



October 8, 2015

Stan Spencer  
NW Environmental Protection Specialist  
Colorado Oil and Gas Conservation Commission  
796 Megan Ave, Suite 201,  
Rifle, CO 81650

Re: PA 22-34 Produced Water Spill and Historical Release Closure Request

Dear Mr. Spencer,

Attached are the laboratory reports and the sample location map for soil samples collected from the excavated area, landfarmed material, and nearby non-impacted native soil in order to close the condensate and produced water spill that occurred at the PA 22-34 well pad and was discovered on March 3, 2014.

Soil impacted by the produced water spill was excavated and a total of five grab confirmation samples were collected from the bottom and four walls of the excavation. Due to the pad size constraints, the soil was landfarmed on three COGCC locations, permitted with the supplemental Form 19, in 11 separate batches. One composite sample was collected from each landfarm batch. All samples were analyzed for the constituents listed in the COGCC Table 910-1. Three grab samples were collected from nearby non-impacted, native soil to establish the background concentrations for arsenic. In accordance with the COGCC Rule 910.b.(3)E. one grab sample was analyzed for inorganics to establish background soil conditions.

As the attached laboratory reports indicate, the constituents of concern listed above tested below the cleanup requirements. Based on these results, WPX respectfully requests closure of this incident.

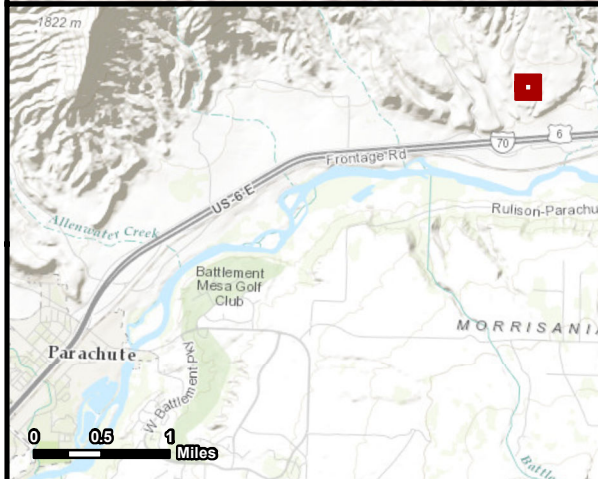
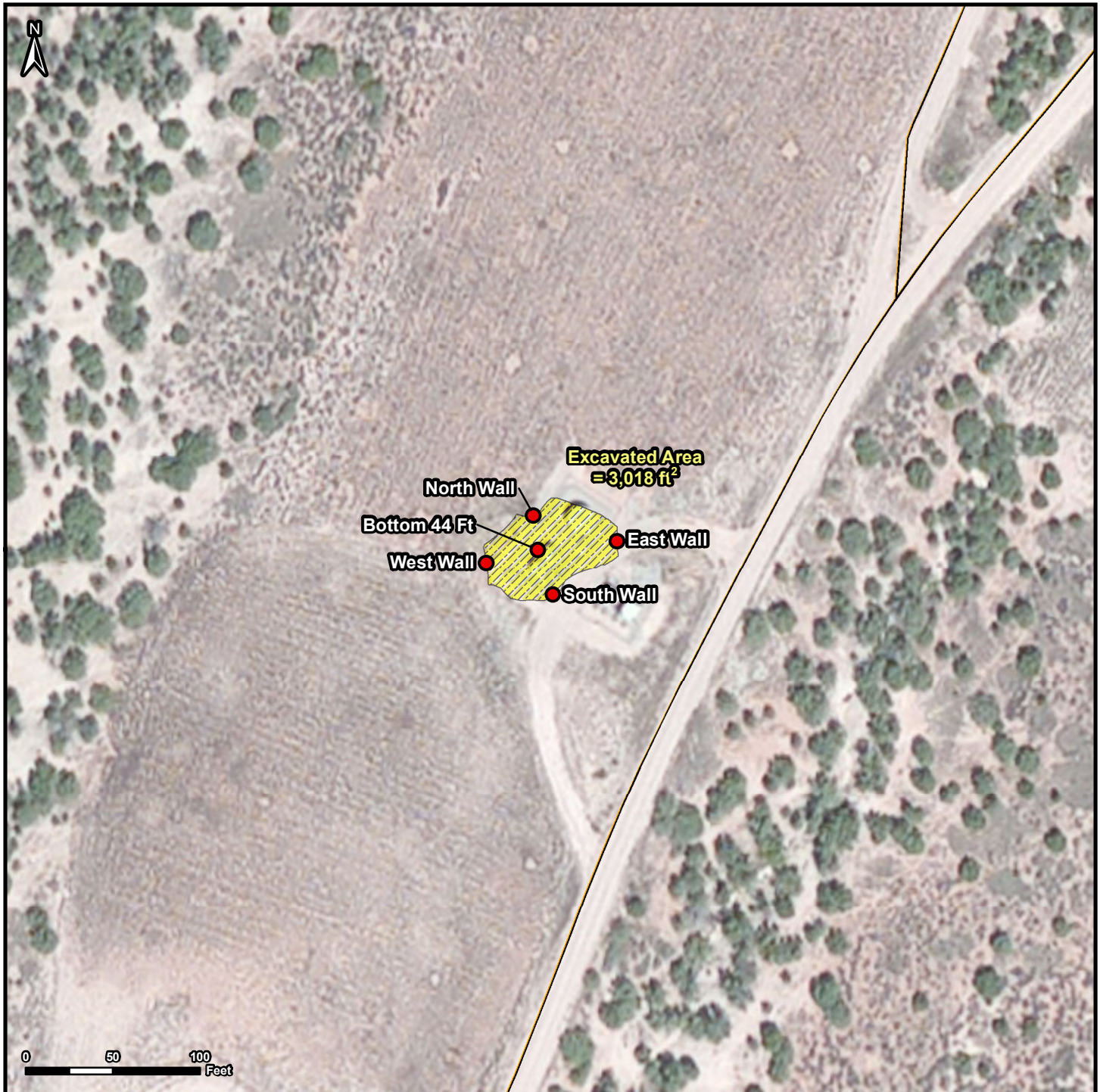
Please do not hesitate to contact me at (970) 683-2295 should you have any questions or concerns regarding this information.

Sincerely,

Karolina Blaney  
Environmental Specialist

Attachments (2)

- Sampling Location Map
- Laboratory Reports



#### NOTES / COMMENTS:

DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HCSL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.



### SAMPLE LOCATION MAP

PA 22-34

39.482907 -107.987615  
Section 34, Township 6 South, Range 95 West

#### Mapped Features

- Sample Location
- Excavated Area

#### PLSS

- Township
- Section

#### Transportation

- CO Highways
- County Roads
- Local Streets
- Access Roads

#### Hydrography

- Ditch
- Intermittent Stream
- Perennial Stream
- Waterbody
- Watershed



HRL COMPLIANCE SOLUTIONS, INC.  
Environmental Consultants

Author: E. Fought




Revision: 0

Date: 10/1/2015





## Legend

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

**PA 22-34**  
**Arsenic Background Sample Location Map**  
**T6S R95W, Section 34**

**October 8, 2015**





Contaminant of Concern ↓	COGCC standards	Location →	North Wall	South Wall	South Wall	West Wall
		Date Sampled →	3/12/2014	3/12/2014	3/19/2014	3/12/2014
Organic Compounds in Soil						
TPH	500	mg/kg	ND	940	30	ND
DRO		mg/kg	ND	330	ND	ND
GRO		mg/kg	ND	610	30	ND
Benzene	0.17	mg/kg	0.12	0.074	ND	0.05
Toluene	85	mg/kg	0.68	0.25	ND	0.13
Ethylbenzene	100	mg/kg	ND	1.5	ND	ND
Xylenes (Total)	175	mg/kg	0.53	ND	ND	ND
Acenaphthene	1,000	mg/kg	ND	ND		ND
Anthracene	1,000	mg/kg	ND	ND		ND
Benzo(A)anthracene	0.22	mg/kg	ND	ND		ND
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND		ND
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND		ND
Benzo(A)pyrene	0.022	mg/kg	ND	ND		ND
Chrysene	22	mg/kg	ND	ND		ND
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND		ND
Fluoranthene	1,000	mg/kg	ND	ND		ND
Fluorene	1,000	mg/kg	ND	0.014		ND
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND	ND		ND
Naphthalene	23	mg/kg	ND	ND		ND
Pyrene	1,000	mg/kg	ND	ND		ND
Inorganics in Soil						
EC	<4 or 2 x background	mmhos/cm		28		12
SAR	<12			15		16
pH	6-9			8.2		8.2
Metals in Soil						
Arsenic	0.39	mg/kg				
Barium total	15,000	mg/kg				
Cadmium	70	mg/kg				
Chromium (III)	120,000	mg/kg				
Chromium (VI)	23	mg/kg				
Copper	3,100	mg/kg				
Lead	400	mg/kg				
Mercury	23	mg/kg				
Nickel	1,600	mg/kg				
Selenium	390	mg/kg				
Silver	390	mg/kg				
Zinc	23,000	mg/kg				

Contaminant of Concern ↓	COGCC standards	Location →	East Wall	East Wall	Bottom 32'	Bottom 44'	PA 31-34 Batch 1	PA 31-34 Batch 1
		Date Sampled →	3/12/2014	3/19/2014	3/12/2014	3/19/2014	5/1/2014	8/27/2014
Organic Compounds in Soil								
TPH	500	mg/kg	77		14,900	60	2,860	26
DRO		mg/kg	ND		2,900	17	660	26
GRO		mg/kg	77		12,000	43	2,200	ND
Benzene	0.17	mg/kg	0.44	0.068	ND	0.067	0.082	
Toluene	85	mg/kg	7.7	1.6	ND	0.54	13	
Ethylbenzene	100	mg/kg	0.64	0.30	ND	0.071	3.6	
Xylenes (Total)	175	mg/kg	12	6	ND	1.5	94	
Acenaphthene	1,000	mg/kg	ND		ND		ND	
Anthracene	1,000	mg/kg	ND		0.013		ND	
Benzo(A)anthracene	0.22	mg/kg	ND		ND		ND	
Benzo(B)fluoranthene	0.22	mg/kg	ND		ND		ND	
Benzo(K)fluoranthene	2.2	mg/kg	ND		ND		ND	
Benzo(A)pyrene	0.022	mg/kg	ND		ND		ND	
Chrysene	22	mg/kg	ND		ND		ND	
Dibenzo(A,H)anthracene	0.022	mg/kg	ND		ND		ND	
Fluoranthene	1,000	mg/kg	ND		ND		ND	
Fluorene	1,000	mg/kg	ND		0.089		0.039	
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND		ND		ND	
Naphthalene	23	mg/kg	0.0093		3.4		0.71	
Pyrene	1,000	mg/kg	ND		ND		ND	
Inorganics in Soil								
EC	<4 or 2 x background	mmhos/cm	5		9.8		3.3	
SAR	<12		8.7		13		9.9	
pH	6-9		9		8		8.6	
Metals in Soil								
Arsenic	0.39	mg/kg					6.6	
Barium total	15,000	mg/kg					310	
Cadmium	70	mg/kg					ND	
Chromium (III)	120,000	mg/kg					11	
Chromium (VI)	23	mg/kg					ND	
Copper	3,100	mg/kg					10	
Lead	400	mg/kg					12	
Mercury	23	mg/kg					0.028	
Nickel	1,600	mg/kg					12	
Selenium	390	mg/kg					ND	
Silver	390	mg/kg					ND	
Zinc	23,000	mg/kg					40	

Contaminant of Concern ↓	COGCC standards	Location →	PA 31-34 Batch 2	PA 31-34 Batch 2	PA 31-34 Batch 3	PA 31-34 Batch 4	PA 31-34 Batch 5	PA 31-34 Batch 5
		Date Sampled →	9/18/2014	12/5/2014	2/4/2015	3/5/2015	5/13/2015	6/25/2015
Organic Compounds in Soil								
TPH	500	mg/kg	1,180	484	110	450	1,340	170
DRO		mg/kg	320	410	110	200	880	170
GRO		mg/kg	860	74	ND	250	460	ND
Benzene	0.17	mg/kg	ND		ND	ND	ND	
Toluene	85	mg/kg	ND		ND	0.21	ND	
Ethylbenzene	100	mg/kg	ND		ND	0.38	ND	
Xylenes (Total)	175	mg/kg	26		ND	37	7.3	
Acenaphthene	1,000	mg/kg	ND		ND	ND	ND	
Anthracene	1,000	mg/kg	ND		ND	ND	ND	
Benzo(A)anthracene	0.22	mg/kg	ND		ND	ND	ND	
Benzo(B)fluoranthene	0.22	mg/kg	ND		ND	ND	ND	
Benzo(K)fluoranthene	2.2	mg/kg	ND		ND	ND	ND	
Benzo(A)pyrene	0.022	mg/kg	ND		ND	ND	ND	
Chrysene	22	mg/kg	ND		ND	ND	ND	
Dibenzo(A,H)anthracene	0.022	mg/kg	ND		ND	ND	ND	
Fluoranthene	1,000	mg/kg	ND		ND	ND	ND	
Fluorene	1,000	mg/kg	0.031		ND	0.013	ND	
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND		ND	ND	ND	
Naphthalene	23	mg/kg	0.18		ND	0.097	ND	
Pyrene	1,000	mg/kg	ND		ND	ND	ND	
Inorganics in Soil								
EC	<4 or 2 x background	mmhos/cm	4.1		1	7.7	10	
SAR	<12		7.9		4.2	11	10	
pH	6-9		8.1		8.5	8.6	7.9	
Metals in Soil								
Arsenic	0.39	mg/kg	6.4		7.6	12	19	
Barium total	15,000	mg/kg	310		190	220	260	
Cadmium	70	mg/kg	ND		ND	ND	ND	
Chromium (III)	120,000	mg/kg	15		ND	13	11	
Chromium (VI)	23	mg/kg	ND		ND	ND	ND	
Copper	3,100	mg/kg	12		10	14	27	
Lead	400	mg/kg	11		9.2	12	23	
Mercury	23	mg/kg	0.025		ND	0.032	0.023	
Nickel	1,600	mg/kg	15		10	17	18	
Selenium	390	mg/kg	ND		ND	ND	ND	
Silver	390	mg/kg	ND		ND	ND	ND	
Zinc	23,000	mg/kg	44		34	72	56	

Contaminant of Concern ↓	COGCC standards	Location →	PA 31-34 Batch 6	PA 31-34 Batch 6	PA 322-34 Batch 1	PA 322-34 Batch 2	PA 322-34 Batch 2
		Date Sampled →	7/29/2015	9/21/2015	9/18/2015	10/23/2014	2/4/2015
Organic Compounds in Soil							
TPH	500	mg/kg	1,170	47	330	1,260	166
DRO		mg/kg	640	47	190	300	74
GRO		mg/kg	530	ND	140	960	92
Benzene	0.17	mg/kg	ND		ND	ND	
Toluene	85	mg/kg	ND		ND	ND	
Ethylbenzene	100	mg/kg	ND		ND	ND	
Xylenes (Total)	175	mg/kg	0.82		0.32	ND	
Acenaphthene	1,000	mg/kg	ND		ND	ND	
Anthracene	1,000	mg/kg	ND		ND	ND	
Benzo(A)anthracene	0.22	mg/kg	ND		ND	ND	
Benzo(B)fluoranthene	0.22	mg/kg	ND		ND	ND	
Benzo(K)fluoranthene	2.2	mg/kg	ND		ND	ND	
Benzo(A)pyrene	0.022	mg/kg	ND		ND	ND	
Chrysene	22	mg/kg	ND		ND	ND	
Dibenzo(A,H)anthracene	0.022	mg/kg	ND		ND	ND	
Fluoranthene	1,000	mg/kg	ND		ND	ND	
Fluorene	1,000	mg/kg	0.04		ND	ND	
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND		ND	ND	
Naphthalene	23	mg/kg	0.096		ND	ND	
Pyrene	1,000	mg/kg	ND		ND	ND	
Inorganics in Soil							
EC	<4 or 2 x background	mmhos/cm	11		8.7		
SAR	<12		12		6.9		
pH	6-9		8.3		7.9		
Metals in Soil							
Arsenic	0.39	mg/kg	9.5		6.5		
Barium total	15,000	mg/kg	250		250		
Cadmium	70	mg/kg	ND		0.66		
Chromium (III)	120,000	mg/kg	12		13		
Chromium (VI)	23	mg/kg	ND		ND		
Copper	3,100	mg/kg	13		11		
Lead	400	mg/kg	6		11		
Mercury	23	mg/kg	0.023		0.027		
Nickel	1,600	mg/kg	26		13		
Selenium	390	mg/kg	ND		2		
Silver	390	mg/kg	ND		ND		
Zinc	23,000	mg/kg	39		42		

Contaminant of Concern ↓	COGCC standards	Location →	PA 322-34 Batch 3	PA 322-34 Batch 3	PA 322-34 Batch 4	PA 322-34 Batch 4	PA 21-34 Batch 1	PA 21-34 Batch 1
		Date Sampled →	5/13/2015	6/25/2015	7/29/2015	9/21/2014	7/29/2015	9/21/2015
Organic Compounds in Soil								
TPH	500	mg/kg	770	320	860	355	660	490
DRO		mg/kg	180	190	640	310	280	250
GRO		mg/kg	590	130	220	45	380	240
Benzene	0.17	mg/kg	ND		ND		ND	
Toluene	85	mg/kg	ND		ND		ND	
Ethylbenzene	100	mg/kg	ND		ND		ND	
Xylenes (Total)	175	mg/kg	0.93		1.2		1	
Acenaphthene	1,000	mg/kg	ND		ND		ND	
Anthracene	1,000	mg/kg	ND		ND		ND	
Benzo(A)anthracene	0.22	mg/kg	ND		ND		ND	
Benzo(B)fluoranthene	0.22	mg/kg	ND		ND		ND	
Benzo(K)fluoranthene	2.2	mg/kg	ND		ND		ND	
Benzo(A)pyrene	0.022	mg/kg	ND		ND		ND	
Chrysene	22	mg/kg	ND		ND		ND	
Dibenzo(A,H)anthracene	0.022	mg/kg	ND		ND		ND	
Fluoranthene	1,000	mg/kg	ND		0.0086		ND	
Fluorene	1,000	mg/kg	ND		ND		0.049	
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND		ND		ND	
Naphthalene	23	mg/kg	0.06		0.14		0.13	
Pyrene	1,000	mg/kg	ND		ND		ND	
Inorganics in Soil								
EC	<4 or 2 x background	mmhos/cm	6.6		11		11	
SAR	<12		11		13		12	
pH	6-9		7.8		8.3		8.4	
Metals in Soil								
Arsenic	0.39	mg/kg	8.6		9.9		9.7	
Barium total	15,000	mg/kg	180		220		250	
Cadmium	70	mg/kg	ND		ND		ND	
Chromium (III)	120,000	mg/kg	9		12		14	
Chromium (VI)	23	mg/kg	ND		ND		ND	
Copper	3,100	mg/kg	12		13		16	
Lead	400	mg/kg	11		7.2		5.7	
Mercury	23	mg/kg	0.024		0.026		0.021	
Nickel	1,600	mg/kg	11		23		28	
Selenium	390	mg/kg	ND		ND		ND	
Silver	390	mg/kg	ND		ND		ND	
Zinc	23,000	mg/kg	42		45		44	



Contaminant of Concern ↓	COGCC standards	Location →	PA 22-34-B-1	PA 22-34-B-2	PA 22-34-B-3	PA 22-34-B-4	PA 22-34-B-5
		Date Sampled →	9/28/2015	9/28/2015	9/28/2015	9/28/2015	9/28/2015
Organic Compounds in Soil							
TPH	500	mg/kg					
DRO		mg/kg					
GRO		mg/kg					
Benzene	0.17	mg/kg					
Toluene	85	mg/kg					
Ethylbenzene	100	mg/kg					
Xylenes (Total)	175	mg/kg					
Acenaphthene	1,000	mg/kg					
Anthracene	1,000	mg/kg					
Benzo(A)anthracene	0.22	mg/kg					
Benzo(B)fluoranthene	0.22	mg/kg					
Benzo(K)fluoranthene	2.2	mg/kg					
Benzo(A)pyrene	0.022	mg/kg					
Chrysene	22	mg/kg					
Dibenzo(A,H)anthracene	0.022	mg/kg					
Fluoranthene	1,000	mg/kg					
Fluorene	1,000	mg/kg					
Indeno(1,2,3-cd)pyrene	0.22	mg/kg					
Naphthalene	23	mg/kg					
Pyrene	1,000	mg/kg					
Inorganics in Soil							
EC	<4 or 2 x background	mmhos/cm				0.3	
SAR	<12					0.048	
pH	6-9					8.1	
Metals in Soil							
Arsenic	0.39	mg/kg	5	9.9	6.7	6.8	9.6
Barium total	15,000	mg/kg					
Cadmium	70	mg/kg					
Chromium (III)	120,000	mg/kg					
Chromium (VI)	23	mg/kg					
Copper	3,100	mg/kg					
Lead	400	mg/kg					
Mercury	23	mg/kg					
Nickel	1,600	mg/kg					
Selenium	390	mg/kg					
Silver	390	mg/kg					
Zinc	23,000	mg/kg					



18-Mar-2014

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

Re: **WPX PA 22-34 Produced Water Spill 3.12.14**

Work Order: **1403523**

Dear Mark,

ALS Environmental received 5 samples on 13-Mar-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 29.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Work Order:** 1403523

**Work Order Sample Summary**

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1403523-01	South Wall	Soil		3/12/2014 14:00	3/13/2014 10:00	<input type="checkbox"/>
1403523-02	West Wall	Soil		3/12/2014 11:00	3/13/2014 10:00	<input type="checkbox"/>
1403523-03	North Wall	Soil		3/8/2014 13:30	3/13/2014 10:00	<input type="checkbox"/>
1403523-04	East Wall	Soil		3/12/2014 14:30	3/13/2014 10:00	<input type="checkbox"/>
1403523-05	Bottom 32 Ft	Soil		3/12/2014 14:45	3/13/2014 10:00	<input type="checkbox"/>



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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Work Order:** 1403523

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**Case Narrative**

Batch 56520 sample 1403523-05 PAH analysis had one high surrogate recovery a due to sample matrix interference. Target analytes were not affected by the interference. No qualification is necessary.

