/8/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.031	0.050	0	0	0		0.975	5.58	50	

The following samples were analyzed in this batch: 1401056-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54669** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-54669-54669** Units: **s.u.** Analysis Date: **1/3/2014 05:45 PM**
Client ID: Run ID: **WETCHEM_140103L** SeqNo: **2603526** Prep Date: **1/3/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.93	0	4	0	98.2	90-110	0			

DUP Sample ID: **1401073-01A DUP** Units: **s.u.** Analysis Date: **1/3/2014 05:45 PM**
Client ID: Run ID: **WETCHEM_140103L** SeqNo: **2603535** Prep Date: **1/3/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.87	0	0	0	0	0-0	7.7	2.18	20	

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **54821** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-54821-54821** Units: **mg/Kg** Analysis Date: **1/10/2014 02:00 PM**
Client ID: Run ID: **WETCHEM_140110I** SeqNo: **2607936** Prep Date: **1/9/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.50								

LCS Sample ID: **LCS-54821-54821** Units: **mg/Kg** Analysis Date: **1/10/2014 02:00 PM**
Client ID: Run ID: **WETCHEM_140110I** SeqNo: **2607935** Prep Date: **1/9/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.8	0.50	2	0	90	80-120	0			

MS Sample ID: **13121018-09B MS** Units: **mg/Kg** Analysis Date: **1/10/2014 02:00 PM**
Client ID: Run ID: **WETCHEM_140110I** SeqNo: **2607913** Prep Date: **1/9/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.751	0.49	1.946	0.2392	77.7	75-125	0			

MS Sample ID: **13121018-09B MSI** Units: **mg/Kg** Analysis Date: **1/10/2014 02:00 PM**
Client ID: Run ID: **WETCHEM_140110I** SeqNo: **2607915** Prep Date: **1/9/2014** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1246	48	954.2	0.2392	131	75-125	0			S

MSD Sample ID: **13121018-09B MSD** Units: **mg/Kg** Analysis Date: **1/10/2014 02:00 PM**
Client ID: Run ID: **WETCHEM_140110I** SeqNo: **2607914** Prep Date: **1/9/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.859	0.49	1.953	0.2392	83	75-125	1.751	6.01	20	

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401056
Project: WPX PA 22-11 Pit Closure 12.23.13

QC BATCH REPORT

Batch ID: **R133540** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R133540** Units: **% of sample** Analysis Date: **1/3/2014 04:52 PM**
Client ID: Run ID: **MOIST_140103B** SeqNo: **2603552** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R133540** Units: **% of sample** Analysis Date: **1/3/2014 04:52 PM**
Client ID: Run ID: **MOIST_140103B** SeqNo: **2603548** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1401078-01B DUP** Units: **% of sample** Analysis Date: **1/3/2014 04:52 PM**
Client ID: Run ID: **MOIST_140103B** SeqNo: **2603541** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	7.26	0.050	0	0	0	0-0	7.59	4.44	20	

DUP Sample ID: **1401078-02B DUP** Units: **% of sample** Analysis Date: **1/3/2014 04:52 PM**
Client ID: Run ID: **MOIST_140103B** SeqNo: **2603543** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	16.85	0.050	0	0	0	0-0	18.3	8.25	20	

The following samples were analyzed in this batch: 1401056-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

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Chain-of-Custody

Form 202r8

WORKORDER #: 1401056

		SAMPLER	Reed Wold	DATE	1/2/14	PAGE	1 of 1
PROJECT NAME	WPX PA 22-11 Pit	SITE ID	PA 22-11	TURNAROUND	Standard	DISPOSAL	By Lab (circled) or Return to Client
PROJECT No.	closure	EDD FORMAT					
		PURCHASE ORDER					
COMPANY NAME	HRL Compliance	BILL TO COMPANY	WPX				
SEND REPORT TO	Mark Mumby	INVOICE ATTN TO	Karolina Blaney				
ADDRESS	2385 F 1/2 Rd	ADDRESS	1058 Co Rd 215				
CITY / STATE / ZIP	Grand Junction, CO 81506	CITY / STATE / ZIP	Parachure CO 81635				
PHONE	970-243-3271	PHONE	970-683-2295				
FAX	970-243-3280	FAX					
E-MAIL	mmumby@hrlcomp.com rwold@hrlcomp.com	E-MAIL	Karolina.blaney@wpxenergy.com				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX/GRO	DRO/PAH/metals	SAR/EC/pH
1	PA 22-11 cuttings	SO	12/23/13	10:40	1	8		X	X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