Batch 56532 sample 1403523-05 was run at a dilution for BTEX due to high concentrations of target and non target analytes.

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**WorkOrder:** 1403523

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** South Wall  
**Collection Date:** 3/12/2014 02:00 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/13/14	Analyst: <b>CW</b>
<b>DRO (C10-C28)</b>	<b>330</b>		<b>4.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/13/2014 08:54 PM
Surr: 4-Terphenyl-d14	79.0		39-115	%REC	1	3/13/2014 08:54 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/13/14	Analyst: <b>CW</b>
<b>GRO (C6-C10)</b>	<b>610</b>		<b>3.0</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/13/2014 03:41 PM
Surr: Toluene-d8	108		50-150	%REC	1	3/13/2014 03:41 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>480</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	3/18/2014 12:58 PM
<b>Magnesium</b>	<b>1,800</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/18/2014 12:58 PM
<b>Sodium</b>	<b>3,300</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	3/18/2014 12:58 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
<b>Sodium Adsorption Ratio</b>	<b>15</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	3/18/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/13/14	Analyst: <b>HL</b>
Acenaphthene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Acenaphthylene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Anthracene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Benzo(a)anthracene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Benzo(a)pyrene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Benzo(b)fluoranthene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Benzo(g,h,i)perylene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Benzo(k)fluoranthene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Chrysene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Dibenzo(a,h)anthracene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Fluoranthene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
<b>Fluorene</b>	<b>14</b>		<b>7.9</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/14/2014 12:12 PM
Indeno(1,2,3-cd)pyrene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
<b>Naphthalene</b>	<b>200</b>		<b>7.9</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/14/2014 12:12 PM
Pyrene	ND		7.9	µg/Kg-dry	1	3/14/2014 12:12 PM
Surr: 2-Fluorobiphenyl	56.0		12-100	%REC	1	3/14/2014 12:12 PM
Surr: 4-Terphenyl-d14	80.6		25-137	%REC	1	3/14/2014 12:12 PM
Surr: Nitrobenzene-d5	70.2		37-107	%REC	1	3/14/2014 12:12 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/13/14	Analyst: <b>RS</b>
<b>Benzene</b>	<b>74</b>		<b>36</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/13/2014 05:21 PM
Ethylbenzene	ND		36	µg/Kg-dry	1	3/13/2014 05:21 PM
<b>m,p-Xylene</b>	<b>290</b>		<b>72</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/13/2014 05:21 PM
<b>o-Xylene</b>	<b>1,200</b>		<b>36</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/13/2014 05:21 PM

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



**ALS Group USA, Corp**

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** South Wall  
**Collection Date:** 3/12/2014 02:00 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Toluene	250		36	µg/Kg-dry	1	3/13/2014 05:21 PM
Xylenes, Total	1,500		110	µg/Kg-dry	1	3/13/2014 05:21 PM
Surr: 1,2-Dichloroethane-d4	91.2		70-130	%REC	1	3/13/2014 05:21 PM
Surr: 4-Bromofluorobenzene	91.0		70-130	%REC	1	3/13/2014 05:21 PM
Surr: Dibromofluoromethane	90.3		70-130	%REC	1	3/13/2014 05:21 PM
Surr: Toluene-d8	120		70-130	%REC	1	3/13/2014 05:21 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep: USDA Method 20B / 3/17/14	Analyst: JB
Electrical Conductivity @ Saturation	28		0.050	mmhos/cm @25	10	3/17/2014 04:50 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	16		0.050	% of sample	1	3/13/2014 04:37 PM
PH			SW9045D		Prep: EXTRACT / 3/13/14	Analyst: AT
pH	8.2			s.u.	1	3/13/2014 04:20 PM

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

# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** West Wall  
**Collection Date:** 3/12/2014 11:00 AM

**Work Order:** 1403523  
**Lab ID:** 1403523-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/13/14	Analyst: <b>CW</b>
DRO (C10-C28)	ND		4.7	mg/Kg-dry	1	3/13/2014 09:25 PM
Surr: 4-Terphenyl-d14	70.7		39-115	%REC	1	3/13/2014 09:25 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/13/14	Analyst: <b>CW</b>
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	3/13/2014 04:06 PM
Surr: Toluene-d8	107		50-150	%REC	1	3/13/2014 04:06 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
Calcium	170		10	mg/L	20	3/18/2014 01:04 PM
Magnesium	340		4.0	mg/L	20	3/18/2014 01:04 PM
Sodium	1,500		4.0	mg/L	20	3/18/2014 01:04 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
Sodium Adsorption Ratio	16		0.010	none	1	3/18/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/13/14	Analyst: <b>HL</b>
Acenaphthene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Acenaphthylene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Chrysene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Fluorene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Naphthalene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 12:35 PM
Surr: 2-Fluorobiphenyl	51.9		12-100	%REC	1	3/14/2014 12:35 PM
Surr: 4-Terphenyl-d14	80.7		25-137	%REC	1	3/14/2014 12:35 PM
Surr: Nitrobenzene-d5	51.2		37-107	%REC	1	3/14/2014 12:35 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/13/14	Analyst: <b>RS</b>
Benzene	47		34	µg/Kg-dry	1	3/13/2014 03:35 PM
Ethylbenzene	ND		34	µg/Kg-dry	1	3/13/2014 03:35 PM
m,p-Xylene	ND		69	µg/Kg-dry	1	3/13/2014 03:35 PM
o-Xylene	ND		34	µg/Kg-dry	1	3/13/2014 03:35 PM

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

**ALS Group USA, Corp**

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** West Wall  
**Collection Date:** 3/12/2014 11:00 AM

**Work Order:** 1403523  
**Lab ID:** 1403523-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Toluene</b>	<b>130</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/13/2014 03:35 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	3/13/2014 03:35 PM
Surr: 1,2-Dichloroethane-d4	91.6		70-130	%REC	1	3/13/2014 03:35 PM
Surr: 4-Bromofluorobenzene	97.5		70-130	%REC	1	3/13/2014 03:35 PM
Surr: Dibromofluoromethane	90.4		70-130	%REC	1	3/13/2014 03:35 PM
Surr: Toluene-d8	96.2		70-130	%REC	1	3/13/2014 03:35 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/17/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	<b>10</b>		<b>0.050</b>	mmhos/cm @25	10	3/17/2014 04:50 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	<b>12</b>		<b>0.050</b>	% of sample	1	3/13/2014 04:37 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/13/14		Analyst: <b>AT</b>
pH	<b>8.1</b>			s.u.	1	3/13/2014 04:20 PM

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



# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** North Wall  
**Collection Date:** 3/8/2014 01:30 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-03  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/13/14	Analyst: <b>CW</b>
DRO (C10-C28)	ND		4.8	mg/Kg-dry	1	3/13/2014 10:25 PM
Surr: 4-Terphenyl-d14	79.7		39-115	%REC	1	3/13/2014 10:25 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/13/14	Analyst: <b>CW</b>
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	3/13/2014 04:32 PM
Surr: Toluene-d8	101		50-150	%REC	1	3/13/2014 04:32 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
Calcium	520		10	mg/L	20	3/18/2014 01:10 PM
Magnesium	460		4.0	mg/L	20	3/18/2014 01:10 PM
Sodium	1,500		4.0	mg/L	20	3/18/2014 01:10 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
Sodium Adsorption Ratio	11		0.010	none	1	3/18/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/13/14	Analyst: <b>HL</b>
Acenaphthene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Acenaphthylene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Anthracene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Benzo(a)anthracene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Benzo(a)pyrene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Benzo(b)fluoranthene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Benzo(g,h,i)perylene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Benzo(k)fluoranthene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Chrysene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Dibenzo(a,h)anthracene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Fluoranthene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Fluorene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Indeno(1,2,3-cd)pyrene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Naphthalene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Pyrene	ND		7.7	µg/Kg-dry	1	3/14/2014 12:57 PM
Surr: 2-Fluorobiphenyl	67.8		12-100	%REC	1	3/14/2014 12:57 PM
Surr: 4-Terphenyl-d14	99.6		25-137	%REC	1	3/14/2014 12:57 PM
Surr: Nitrobenzene-d5	65.7		37-107	%REC	1	3/14/2014 12:57 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/13/14	Analyst: <b>RS</b>
Benzene	120		35	µg/Kg-dry	1	3/13/2014 04:55 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	3/13/2014 04:55 PM
m,p-Xylene	460		70	µg/Kg-dry	1	3/13/2014 04:55 PM
o-Xylene	72		35	µg/Kg-dry	1	3/13/2014 04:55 PM

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

# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** North Wall  
**Collection Date:** 3/8/2014 01:30 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-03  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Toluene</b>	<b>680</b>		<b>35</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/13/2014 04:55 PM
<b>Xylenes, Total</b>	<b>530</b>		<b>110</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/13/2014 04:55 PM
Surr: 1,2-Dichloroethane-d4	92.0		70-130	%REC	1	3/13/2014 04:55 PM
Surr: 4-Bromofluorobenzene	96.0		70-130	%REC	1	3/13/2014 04:55 PM
Surr: Dibromofluoromethane	90.9		70-130	%REC	1	3/13/2014 04:55 PM
Surr: Toluene-d8	94.4		70-130	%REC	1	3/13/2014 04:55 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b> Prep: USDA Method 20B / 3/17/14			
Electrical Conductivity @ Saturation	12		0.050	mmhos/cm @25	10	3/17/2014 04:50 PM
<b>MOISTURE</b>			<b>A2540 G</b> Analyst: <b>AT</b>			
Moisture	15		0.050	% of sample	1	3/13/2014 04:37 PM
<b>PH</b>			<b>SW9045D</b> Prep: EXTRACT / 3/13/14 Analyst: <b>AT</b>			
pH	8.2			s.u.	1	3/13/2014 04:20 PM

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

# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** East Wall  
**Collection Date:** 3/12/2014 02:30 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-04  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/13/14	Analyst: <b>CW</b>
DRO (C10-C28)	ND		4.7	mg/Kg-dry	1	3/13/2014 10:55 PM
Surr: 4-Terphenyl-d14	76.5		39-115	%REC	1	3/13/2014 10:55 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/13/14	Analyst: <b>CW</b>
GRO (C6-C10)	77		2.8	mg/Kg-dry	1	3/13/2014 04:57 PM
Surr: Toluene-d8	85.4		50-150	%REC	1	3/13/2014 04:57 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
Calcium	110		10	mg/L	20	3/18/2014 01:21 PM
Magnesium	170		4.0	mg/L	20	3/18/2014 01:21 PM
Sodium	630		4.0	mg/L	20	3/18/2014 01:21 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
Sodium Adsorption Ratio	8.7		0.010	none	1	3/18/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/13/14	Analyst: <b>HL</b>
Acenaphthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Acenaphthylene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Chrysene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Fluorene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
<b>Naphthalene</b>	<b>9.3</b>		<b>7.5</b>	<b>µg/Kg-dry</b>	1	3/14/2014 01:19 PM
Pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:19 PM
Surr: 2-Fluorobiphenyl	64.6		12-100	%REC	1	3/14/2014 01:19 PM
Surr: 4-Terphenyl-d14	92.2		25-137	%REC	1	3/14/2014 01:19 PM
Surr: Nitrobenzene-d5	63.3		37-107	%REC	1	3/14/2014 01:19 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/13/14	Analyst: <b>RS</b>
Benzene	440		34	µg/Kg-dry	1	3/13/2014 04:28 PM
Ethylbenzene	640		34	µg/Kg-dry	1	3/13/2014 04:28 PM
m,p-Xylene	10,000		68	µg/Kg-dry	1	3/13/2014 04:28 PM
o-Xylene	1,500		34	µg/Kg-dry	1	3/13/2014 04:28 PM

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

# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** East Wall  
**Collection Date:** 3/12/2014 02:30 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-04  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Toluene	7,700		68	µg/Kg-dry	2	3/14/2014 12:07 PM
Xylenes, Total	12,000		100	µg/Kg-dry	1	3/13/2014 04:28 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	2	3/14/2014 12:07 PM
Surr: 1,2-Dichloroethane-d4	92.2		70-130	%REC	1	3/13/2014 04:28 PM
Surr: 4-Bromofluorobenzene	98.3		70-130	%REC	2	3/14/2014 12:07 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	3/13/2014 04:28 PM
Surr: Dibromofluoromethane	99.4		70-130	%REC	2	3/14/2014 12:07 PM
Surr: Dibromofluoromethane	88.8		70-130	%REC	1	3/13/2014 04:28 PM
Surr: Toluene-d8	97.8		70-130	%REC	1	3/13/2014 04:28 PM
Surr: Toluene-d8	99.6		70-130	%REC	2	3/14/2014 12:07 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep: USDA Method 20B / 3/17/14	Analyst: JB
Electrical Conductivity @ Saturation	5.0		0.050	mmhos/cm @25	10	3/17/2014 04:50 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	12		0.050	% of sample	1	3/13/2014 04:37 PM
PH			SW9045D		Prep: EXTRACT / 3/13/14	Analyst: AT
pH	9.0			s.u.	1	3/13/2014 04:20 PM

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



# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** Bottom 32 Ft  
**Collection Date:** 3/12/2014 02:45 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-05  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>2,900</b>		<b>19</b>	<b>mg/Kg-dry</b>	<b>4</b>	<b>3/17/2014 10:18 AM</b>
Surr: 4-Terphenyl-d14	109		39-115	%REC	4	3/17/2014 10:18 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>12,000</b>		<b>58</b>	<b>mg/Kg-dry</b>	<b>20</b>	<b>3/17/2014 02:31 PM</b>
Surr: Toluene-d8	123		50-150	%REC	20	3/17/2014 02:31 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>200</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	<b>3/18/2014 01:27 PM</b>
<b>Magnesium</b>	<b>320</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>3/18/2014 01:27 PM</b>
<b>Sodium</b>	<b>1,300</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	<b>3/18/2014 01:27 PM</b>
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/17/14	Analyst: <b>RH</b>
<b>Sodium Adsorption Ratio</b>	<b>13</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	<b>3/18/2014</b>
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 3/13/14	Analyst: <b>HL</b>
Acenaphthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Acenaphthylene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
<b>Anthracene</b>	<b>13</b>		<b>7.5</b>	<b>µg/Kg-dry</b>	<b>1</b>	<b>3/14/2014 01:42 PM</b>
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Chrysene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Fluoranthene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
<b>Fluorene</b>	<b>89</b>		<b>7.5</b>	<b>µg/Kg-dry</b>	<b>1</b>	<b>3/14/2014 01:42 PM</b>
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
<b>Naphthalene</b>	<b>3,400</b>		<b>75</b>	<b>µg/Kg-dry</b>	<b>10</b>	<b>3/14/2014 02:26 PM</b>
Pyrene	ND		7.5	µg/Kg-dry	1	3/14/2014 01:42 PM
Surr: 2-Fluorobiphenyl	67.8		12-100	%REC	10	3/14/2014 02:26 PM
Surr: 4-Terphenyl-d14	87.4		25-137	%REC	10	3/14/2014 02:26 PM
Surr: Nitrobenzene-d5	224	S	37-107	%REC	10	3/14/2014 02:26 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/13/14	Analyst: <b>RS</b>
<b>Benzene</b>	<b>33,000</b>		<b>3,500</b>	<b>µg/Kg-dry</b>	<b>100</b>	<b>3/13/2014 04:01 PM</b>
<b>Ethylbenzene</b>	<b>45,000</b>		<b>3,500</b>	<b>µg/Kg-dry</b>	<b>100</b>	<b>3/13/2014 04:01 PM</b>
<b>m,p-Xylene</b>	<b>700,000</b>		<b>6,900</b>	<b>µg/Kg-dry</b>	<b>100</b>	<b>3/13/2014 04:01 PM</b>
<b>o-Xylene</b>	<b>92,000</b>		<b>3,500</b>	<b>µg/Kg-dry</b>	<b>100</b>	<b>3/13/2014 04:01 PM</b>

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

# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14  
**Sample ID:** Bottom 32 Ft  
**Collection Date:** 3/12/2014 02:45 PM

**Work Order:** 1403523  
**Lab ID:** 1403523-05  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Toluene</b>	<b>420,000</b>		<b>3,500</b>	<b>µg/Kg-dry</b>	100	3/13/2014 04:01 PM
<b>Xylenes, Total</b>	<b>790,000</b>		<b>10,000</b>	<b>µg/Kg-dry</b>	100	3/13/2014 04:01 PM
Surr: 1,2-Dichloroethane-d4	90.6		70-130	%REC	100	3/13/2014 04:01 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	100	3/13/2014 04:01 PM
Surr: Dibromofluoromethane	89.8		70-130	%REC	100	3/13/2014 04:01 PM
Surr: Toluene-d8	105		70-130	%REC	100	3/13/2014 04:01 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b> Prep: USDA Method 20B / 3/17/14			
Electrical Conductivity @ Saturation	9.8		0.050	mmhos/cm @25	10	Analyst: <b>JB</b> 3/17/2014 04:50 PM
<b>MOISTURE</b>			<b>A2540 G</b>			
Moisture	14		0.050	% of sample	1	Analyst: <b>AT</b> 3/13/2014 04:37 PM
<b>PH</b>			<b>SW9045D</b> Prep: EXTRACT / 3/13/14			
pH	8.0			s.u.	1	Analyst: <b>AT</b> 3/13/2014 04:20 PM

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

# ALS Group USA, Corp

Date: 18-Mar-14

**Client:** HRL Compliance Solutions, Inc

## QC BATCH REPORT

**Work Order:** 1403523

**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

Batch ID: **56524**

Instrument ID **GC8**

Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-56524-56524</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/13/2014 04:54 PM</b>		
Client ID:		Run ID: <b>GC8_140313B</b>				SeqNo: <b>2673005</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	1.336	0	1.667	0	80.2	39-115	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-56524-56524</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/13/2014 05:24 PM</b>		
Client ID:		Run ID: <b>GC8_140313B</b>				SeqNo: <b>2673006</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	132.7	4.2	166.7	0	79.6	49-124	0			
Surr: 4-Terphenyl-d14	1.106	0	1.667	0	66.4	39-115	0			