4.2°c

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Reed Wold	Reed Wold	1/2/14	2:15
RECEIVED BY	[signature]	[signature]	1-2-14	2:15
RELINQUISHED BY	[signature]	[signature]	1/2	230
RECEIVED BY	[signature]	Diane F. Shaw	1/3/14	1000
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **03-Jan-14 10:00**

Work Order: **1401056** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 03-Jan-14 (Date) Reviewed by: Ann Preston (eSignature) 03-Jan-14 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/3/2014 12:45:04 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (970) 424-4749
Lab Hub, LLC

127 E First Street

PARACHUTE, CO 81635

Origin ID: RILA

FedEx Express

J1320130626O326

Ship Date: 02JAN14
ActWgt: 53.0 LB
CAD: 103923490/INET3430

Dims: 25 X 14 X 15 IN

Delivery Address Bar Code

Ref # 1001-010213-1
Invoice #
PO #
Dept #

SHIP TO: (616) 399-6070 BILL RECIPIENT

Sample recieving
ALS Holland
3352 128TH AVE

HOLLAND, MI 49424

1 of 2

FRI - 03 JAN 10:30A
PRIORITY OVERNIGHT

TRK# **7975 4656 7939**

0201

MASTER

XX GRRA

49424
MI-US
GRR

51AG1/D6EC/1A9E

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

3 of 10

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Tax I.D. 62-0814289

Est. 1970

Karolina Blaney
Williams
1058 County Road 215
Parachute, CO 81635

Report Summary

Friday October 14, 2011

Report Number: L540261
Samples Received: 10/06/11
Client Project:

Description: PA 22-11

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, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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

Karolina Blaney
Williams
1058 County Road 215
Parachute, CO 81635

October 14, 2011

ESC Sample # : L540261-02

Date Received : October 06, 2011
Description : PA 22-11

Site ID : PA 22-11

Sample ID : PA 22-11-B-1

Project # :

Collected By :
Collection Date : 10/05/11 09:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.0	1.0	mg/kg	6010B	10/12/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 10/14/11 13:35 Printed: 10/14/11 13:35

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REPORT OF ANALYSIS

Karolina Blaney
Williams
1058 County Road 215
Parachute, CO 81635

October 14, 2011

ESC Sample # : L540261-03

Date Received : October 06, 2011
Description : PA 22-11

Site ID : PA 22-11

Sample ID : PA 22-11-B-2

Project # :

Collected By :
Collection Date : 10/05/11 09:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.0	1.0	mg/kg	6010B	10/12/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 10/14/11 13:35 Printed: 10/14/11 13:35

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REPORT OF ANALYSIS

Karolina Blaney
Williams
1058 County Road 215
Parachute, CO 81635

October 14, 2011

ESC Sample # : L540261-04

Date Received : October 06, 2011
Description : PA 22-11

Site ID : PA 22-11

Sample ID : PA 22-11-B-3

Project # :

Collected By :
Collection Date : 10/05/11 09:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.8	1.0	mg/kg	6010B	10/12/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 10/14/11 13:35 Printed: 10/14/11 13:35

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REPORT OF ANALYSIS

Karolina Blaney
Williams
1058 County Road 215
Parachute, CO 81635

October 14, 2011

ESC Sample # : L540261-05

Date Received : October 06, 2011
Description : PA 22-11

Site ID : PA 22-11

Sample ID : PA 22-11-B-4

Project # :

Collected By :
Collection Date : 10/05/11 09:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.2	1.0	mg/kg	6010B	10/12/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 10/14/11 13:35 Printed: 10/14/11 13:35

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REPORT OF ANALYSIS

Karolina Blaney
Williams
1058 County Road 215
Parachute, CO 81635

October 14, 2011

ESC Sample # : L540261-06

Date Received : October 06, 2011
Description : PA 22-11

Site ID : PA 22-11

Sample ID : PA 22-11-B-5

Project # :

Collected By :
Collection Date : 10/05/11 09:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.7	1.0	mg/kg	6010B	10/12/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 10/14/11 13:35 Printed: 10/14/11 13:35

Summary of Remarks For Samples Printed
10/14/11 at 13:35:33

TSR Signing Reports: 364
R5 - Desired TAT

use WILPCO-910-1 for 910 list use WILPCO-910-1 for 910 list, $100 min invoice removed per Rodney Mann 9/19/11 TAH

Sample: L540261-01 Account: WILPCO Received: 10/06/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 13:35

Sample: L540261-02 Account: WILPCO Received: 10/06/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 13:35

Sample: L540261-03 Account: WILPCO Received: 10/06/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 13:35

Sample: L540261-04 Account: WILPCO Received: 10/06/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 13:35

Sample: L540261-05 Account: WILPCO Received: 10/06/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 13:35

Sample: L540261-06 Account: WILPCO Received: 10/06/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 13:35

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Williams
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L540261

October 14, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
pH	4.60	su			WG559483	10/08/11 14:00
Mercury	< .02	mg/kg			WG559443	10/10/11 07:41
Acenaphthene	< .006	mg/kg			WG559652	10/10/11 14:33
Anthracene	< .006	mg/kg			WG559652	10/10/11 14:33
Benzo(a)anthracene	< .006	mg/kg			WG559652	10/10/11 14:33
Benzo(a)pyrene	< .006	mg/kg			WG559652	10/10/11 14:33
Benzo(b)fluoranthene	< .006	mg/kg			WG559652	10/10/11 14:33
Benzo(k)fluoranthene	< .006	mg/kg			WG559652	10/10/11 14:33
Chrysene	< .006	mg/kg			WG559652	10/10/11 14:33
Dibenz(a,h)anthracene	< .006	mg/kg			WG559652	10/10/11 14:33
Fluoranthene	< .006	mg/kg			WG559652	10/10/11 14:33
Fluorene	< .006	mg/kg			WG559652	10/10/11 14:33
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG559652	10/10/11 14:33
Naphthalene	< .006	mg/kg			WG559652	10/10/11 14:33
Pyrene	< .006	mg/kg			WG559652	10/10/11 14:33
2-Fluorobiphenyl		% Rec.	68.31	34-129	WG559652	10/10/11 14:33
Nitrobenzene-d5		% Rec.	61.56	14-141	WG559652	10/10/11 14:33
p-Terphenyl-d14		% Rec.	85.84	25-139	WG559652	10/10/11 14:33
Chromium,Hexavalent	< 2	mg/kg			WG559616	10/11/11 08:42
Specific Conductance	1.00	umhos/cm			WG559802	10/11/11 15:29
Benzene	< .0005	mg/kg			WG559635	10/09/11 23:33
Ethylbenzene	< .0005	mg/kg			WG559635	10/09/11 23:33
Toluene	< .005	mg/kg			WG559635	10/09/11 23:33
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG559635	10/09/11 23:33
Total Xylene	< .0015	mg/kg			WG559635	10/09/11 23:33
a,a,a-Trifluorotoluene(FID)		% Rec.	91.62	59-128	WG559635	10/09/11 23:33
a,a,a-Trifluorotoluene(PID)		% Rec.	95.81	54-144	WG559635	10/09/11 23:33
TPH (GC/FID) High Fraction	< 4	ppm			WG559628	10/10/11 12:31
o-Terphenyl		% Rec.	70.52	50-150	WG559628	10/10/11 12:31
Arsenic	< 1	mg/kg			WG559782	10/12/11 09:41
Arsenic	< 1	mg/kg			WG559356	10/12/11 23:56
Barium	< .25	mg/kg			WG559356	10/12/11 23:56
Cadmium	< .25	mg/kg			WG559356	10/12/11 23:56
Chromium	< .5	mg/kg			WG559356	10/12/11 23:56
Copper	< 1	mg/kg			WG559356	10/12/11 23:56
Lead	< .25	mg/kg			WG559356	10/12/11 23:56
Nickel	< 1	mg/kg			WG559356	10/12/11 23:56
Selenium	< 1	mg/kg			WG559356	10/12/11 23:56
Silver	< .5	mg/kg			WG559356	10/12/11 23:56
Zinc	< 1.5	mg/kg			WG559356	10/12/11 23:56