<b>MS</b>		Sample ID: <b>1403449-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/13/2014 05:54 PM</b>		
Client ID:		Run ID: <b>GC8_140313B</b>				SeqNo: <b>2673007</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	228.3	7.9	315.7	0	72.3	49-130	0			
Surr: 4-Terphenyl-d14	2.006	0	3.157	0	63.5	39-115	0			

<b>MSD</b>		Sample ID: <b>1403449-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/13/2014 06:24 PM</b>		
Client ID:		Run ID: <b>GC8_140313B</b>				SeqNo: <b>2673009</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	245.6	8.1	322.2	0	76.2	49-130	228.3	7.28	30	
Surr: 4-Terphenyl-d14	2.211	0	3.222	0	68.6	39-115	2.006	9.72	30	

The following samples were analyzed in this batch:

1403523-01A	1403523-02A	1403523-03A
1403523-04A	1403523-05A	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56533**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-56533-56533</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/13/2014 03:15 PM</b>		
Client ID:		Run ID: <b>GC9_140313A</b>				SeqNo: <b>2672991</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	5145	0	5000	0	103	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-56533-56533</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/13/2014 01:57 PM</b>		
Client ID:		Run ID: <b>GC9_140313A</b>				SeqNo: <b>2672990</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	517300	2,500	500000	0	103	70-130	0			
<i>Surr: Toluene-d8</i>	4749	0	5000	0	95	50-150	0			

<b>MS</b>		Sample ID: <b>1403518-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/13/2014 07:08 PM</b>		
Client ID:		Run ID: <b>GC9_140313A</b>				SeqNo: <b>2672999</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	494700	2,500	500000	30600	92.8	70-130	0			
<i>Surr: Toluene-d8</i>	5121	0	5000	0	102	50-150	0			

<b>MSD</b>		Sample ID: <b>1403518-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/13/2014 07:33 PM</b>		
Client ID:		Run ID: <b>GC9_140313A</b>				SeqNo: <b>2673000</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	469300	2,500	500000	30600	87.7	70-130	494700	5.28	30	
<i>Surr: Toluene-d8</i>	5082	0	5000	0	102	50-150	5121	0.774	30	

The following samples were analyzed in this batch:

1403523-01A	1403523-02A	1403523-03A
1403523-04A	1403523-05A	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56644**      Instrument ID **ICPMS2**      Method: **SW6020A**

DUP		Sample ID: <b>1403523-03BDUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>3/18/2014 01:16 PM</b>		
Client ID: <b>North Wall</b>		Run ID: <b>ICPMS2_140318A</b>				SeqNo: <b>2676535</b>		Prep Date: <b>3/17/2014</b>		DF: <b>20</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	512	10	0	0	0	0-0	515.4	0.662		
Magnesium	445.6	4.0	0	0	0	0-0	462.8	3.79		
Sodium	1380	4.0	0	0	0	0-0	1453	5.11		

DUP		Sample ID: <b>1403523-03BDUP</b>				Units: <b>none</b>		Analysis Date: <b>3/18/2014</b>		
Client ID: <b>North Wall</b>		Run ID: <b>SAR_140318A</b>				SeqNo: <b>2676578</b>		Prep Date: <b>3/17/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	10.77	0.010	0	0	0		11.19	3.85	50	

The following samples were analyzed in this batch:

1403523-01B	1403523-02B	1403523-03B
1403523-04B	1403523-05B	

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56520**      Instrument ID **SVMS7**      Method: **SW8270**

MBLK		Sample ID: <b>SBLKS1-56520-56520</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/14/2014 09:35 AM</b>		
Client ID:		Run ID: <b>SVMS7_140314A</b>				SeqNo: <b>2672663</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
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								
<i>Surr: 2-Fluorobiphenyl</i>	1203	0	1667	0	72.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1745	0	1667	0	105	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1133	0	1667	0	68	37-107	0			

LCS		Sample ID: <b>SLCSS1-56520-56520</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/14/2014 09:13 AM</b>		
Client ID:		Run ID: <b>SVMS7_140314A</b>				SeqNo: <b>2672660</b>		Prep Date: <b>3/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	452.3	6.7	666.7	0	67.8	45-110	0			
Acenaphthylene	489.7	6.7	666.7	0	73.4	45-105	0			
Anthracene	511	6.7	666.7	0	76.6	55-105	0			
Benzo(a)anthracene	540	6.7	666.7	0	81	50-110	0			
Benzo(a)pyrene	603.3	6.7	666.7	0	90.5	50-110	0			
Benzo(b)fluoranthene	627	6.7	666.7	0	94	45-115	0			
Benzo(g,h,i)perylene	525.3	6.7	666.7	0	78.8	40-125	0			
Benzo(k)fluoranthene	595.3	6.7	666.7	0	89.3	45-115	0			
Chrysene	505.7	6.7	666.7	0	75.8	55-110	0			
Dibenzo(a,h)anthracene	539.7	6.7	666.7	0	80.9	40-125	0			
Fluoranthene	560.7	6.7	666.7	0	84.1	55-115	0			
Fluorene	538.3	6.7	666.7	0	80.7	50-110	0			
Indeno(1,2,3-cd)pyrene	650	6.7	666.7	0	97.5	40-120	0			
Naphthalene	455.3	6.7	666.7	0	68.3	40-105	0			
Pyrene	537	6.7	666.7	0	80.5	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1255	0	1667	0	75.3	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1729	0	1667	0	104	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1178	0	1667	0	70.7	37-107	0			

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56520**      Instrument ID **SVMS7**      Method: **SW8270**

MS				Sample ID: 1403485-02A MS			Units: µg/Kg		Analysis Date: 3/14/2014 10:43 AM		
Client ID:			Run ID: SVMS7_140314A			SeqNo: 2675461		Prep Date: 3/13/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	824.2	13	1289	0	63.9	45-110	0				
Acenaphthylene	897	13	1289	0	69.6	45-105	0				
Anthracene	982.7	13	1289	0	76.2	55-105	0				
Benzo(a)anthracene	1102	13	1289	0	85.5	50-110	0				
Benzo(a)pyrene	1188	13	1289	0	92.1	50-110	0				
Benzo(b)fluoranthene	1184	13	1289	0	91.9	45-115	0				
Benzo(g,h,i)perylene	1099	13	1289	0	85.2	40-125	0				
Benzo(k)fluoranthene	1144	13	1289	0	88.7	45-115	0				
Chrysene	1081	13	1289	0	83.8	55-110	0				
Dibenzo(a,h)anthracene	1076	13	1289	0	83.5	40-125	0				
Fluoranthene	1121	13	1289	0	87	55-115	0				
Fluorene	985.9	13	1289	0	76.5	50-110	0				
Indeno(1,2,3-cd)pyrene	1306	13	1289	0	101	40-120	0				
Naphthalene	715.3	13	1289	0	55.5	40-105	0				
Pyrene	1095	13	1289	65.56	79.9	45-125	0				
Surr: 2-Fluorobiphenyl	2013	0	3222	0	62.5	12-100	0				
Surr: 4-Terphenyl-d14	3335	0	3222	0	104	25-137	0				
Surr: Nitrobenzene-d5	1928	0	3222	0	59.8	37-107	0				

MSD				Sample ID: 1403485-02A MSD			Units: µg/Kg		Analysis Date: 3/14/2014 11:06 AM		
Client ID:			Run ID: SVMS7_140314A			SeqNo: 2675462		Prep Date: 3/13/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	849.3	13	1286	0	66	45-110	824.2	3.01	30		
Acenaphthylene	876.3	13	1286	0	68.1	45-105	897	2.33	30		
Anthracene	1059	13	1286	0	82.3	55-105	982.7	7.47	30		
Benzo(a)anthracene	1102	13	1286	0	85.7	50-110	1102	0.00837	30		
Benzo(a)pyrene	1232	13	1286	0	95.8	50-110	1188	3.66	30		
Benzo(b)fluoranthene	1285	13	1286	0	99.9	45-115	1184	8.12	30		
Benzo(g,h,i)perylene	1192	13	1286	0	92.7	40-125	1099	8.15	30		
Benzo(k)fluoranthene	1186	13	1286	0	92.2	45-115	1144	3.64	30		
Chrysene	1085	13	1286	0	84.3	55-110	1081	0.369	30		
Dibenzo(a,h)anthracene	1135	13	1286	0	88.3	40-125	1076	5.36	30		
Fluoranthene	1167	13	1286	0	90.7	55-115	1121	3.99	30		
Fluorene	1015	13	1286	0	78.9	50-110	985.9	2.93	30		
Indeno(1,2,3-cd)pyrene	1400	13	1286	0	109	40-120	1306	6.91	30		
Naphthalene	774.1	13	1286	0	60.2	40-105	715.3	7.9	30		
Pyrene	1133	13	1286	65.56	83	45-125	1095	3.42	30		
Surr: 2-Fluorobiphenyl	2079	0	3215	0	64.7	12-100	2013	3.2	40		
Surr: 4-Terphenyl-d14	3388	0	3215	0	105	25-137	3335	1.56	40		
Surr: Nitrobenzene-d5	2037	0	3215	0	63.4	37-107	1928	5.52	40		

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

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Batch ID: **56520**      Instrument ID **SVMS7**      Method: **SW8270**

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**The following samples were analyzed in this batch:**

1403523-01A	1403523-02A	1403523-03A
1403523-04A	1403523-05A	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56532**      Instrument ID **VMS5**      Method: **SW8260B**

MBLK				Sample ID: MBLK-56532-56532				Units: µg/Kg			Analysis Date: 3/13/2014 09:04 PM			
Client ID:				Run ID: VMS5_140313A				SeqNo: 2672530			Prep Date: 3/13/2014		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	1015	0	1000	0	102	70-130		0						
Surr: 4-Bromofluorobenzene	979.5	0	1000	0	98	70-130		0						
Surr: Dibromofluoromethane	1009	0	1000	0	101	70-130		0						
Surr: Toluene-d8	989	0	1000	0	98.9	70-130		0						

LCS				Sample ID: LCS-56532-56532			Units: µg/Kg		Analysis Date: 3/13/2014 07:19 PM		
Client ID:			Run ID: VMS5_140313A			SeqNo: 2672528		Prep Date: 3/13/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	920.5	30	1000	0	92	75-125	0				
Ethylbenzene	962	30	1000	0	96.2	75-125	0				
m,p-Xylene	1924	60	2000	0	96.2	80-125	0				
o-Xylene	970	30	1000	0	97	75-125	0				
Toluene	927	30	1000	0	92.7	70-125	0				
Xylenes, Total	2894	90	3000	0	96.5	75-125	0				
Surr: 1,2-Dichloroethane-d4	1006	0	1000	0	101	70-130	0				
Surr: 4-Bromofluorobenzene	1004	0	1000	0	100	70-130	0				
Surr: Dibromofluoromethane	1012	0	1000	0	101	70-130	0				
Surr: Toluene-d8	995.5	0	1000	0	99.6	70-130	0				

MS				Sample ID: 1403485-02B MS			Units: µg/Kg		Analysis Date: 3/14/2014 10:19 AM		
Client ID:			Run ID: VMS6_140313B			SeqNo: 2672606		Prep Date: 3/13/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	929.3	31	1025	0	90.7	75-125	0				
Ethylbenzene	940.1	31	1025	0	91.8	75-125	0				
m,p-Xylene	1938	61	2049	0	94.6	80-125	0				
o-Xylene	963.1	31	1025	10.76	93	75-125	0				
Toluene	932.4	31	1025	0	91	70-125	0				
Xylenes, Total	2901	92	3074	0	94.4	75-125	0				
Surr: 1,2-Dichloroethane-d4	927.8	0	1025	0	90.6	70-130	0				
Surr: 4-Bromofluorobenzene	992.3	0	1025	0	96.8	70-130	0				
Surr: Dibromofluoromethane	937	0	1025	0	91.4	70-130	0				
Surr: Toluene-d8	969.8	0	1025	0	94.6	70-130	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56532**      Instrument ID **VMS5**      Method: **SW8260B**

MSD				Sample ID: <b>1403485-02B MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>3/14/2014 10:45 AM</b>	
Client ID:				Run ID: <b>VMS6_140313B</b>			SeqNo: <b>2672607</b>		Prep Date: <b>3/13/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	885.8	31	1025	0	86.4	75-125	929.3	4.8	30	
Ethylbenzene	906.2	31	1025	0	88.4	75-125	940.1	3.66	30	
m,p-Xylene	1863	61	2049	0	90.9	80-125	1938	3.91	30	
o-Xylene	925.2	31	1025	10.76	89.2	75-125	963.1	4.02	30	
Toluene	884.7	31	1025	0	86.4	70-125	932.4	5.24	30	
Xylenes, Total	2788	92	3074	0	90.7	75-125	2901	3.94	30	
Surr: 1,2-Dichloroethane-d4	954.4	0	1025	0	93.2	70-130	927.8	2.83	30	
Surr: 4-Bromofluorobenzene	989.8	0	1025	0	96.6	70-130	992.3	0.258	30	
Surr: Dibromofluoromethane	959	0	1025	0	93.6	70-130	937	2.32	30	
Surr: Toluene-d8	966.7	0	1025	0	94.4	70-130	969.8	0.317	30	

The following samples were analyzed in this batch:

1403523-01A	1403523-02A	1403523-03A
1403523-04A	1403523-05A	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56515**      Instrument ID **WETCHEM**      Method: **SW9045D**

LCS		Sample ID: LCS-56515-56515				Units: s.u.		Analysis Date: 3/13/2014 04:20 PM		
Client ID:		Run ID: WETCHEM_140313M				SeqNo: 2671871		Prep Date: 3/13/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      3.97      0      4      0      99.2      90-110      0

DUP		Sample ID: 1403454-01B DUP				Units: s.u.		Analysis Date: 3/13/2014 04:20 PM		
Client ID:		Run ID: WETCHEM_140313M				SeqNo: 2671875		Prep Date: 3/13/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      8.54      0      0      0      0      0-0      8.47      0.823      20

DUP				Sample ID: 1403523-01A DUP				Units: s.u.			Analysis Date: 3/13/2014 04:20 PM			
Client ID: South Wall				Run ID: WETCHEM_140313M				SeqNo: 2671880			Prep Date: 3/13/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH      8.26      0      0      0      0      0-0      8.19      0.851      20

The following samples were analyzed in this batch:

1403523-01A	1403523-02A	1403523-03A
1403523-04A	1403523-05A	

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **56644** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1403523-03B DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>3/17/2014 04:50 PM</b>		
Client ID: <b>North Wall</b>		Run ID: <b>WETCHEM_140317T</b>				SeqNo: <b>2675192</b>		Prep Date: <b>3/17/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	11.93	0.050	0	0	0		12.06	1.08	50	

The following samples were analyzed in this batch:

1403523-01B	1403523-02B	1403523-03B
1403523-04B	1403523-05B	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403523  
**Project:** WPX PA 22-34 Produced Water Spill 3.12.14

## QC BATCH REPORT

Batch ID: **R137138**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R137138</b>				Units: % of sample		Analysis Date: <b>3/13/2014 04:37 PM</b>		
Client ID:		Run ID: <b>MOIST_140313C</b>				SeqNo: <b>2672947</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R137138</b>				Units: % of sample		Analysis Date: <b>3/13/2014 04:37 PM</b>		
Client ID:		Run ID: <b>MOIST_140313C</b>				SeqNo: <b>2672946</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1403523-01A DUP</b>				Units: % of sample		Analysis Date: <b>3/13/2014 04:37 PM</b>		
Client ID: <b>South Wall</b>		Run ID: <b>MOIST_140313C</b>				SeqNo: <b>2672941</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      17.34      0.050      0      0      0      0-0      16.5      4.96      20

The following samples were analyzed in this batch:

1403523-01A	1403523-02A	1403523-03A
1403523-04A	1403523-05A	

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



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

## Chain-of-Custody

Form 202r8

WORKORDER  
#

1403523

PROJECT NAME	WPX PA 22-34 produced Water Spill	SAMPLER	Reed Wold	DATE	3/12/14	PAGE	1 of 1
PROJECT No.		SITE ID	PA 22-34	TURNAROUND	24HR	DISPOSAL	By Lab or Return to Client
COMPANY NAME	HRL Compliance	EDD FORMAT					
SEND REPORT TO	Mark Mumby	PURCHASE ORDER					
ADDRESS	2385 F 1/2 Rd	BILL TO COMPANY	WPX				
CITY / STATE / ZIP	Grand Junction, CO 81506	INVOICE ATTN TO	Karolina Blaney				
PHONE	970-243-3271	ADDRESS	1058 Co Rd 215				
FAX	970-243-3280	CITY / STATE / ZIP	Parachure CO 81635				
E-MAIL	mmumby@hrlcomp.com rwold@hrlcomp.com	PHONE	970-683-2295				
E-MAIL		FAX					
E-MAIL		E-MAIL	Karolina.blaney@wpxenergy.com				
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	South Wall	SO	3/12/14	2:00	2	8	X X X
2	West Wall	SO	3/12/14	11:00	2	8	X X X
3	North Wall		3/8/14	11:30	2	8	X X X
4	East Wall		3/12/14	2:30	2	8	X X X
5	Bottom 32Ft		3/12/14	2:45	2	8	X X X

BTEX LGRO  
DRO / PAH  
SAR / Ec / pH

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

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
4.2°C	<input checked="" type="checkbox"/> LEVEL II (Standard QC)
	<input type="checkbox"/> LEVEL III (Std QC + forms)
	<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>
Preservative Key:	1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY: Reed Wold	Reed Wold	3/12/14	3:00
RECEIVED BY: W.M.	W.M.	3-12-14	3:00
RELINQUISHED BY: W.M.	W.M.	3-12-14	3:00
RECEIVED BY: Diane F. Shea	Diane F. Shea	3/13/14	1000
RELINQUISHED BY:			
RECEIVED BY:			

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 13-Mar-14 10:00

Work Order: 1403523

Received by: DS

Checklist completed by Diane Shaw  
eSignature

13-Mar-14  
Date

Reviewed by: Ann Preston  
eSignature

14-Mar-14  
Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>3/13/2014 10:49:30 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
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



J141014207032v

Ship Date: 12MAR14  
Act/Vgt: 73.0 LB  
CAD: 103923490MINET3490  
Dims: 25 X 14 X 15 IN

Delivery Address Bar Code



Ref # 1001-031214-3  
Invoice #  
PO #  
Dept #

SHIP TO: (616) 399-6878  
Sample recieving  
ALS Holland  
3352 128TH AVE

BILL RECIPIENT

HOLLAND, MI 49424

THU - 13 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7981 9871 0456  
0201

49424  
MI-US  
GRR

**XX GRRA**

52261/CC4F/P220

**After printing this label:**

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Lab Hub LLC Custody seal

Name: W/M

Date: 3-15-18

Time: 1730





21-Mar-2014

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

Re: **WPX PA 22-34 Prod. Water Spill 3.19.14**

Work Order: **1403848**

Dear Mark,

ALS Environmental received 3 samples on 20-Mar-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 13.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14  
**Work Order:** 1403848

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1403848-01	South Wall	Soil		3/19/2014 16:45	3/20/2014 10:00	<input type="checkbox"/>
1403848-02	East Wall	Soil		3/19/2014 14:15	3/20/2014 10:00	<input type="checkbox"/>
1403848-03	Bottom 44 Ft	Soil		3/19/2014 16:30	3/20/2014 10:00	<input type="checkbox"/>

---

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14  
**WorkOrder:** 1403848

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

# ALS Group USA, Corp

Date: 21-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14  
**Sample ID:** South Wall  
**Collection Date:** 3/19/2014 04:45 PM