* 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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Est. 1970

Williams
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L540261

October 14, 2011

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
pH	su	5.80	6.00	3.74*	1	L540005-01	WG559483
pH	su	7.00	6.80	3.04*	1	L540349-01	WG559483
Mercury	mg/kg	0	0	0	20	L540261-01	WG559443
Chromium,Hexavalent	mg/kg	0	0	0	20	L540562-02	WG559616
Chromium,Hexavalent	mg/kg	0	0	0	20	L540236-01	WG559616
Specific Conductance	umhos/cm	580.	630.	7.92	20	L540236-07	WG559802
Specific Conductance	umhos/cm	1300	1300	2.26	20	L540562-02	WG559802
ORP	mV	150.	150.	1.98	20	L540236-06	WG559681
ORP	mV	59.0	63.0	6.56	20	L540508-04	WG559681
Arsenic	mg/kg	3.90	3.20	19.5	20	L540261-05	WG559782
Arsenic	mg/kg	2.70	2.60	2.66	20	L540236-09	WG559356
Barium	mg/kg	150.	150.	2.02	20	L540236-09	WG559356
Cadmium	mg/kg	0.0930	0.0670	32.5*	20	L540236-09	WG559356
Chromium	mg/kg	17.0	17.0	0.587	20	L540236-09	WG559356
Copper	mg/kg	14.0	14.0	1.44	20	L540236-09	WG559356
Lead	mg/kg	9.50	9.10	4.72	20	L540236-09	WG559356
Nickel	mg/kg	15.0	14.0	6.23	20	L540236-09	WG559356
Selenium	mg/kg	4.20	4.30	3.55	20	L540236-09	WG559356
Silver	mg/kg	1.60	0.590	90.7*	20	L540236-09	WG559356
Zinc	mg/kg	39.0	37.0	5.77	20	L540236-09	WG559356

Analyte	Units	Known Val	Laboratory Control Sample Result	% Rec	Limit	Batch
pH	su	9.04	8.90	98.5	98-101	WG559483
Mercury	mg/kg	3.77	3.65	96.8	71.6-128	WG559443
Acenaphthene	mg/kg	.033	0.0267	80.9	52-108	WG559652
Anthracene	mg/kg	.033	0.0256	77.6	58-120	WG559652
Benzo(a)anthracene	mg/kg	.033	0.0276	83.7	54-110	WG559652
Benzo(a)pyrene	mg/kg	.033	0.0291	88.3	56-118	WG559652
Benzo(b)fluoranthene	mg/kg	.033	0.0307	92.9	55-114	WG559652
Benzo(k)fluoranthene	mg/kg	.033	0.0269	81.5	55-122	WG559652
Chrysene	mg/kg	.033	0.0263	79.8	57-118	WG559652
Dibenz(a,h)anthracene	mg/kg	.033	0.0364	110.	53-122	WG559652
Fluoranthene	mg/kg	.033	0.0291	88.2	58-118	WG559652
Fluorene	mg/kg	.033	0.0283	85.7	54-109	WG559652
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0355	108.	51-125	WG559652
Naphthalene	mg/kg	.033	0.0247	74.7	45-105	WG559652
Pyrene	mg/kg	.033	0.0276	83.6	53-121	WG559652
2-Fluorobiphenyl				75.90	34-129	WG559652
Nitrobenzene-d5				72.48	14-141	WG559652
p-Terphenyl-d14				86.34	25-139	WG559652

* 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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Est. 1970