**Work Order:** 1403848  
**Lab ID:** 1403848-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/20/14	Analyst: <b>IT</b>
DRO (C10-C28)	ND		4.8	mg/Kg-dry	1	3/21/2014 11:35 AM
Surr: 4-Terphenyl-d14	68.7		39-115	%REC	1	3/21/2014 11:35 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/20/14	Analyst: <b>IT</b>
GRO (C6-C10)	30		2.9	mg/Kg-dry	1	3/20/2014 07:16 PM
Surr: Toluene-d8	111		50-150	%REC	1	3/20/2014 07:16 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/20/14	Analyst: <b>AK</b>
Benzene	ND		35	µg/Kg-dry	1	3/20/2014 02:42 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	3/20/2014 02:42 PM
m,p-Xylene	ND		69	µg/Kg-dry	1	3/20/2014 02:42 PM
o-Xylene	ND		35	µg/Kg-dry	1	3/20/2014 02:42 PM
Toluene	ND		35	µg/Kg-dry	1	3/20/2014 02:42 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	3/20/2014 02:42 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	3/20/2014 02:42 PM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	1	3/20/2014 02:42 PM
Surr: Dibromofluoromethane	101		70-130	%REC	1	3/20/2014 02:42 PM
Surr: Toluene-d8	95.9		70-130	%REC	1	3/20/2014 02:42 PM
<b>MOISTURE</b>						
			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	13		0.050	% of sample	1	3/20/2014 01:07 PM

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

# ALS Group USA, Corp

Date: 21-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14  
**Sample ID:** East Wall  
**Collection Date:** 3/19/2014 02:15 PM

**Work Order:** 1403848  
**Lab ID:** 1403848-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>		Prep: SW5035 / 3/20/14	Analyst: <b>AK</b>
Benzene	68		35	µg/Kg-dry	1	3/20/2014 03:07 PM
Ethylbenzene	300		35	µg/Kg-dry	1	3/20/2014 03:07 PM
m,p-Xylene	5,100		70	µg/Kg-dry	1	3/20/2014 03:07 PM
o-Xylene	900		35	µg/Kg-dry	1	3/20/2014 03:07 PM
Toluene	1,600		35	µg/Kg-dry	1	3/20/2014 03:07 PM
Xylenes, Total	6,000		100	µg/Kg-dry	1	3/20/2014 03:07 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	3/20/2014 03:07 PM
Surr: 4-Bromofluorobenzene	106		70-130	%REC	1	3/20/2014 03:07 PM
Surr: Dibromofluoromethane	98.6		70-130	%REC	1	3/20/2014 03:07 PM
Surr: Toluene-d8	104		70-130	%REC	1	3/20/2014 03:07 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>AT</b>
Moisture	14		0.050	% of sample	1	3/20/2014 01:07 PM

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

# ALS Group USA, Corp

Date: 21-Mar-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14  
**Sample ID:** Bottom 44 Ft  
**Collection Date:** 3/19/2014 04:30 PM

**Work Order:** 1403848  
**Lab ID:** 1403848-03  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 3/20/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>17</b>		<b>4.6</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/21/2014 11:05 AM
Surr: 4-Terphenyl-d14	60.6		39-115	%REC	1	3/21/2014 11:05 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 3/20/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>43</b>		<b>2.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/20/2014 07:41 PM
Surr: Toluene-d8	114		50-150	%REC	1	3/20/2014 07:41 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260B</b>		Prep: SW5035 / 3/20/14	Analyst: <b>AK</b>
<b>Benzene</b>	<b>67</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:31 PM
<b>Ethylbenzene</b>	<b>71</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:31 PM
<b>m,p-Xylene</b>	<b>1,300</b>		<b>68</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:31 PM
<b>o-Xylene</b>	<b>230</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:31 PM
<b>Toluene</b>	<b>540</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:31 PM
<b>Xylenes, Total</b>	<b>1,500</b>		<b>100</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/20/2014 03:31 PM
Surr: 1,2-Dichloroethane-d4	103		70-130	%REC	1	3/20/2014 03:31 PM
Surr: 4-Bromofluorobenzene	105		70-130	%REC	1	3/20/2014 03:31 PM
Surr: Dibromofluoromethane	99.6		70-130	%REC	1	3/20/2014 03:31 PM
Surr: Toluene-d8	98.4		70-130	%REC	1	3/20/2014 03:31 PM
<b>MOISTURE</b>						
			<b>A2540 G</b>			Analyst: <b>AT</b>
<b>Moisture</b>	<b>12</b>		<b>0.050</b>	<b>% of sample</b>	<b>1</b>	3/20/2014 01:07 PM

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403848  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14

# QC BATCH REPORT

Batch ID: **56751** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-56751-56751</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 09:05 AM</b>		
Client ID:		Run ID: <b>GC8_140321B</b>				SeqNo: <b>2680318</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	1.13	0	1.667	0	67.8	39-115	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-56751-56751</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 09:35 AM</b>		
Client ID:		Run ID: <b>GC8_140321B</b>				SeqNo: <b>2680319</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	135	4.2	166.7	0	81	49-124	0			
Surr: 4-Terphenyl-d14	0.951	0	1.667	0	57.1	39-115	0			

<b>MS</b>		Sample ID: <b>1403848-03A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 10:05 AM</b>		
Client ID: <b>Bottom 44 Ft</b>		Run ID: <b>GC8_140321B</b>				SeqNo: <b>2680320</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	242.6	8.1	323.4	14.79	70.4	49-130	0			
Surr: 4-Terphenyl-d14	1.657	0	3.234	0	51.2	39-115	0			

<b>MSD</b>		Sample ID: <b>1403848-03A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/21/2014 10:35 AM</b>		
Client ID: <b>Bottom 44 Ft</b>		Run ID: <b>GC8_140321B</b>				SeqNo: <b>2680321</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	252.1	8.0	319.7	14.79	74.2	49-130	242.6	3.84	30	
Surr: 4-Terphenyl-d14	1.604	0	3.197	0	50.2	39-115	1.657	3.23	30	

The following samples were analyzed in this batch: 1403848-01A 1403848-03A

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403848  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14

## QC BATCH REPORT

Batch ID: **56734**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-56734-56734</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/20/2014 01:17 PM</b>		
Client ID:		Run ID: <b>GC9_140320A</b>				SeqNo: <b>2679359</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	5529	0	5000	0	111	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-56734-56734</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/20/2014 12:51 PM</b>		
Client ID:		Run ID: <b>GC9_140320A</b>				SeqNo: <b>2679358</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	571500	2,500	500000	0	114	70-130	0			
<i>Surr: Toluene-d8</i>	4854	0	5000	0	97.1	50-150	0			

<b>MS</b>		Sample ID: <b>1403856-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/20/2014 08:58 PM</b>		
Client ID:		Run ID: <b>GC9_140320A</b>				SeqNo: <b>2679366</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	596700	2,500	500000	0	119	70-130	0			
<i>Surr: Toluene-d8</i>	5036	0	5000	0	101	50-150	0			

<b>MSD</b>		Sample ID: <b>1403856-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/20/2014 09:23 PM</b>		
Client ID:		Run ID: <b>GC9_140320A</b>				SeqNo: <b>2679367</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	595700	2,500	500000	0	119	70-130	596700	0.157	30	
<i>Surr: Toluene-d8</i>	4865	0	5000	0	97.3	50-150	5036	3.45	30	

The following samples were analyzed in this batch:

1403848-01A	1403848-03A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403848  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14

## QC BATCH REPORT

Batch ID: **56732**      Instrument ID **VMS8**      Method: **SW8260B**

<b>MBLK</b>		Sample ID: <b>MBLK-56732-56732</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/20/2014 01:29 PM</b>		
Client ID:		Run ID: <b>VMS8_140320A</b>				SeqNo: <b>2679326</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
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								
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>1009</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>101</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>1044</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>104</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>1006</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>101</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>960</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>96</i>	<i>70-130</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-56732-56732</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/20/2014 11:51 AM</b>		
Client ID:		Run ID: <b>VMS8_140320A</b>				SeqNo: <b>2679325</b>		Prep Date: <b>3/20/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	952	30	1000	0	95.2	75-125	0			
Ethylbenzene	950	30	1000	0	95	75-125	0			
m,p-Xylene	1936	60	2000	0	96.8	80-125	0			
o-Xylene	979	30	1000	0	97.9	75-125	0			
Toluene	923	30	1000	0	92.3	70-125	0			
Xylenes, Total	2914	90	3000	0	97.2	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>993.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>99.4</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>1026</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>103</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>1004</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>100</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>952.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>95.2</i>	<i>70-130</i>	<i>0</i>			

The following samples were analyzed in this batch:

1403848-01A	1403848-02A	1403848-03A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1403848  
**Project:** WPX PA 22-34 Prod. Water Spill 3.19.14

## QC BATCH REPORT

Batch ID: **R137505**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R137505</b>				Units: % of sample		Analysis Date: <b>3/20/2014 01:07 PM</b>		
Client ID:		Run ID: <b>MOIST_140320B</b>				SeqNo: <b>2680234</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R137505</b>				Units: % of sample		Analysis Date: <b>3/20/2014 01:07 PM</b>		
Client ID:		Run ID: <b>MOIST_140320B</b>				SeqNo: <b>2680233</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1403848-01A DUP</b>				Units: % of sample		Analysis Date: <b>3/20/2014 01:07 PM</b>		
Client ID: <b>South Wall</b>		Run ID: <b>MOIST_140320B</b>				SeqNo: <b>2680217</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      13.22      0.050      0      0      0      0-0      13.46      1.8      20

<b>DUP</b>		Sample ID: <b>1403848-03A DUP</b>				Units: % of sample		Analysis Date: <b>3/20/2014 01:07 PM</b>		
Client ID: <b>Bottom 44 Ft</b>		Run ID: <b>MOIST_140320B</b>				SeqNo: <b>2680220</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      11.69      0.050      0      0      0      0-0      11.57      1.03      20

The following samples were analyzed in this batch:

1403848-01A	1403848-02A	1403848-03A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

## Chain-of-Custody

Form 202r8

WORKORDER  
#

1403848

PROJECT NAME		WPX PA 22-34 Produced Water Spill		SAMPLER		Reed Wold		DATE		3/19/2014		PAGE		1 of 1	
PROJECT No.				SITE ID		PA 22-34		TURNAROUND		24 hr		DISPOSAL		By Lab or Return to Client	
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	GRO	DRO	BTEX					
1	South Wall	SO	3/19/2014	4:45	1	8		X	X	X					
2	East Wall	SO	3/19/2014	2:15	1	8				X					
3	Bottom 44 Ft	SO	3/19/2014	4:30	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 = filler

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Reed Wold	3/19/14	
RECEIVED BY	Mark Mumby	3/19/14	
RELINQUISHED BY	Michael	3/19/14	1200
RECEIVED BY	Diane F. Shaw	3/20/14	1000
RELINQUISHED BY			
RECEIVED BY			

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 20-Mar-14 10:00

Work Order: 1403848

Received by: DS

Checklist completed by Diane Shaw 20-Mar-14  
eSignature Date

Reviewed by: Ann Preston 21-Mar-14  
eSignature Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.4 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>3/20/2014 10:35:58 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

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

Origin ID: RILA

FedEx  
Express

Ship Date: 19MAR14  
A-Wght: 46.0 LB  
CART: 003923490/NET3490

Dims: 25 X 14 X 15 IN

127 E First Street

PARACHUTE, CO 81635

SHIP TO: (616) 399-6070

Sample recieving  
ALS Holland  
3352 128TH AVE

HOLLAND, MI 49424

BILL REC

Delivery Address Bar Code

1001-031914-1

PO  
De

THU - 20 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7982 7436 2024  
6201

**XX GRRA**

49424  
MI-US  
GRR



52261000#F720

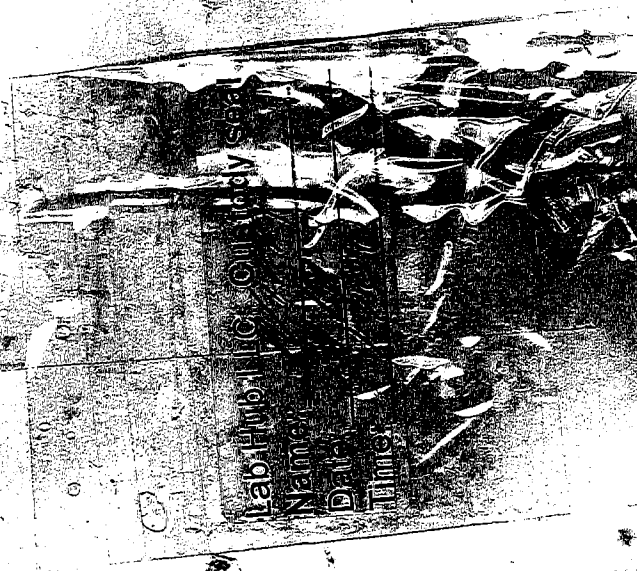
**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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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.

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://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 Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

2.9c





13-May-2014

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

Re: **WPX PA 22-34 Produced Water Spill 5.1.14**

Work Order: **1405099**

Dear Mark,

ALS Environmental received 1 sample on 02-May-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,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14  
**Work Order:** 1405099

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**Work Order Sample Summary**

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1405099-01	PA 31-34 Batch 1	Soil		5/1/2014 12:15	5/2/2014 10:00	<input type="checkbox"/>

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14  
**Work Order:** 1405099

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**Case Narrative**

Batch 58207 sample 1405099-01 BTEX surrogate recovery was high due to matrix. All compounds associated with this surrogate were reported from a different dilution. No data requires qualification.

Batch 58216 sample 1405099-01 GRO surrogate recovery was high due to matrix interference. No data requires qualification.

Batch 58315 sample 1405099-01 Metals' reporting limits were 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 58327 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.



<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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-May-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14  
**Sample ID:** PA 31-34 Batch 1  
**Collection Date:** 5/1/2014 12:15 PM

**Work Order:** 1405099  
**Lab ID:** 1405099-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 5/5/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>660</b>		<b>4.7</b>	<b>mg/Kg-dry</b>	<b>1</b>	5/5/2014 10:08 PM
Surr: 4-Terphenyl-d14	74.8		39-133	%REC	1	5/5/2014 10:08 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 5/2/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>2,200</b>		<b>2.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	5/2/2014 04:58 PM
Surr: Toluene-d8	532	S	50-150	%REC	1	5/2/2014 04:58 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471</b>		Prep: SW7471 / 5/5/14	Analyst: <b>RH</b>
<b>Mercury</b>	<b>0.028</b>		<b>0.018</b>	<b>mg/Kg-dry</b>	<b>1</b>	5/5/2014 04:37 PM
<b>METALS BY ICP-MS</b>						
			<b>SW6020A</b>		Prep: SW3050B / 5/6/14	Analyst: <b>ML</b>
<b>Arsenic</b>	<b>6.6</b>		<b>1.9</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
<b>Barium</b>	<b>310</b>		<b>1.9</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
Cadmium	ND		0.76	mg/Kg-dry	5	5/6/2014 06:21 PM
<b>Chromium</b>	<b>12</b>		<b>1.9</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
<b>Copper</b>	<b>10</b>		<b>1.9</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
<b>Lead</b>	<b>12</b>		<b>1.9</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
<b>Nickel</b>	<b>12</b>		<b>1.9</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
Selenium	ND		1.9	mg/Kg-dry	5	5/6/2014 06:21 PM
Silver	ND		1.9	mg/Kg-dry	5	5/6/2014 06:21 PM
<b>Zinc</b>	<b>40</b>		<b>3.8</b>	<b>mg/Kg-dry</b>	<b>5</b>	5/6/2014 06:21 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW6020A</b>		Prep: USDA Method 20B / 5/9/14	Analyst: <b>RH</b>
<b>Calcium</b>	<b>48</b>		<b>10</b>	<b>mg/L</b>	<b>20</b>	5/10/2014 05:59 PM
<b>Magnesium</b>	<b>59</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	5/10/2014 05:59 PM
<b>Sodium</b>	<b>430</b>		<b>4.0</b>	<b>mg/L</b>	<b>20</b>	5/10/2014 05:59 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 5/9/14	Analyst: <b>ML</b>
<b>Sodium Adsorption Ratio</b>	<b>9.9</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	5/10/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep: SW3541 / 5/5/14	Analyst: <b>JG</b>
Acenaphthene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Acenaphthylene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Anthracene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Chrysene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM

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

# ALS Group USA, Corp

Date: 13-May-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14  
**Sample ID:** PA 31-34 Batch 1  
**Collection Date:** 5/1/2014 12:15 PM

**Work Order:** 1405099  
**Lab ID:** 1405099-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Fluoranthene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Fluorene	39		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Naphthalene	710		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Pyrene	ND		7.5	µg/Kg-dry	1	5/6/2014 06:20 PM
Surr: 2-Fluorobiphenyl	80.2		12-100	%REC	1	5/6/2014 06:20 PM
Surr: 4-Terphenyl-d14	119		25-137	%REC	1	5/6/2014 06:20 PM
Surr: Nitrobenzene-d5	66.8		37-107	%REC	1	5/6/2014 06:20 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 5/2/14		Analyst: AK
Benzene	82		34	µg/Kg-dry	1	5/6/2014 03:06 AM
Ethylbenzene	3,600		34	µg/Kg-dry	1	5/6/2014 03:06 AM
m,p-Xylene	81,000		1,400	µg/Kg-dry	20	5/6/2014 11:26 PM
o-Xylene	12,000		690	µg/Kg-dry	20	5/6/2014 11:26 PM
Toluene	13,000		690	µg/Kg-dry	20	5/6/2014 11:26 PM
Xylenes, Total	94,000		2,100	µg/Kg-dry	20	5/6/2014 11:26 PM
Surr: 1,2-Dichloroethane-d4	103		70-130	%REC	20	5/6/2014 11:26 PM
Surr: 1,2-Dichloroethane-d4	98.6		70-130	%REC	1	5/6/2014 03:06 AM
Surr: 4-Bromofluorobenzene	94.9		70-130	%REC	20	5/6/2014 11:26 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	5/6/2014 03:06 AM
Surr: Dibromofluoromethane	98.0		70-130	%REC	1	5/6/2014 03:06 AM
Surr: Dibromofluoromethane	100		70-130	%REC	20	5/6/2014 11:26 PM
Surr: Toluene-d8	132	S	70-130	%REC	1	5/6/2014 03:06 AM
Surr: Toluene-d8	96.8		70-130	%REC	20	5/6/2014 11:26 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 5/9/14		Analyst: JB
Electrical Conductivity @ Saturation	3.3		0.050	mmhos/cm @25	10	5/9/2014 05:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	11		0.57	mg/Kg-dry	1	5/8/2014 07:56 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 5/6/14		Analyst: JI
Chromium, Hexavalent	ND		0.58	mg/Kg-dry	1	5/7/2014 10:00 AM
MOISTURE			A2540 G			Analyst: AT
Moisture	13		0.050	% of sample	1	5/2/2014 01:07 PM
PH			SW9045D	Prep: EXTRACT / 5/2/14		Analyst: AT
pH	8.6			s.u.	1	5/2/2014 04:58 PM

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

Client: HRL Compliance Solutions, Inc

# QC BATCH REPORT

Work Order: 1405099

Project: WPX PA 22-34 Produced Water Spill 5.1.14

Batch ID: 58248

Instrument ID GC8

Method: SW8015M

<b>MBLK</b>		Sample ID: <b>DBLKS1-58248-58248</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 08:08 PM</b>		
Client ID:		Run ID: <b>GC8_140505A</b>				SeqNo: <b>2746282</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	1.455	0	1.667	0	87.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-58248-58248</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 08:38 PM</b>		
Client ID:		Run ID: <b>GC8_140505A</b>				SeqNo: <b>2746283</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	139.3	4.2	166.7	0	83.6	61-109	0			
Surr: 4-Terphenyl-d14	1.317	0	1.667	0	79	39-133	0			

<b>MS</b>		Sample ID: <b>1405099-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 09:08 PM</b>		
Client ID: <b>PA 31-34 Batch 1</b>		Run ID: <b>GC8_140505A</b>				SeqNo: <b>2746284</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1248	7.9	630.6	572.7	107	48-110	0			
Surr: 4-Terphenyl-d14	2.848	0	3.153	0	90.3	39-133	0			

<b>MSD</b>		Sample ID: <b>1405099-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 09:38 PM</b>		
Client ID: <b>PA 31-34 Batch 1</b>		Run ID: <b>GC8_140505A</b>				SeqNo: <b>2746285</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1190	8.3	662	572.7	93.2	48-110	1248	4.78	30	
Surr: 4-Terphenyl-d14	2.917	0	3.31	0	88.1	39-133	2.848	2.41	30	

The following samples were analyzed in this batch: 1405099-01B

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58216** Instrument ID **GC9** Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-58216-58216</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/2/2014 04:07 PM</b>		
Client ID:		Run ID: <b>GC9_140502A</b>				SeqNo: <b>2744679</b>		Prep Date: <b>5/2/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	<i>4808</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>96.2</i>	<i>50-150</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-58216-58216</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/2/2014 02:50 PM</b>		
Client ID:		Run ID: <b>GC9_140502A</b>				SeqNo: <b>2744677</b>		Prep Date: <b>5/2/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	462100	2,500	500000	0	92.4	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5470</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>109</i>	<i>50-150</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>1405098-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/2/2014 10:10 PM</b>		
Client ID:		Run ID: <b>GC9_140502A</b>				SeqNo: <b>2744692</b>		Prep Date: <b>5/2/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	652300	2,500	500000	39220	123	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5010</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>100</i>	<i>50-150</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>1405098-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/2/2014 10:35 PM</b>		
Client ID:		Run ID: <b>GC9_140502A</b>				SeqNo: <b>2744693</b>		Prep Date: <b>5/2/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	644200	2,500	500000	39220	121	70-130	652300	1.26	30	
<i>Surr: Toluene-d8</i>	<i>5576</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>112</i>	<i>50-150</i>	<i>5010</i>	<i>10.7</i>	<i>30</i>	

The following samples were analyzed in this batch:

1405099-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58236**      Instrument ID **HG1**      Method: **SW7471**

<b>MBLK</b>		Sample ID: <b>MBLK-58236-58236</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 03:26 PM</b>		
Client ID:		Run ID: <b>HG1_140505A</b>				SeqNo: <b>2745490</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      ND      0.020

<b>LCS</b>		Sample ID: <b>LCS-58236-58236</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 03:28 PM</b>		
Client ID:		Run ID: <b>HG1_140505A</b>				SeqNo: <b>2745491</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1842      0.020      0.1665      0      111      80-120      0

<b>MS</b>		Sample ID: <b>1405106-08AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 03:37 PM</b>		
Client ID:		Run ID: <b>HG1_140505A</b>				SeqNo: <b>2745495</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.01853      0.0019      0.0154      0.003041      101      75-125      0

<b>MSD</b>		Sample ID: <b>1405106-08AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/5/2014 03:39 PM</b>		
Client ID:		Run ID: <b>HG1_140505A</b>				SeqNo: <b>2745496</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.01826      0.0019      0.01559      0.003041      97.6      75-125      0.01853      1.49      35

The following samples were analyzed in this batch:

1405099-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58286** Instrument ID **ICPMS1** Method: **SW6020A**

<b>DUP</b>		Sample ID: <b>1405095-03BDUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/10/2014 05:41 PM</b>		
Client ID:		Run ID: <b>ICPMS1_140510A</b>				SeqNo: <b>2755248</b>		Prep Date: <b>5/9/2014</b>		DF: <b>20</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	61.9	10	0	0	0	0-0	58.54	5.58		
Magnesium	8.46	4.0	0	0	0	0-0	7.914	6.67		
Sodium	4.712	4.0	0	0	0	0-0	5.016	6.25		

The following samples were analyzed in this batch:

1405099-01C

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58315**      Instrument ID **ICPMS1**      Method: **SW6020A**

Sample ID: MBLK-58315-58315				Units: mg/Kg			Analysis Date: 5/6/2014 04:59 PM			
Client ID:		Run ID: ICPMS1_140506A			SeqNo: 2748724		Prep Date: 5/6/2014		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	ND	0.25								
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	0.01431	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	0.001414	0.25								J
Zinc	0.4804	0.50								J

LCS				Sample ID: LCS-58315-58315			Units: mg/Kg		Analysis Date: 5/6/2014 05:09 PM		
Client ID:			Run ID: ICPMS1_140506A			SeqNo: 2748725		Prep Date: 5/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	4.416	0.25	5	0	88.3	80-120	0				
Barium	4.752	0.25	5	0	95	80-120	0				
Cadmium	4.562	0.10	5	0	91.2	80-120	0				
Chromium	4.623	0.25	5	0	92.5	80-120	0				
Copper	4.562	0.25	5	0	91.2	80-120	0				
Lead	4.581	0.25	5	0	91.6	80-120	0				
Nickel	4.605	0.25	5	0	92.1	80-120	0				
Selenium	4.344	0.25	5	0	86.9	80-120	0				
Silver	4.334	0.25	5	0	86.7	80-120	0				
Zinc	4.295	0.50	5	0	85.9	80-120	0				

MS					Sample ID: 1405162-02BMS			Units: mg/Kg		Analysis Date: 5/6/2014 07:49 PM		
Client ID:			Run ID: ICPMS1_140506A			SeqNo: 2748792		Prep Date: 5/6/2014		DF: 5		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	19.76	2.0	7.8	13.1	85.4	75-125	0					
Barium	35.2	2.0	7.8	26.74	108	75-125	0					
Cadmium	7.028	0.78	7.8	0.006685	90	75-125	0					
Chromium	21.47	2.0	7.8	14.16	93.7	75-125	0					
Copper	18.66	2.0	7.8	12.6	77.7	75-125	0					
Lead	15.06	2.0	7.8	8.158	88.5	75-125	0					
Nickel	30.45	2.0	7.8	23.93	83.6	75-125	0					
Selenium	7.625	2.0	7.8	1.527	78.2	75-125	0					
Silver	5.85	2.0	7.8	0.08855	73.9	75-125	0			S		
Zinc	55.3	3.9	7.8	48.55	86.7	75-125	0			O		

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58315**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>1405162-02BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/6/2014 07:55 PM</b>		
Client ID:		Run ID: <b>ICPMS1_140506A</b>				SeqNo: <b>2748795</b>		Prep Date: <b>5/6/2014</b>		DF: <b>5</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	19.7	1.9	7.508	13.1	87.8	75-125	19.76	0.335	25	
Barium	35.24	1.9	7.508	26.74	113	75-125	35.2	0.117	25	
Cadmium	6.854	0.75	7.508	0.006685	91.2	75-125	7.028	2.5	25	
Chromium	21.84	1.9	7.508	14.16	102	75-125	21.47	1.69	25	
Copper	18.93	1.9	7.508	12.6	84.4	75-125	18.66	1.45	25	
Lead	14.83	1.9	7.508	8.158	88.9	75-125	15.06	1.55	25	
Nickel	30.24	1.9	7.508	23.93	84.1	75-125	30.45	0.686	25	
Selenium	7.744	1.9	7.508	1.527	82.8	75-125	7.625	1.55	25	
Silver	5.815	1.9	7.508	0.08855	76.3	75-125	5.85	0.612	25	
Zinc	55.82	3.8	7.508	48.55	96.9	75-125	55.3	0.925	25	O

The following samples were analyzed in this batch: | 1405099-01B |

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58247**      Instrument ID **SVMS8**      Method: **SW8270**

MBLK		Sample ID: <b>SBLKS1-58247-58247</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/6/2014 03:36 PM</b>		
Client ID:		Run ID: <b>SVMS8_140506A</b>				SeqNo: <b>2749752</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
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								
<i>Surr: 2-Fluorobiphenyl</i>	1323	0	1667	0	79.4	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1922	0	1667	0	115	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1124	0	1667	0	67.5	37-107	0			

LCS		Sample ID: <b>SLCSS1-58247-58247</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/6/2014 03:57 PM</b>		
Client ID:		Run ID: <b>SVMS8_140506A</b>				SeqNo: <b>2749753</b>		Prep Date: <b>5/5/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	484.3	6.7	666.7	0	72.6	45-110	0			
Acenaphthylene	507	6.7	666.7	0	76	45-105	0			
Anthracene	532	6.7	666.7	0	79.8	55-105	0			
Benzo(a)anthracene	598	6.7	666.7	0	89.7	50-110	0			
Benzo(a)pyrene	591	6.7	666.7	0	88.6	50-110	0			
Benzo(b)fluoranthene	610.3	6.7	666.7	0	91.5	45-115	0			
Benzo(g,h,i)perylene	515.3	6.7	666.7	0	77.3	40-125	0			
Benzo(k)fluoranthene	600.7	6.7	666.7	0	90.1	45-115	0			
Chrysene	590.7	6.7	666.7	0	88.6	55-110	0			
Dibenzo(a,h)anthracene	525.3	6.7	666.7	0	78.8	40-125	0			
Fluoranthene	572.3	6.7	666.7	0	85.8	55-115	0			
Fluorene	590	6.7	666.7	0	88.5	50-110	0			
Indeno(1,2,3-cd)pyrene	577.3	6.7	666.7	0	86.6	40-120	0			
Naphthalene	500.3	6.7	666.7	0	75	40-105	0			
Pyrene	604.7	6.7	666.7	0	90.7	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1375	0	1667	0	82.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1928	0	1667	0	116	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1242	0	1667	0	74.5	37-107	0			

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58247**      Instrument ID **SVMS8**      Method: **SW8270**

MS				Sample ID: 1405146-21D MS			Units: µg/Kg		Analysis Date: 5/6/2014 04:17 PM		
Client ID:		Run ID: SVMS8_140506A			SeqNo: 2749754		Prep Date: 5/5/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	940.7	13	1300	0	72.3	45-110	0				
Acenaphthylene	966.1	13	1300	39.75	71.2	45-105	0				
Anthracene	1133	13	1300	32.32	84.7	55-105	0				
Benzo(a)anthracene	1220	13	1300	98.57	86.2	50-110	0				
Benzo(a)pyrene	1232	13	1300	119.9	85.5	50-110	0				
Benzo(b)fluoranthene	1228	13	1300	139	83.8	45-115	0				
Benzo(g,h,i)perylene	1113	13	1300	86.62	78.9	40-125	0				
Benzo(k)fluoranthene	1211	13	1300	73.04	87.5	45-115	0				
Chrysene	1225	13	1300	80.8	88	55-110	0				
Dibenzo(a,h)anthracene	1099	13	1300	43.95	81.2	40-125	0				
Fluoranthene	1236	13	1300	133.5	84.8	55-115	0				
Fluorene	1183	13	1300	0	90.9	50-110	0				
Indeno(1,2,3-cd)pyrene	1251	13	1300	104.4	88.2	40-120	0				
Naphthalene	948.5	13	1300	0	72.9	40-105	0				
Pyrene	1284	13	1300	131.2	88.7	45-125	0				
Surr: 2-Fluorobiphenyl	2626	0	3251	0	80.8	12-100	0				
Surr: 4-Terphenyl-d14	4098	0	3251	0	126	25-137	0				
Surr: Nitrobenzene-d5	2378	0	3251	0	73.2	37-107	0				

MSD				Sample ID: 1405146-21D MSD			Units: µg/Kg		Analysis Date: 5/6/2014 04:37 PM		
Client ID:			Run ID: SVMS8_140506A			SeqNo: 2749755		Prep Date: 5/5/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	915.8	13	1274	0	71.9	45-110	940.7	2.68	30		
Acenaphthylene	951.5	13	1274	39.75	71.6	45-105	966.1	1.52	30		
Anthracene	1086	13	1274	32.32	82.7	55-105	1133	4.26	30		
Benzo(a)anthracene	1189	13	1274	98.57	85.6	50-110	1220	2.54	30		
Benzo(a)pyrene	1190	13	1274	119.9	84	50-110	1232	3.44	30		
Benzo(b)fluoranthene	1205	13	1274	139	83.7	45-115	1228	1.9	30		
Benzo(g,h,i)perylene	1105	13	1274	86.62	79.9	40-125	1113	0.724	30		
Benzo(k)fluoranthene	1145	13	1274	73.04	84.2	45-115	1211	5.61	30		
Chrysene	1201	13	1274	80.8	88	55-110	1225	2.01	30		
Dibenzo(a,h)anthracene	1077	13	1274	43.95	81.1	40-125	1099	2.06	30		
Fluoranthene	1155	13	1274	133.5	80.2	55-115	1236	6.8	30		
Fluorene	1145	13	1274	0	89.9	50-110	1183	3.22	30		
Indeno(1,2,3-cd)pyrene	1197	13	1274	104.4	85.7	40-120	1251	4.48	30		
Naphthalene	978.2	13	1274	0	76.8	40-105	948.5	3.08	30		
Pyrene	1234	13	1274	131.2	86.6	45-125	1284	3.95	30		
Surr: 2-Fluorobiphenyl	2657	0	3184	0	83.4	12-100	2626	1.18	40		
Surr: 4-Terphenyl-d14	3891	0	3184	0	122	25-137	4098	5.18	40		
Surr: Nitrobenzene-d5	2460	0	3184	0	77.3	37-107	2378	3.39	40		

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

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Batch ID: **58247**      Instrument ID **SVMS8**      Method: **SW8270**

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**The following samples were analyzed in this batch:**

1405099-01B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58207**      Instrument ID **VMS7**      Method: **SW8260B**

MBLK				Sample ID: MBLK-58207-58207				Units: µg/Kg			Analysis Date: 5/2/2014 12:13 PM		
Client ID:			Run ID: VMS7_140502A				SeqNo: 2744074			Prep Date: 5/2/2014		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	1000	0	1000	0	100	70-130		0					
Surr: 4-Bromofluorobenzene	1006	0	1000	0	101	70-130		0					
Surr: Dibromofluoromethane	982	0	1000	0	98.2	70-130		0					
Surr: Toluene-d8	1015	0	1000	0	102	70-130		0					

LCS				Sample ID: LCS-58207-58207			Units: µg/Kg		Analysis Date: 5/2/2014 10:33 AM		
Client ID:		Run ID: VMS7_140502A			SeqNo: 2744073		Prep Date: 5/2/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1004	30	1000	0	100	75-125	0				
Ethylbenzene	1009	30	1000	0	101	75-125	0				
m,p-Xylene	2010	60	2000	0	101	80-125	0				
o-Xylene	986	30	1000	0	98.6	75-125	0				
Toluene	1046	30	1000	0	105	70-125	0				
Xylenes, Total	2996	90	3000	0	99.9	75-125	0				
Surr: 1,2-Dichloroethane-d4	993.5	0	1000	0	99.4	70-130	0				
Surr: 4-Bromofluorobenzene	957	0	1000	0	95.7	70-130	0				
Surr: Dibromofluoromethane	1008	0	1000	0	101	70-130	0				
Surr: Toluene-d8	1047	0	1000	0	105	70-130	0				

MS					Sample ID: 1405098-01A MS			Units: µg/Kg		Analysis Date: 5/6/2014 08:01 AM	
Client ID:			Run ID: VMS8_140505B			SeqNo: 2746618		Prep Date: 5/2/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1044	30	1000	0	104	75-125	0				
Ethylbenzene	939.5	30	1000	33	90.6	75-125	0				
m,p-Xylene	2556	60	2000	903	82.7	80-125	0				
o-Xylene	933.5	30	1000	51	88.2	75-125	0				
Toluene	930	30	1000	55	87.5	70-125	0				
Xylenes, Total	3490	90	3000	951	84.6	75-125	0				
Surr: 1,2-Dichloroethane-d4	1063	0	1000	0	106	70-130	0				
Surr: 4-Bromofluorobenzene	1037	0	1000	0	104	70-130	0				
Surr: Dibromofluoromethane	976	0	1000	0	97.6	70-130	0				
Surr: Toluene-d8	984.5	0	1000	0	98.4	70-130	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58207**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: <b>1405098-01A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>5/6/2014 08:26 AM</b>	
Client ID:		Run ID: <b>VMS8_140505B</b>			SeqNo: <b>2746621</b>		Prep Date: <b>5/2/2014</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1061	30	1000	0	106	75-125	1044	1.62	30	
Ethylbenzene	948.5	30	1000	33	91.6	75-125	939.5	0.953	30	
m,p-Xylene	2598	60	2000	903	84.7	80-125	2556	1.59	30	
o-Xylene	948.5	30	1000	51	89.8	75-125	933.5	1.59	30	
Toluene	939.5	30	1000	55	88.4	70-125	930	1.02	30	
Xylenes, Total	3546	90	3000	951	86.5	75-125	3490	1.59	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>1072</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>107</i>	<i>70-130</i>	<i>1063</i>	<i>0.89</i>	<i>30</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>1002</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>100</i>	<i>70-130</i>	<i>1037</i>	<i>3.43</i>	<i>30</i>	
<i>Surr: Dibromofluoromethane</i>	<i>1005</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>100</i>	<i>70-130</i>	<i>976</i>	<i>2.93</i>	<i>30</i>	
<i>Surr: Toluene-d8</i>	<i>982</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.2</i>	<i>70-130</i>	<i>984.5</i>	<i>0.254</i>	<i>30</i>	

The following samples were analyzed in this batch: | 1405099-01A |

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58232** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-58232-58232				Units: s.u.			Analysis Date: 5/2/2014 04:58 PM			
Client ID:				Run ID: WETCHEM_140502G				SeqNo: 2742833			Prep Date: 5/2/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		4.01	0	4	0	100	90-110	0						

DUP		Sample ID: 1405035-01B DUP					Units: s.u.		Analysis Date: 5/2/2014 04:58 PM		
Client ID:		Run ID: WETCHEM_140502G			SeqNo: 2742836		Prep Date: 5/2/2014		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	7.83	0.51	20		

DUP				Sample ID: 1405108-02A DUP				Units: s.u.			Analysis Date: 5/2/2014 04:58 PM			
Client ID:				Run ID: WETCHEM_140502G				SeqNo: 2742845			Prep Date: 5/2/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
pH	8.62	0	0	0	0	0-0	8.64	0.232	20					

The following samples were analyzed in this batch:

1405099-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58286** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1405095-03B DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>5/9/2014 05:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140509M</b>				SeqNo: <b>2753988</b>		Prep Date: <b>5/9/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.431	0.050	0	0	0		0.421	2.35	50	

The following samples were analyzed in this batch:

1405099-01C

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **58327**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-58327-58327</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/7/2014 10:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_140507H</b>				SeqNo: <b>2749292</b>		Prep Date: <b>5/6/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.49

<b>LCS</b>		Sample ID: <b>LCS-58327-58327</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/7/2014 10:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_140507H</b>				SeqNo: <b>2749293</b>		Prep Date: <b>5/6/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2.378      0.50      2.008      0      118      80-120      0

<b>MS</b>		Sample ID: <b>1405098-01BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/7/2014 10:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_140507H</b>				SeqNo: <b>2749295</b>		Prep Date: <b>5/6/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.2851      0.50      2.008      0.3373      -2.6      75-125      0      JS

<b>MS</b>		Sample ID: <b>1405098-01BMSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/7/2014 10:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_140507H</b>				SeqNo: <b>2749297</b>		Prep Date: <b>5/6/2014</b>		DF: <b>50</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      683.1      25      1386      0.3373      49.3      75-125      0      S

<b>MSD</b>		Sample ID: <b>1405098-01BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/7/2014 10:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_140507H</b>				SeqNo: <b>2749296</b>		Prep Date: <b>5/6/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.3281      0.49      1.953      0.3373      -0.472      75-125      0.2851      0      20      JS

The following samples were analyzed in this batch:

1405099-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1405099  
**Project:** WPX PA 22-34 Produced Water Spill 5.1.14

## QC BATCH REPORT

Batch ID: **R140127**      Instrument ID **MOIST**      Method: **A2540 G**

MBLK				Sample ID: WBLKS-R140127				Units: % of sample			Analysis Date: 5/2/2014 01:07 PM			
Client ID:				Run ID: MOIST_140502A				SeqNo: 2744647			Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Moisture		0.03	0.050								J			

LCS		Sample ID: LCS-R140127				Units: % of sample		Analysis Date: 5/2/2014 01:07 PM		
Client ID:		Run ID: MOIST_140502A			SeqNo: 2744646		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: 1405096-03A DUP				Units: % of sample			Analysis Date: 5/2/2014 01:07 PM			
Client ID:				Run ID: MOIST_140502A				SeqNo: 2744639			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Moisture	12.16	0.050	0	0	0	0-0	12.6	3.55	20					

DUP				Sample ID: 1405099-01B DUP				Units: % of sample			Analysis Date: 5/2/2014 01:07 PM			
Client ID: PA 31-34 Batch 1				Run ID: MOIST_140502A				SeqNo: 2744643			Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Moisture		12.49	0.050	0	0	0	0-0	12.64	1.19	20				

The following samples were analyzed in this batch:

1405099-01B

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



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
 TF: (800) 443-1511 FH: (970) 490-1511 FX: (970) 490-1522

## Chain-of-Custody

Form 202r0

WORKORDER #

1405099

PAGE

1 of 1

DISPOSAL

By Lab or Return to Client

PROJECT NAME

WPX

SAMPLER

Reed Wold

DATE

5/1/14

PROJECT No.