Williams
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L540261

October 14, 2011

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	132	104.	78.8	50-150	WG559616
Specific Conductance	umhos/cm	427	420.	98.4	85-115	WG559802
Benzene	mg/kg	.05	0.0436	87.3	76-113	WG559635
Ethylbenzene	mg/kg	.05	0.0488	97.6	78-115	WG559635
Toluene	mg/kg	.05	0.0501	100.	76-114	WG559635
Total Xylene	mg/kg	.15	0.143	95.5	81-118	WG559635
a,a,a-Trifluorotoluene(PID)				95.23	54-144	WG559635
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.61	120.	67-135	WG559635
a,a,a-Trifluorotoluene(FID)				97.35	59-128	WG559635
TPH (GC/FID) High Fraction	ppm	60	49.8	83.0	50-150	WG559628
o-Terphenyl				76.15	50-150	WG559628
ORP	mV	229	220.	96.1	95.6-104.37	WG559681
Arsenic	mg/kg	92.6	90.0	97.2	82.9-117	WG559782
Arsenic	mg/kg	92.6	87.4	94.4	82.9-117	WG559356
Barium	mg/kg	169	171.	101.	82.8-117	WG559356
Cadmium	mg/kg	61.8	59.7	96.6	83.3-117	WG559356
Chromium	mg/kg	71.3	69.9	98.0	81.8-118	WG559356
Copper	mg/kg	81.2	85.7	106.	83.9-116	WG559356
Lead	mg/kg	92.4	89.1	96.4	83.3-117	WG559356
Nickel	mg/kg	59.1	55.7	94.2	83.8-116	WG559356
Selenium	mg/kg	89.5	88.5	98.9	79-121	WG559356
Silver	mg/kg	34.4	35.7	104.	66.3-134	WG559356
Zinc	mg/kg	141	131.	92.9	80.9-119	WG559356

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	8.90	8.90	98.0	98-101	0	20	WG559483
Chromium,Hexavalent	mg/kg	105.	104.	80.0	50-150	0.957	20	WG559616
Acenaphthene	mg/kg	0.0261	0.0267	79.0	52-108	2.38	22	WG559652
Anthracene	mg/kg	0.0261	0.0256	79.0	58-120	2.01	20	WG559652
Benzo(a)anthracene	mg/kg	0.0286	0.0276	86.0	54-110	3.40	22	WG559652
Benzo(a)pyrene	mg/kg	0.0295	0.0291	89.0	56-118	1.09	21	WG559652
Benzo(b)fluoranthene	mg/kg	0.0296	0.0307	90.0	55-114	3.50	20	WG559652
Benzo(k)fluoranthene	mg/kg	0.0279	0.0269	84.0	55-122	3.74	25	WG559652
Chrysene	mg/kg	0.0270	0.0263	82.0	57-118	2.34	20	WG559652
Dibenz(a,h)anthracene	mg/kg	0.0364	0.0364	110.	53-122	0.108	20	WG559652
Fluoranthene	mg/kg	0.0282	0.0291	85.0	58-118	3.21	20	WG559652
Fluorene	mg/kg	0.0276	0.0283	84.0	54-109	2.33	20	WG559652
Indeno(1,2,3-cd)pyrene	mg/kg	0.0352	0.0355	107.	51-125	0.979	21	WG559652
Naphthalene	mg/kg	0.0228	0.0247	69.0	45-105	7.76	24	WG559652
Pyrene	mg/kg	0.0276	0.0276	84.0	53-121	0.252	20	WG559652
2-Fluorobiphenyl				67.14	34-129			WG559652

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Quality Assurance Report
Level II

L540261

October 14, 2011

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Nitrobenzene-d5				61.18	14-141			
p-Terphenyl-d14				80.96	25-139			
Specific Conductance	umhos/	420.	420.	98.0	85-115	0	20	WG559802
Benzene	mg/kg	0.0435	0.0436	87.0	76-113	0.330	20	WG559635
Ethylbenzene	mg/kg	0.0482	0.0488	96.0	78-115	1.20	20	WG559635
Toluene	mg/kg	0.0500	0.0501	100.	76-114	0.110	20	WG559635
Total Xylene	mg/kg	0.140	0.143	93.0	81-118	2.51	20	WG559635
a,a,a-Trifluorotoluene(PID)				95.89	54-144			WG559635
TPH (GC/FID) Low Fraction	mg/kg	6.76	6.61	123.	67-135	2.29	20	WG559635
a,a,a-Trifluorotoluene(FID)				97.23	59-128			WG559635
TPH (GC/FID) High Fraction	ppm	46.7	49.8	78.0	50-150	6.39	25	WG559628
o-Terphenyl				74.35	50-150			WG559628
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG559681

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.249	0	.25	99.6	70-130	L540261-01	WG559443
Chromium,Hexavalent	mg/kg	199.	0	20	39.7*	50-150	L540236-09	WG559616
Acenaphthene	mg/kg	0.0251	0	.033	76.2	43-133	L540381-01	WG559652
Anthracene	mg/kg	0.0278	0	.033	84.2	38-153	L540381-01	WG559652
Benzo(a)anthracene	mg/kg	0.0302	0	.033	91.5	31-142	L540381-01	WG559652
Benzo(a)pyrene	mg/kg	0.0314	0	.033	95.2	26-152	L540381-01	WG559652
Benzo(b)fluoranthene	mg/kg	0.0333	0	.033	101.	10-188	L540381-01	WG559652
Benzo(k)fluoranthene	mg/kg	0.0293	0	.033	88.8	22-163	L540381-01	WG559652
Chrysene	mg/kg	0.0294	0	.033	89.2	26-146	L540381-01	WG559652
Dibenz(a,h)anthracene	mg/kg	0.0338	0	.033	102.	10-160	L540381-01	WG559652
Fluoranthene	mg/kg	0.0319	0	.033	96.8	23-160	L540381-01	WG559652
Fluorene	mg/kg	0.0289	0	.033	87.7	44-143	L540381-01	WG559652
Indeno(1,2,3-cd)pyrene	mg/kg	0.0328	0	.033	99.5	10-157	L540381-01	WG559652
Naphthalene	mg/kg	0.0209	0	.033	63.4	22-156	L540381-01	WG559652
Pyrene	mg/kg	0.0287	0	.033	87.1	12-170	L540381-01	WG559652
2-Fluorobiphenyl					67.93	34-129		WG559652
Nitrobenzene-d5					60.39	14-141		WG559652
p-Terphenyl-d14					87.41	25-139		WG559652
Benzene	mg/kg	0.201	0	.05	80.4	32-137	L540254-01	WG559635
Ethylbenzene	mg/kg	0.217	0	.05	86.9	10-150	L540254-01	WG559635
Toluene	mg/kg	0.231	0	.05	92.4	20-142	L540254-01	WG559635
Total Xylene	mg/kg	0.629	0	.15	83.8	16-141	L540254-01	WG559635
a,a,a-Trifluorotoluene(PID)					94.77	54-144		WG559635
TPH (GC/FID) Low Fraction	mg/kg	24.6	0	5.5	89.5	55-109	L540254-01	WG559635
a,a,a-Trifluorotoluene(FID)					95.00	59-128		WG559635
TPH (GC/FID) High Fraction	ppm	54.8	13.0	60	69.6	50-150	L540562-02	WG559628
o-Terphenyl					67.17	50-150		WG559628

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Quality Assurance Report
Level II

L540261

October 14, 2011

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Arsenic	mg/kg	48.3	3.20	50	90.2	75-125	L540261-05	WG559782
Arsenic	mg/kg	46.3	2.60	50	87.4	75-125	L540236-09	WG559356
Barium	mg/kg	196.	150.	50	92.0	75-125	L540236-09	WG559356
Cadmium	mg/kg	45.5	0.0670	50	90.9	75-125	L540236-09	WG559356
Chromium	mg/kg	63.0	17.0	50	92.0	75-125	L540236-09	WG559356
Copper	mg/kg	63.1	14.0	50	98.2	75-125	L540236-09	WG559356
Lead	mg/kg	53.2	9.10	50	88.2	75-125	L540236-09	WG559356
Nickel	mg/kg	55.1	14.0	50	82.2	75-125	L540236-09	WG559356
Selenium	mg/kg	47.0	4.30	50	85.4	75-125	L540236-09	WG559356
Silver	mg/kg	50.0	0.590	50	98.8	75-125	L540236-09	WG559356
Zinc	mg/kg	80.2	37.0	50	86.4	75-125	L540236-09	WG559356