PA 22-34 Produced Water

SITE ID

PA 31-34

TURNAROUND

Standard

EDD FORMAT

PURCHASE ORDER

COMPANY NAME

HRL Compliance

BILL TO COMPANY

WPX Energy

SEND REPORT TO

Mark Mumby

INVOICE ATTN TO

Karolina Blaney

ADDRESS

2385 F 1/2 Rd

ADDRESS

CITY / STATE / ZIP

Grand Junction, CO 81506

CITY / STATE / ZIP

PHONE

970-243-3271

PHONE

FAX

970-243-3280

FAX

E-MAIL

mmumby@hrlcomp.com  
 rwold@hrlcomp.com

E-MAIL

Lab ID

Field ID

Matrix

Sample Date

Sample Time

# Bottles

Pres.

QC

BTEX/HRO  
 DRO/PAH  
 SAR/EC/PH

1 PA31-34 Batch 1 SO 5/1/14 12:15 3 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:

3.2'c

QC PACKAGE (check below)

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

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

SIGNATURE

PRINTED NAME

DATE

TIME

RELINQUISHED BY

Reed Wold

Reed Wold

5/1/14

2:00

RECEIVED BY

N. Wold

N. Wold

5/1/14

2:00

RELINQUISHED BY

N. Wold

DMARINE

5/1/14

2:10

RECEIVED BY

Reed Wold

Diane F. Shaw

5/2/14

10:00

RELINQUISHED BY

RECEIVED BY

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **02-May-14 10:00**

Work Order: **1405099**

Received by: **DS**

Checklist completed by Diane Shaw 02-May-14  
eSignature Date

Reviewed by: Ann Preston 05-May-14  
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>5/2/2014 11:50:31 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

From: (616) 399-6870  
Sample Receiving  
ALS Laboratory Group  
3352 128th Avenue  
Holland, MI 49424

Origin ID: GRRR



214101 89070320

Ship Date: 01MAY14  
Actual: 71.0 LB  
GAD: 2254840/NET3400

Dim: 14 X 28 X 15 IN

Delivery Address Bar Code



SHIP TO: (616) 399-6870  
sample receiving  
ALS Laboratory Group  
3352 128TH AVE  
HOLLAND, MI 49424

BILL BENDER

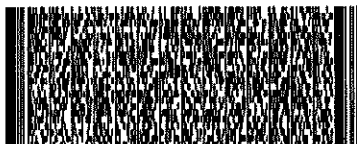
Ref # 050114-1  
Invoice #  
PO # Parcelite  
Dept #

FRJ - 02 MAY AA  
STANDARD OVERNIGHT

T89L 7987 2881 0523  
5221

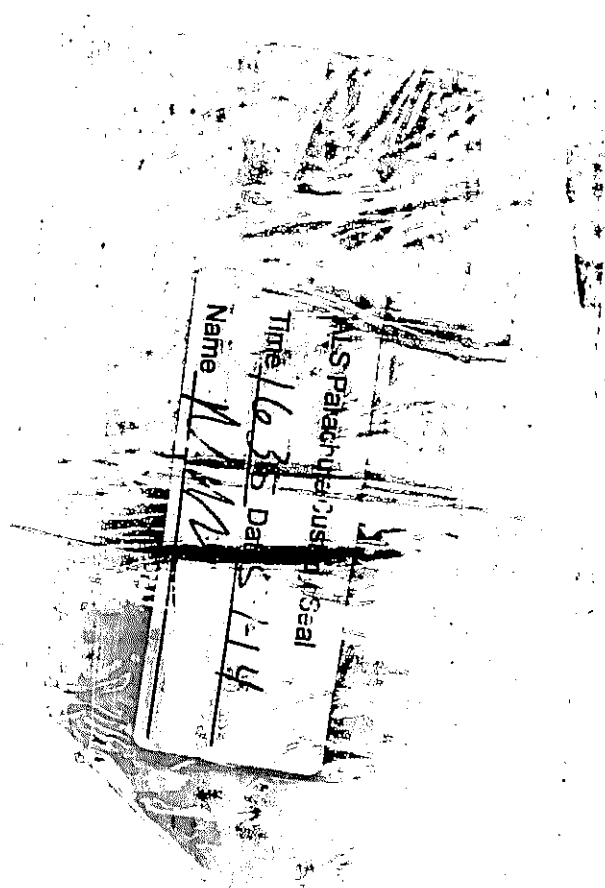
68 GRRR

49424  
88-128  
GRR



5221 14101 89070320

/templates/components/dolcom\_label\_contents/FoldInst/en/Folding\_instructions.html loading...  
/templates/components/dolcom\_label\_contents/WarningsOriginalLabel/en/Folding\_warning.html loading...  
/templates/components/dolcom\_label\_contents/TnCDom/en/TC\_dom.html loading...





03-Sep-2014

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

Re: **WPX PA 22-34 PA 31-34 8.27.14**

Work Order: **14081486**

Dear Mark,

ALS Environmental received 1 sample on 28-Aug-2014 09:30 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 10.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 PA 31-34 8.27.14  
**Work Order:** 14081486

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
14081486-01	PA 31-34 Batch 1	Soil		8/27/2014 09:20	8/28/2014 09:30	<input type="checkbox"/>

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 PA 31-34 8.27.14  
**WorkOrder:** 14081486

**QUALIFIERS,  
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	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

<u>Acronym</u>	<u>Description</u>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight



**ALS Group USA, Corp****Date:** 03-Sep-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 PA 31-34 8.27.14  
**Sample ID:** PA 31-34 Batch 1  
**Collection Date:** 8/27/2014 09:20 AM

**Work Order:** 14081486  
**Lab ID:** 14081486-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 8/29/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>26</b>		<b>4.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/2/2014 10:08 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>53.4</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	9/2/2014 10:08 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 8/29/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>2.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/2/2014 12:30 PM
<i>Surr: Toluene-d8</i>	<i>100</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	9/2/2014 12:30 PM
<b>MOISTURE</b>						
			<b>A2540 G</b>			Analyst: <b>JJG</b>
<b>Moisture</b>	<b>14</b>		<b>0.050</b>	<b>% of sample</b>	<b>1</b>	8/29/2014 02:01 PM

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

# ALS Group USA, Corp

Date: 03-Sep-14

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14081486  
**Project:** WPX PA 22-34 PA 31-34 8.27.14

## QC BATCH REPORT

Batch ID: **62206** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-62206-62206</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/29/2014 06:03 PM</b>		
Client ID:		Run ID: <b>GC8_140829A</b>				SeqNo: <b>2913138</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	1.07	0	1.667	0	64.2	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-62206-62206</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/29/2014 06:33 PM</b>		
Client ID:		Run ID: <b>GC8_140829A</b>				SeqNo: <b>2913139</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	134.1	4.2	166.7	0	80.5	61-109	0			
Surr: 4-Terphenyl-d14	1.156	0	1.667	0	69.4	39-133	0			

<b>MS</b>		Sample ID: <b>14081488-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/29/2014 07:03 PM</b>		
Client ID:		Run ID: <b>GC8_140829A</b>				SeqNo: <b>2913140</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	276.2	8.2	329.5	34.68	73.3	48-110	0			
Surr: 4-Terphenyl-d14	2.298	0	3.295	0	69.7	39-133	0			

<b>MSD</b>		Sample ID: <b>14081488-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/29/2014 07:33 PM</b>		
Client ID:		Run ID: <b>GC8_140829A</b>				SeqNo: <b>2913141</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	272.9	8.0	320.7	34.68	74.3	48-110	276.2	1.19	30	
Surr: 4-Terphenyl-d14	2.32	0	3.207	0	72.3	39-133	2.298	0.956	30	

The following samples were analyzed in this batch: 14081486-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14081486  
**Project:** WPX PA 22-34 PA 31-34 8.27.14

## QC BATCH REPORT

Batch ID: **62231**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-62231-62231</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>8/30/2014 02:39 AM</b>		
Client ID:		Run ID: <b>GC9_140829A</b>				SeqNo: <b>2913066</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	5388	0	5000	0	108	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-62231-62231</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>8/30/2014 02:14 AM</b>		
Client ID:		Run ID: <b>GC9_140829A</b>				SeqNo: <b>2913065</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	450300	2,500	500000	0	90.1	70-130	0			
<i>Surr: Toluene-d8</i>	5824	0	5000	0	116	50-150	0			

<b>MS</b>		Sample ID: <b>14081480-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>8/30/2014 03:29 AM</b>		
Client ID:		Run ID: <b>GC9_140829A</b>				SeqNo: <b>2913068</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	456200	2,500	500000	0	91.2	70-130	0			
<i>Surr: Toluene-d8</i>	5856	0	5000	0	117	50-150	0			

<b>MSD</b>		Sample ID: <b>14081480-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>8/30/2014 03:54 AM</b>		
Client ID:		Run ID: <b>GC9_140829A</b>				SeqNo: <b>2913069</b>		Prep Date: <b>8/29/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	443400	2,500	500000	0	88.7	70-130	456200	2.84	30	
<i>Surr: Toluene-d8</i>	5066	0	5000	0	101	50-150	5856	14.5	30	

The following samples were analyzed in this batch:

14081486-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14081486  
**Project:** WPX PA 22-34 PA 31-34 8.27.14

## QC BATCH REPORT

Batch ID: **R147301**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R147301</b>				Units: % of sample		Analysis Date: <b>8/29/2014 02:01 PM</b>		
Client ID:		Run ID: <b>MOIST_140829G</b>				SeqNo: <b>2911715</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R147301</b>				Units: % of sample		Analysis Date: <b>8/29/2014 02:01 PM</b>		
Client ID:		Run ID: <b>MOIST_140829G</b>				SeqNo: <b>2911711</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      99.99      0.050      100      0      100      99.5-100.5      0

<b>DUP</b>		Sample ID: <b>14081306-17BDUP</b>				Units: % of sample		Analysis Date: <b>8/29/2014 02:01 PM</b>		
Client ID:		Run ID: <b>MOIST_140829G</b>				SeqNo: <b>2911689</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      14.79      0.050      0      0      0      0-0      14.88      0.607      20

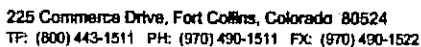
<b>DUP</b>		Sample ID: <b>14081395-01ADUP</b>				Units: % of sample		Analysis Date: <b>8/29/2014 02:01 PM</b>		
Client ID:		Run ID: <b>MOIST_140829G</b>				SeqNo: <b>2911701</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      14.21      0.050      0      0      0      0-0      12.9      9.66      20

The following samples were analyzed in this batch:

14081486-01A

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



**WORKORDER**

14081486

Form 202nd

\*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.**

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Rodolfo	8/27/14	12:00
RECEIVED BY	N.M.	N.M.	8:27	12:10
RELINQUISHED BY		N.M.	8:27	1:30
RECEIVED BY		Keith Wierenga	8/28/14	0930
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **28-Aug-14 09:30**

Work Order: **14081486**

Received by: **KRW**

Checklist completed by <u>Keith Wurenga</u>	28-Aug-14	Reviewed by: <u>Ann Preston</u>	28-Aug-14
eSignature	Date	eSignature	Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>8/28/2014 1:48:00 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (616) 399-8070  
 Nick Martinez  
 ALS Environmental  
 127 E. 1st Street

Origin ID: HLMA



Ship Date: 27AUG14  
 Act/Vgt: 04.013  
 CAD: 2284840/NET3550

Dims: 24 X 15 X 15 IN

PARACHUTE, MI 49424



Delivery Address Bar Code



SHIP TO: (616) 399-8070  
 sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

BILL BENDER

Ref # 082714-2  
 Invoice #  
 PO # Parachute  
 Dept #

HOLLAND, MI 49424

2 of 3

THU - 28 AUG 10:30A  
 PRIORITY OVERNIGHT

MP# 7709 7048 4375

Met# 7709 7048 4103

0261

49424

MS-US

GRR

68 HLMA



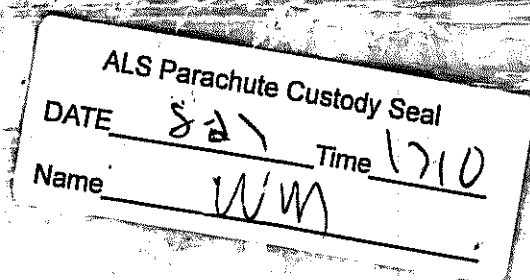
52G1ECF28AC0

**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](http://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.





24-Sep-2014

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

Re: **WPX PA 31-34, PA 22-34 Batch 2 9.18.14**

Work Order: **1409943**

Dear Mark,

ALS Environmental received 1 sample on 19-Sep-2014 09:00 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,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental The ALS logo, a stylized blue triangle with a yellow flame.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14  
**Work Order:** 1409943

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1409943-01	Batch 2	Soil		9/18/2014 14:30	9/19/2014 09:00	<input type="checkbox"/>

---

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14  
**Work Order:** 1409943

---

**Case Narrative**

Batch 62960 MS/MSD data for PAHs is not related to this project's samples. No data requires qualification.

Batch 62961 MS/MSD data for DRO is not related to this project's samples. No data requires qualification.

Batch 62981 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 63060 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

Batch 62983 sample 1409943-01 ran at a dilution for BTEX due to matrix interference. No data requires qualification.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 24-Sep-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14  
**Sample ID:** Batch 2  
**Collection Date:** 9/18/2014 02:30 PM

**Work Order:** 1409943  
**Lab ID:** 1409943-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 9/19/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>320</b>		<b>4.7</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/22/2014 01:54 PM
Surr: 4-Terphenyl-d14	76.7		39-133	%REC	1	9/22/2014 01:54 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 9/19/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>860</b>		<b>2.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/20/2014 03:35 PM
Surr: Toluene-d8	117		50-150	%REC	1	9/20/2014 03:35 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471</b>		Prep: SW7471 / 9/22/14	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.025</b>		<b>0.017</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/22/2014 07:40 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 9/23/14	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>110</b>		<b>5.0</b>	<b>mg/L</b>	<b>10</b>	9/23/2014 12:28 PM
<b>Magnesium</b>	<b>110</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	9/23/2014 12:28 PM
<b>Sodium</b>	<b>490</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	9/23/2014 12:28 PM
<b>METALS BY ICP-MS</b>						
			<b>SW6020A</b>		Prep: SW3050B / 9/19/14	Analyst: <b>ML</b>
<b>Arsenic</b>	<b>6.4</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Barium</b>	<b>310</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Cadmium</b>	<b>ND</b>		<b>0.87</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Chromium</b>	<b>15</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Copper</b>	<b>12</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Lead</b>	<b>11</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Nickel</b>	<b>15</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Selenium</b>	<b>2.4</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Silver</b>	<b>ND</b>		<b>2.2</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>Zinc</b>	<b>44</b>		<b>4.4</b>	<b>mg/Kg-dry</b>	<b>5</b>	9/20/2014 05:17 AM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHOD</b>		Prep: USDA Method 20B / 9/23/14	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>7.9</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	9/23/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 9/19/14	Analyst: <b>RM</b>
<b>Acenaphthene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Acenaphthylene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Anthracene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Benzo(a)anthracene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Benzo(a)pyrene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Benzo(g,h,i)perylene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM
<b>Chrysene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	9/20/2014 09:26 PM

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

# ALS Group USA, Corp

Date: 24-Sep-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14  
**Sample ID:** Batch 2  
**Collection Date:** 9/18/2014 02:30 PM

**Work Order:** 1409943  
**Lab ID:** 1409943-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	9/20/2014 09:26 PM
Fluoranthene	ND		7.6	µg/Kg-dry	1	9/20/2014 09:26 PM
Fluorene	31		7.6	µg/Kg-dry	1	9/20/2014 09:26 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	9/20/2014 09:26 PM
Naphthalene	180		7.6	µg/Kg-dry	1	9/20/2014 09:26 PM
Pyrene	ND		7.6	µg/Kg-dry	1	9/20/2014 09:26 PM
Surr: 2-Fluorobiphenyl	64.5		12-100	%REC	1	9/20/2014 09:26 PM
Surr: 4-Terphenyl-d14	78.2		25-137	%REC	1	9/20/2014 09:26 PM
Surr: Nitrobenzene-d5	68.7		37-107	%REC	1	9/20/2014 09:26 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/19/14		Analyst: BG
Benzene	ND		700	µg/Kg-dry	20	9/22/2014 05:43 PM
Ethylbenzene	ND		700	µg/Kg-dry	20	9/22/2014 05:43 PM
m,p-Xylene	25,000		1,400	µg/Kg-dry	20	9/22/2014 05:43 PM
o-Xylene	ND		700	µg/Kg-dry	20	9/22/2014 05:43 PM
Toluene	ND		700	µg/Kg-dry	20	9/22/2014 05:43 PM
Xylenes, Total	26,000		2,100	µg/Kg-dry	20	9/22/2014 05:43 PM
Surr: 1,2-Dichloroethane-d4	94.6		70-130	%REC	20	9/22/2014 05:43 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	20	9/22/2014 05:43 PM
Surr: Dibromofluoromethane	90.4		70-130	%REC	20	9/22/2014 05:43 PM
Surr: Toluene-d8	102		70-130	%REC	20	9/22/2014 05:43 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 9/23/14		Analyst: JB
Electrical Conductivity @ Saturation	4.1		0.050	mmhos/cm @25	10	9/23/2014 03:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	15		0.58	mg/Kg-dry	1	9/23/2014 04:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/19/14		Analyst: MB
Chromium, Hexavalent	ND		0.57	mg/Kg-dry	1	9/22/2014 03:30 PM
MOISTURE			A2540 G			Analyst: RLM
Moisture	14		0.050	% of sample	1	9/19/2014 04:40 PM
PH			SW9045D	Prep: EXTRACT / 9/22/14		Analyst: JB
pH	8.1			s.u.	1	9/23/2014 08:45 AM

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

Client: HRL Compliance Solutions, Inc

## QC BATCH REPORT

Work Order: 1409943

Project: WPX PA 31-34, PA 22-34 Batch 2 9.18.14

Batch ID: 62961

Instrument ID GC8

Method: SW8015M

<b>MBLK</b>		Sample ID: <b>DBLKS1-62961-62961</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 05:19 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946281</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
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	1.647	0	2	0	82.4	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-62961-62961</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 05:46 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946284</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	177.4	5.0	200	0	88.7	61-109		0		
Surr: 4-Terphenyl-d14	1.541	0	2	0	77.1	39-133		0		

<b>MS</b>		Sample ID: <b>1409892-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 06:14 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946286</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	612	8.3	331.3	72.35	163	48-110		0		S
Surr: 4-Terphenyl-d14	2.654	0	3.313	0	80.1	39-133		0		

<b>MSD</b>		Sample ID: <b>1409892-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 06:41 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946288</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	336	8.1	325.3	72.35	81	48-110	612	58.2	30	R
Surr: 4-Terphenyl-d14	2.433	0	3.253	0	74.8	39-133	2.654	8.68	30	

The following samples were analyzed in this batch: 1409943-01B

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62991**      Instrument ID **GC9**      Method: **SW8015C**