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.282	0.249	113.	70-130	12.4	20	L540261-01	WG559443
Chromium,Hexavalent	mg/kg	195.	199.	39.0*	50-150	1.98	20	L540236-09	WG559616
Acenaphthene	mg/kg	0.0234	0.0251	70.8	43-133	7.39	26	L540381-01	WG559652
Anthracene	mg/kg	0.0273	0.0278	82.9	38-153	1.62	27	L540381-01	WG559652
Benzo(a)anthracene	mg/kg	0.0291	0.0302	88.2	31-142	3.59	31	L540381-01	WG559652
Benzo(a)pyrene	mg/kg	0.0303	0.0314	91.8	26-152	3.57	32	L540381-01	WG559652
Benzo(b)fluoranthene	mg/kg	0.0314	0.0333	95.2	10-188	5.77	33	L540381-01	WG559652
Benzo(k)fluoranthene	mg/kg	0.0288	0.0293	87.4	22-163	1.58	29	L540381-01	WG559652
Chrysene	mg/kg	0.0279	0.0294	84.4	26-146	5.44	30	L540381-01	WG559652
Dibenz(a,h)anthracene	mg/kg	0.0324	0.0338	98.1	10-160	4.28	39	L540381-01	WG559652
Fluoranthene	mg/kg	0.0309	0.0319	93.6	23-160	3.33	22	L540381-01	WG559652
Fluorene	mg/kg	0.0265	0.0289	80.3	44-143	8.77	23	L540381-01	WG559652
Indeno(1,2,3-cd)pyrene	mg/kg	0.0311	0.0328	94.4	10-157	5.25	40	L540381-01	WG559652
Naphthalene	mg/kg	0.0189	0.0209	57.3	22-156	10.1	27	L540381-01	WG559652
Pyrene	mg/kg	0.0274	0.0287	83.2	12-170	4.65	24	L540381-01	WG559652
2-Fluorobiphenyl				63.63	34-129				WG559652
Nitrobenzene-d5				54.31	14-141				WG559652
p-Terphenyl-d14				83.83	25-139				WG559652
Benzene	mg/kg	0.208	0.201	83.1	32-137	3.36	39	L540254-01	WG559635
Ethylbenzene	mg/kg	0.224	0.217	89.4	10-150	2.86	44	L540254-01	WG559635
Toluene	mg/kg	0.234	0.231	93.6	20-142	1.25	42	L540254-01	WG559635
Total Xylene	mg/kg	0.641	0.629	85.5	16-141	1.91	46	L540254-01	WG559635
a,a,a-Trifluorotoluene(PID)				95.58	54-144				WG559635
TPH (GC/FID) Low Fraction	mg/kg	24.8	24.6	90.3	55-109	0.886	20	L540254-01	WG559635
a,a,a-Trifluorotoluene(FID)				95.45	59-128				WG559635
TPH (GC/FID) High Fraction	ppm	55.7	54.8	71.1	50-150	1.65	25	L540562-02	WG559628
o-Terphenyl				70.25	50-150				WG559628
Arsenic	mg/kg	50.4	48.3	94.4	75-125	4.26	20	L540261-05	WG559782
Arsenic	mg/kg	47.4	46.3	89.6	75-125	2.35	20	L540236-09	WG559356

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Quality Assurance Report
Level II

L540261

October 14, 2011

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Barium	mg/kg	200.	196.	100.	75-125	2.02	20	L540236-09	WG559356
Cadmium	mg/kg	46.1	45.5	92.1	75-125	1.31	20	L540236-09	WG559356
Chromium	mg/kg	62.5	63.0	91.0	75-125	0.797	20	L540236-09	WG559356
Copper	mg/kg	63.0	63.1	98.0	75-125	0.159	20	L540236-09	WG559356
Lead	mg/kg	54.8	53.2	91.4	75-125	2.96	20	L540236-09	WG559356
Nickel	mg/kg	54.1	55.1	80.2	75-125	1.83	20	L540236-09	WG559356
Selenium	mg/kg	47.6	47.0	86.6	75-125	1.27	20	L540236-09	WG559356
Silver	mg/kg	49.5	50.0	97.8	75-125	1.01	20	L540236-09	WG559356
Zinc	mg/kg	79.5	80.2	85.0	75-125	0.877	20	L540236-09	WG559356

Batch number /Run number / Sample number cross reference

WG559483: R1889972: L540261-01
WG559443: R1890334: L540261-01
WG559652: R1890632: L540261-01
WG559616: R1891197: L540261-01
WG559802: R1892212: L540261-01
WG559635: R1892472: L540261-01
WG559628: R1892715: L540261-01
WG559681: R1893214: L540261-01
WG559782: R1894212 R1894213: L540261-02 03 04 05 06
WG559356: R1894373: L540261-01
WG560121: R1896332: L540261-01

* * Calculations are performed prior to rounding of reported values.
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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.