<b>MBLK</b>		Sample ID: <b>MBLK-62991-62991</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 02:00 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945644</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	<i>4800</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>96</i>	<i>50-150</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-62991-62991</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 01:34 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945643</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	548800	2,500	500000	0	110	70-130	0			
<i>Surr: Toluene-d8</i>	<i>4410</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>88.2</i>	<i>50-150</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>1409920-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 03:16 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945646</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	552100	2,500	500000	0	110	70-130	0			
<i>Surr: Toluene-d8</i>	<i>6310</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>126</i>	<i>50-150</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>1409920-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 03:41 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945647</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	531300	2,500	500000	0	106	70-130	552100	3.85	30	
<i>Surr: Toluene-d8</i>	<i>6062</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>121</i>	<i>50-150</i>	<i>6310</i>	<i>4.02</i>	<i>30</i>	

The following samples were analyzed in this batch:

1409943-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **63044**      Instrument ID **HG1**      Method: **SW7471**

Sample ID: <b>MBLK-63044-63044</b>				Units: <b>mg/Kg</b>			Analysis Date: <b>9/22/2014 06:09 PM</b>				
Client ID:			Run ID: <b>HG1_140922A</b>			SeqNo: <b>2947030</b>		Prep Date: <b>9/22/2014</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.003167	0.020								J	

LCS		Sample ID: LCS-63044-63044				Units:mg/Kg		Analysis Date: 9/22/2014 06:11 PM		
Client ID:			Run ID: HG1_140922A			SeqNo:2947031		Prep Date: 9/22/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1798	0.020	0.1665	0	108	80-120	0			

MS				Sample ID: 1409942-01BMS				Units:mg/Kg			Analysis Date: 9/22/2014 06:16 PM					
Client ID:				Run ID: HG1_140922A				SeqNo:2947033			Prep Date: 9/22/2014		DF: 1			
Analyte				Result		PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value		%RPD	RPD Limit	Qual
Mercury				0.144		0.013	0.1066	0.0239		113	75-125	0				

MSD				Sample ID: 1409942-01BMSD				Units:mg/Kg			Analysis Date: 9/22/2014 06:18 PM			
Client ID:				Run ID: HG1_140922A				SeqNo:2947034			Prep Date: 9/22/2014		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury				0.1475	0.013	0.1049	0.0239	118	75-125	0.144	2.37	35		

The following samples were analyzed in this batch:

1409943-01B

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62992**      Instrument ID **ICP2**      Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>1409967-02B DUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>9/23/2014 01:23 PM</b>		
Client ID:		Run ID: <b>ICP2_140923A</b>				SeqNo: <b>2948639</b>		Prep Date: <b>9/23/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	1063	5.0	0	0	0	0-0	0			
Magnesium	186.8	2.0	0	0	0	0-0	0			

<b>DUP</b>		Sample ID: <b>1409967-02B DUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>9/23/2014 02:17 PM</b>		
Client ID:		Run ID: <b>ICP2_140923A</b>				SeqNo: <b>2948647</b>		Prep Date: <b>9/23/2014</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	8911	20	0	0	0	0-0	0			

The following samples were analyzed in this batch:

1409943-01C

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62981**      Instrument ID **ICPMS1**      Method: **SW6020A**

Sample ID: <b>MBLK-62981-62981</b>				Units: <b>mg/Kg</b>			Analysis Date: <b>9/20/2014 01:48 AM</b>			
Client ID:		Run ID: <b>ICPMS1_140919A</b>			SeqNo: <b>2945336</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	0.008235	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	0.03875	0.25								J
Silver	ND	0.25								
Zinc	0.1595	0.50								J

LCS				Sample ID: LCS-62981-62981				Units:mg/Kg			Analysis Date: 9/20/2014 02:37 AM			
Client ID:				Run ID: ICPMS1_140919A				SeqNo:2945349			Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	4.591	0.25	5	0	91.8	80-120	0							
Barium	4.777	0.25	5	0	95.5	80-120	0							
Cadmium	4.825	0.10	5	0	96.5	80-120	0							
Chromium	4.854	0.25	5	0	97.1	80-120	0							
Copper	4.638	0.25	5	0	92.8	80-120	0							
Lead	4.714	0.25	5	0	94.3	80-120	0							
Nickel	4.78	0.25	5	0	95.6	80-120	0							
Selenium	4.539	0.25	5	0	90.8	80-120	0							
Silver	4.696	0.25	5	0	93.9	80-120	0							
Zinc	4.86	0.50	5	0	97.2	80-120	0							

MS					Sample ID: 1409900-09BMS		Units:mg/Kg		Analysis Date: 9/22/2014 03:58 PM		
Client ID:			Run ID: ICPMS1_140922A			SeqNo:2946886		Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	6.702	0.33	6.596	0.896	88	75-125	0				
Barium	30.48	0.33	6.596	17.81	192	75-125	0			S	
Cadmium	6.241	0.13	6.596	0.05485	93.8	75-125	0				
Chromium	11.41	0.33	6.596	4.301	108	75-125	0				
Copper	7.942	0.33	6.596	1.676	95	75-125	0				
Lead	9.096	0.33	6.596	2.559	99.1	75-125	0				
Nickel	9.96	0.33	6.596	3.197	103	75-125	0				
Selenium	6.379	0.33	6.596	0.6284	87.2	75-125	0				
Silver	5.805	0.33	6.596	0.006848	87.9	75-125	0				
Zinc	20.17	0.66	6.596	11.56	131	75-125	0			S	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62981**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>1409900-09BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 04:04 PM</b>		
Client ID:		Run ID: <b>ICPMS1_140922A</b>				SeqNo: <b>2946887</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.718	0.33	6.684	0.896	87.1	75-125	6.702	0.239	25	
Barium	25.98	0.33	6.684	17.81	122	75-125	30.48	15.9	25	
Cadmium	6.282	0.13	6.684	0.05485	93.2	75-125	6.241	0.649	25	
Chromium	13.44	0.33	6.684	4.301	137	75-125	11.41	16.3	25	S
Copper	8.175	0.33	6.684	1.676	97.2	75-125	7.942	2.89	25	
Lead	9.452	0.33	6.684	2.559	103	75-125	9.096	3.83	25	
Nickel	10.83	0.33	6.684	3.197	114	75-125	9.96	8.35	25	
Selenium	6.656	0.33	6.684	0.6284	90.2	75-125	6.379	4.24	25	
Silver	5.912	0.33	6.684	0.006848	88.3	75-125	5.805	1.83	25	
Zinc	21.65	0.67	6.684	11.56	151	75-125	20.17	7.08	25	S

The following samples were analyzed in this batch:      1409943-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62960**      Instrument ID **SVMS5**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-62960-62960</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 01:45 PM</b>		
Client ID:		Run ID: <b>SVMS5_140920A</b>				SeqNo: <b>2946208</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
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								
<i>Surr: 2-Fluorobiphenyl</i>	1408	0	1667	0	84.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	2048	0	1667	0	123	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1352	0	1667	0	81.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-62960-62960</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 02:07 PM</b>		
Client ID:		Run ID: <b>SVMS5_140920A</b>				SeqNo: <b>2946211</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	674.3	6.7	666.7	0	101	45-110	0			
Acenaphthylene	666	6.7	666.7	0	99.9	45-105	0			
Anthracene	676.7	6.7	666.7	0	101	55-105	0			
Benzo(a)anthracene	718	6.7	666.7	0	108	50-110	0			
Benzo(a)pyrene	731.7	6.7	666.7	0	110	50-110	0			
Benzo(b)fluoranthene	727	6.7	666.7	0	109	45-115	0			
Benzo(g,h,i)perylene	746.3	6.7	666.7	0	112	40-125	0			
Benzo(k)fluoranthene	731	6.7	666.7	0	110	45-115	0			
Chrysene	732.7	6.7	666.7	0	110	55-110	0			
Dibenzo(a,h)anthracene	621	6.7	666.7	0	93.1	40-125	0			
Fluoranthene	732.7	6.7	666.7	0	110	55-115	0			
Fluorene	694.7	6.7	666.7	0	104	50-110	0			
Indeno(1,2,3-cd)pyrene	639	6.7	666.7	0	95.8	40-120	0			
Naphthalene	665.3	6.7	666.7	0	99.8	40-105	0			
Pyrene	779.3	6.7	666.7	0	117	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1368	0	1667	0	82.1	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1823	0	1667	0	109	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1373	0	1667	0	82.4	37-107	0			

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62960**      Instrument ID: **SVMS5**      Method: **SW846 8270D**

MS				Sample ID: <b>1409698-03B MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 07:02 PM</b>	
Client ID:				Run ID: <b>SVMS5_140920A</b>			SeqNo: <b>2946213</b>		Prep Date: <b>9/19/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1185	13	1291	0	91.8	45-110	0			
Acenaphthylene	1328	13	1291	0	103	45-105	0			
Anthracene	1464	13	1291	0	113	55-105	0			S
Benzo(a)anthracene	1731	13	1291	221.2	117	50-110	0			S
Benzo(a)pyrene	1633	13	1291	0	126	50-110	0			S
Benzo(b)fluoranthene	1767	13	1291	0	137	45-115	0			S
Benzo(g,h,i)perylene	1723	13	1291	0	133	40-125	0			S
Benzo(k)fluoranthene	1757	13	1291	0	136	45-115	0			S
Chrysene	1790	13	1291	0	139	55-110	0			S
Dibenzo(a,h)anthracene	1375	13	1291	40.28	103	40-125	0			
Fluoranthene	1784	13	1291	0	138	55-115	0			S
Fluorene	1355	13	1291	0	105	50-110	0			
Indeno(1,2,3-cd)pyrene	1468	13	1291	166.6	101	40-120	0			
Naphthalene	1105	13	1291	0	85.6	40-105	0			
Pyrene	2137	13	1291	0	166	45-125	0			S
Surr: 2-Fluorobiphenyl	2327	0	3227	0	72.1	12-100	0			
Surr: 4-Terphenyl-d14	3762	0	3227	0	117	25-137	0			
Surr: Nitrobenzene-d5	2339	0	3227	0	72.5	37-107	0			

MSD				Sample ID: <b>1409698-03B MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 07:23 PM</b>	
Client ID:				Run ID: <b>SVMS5_140920A</b>			SeqNo: <b>2946216</b>		Prep Date: <b>9/19/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1323	13	1299	0	102	45-110	1185	11	30	
Acenaphthylene	1448	13	1299	0	111	45-105	1328	8.6	30	S
Anthracene	1568	13	1299	0	121	55-105	1464	6.9	30	S
Benzo(a)anthracene	1820	13	1299	221.2	123	50-110	1731	5.04	30	S
Benzo(a)pyrene	1720	13	1299	0	132	50-110	1633	5.22	30	S
Benzo(b)fluoranthene	1881	13	1299	0	145	45-115	1767	6.28	30	S
Benzo(g,h,i)perylene	1728	13	1299	0	133	40-125	1723	0.254	30	S
Benzo(k)fluoranthene	1794	13	1299	0	138	45-115	1757	2.05	30	S
Chrysene	1875	13	1299	0	144	55-110	1790	4.66	30	S
Dibenzo(a,h)anthracene	1448	13	1299	40.28	108	40-125	1375	5.12	30	
Fluoranthene	1904	13	1299	0	146	55-115	1784	6.46	30	S
Fluorene	1462	13	1299	0	112	50-110	1355	7.61	30	S
Indeno(1,2,3-cd)pyrene	1582	13	1299	166.6	109	40-120	1468	7.46	30	
Naphthalene	1277	13	1299	0	98.2	40-105	1105	14.4	30	
Pyrene	2116	13	1299	0	163	45-125	2137	0.977	30	S
Surr: 2-Fluorobiphenyl	2659	0	3249	0	81.8	12-100	2327	13.3	40	
Surr: 4-Terphenyl-d14	3825	0	3249	0	118	25-137	3762	1.66	40	
Surr: Nitrobenzene-d5	2706	0	3249	0	83.3	37-107	2339	14.6	40	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

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Batch ID: **62960** Instrument ID **SVMS5** Method: **SW846 8270D**

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The following samples were analyzed in this batch:

1409943-01B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62983**      Instrument ID **VMS7**      Method: **SW8260B**

MBLK				Sample ID: MBLK-62983-62983				Units: µg/Kg			Analysis Date: 9/20/2014 02:07 AM		
Client ID:			Run ID: VMS7_140919A				SeqNo:2944776			Prep Date: 9/19/2014		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	985.5	0	1000	0	98.6	70-130		0					
Surr: 4-Bromofluorobenzene	1004	0	1000	0	100	70-130		0					
Surr: Dibromofluoromethane	968.5	0	1000	0	96.8	70-130		0					
Surr: Toluene-d8	994	0	1000	0	99.4	70-130		0					

LCS				Sample ID: LCS-62983-62983			Units: µg/Kg		Analysis Date: 9/19/2014 10:48 PM		
Client ID:			Run ID: VMS7_140919A			SeqNo:2944775		Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	982	30	1000	0	98.2	75-125	0				
Ethylbenzene	1018	30	1000	0	102	75-125	0				
m,p-Xylene	2020	60	2000	0	101	80-125	0				
o-Xylene	993.5	30	1000	0	99.4	75-125	0				
Toluene	980	30	1000	0	98	70-125	0				
Xylenes, Total	3014	90	3000	0	100	75-125	0				
Surr: 1,2-Dichloroethane-d4	992.5	0	1000	0	99.2	70-130	0				
Surr: 4-Bromofluorobenzene	981	0	1000	0	98.1	70-130	0				
Surr: Dibromofluoromethane	1004	0	1000	0	100	70-130	0				
Surr: Toluene-d8	999.5	0	1000	0	100	70-130	0				

MS				Sample ID: 1409903-13A MS				Units: µg/Kg		Analysis Date: 9/20/2014 07:57 AM	
Client ID:			Run ID: VMS7_140919A			SeqNo:2944778		Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	960.5	30	1000	0	96	75-125	0				
Ethylbenzene	977	30	1000	0	97.7	75-125	0				
m,p-Xylene	1934	60	2000	0	96.7	80-125	0				
o-Xylene	977	30	1000	0	97.7	75-125	0				
Toluene	948.5	30	1000	0	94.8	70-125	0				
Xylenes, Total	2910	90	3000	0	97	75-125	0				
Surr: 1,2-Dichloroethane-d4	991	0	1000	0	99.1	70-130	0				
Surr: 4-Bromofluorobenzene	985.5	0	1000	0	98.6	70-130	0				
Surr: Dibromofluoromethane	987	0	1000	0	98.7	70-130	0				
Surr: Toluene-d8	978	0	1000	0	97.8	70-130	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62983**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: <b>1409903-13A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 08:22 AM</b>	
Client ID:				Run ID: <b>VMS7_140919A</b>			SeqNo: <b>2944779</b>		Prep Date: <b>9/19/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	954.5	30	1000	0	95.4	75-125	960.5	0.627	30	
Ethylbenzene	977	30	1000	0	97.7	75-125	977	0	30	
m,p-Xylene	1950	60	2000	0	97.5	80-125	1934	0.824	30	
o-Xylene	970	30	1000	0	97	75-125	977	0.719	30	
Toluene	944	30	1000	0	94.4	70-125	948.5	0.476	30	
Xylenes, Total	2920	90	3000	0	97.3	75-125	2910	0.309	30	
Surr: 1,2-Dichloroethane-d4	989	0	1000	0	98.9	70-130	991	0.202	30	
Surr: 4-Bromofluorobenzene	987	0	1000	0	98.7	70-130	985.5	0.152	30	
Surr: Dibromofluoromethane	982.5	0	1000	0	98.2	70-130	987	0.457	30	
Surr: Toluene-d8	986.5	0	1000	0	98.6	70-130	978	0.865	30	

The following samples were analyzed in this batch: 1409943-01A

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **62992** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1409967-02B DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>9/23/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140923J</b>				SeqNo: <b>2948682</b>		Prep Date: <b>9/23/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	60.9	0.050	0	0	0		60.8	0.164	50	

The following samples were analyzed in this batch:

1409943-01C

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **63060**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-63060-63060</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946917</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.50

<b>LCS</b>		Sample ID: <b>LCS-63060-63060</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946916</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.924      0.50      2      0      96.2      80-120      0

<b>MS</b>		Sample ID: <b>1409966-02A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946898</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.1633      0.50      1.992      0.3651      -10.1      75-125      0      JS

<b>MS</b>		Sample ID: <b>1409966-02A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946900</b>		Prep Date: <b>9/19/2014</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1321      50      1352      0.3651      97.7      75-125      0

<b>MSD</b>		Sample ID: <b>1409966-02A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946899</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.2609      0.49      1.976      0.3651      -5.27      75-125      0.1633      0      20      JS

The following samples were analyzed in this batch:

1409943-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **63074**      Instrument ID **WETCHEM**      Method: **SW9045D**

LCS				Sample ID: LCS-63074-63074				Units:s.u.		Analysis Date: 9/23/2014 08:45 AM				
Client ID:				Run ID: WETCHEM_140923A				SeqNo:2947366		Prep Date: 9/22/2014		DF: 1		
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      4.01      0      4      0      100      90-110      0

DUP				Sample ID: 14091025-01B DUP				Units: s.u.		Analysis Date: 9/23/2014 08:45 AM			
Client ID:				Run ID: WETCHEM_140923A				SeqNo: 2947368		Prep Date: 9/22/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH      9      0      0      0      0      0-0      9.02      0.222      20

DUP				Sample ID: 1409946-01B DUP				Units: s.u.			Analysis Date: 9/23/2014 08:45 AM		
Client ID:				Run ID: WETCHEM_140923A				SeqNo: 2947378		Prep Date: 9/22/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH      8.23      0      0      0      0      0-0      8.24      0.121      20

The following samples were analyzed in this batch:

1409943-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409943  
**Project:** WPX PA 31-34, PA 22-34 Batch 2 9.18.14

## QC BATCH REPORT

Batch ID: **R148637**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R148637</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946143</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R148637</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946142</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1409891-09A DUP</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946133</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      11.16      0.050      0      0      0      0-0      11.14      0.179      20

<b>DUP</b>		Sample ID: <b>1409915-01A DUP</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946141</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      73.79      0.050      0      0      0      0-0      73.56      0.312      20

The following samples were analyzed in this batch:

1409943-01B

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



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 - PH: (970) 490-1511 - FX: (970) 490-1522

## Chain-of-Custody

Form 202/8

WORKORDER #

PAGE

1

of

1

DISPOSAL

By Lab or Return to Client

PROJECT NAME

WPX PA31-34/PA22-34

SAMPLER

Reed Wold

SITE ID

PA3134

DATE

9/18/14

TURNAROUND

3 Day

PROJECT No.

Batch 2

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

Parachute 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

01

Batch 2

SO

9/18/14

2:30

3

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:

QC PACKAGE (check below)

X

LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms + raw data)

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

RELINQUISHED BY

Reed Wold

RECEIVED BY

Reed Wold

RELINQUISHED BY

Reed Wold

RECEIVED BY

Reed Wold

RELINQUISHED BY

Reed Wold

RECEIVED BY

Reed Wold

SIGNATURE

PRINTED NAME

DATE

TIME

9/18/14

3:00

9/18/14

3:00

9/18/14

3:00

09/19/14

0900

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **19-Sep-14 09:00**

Work Order: **1409943**

Received by: **TBB**

Checklist completed by <u>Joseph Ribar</u>	19-Sep-14	Reviewed by: <u>Ann Preston</u>	19-Sep-14
eSignature	Date	eSignature	Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.8C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>9/19/2014 11:31:10 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Franz (818) 399-6070  
 Mark Martinez  
 ALS Environmental  
 127 E. 1st Street  
 PARACHUTE, CO 81855

Origin ID: RLA



Ship Date: 18SEP14  
 Actual: 50.0 LB  
 CAC: 22948404NET3558

Dim: 24 X 15 X 15 IN

Delivery Address Bar Code



SHIP TO: (818) 399-6070  
 sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

BILL NUMBER

Ref # 001814-1  
 Invoice #  
 PO # Parachute  
 Dept #

HOLLAND, MI 49424

2 of 2

FRI - 19 SEP 10:30A  
 PRIORITY OVERNIGHT

SHIP# 7712 0858 2206

Master# 7712 0858 2103

5281

49424  
 MI-US  
 GRR

XX HLMA



8220UCB#00000000

## After printing this label:

1. Use the "Print" button on this page to print your label to your laser or inkjet printer.
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ALS Environmental

3362 128th Avenue  
 Holland, Michigan 49424  
 Tel: +1 616 399 6070  
 Fax: +1 616 399 6185

CUSTODY SEAL

Date: 9/18/14 Time: 1:20 PM  
 Name: [Signature]  
 Company: ALS

Seal Broken

Date

RT 828  
 ST 14

2206  
 09:19

B



11-Dec-2014

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

Re: **WPX PA 22-34 Batch 2 12.5.14**

Work Order: **1412381**

Dear Mark,

ALS Environmental received 1 sample on 06-Dec-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 10.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

## Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



---

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Batch 2 12.5.14  
**Work Order:** 1412381

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1412381-01	PA 22-34 Batch 2	Soil		12/5/2014 10:40	12/6/2014 10:00	<input type="checkbox"/>

---

## ALS Group USA, Corp

*Date: 11-Dec-14*

---

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Batch 2 12.5.14  
**Work Order:** 1412381

---

### Case Narrative

Batch 6576 MS/MSD data for DRO is not related to this project's samples. No data requires qualification.

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 22-34 Batch 2 12.5.14  
**WorkOrder:** 1412381

## QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	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

<u>Acronym</u>	<u>Description</u>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

**ALS Group USA, Corp**

Date: 11-Dec-14

Client: HRL Compliance Solutions, Inc

Project: WPX PA 22-34 Batch 2 12.5.14

Sample ID: PA 22-34 Batch 2

Collection Date: 12/5/2014 10:40 AM

Work Order: 1412381

Lab ID: 1412381-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>410</b>		<b>SW8015M</b>		Prep: SW3541 / 12/9/14	Analyst: <b>IT</b>
			<b>4.7</b>	<b>mg/Kg-dry</b>	<b>1</b>	12/10/2014 11:53 AM
Surr: 4-Terphenyl-d14	92.9		39-133	%REC	1	12/10/2014 11:53 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>74</b>		<b>SW8015</b>		Prep: SW5035 / 12/9/14	Analyst: <b>IT</b>
			<b>2.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	12/9/2014 06:46 PM
Surr: Toluene-d8	110		50-150	%REC	1	12/9/2014 06:46 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>13</b>		<b>A2540 G</b>			Analyst: <b>EVB</b>
			<b>0.050</b>	<b>% of sample</b>	<b>1</b>	12/9/2014 03:00 PM

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



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Karolina Blaney  
WPX Energy  
1058 County Road 215  
Parachute, CO 81635

## Report Summary

Wednesday February 11, 2015

Report Number: L747142

Samples Received: 02/05/15

Client Project: PA 22-34

Description: PA 22-34

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:

T. Alan Harvill , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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Est. 1970

REPORT OF ANALYSIS

Ms.Karolina Blaney  
WPX Energy  
1058 County Road 215  
Parachute, CO 81635

February 11, 2015

Date Received : February 05, 2015  
Description : PA 22-34

Sample ID : PA 31-34 BATCH 3

Collected By :  
Collection Date : 02/04/15 10:30

ESC Sample # : L747142-01

Site ID : PA 22-34/PA 31-34 B 3

Project # : PA 22-34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/06/15	5
Toluene	BDL	0.025	mg/kg	8021	02/06/15	5
Ethylbenzene	0.0044	0.0025	mg/kg	8021	02/06/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/06/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	02/06/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.7		% Rec.	8015	02/06/15	1
a,a,a-Trifluorotoluene(PID)	94.1		% Rec.	8021	02/06/15	1
TPH (GC/FID) High Fraction	110	4.0	mg/kg	3546/DRO	02/06/15	1
Surrogate recovery(%)						
o-Terphenyl	72.5		% Rec.	3546/DRO	02/06/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/06/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/06/15	1
Surrogate Recovery						
Nitrobenzene-d5	119.		% Rec.	8270C-SIM	02/06/15	1
2-Fluorobiphenyl	88.1		% Rec.	8270C-SIM	02/06/15	1
p-Terphenyl-d14	85.0		% Rec.	8270C-SIM	02/06/15	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: 02/11/15 09:25 Printed: 02/11/15 12:09



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# REPORT OF ANALYSIS

Ms.Karolina Blaney  
WPX Energy  
1058 County Road 215  
Parachute, CO 81635

February 11, 2015

Date Received : February 05, 2015  
Description : PA 22-34  
Sample ID : PA 31-34 BATCH 3  
Collected By :  
Collection Date : 02/04/15 10:30

ESC Sample # : L747142-02

Site ID : PA 22-34/PA 31-34 B 3

Project # : PA 22-34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	02/10/15	1
Chromium,Trivalent	BDL	0.50	mg/kg	Calc.	02/06/15	1
ORP	110		mV	2580 B-2011	02/07/15	1
pH	8.5	0.10	su	9045D	02/06/15	1
Sodium Adsorption Ratio	4.2			Calc.	02/08/15	1
Specific Conductance	1000		umhos/cm	9050AMod	02/07/15	1
Mercury	BDL	0.020	mg/kg	7471A	02/06/15	1
Arsenic	7.6	2.0	mg/kg	6010B	02/06/15	1
Barium	190	0.50	mg/kg	6010B	02/06/15	1
Cadmium	BDL	0.50	mg/kg	6010B	02/06/15	1
Chromium	8.4	1.0	mg/kg	6010B	02/06/15	1
Copper	10.	2.0	mg/kg	6010B	02/06/15	1
Lead	9.2	0.50	mg/kg	6010B	02/06/15	1
Nickel	10.	2.0	mg/kg	6010B	02/06/15	1
Selenium	BDL	2.0	mg/kg	6010B	02/06/15	1
Silver	BDL	1.0	mg/kg	6010B	02/06/15	1
Zinc	34.	5.0	mg/kg	6010B	02/06/15	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: 02/11/15 09:25 Printed: 02/11/15 12:09  
L747142-02 (PH) - 8.5@21.1c



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Quality Assurance Report  
Level II

L747142

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February 11, 2015

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Arsenic	< 2	mg/kg			WG768677	02/05/15 22:54
Barium	< .5	mg/kg			WG768677	02/05/15 22:54
Cadmium	< .5	mg/kg			WG768677	02/05/15 22:54
Chromium	< 1	mg/kg			WG768677	02/05/15 22:54
Copper	< 2	mg/kg			WG768677	02/05/15 22:54
Lead	< .5	mg/kg			WG768677	02/05/15 22:54
Nickel	< 2	mg/kg			WG768677	02/05/15 22:54
Selenium	< 2	mg/kg			WG768677	02/05/15 22:54
Silver	< 1	mg/kg			WG768677	02/05/15 22:54
Zinc	< 5	mg/kg			WG768677	02/05/15 22:54
Acenaphthene	< .006	mg/kg			WG768741	02/06/15 05:48
Anthracene	< .006	mg/kg			WG768741	02/06/15 05:48
Benzo(a)anthracene	< .006	mg/kg			WG768741	02/06/15 05:48
Benzo(a)pyrene	< .006	mg/kg			WG768741	02/06/15 05:48
Benzo(b)fluoranthene	< .006	mg/kg			WG768741	02/06/15 05:48
Benzo(k)fluoranthene	< .006	mg/kg			WG768741	02/06/15 05:48
Chrysene	< .006	mg/kg			WG768741	02/06/15 05:48
Dibenz(a,h)anthracene	< .006	mg/kg			WG768741	02/06/15 05:48
Fluoranthene	< .006	mg/kg			WG768741	02/06/15 05:48
Fluorene	< .006	mg/kg			WG768741	02/06/15 05:48
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG768741	02/06/15 05:48
Naphthalene	< .02	mg/kg			WG768741	02/06/15 05:48
Pyrene	< .006	mg/kg			WG768741	02/06/15 05:48
2-Fluorobiphenyl		% Rec.	91.30	38.2-135	WG768741	02/06/15 05:48
Nitrobenzene-d5		% Rec.	101.0	28.4-151	WG768741	02/06/15 05:48
p-Terphenyl-d14		% Rec.	92.60	34.2-141	WG768741	02/06/15 05:48
Mercury	< .02	mg/kg			WG768720	02/06/15 07:50
Benzene	< .0005	mg/kg			WG768838	02/06/15 13:47
Ethylbenzene	< .0005	mg/kg			WG768838	02/06/15 13:47
Toluene	< .005	mg/kg			WG768838	02/06/15 13:47
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG768838	02/06/15 13:47
Total Xylene	< .0015	mg/kg			WG768838	02/06/15 13:47
a,a,a-Trifluorotoluene(FID)		% Rec.	95.00	59-128	WG768838	02/06/15 13:47
a,a,a-Trifluorotoluene(PID)		% Rec.	95.90	54-144	WG768838	02/06/15 13:47
TPH (GC/FID) High Fraction	< 4	mg/kg			WG768746	02/06/15 12:39
o-Terphenyl		% Rec.	83.30	50-150	WG768746	02/06/15 12:39
Specific Conductance	0.760	umhos/cm			WG768942	02/07/15 12:30
Chromium, Hexavalent	< 2	mg/kg			WG769306	02/10/15 08:29

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
pH	su	6.60	6.60		0.456	1	L747030-01	WG768775
pH	su	8.20	8.20		0.367	1	L747285-03	WG768775
ORP	mV	100.	100.		1.98	20	L747104-02	WG768938

\* 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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February 11, 2015

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
ORP	mV	99.0	100.	1.01	20	L747285-05	WG768938
Specific Conductance	umhos/cm	1200	1200	0.0	20	L746967-02	WG768942
Specific Conductance	umhos/cm	3200	3500	7.41	20	L747206-09	WG768942
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L747155-02	WG769306
Chromium, Hexavalent	mg/kg	1.30	1.40	5.88	20	L746878-01	WG769306

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Arsenic	mg/kg	100	92.9	93.0	80-120	WG768677
Barium	mg/kg	100	93.9	94.0	80-120	WG768677
Cadmium	mg/kg	100	89.7	90.0	80-120	WG768677
Chromium	mg/kg	100	92.7	93.0	80-120	WG768677
Copper	mg/kg	100	87.3	87.0	80-120	WG768677
Lead	mg/kg	100	93.4	93.0	80-120	WG768677
Nickel	mg/kg	100	86.3	86.0	80-120	WG768677
Selenium	mg/kg	100	91.8	92.0	80-120	WG768677
Silver	mg/kg	100	90.2	90.0	80-120	WG768677
Zinc	mg/kg	100	87.9	88.0	80-120	WG768677
Acenaphthene	mg/kg	.08	0.0725	90.6	48.7-127	WG768741
Anthracene	mg/kg	.08	0.0730	91.3	51.3-136	WG768741
Benzo(a)anthracene	mg/kg	.08	0.0695	86.9	55-126	WG768741
Benzo(a)pyrene	mg/kg	.08	0.0634	79.3	51.9-127	WG768741
Benzo(b)fluoranthene	mg/kg	.08	0.0735	91.9	54-125	WG768741
Benzo(k)fluoranthene	mg/kg	.08	0.0720	90.0	53.9-132	WG768741
Chrysene	mg/kg	.08	0.0743	92.9	55.7-133	WG768741
Dibenz(a,h)anthracene	mg/kg	.08	0.0766	95.8	52.6-137	WG768741
Fluoranthene	mg/kg	.08	0.0774	96.8	54-132	WG768741
Fluorene	mg/kg	.08	0.0729	91.2	48.7-127	WG768741
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0779	97.4	53.8-138	WG768741
Naphthalene	mg/kg	.08	0.0635	79.3	42-127	WG768741
Pyrene	mg/kg	.08	0.0771	96.3	54-129	WG768741
2-Fluorobiphenyl				96.20	38.2-135	WG768741
Nitrobenzene-d5				106.0	28.4-151	WG768741
p-Terphenyl-d14				94.80	34.2-141	WG768741
Mercury	mg/kg	.458	0.458	100.	80-120	WG768720
pH	su	5.9	5.87	99.5	98.3-101.7	WG768775
Benzene	mg/kg	.05	0.0518	104.	70-130	WG768838
Ethylbenzene	mg/kg	.05	0.0525	105.	70-130	WG768838
Toluene	mg/kg	.05	0.0513	103.	70-130	WG768838
Total Xylene	mg/kg	.15	0.144	95.9	70-130	WG768838
a,a,a-Trifluorotoluene(PID)				104.0	54-144	WG768838
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.13	93.3	63.5-137	WG768838
a,a,a-Trifluorotoluene(FID)				96.80	59-128	WG768838
TPH (GC/FID) High Fraction	mg/kg	60	55.2	92.1	50-150	WG768746

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Analyte	Units	Laboratory Control Sample			% Rec	Limit	Batch	
		Known Val		Result				
o-Terphenyl					83.30	50-150		
ORP	mV	100		109.	109.	90-110	WG768938	
Specific Conductance	umhos/cm	759		801.	106.	85-115	WG768942	
Chromium,Hexavalent	mg/kg	187		184.	98.4	80-120	WG769306	
Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Arsenic	mg/kg	92.0	92.9	92.0	80-120	1.00	20	WG768677
Barium	mg/kg	94.4	93.9	94.0	80-120	1.00	20	WG768677
Cadmium	mg/kg	90.7	89.7	91.0	80-120	1.00	20	WG768677
Chromium	mg/kg	93.3	92.7	93.0	80-120	1.00	20	WG768677
Copper	mg/kg	87.5	87.3	88.0	80-120	0.0	20	WG768677
Lead	mg/kg	92.9	93.4	93.0	80-120	0.0	20	WG768677
Nickel	mg/kg	85.8	86.3	86.0	80-120	1.00	20	WG768677
Selenium	mg/kg	92.1	91.8	92.0	80-120	0.0	20	WG768677
Silver	mg/kg	90.7	90.2	91.0	80-120	1.00	20	WG768677
Zinc	mg/kg	88.5	87.9	88.0	80-120	1.00	20	WG768677
Acenaphthene	mg/kg	0.0718	0.0725	90.0	48.7-127	0.920	20	WG768741
Anthracene	mg/kg	0.0722	0.0730	90.0	51.3-136	1.16	20	WG768741
Benzo(a)anthracene	mg/kg	0.0701	0.0695	88.0	55-126	0.890	20	WG768741
Benzo(a)pyrene	mg/kg	0.0607	0.0634	76.0	51.9-127	4.38	20	WG768741
Benzo(b)fluoranthene	mg/kg	0.0703	0.0735	88.0	54-125	4.51	20	WG768741
Benzo(k)fluoranthene	mg/kg	0.0745	0.0720	93.0	53.9-132	3.33	20	WG768741
Chrysene	mg/kg	0.0735	0.0743	92.0	55.7-133	1.14	20	WG768741
Dibenz(a,h)anthracene	mg/kg	0.0753	0.0766	94.0	52.6-137	1.78	20	WG768741
Fluoranthene	mg/kg	0.0767	0.0774	96.0	54-132	0.980	20	WG768741
Fluorene	mg/kg	0.0718	0.0729	90.0	48.7-127	1.61	20	WG768741
Indeno(1,2,3-cd)pyrene	mg/kg	0.0767	0.0779	96.0	53.8-138	1.61	20	WG768741
Naphthalene	mg/kg	0.0642	0.0635	80.0	42-127	1.12	20	WG768741
Pyrene	mg/kg	0.0761	0.0771	95.0	54-129	1.31	20	WG768741
2-Fluorobiphenyl				92.00	38.2-135			WG768741
Nitrobenzene-d5				101.0	28.4-151			WG768741
p-Terphenyl-d14				90.30	34.2-141			WG768741
Mercury	mg/kg	0.460	0.458	100.	80-120	0.0	20	WG768720
pH	su	5.88	5.87	100.	98.3-101.7	0.170	20	WG768775
Benzene	mg/kg	0.0521	0.0518	104.	70-130	0.600	20	WG768838
Ethylbenzene	mg/kg	0.0529	0.0525	106.	70-130	0.730	20	WG768838
Toluene	mg/kg	0.0515	0.0513	103.	70-130	0.330	20	WG768838
Total Xylene	mg/kg	0.145	0.144	96.0	70-130	0.460	20	WG768838
a,a,a-Trifluorotoluene(PID)				104.0	54-144			WG768838
TPH (GC/FID) Low Fraction	mg/kg	5.29	5.13	96.0	63.5-137	2.90	20	WG768838
a,a,a-Trifluorotoluene(FID)				97.40	59-128			WG768838
TPH (GC/FID) High Fraction	mg/kg	53.1	55.2	88.0	50-150	4.04	20	WG768746
o-Terphenyl				75.40	50-150			WG768746

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

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
ORP	mV	109.	109.	109.	90-110	0.0	20	WG768938
Specific Conductance	umhos/	796.	801.	105.	85-115	0.626	20	WG768942
Chromium, Hexavalent	mg/kg	184.	184.	98.0	80-120	0.0	20	WG769306

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Cadmium	mg/kg	91.0	0.341	100	91.0	75-125	L747123-03	WG768677
Chromium	mg/kg	110.	15.6	100	94.0	75-125	L747123-03	WG768677
Lead	mg/kg	103.	14.2	100	89.0	75-125	L747123-03	WG768677
Mercury	mg/kg	0.533	0.0133	.458	110.	75-125	L747179-01	WG768720
Acenaphthene	mg/kg	0.0616	0.00149	.08	75.0	39.4-132	L747142-01	WG768741
Anthracene	mg/kg	0.0563	0.00173	.08	68.0	36.7-144	L747142-01	WG768741
Benzo(a)anthracene	mg/kg	0.0518	0.0	.08	65.0	28-144	L747142-01	WG768741
Benzo(a)pyrene	mg/kg	0.0501	0.0	.08	63.0	23.8-147	L747142-01	WG768741
Benzo(b)fluoranthene	mg/kg	0.0449	0.0	.08	56.0	18.2-147	L747142-01	WG768741
Benzo(k)fluoranthene	mg/kg	0.0529	0.0	.08	66.0	26.5-143	L747142-01	WG768741
Chrysene	mg/kg	0.0539	0.000674	.08	67.0	27.4-150	L747142-01	WG768741
Dibenz(a,h)anthracene	mg/kg	0.0551	0.0	.08	69.0	13.8-150	L747142-01	WG768741
Fluoranthene	mg/kg	0.0575	0.00209	.08	69.0	23.2-158	L747142-01	WG768741
Fluorene	mg/kg	0.0662	0.00587	.08	75.0	30.8-139	L747142-01	WG768741
Indeno(1,2,3-cd)pyrene	mg/kg	0.0507	0.0	.08	63.0	10.7-155	L747142-01	WG768741
Naphthalene	mg/kg	0.0676	0.00484	.08	78.0	34.9-133	L747142-01	WG768741
Pyrene	mg/kg	0.0553	0.00149	.08	67.0	22.6-151	L747142-01	WG768741
2-Fluorobiphenyl					86.80	38.2-135		WG768741
Nitrobenzene-d5					159.0*	28.4-151		WG768741
p-Terphenyl-d14					79.80	34.2-141		WG768741
Benzene	mg/kg	0.206	0.0107	.05	78.0	49.7-127	L747104-01	WG768838
Ethylbenzene	mg/kg	0.193	0.00176	.05	76.0	40.8-141	L747104-01	WG768838
Toluene	mg/kg	0.199	0.0110	.05	75.0	49.8-132	L747104-01	WG768838
Total Xylene	mg/kg	0.561	0.00526	.15	74.0	41.2-140	L747104-01	WG768838
a,a,a-Trifluorotoluene(PID)					97.30	54-144		WG768838
TPH (GC/FID) Low Fraction	mg/kg	18.4	0.0	5.5	67.0	28.5-138	L747104-01	WG768838
a,a,a-Trifluorotoluene(FID)					93.90	59-128		WG768838
Chromium, Hexavalent	mg/kg	20.2	1.40	20	94.0	75-125	L746878-01	WG769306

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Cadmium	mg/kg	92.5	91.0	92.1	75-125	2.00	20	L747123-03	WG768677
Chromium	mg/kg	111.	110.	95.7	75-125	1.00	20	L747123-03	WG768677
Lead	mg/kg	107.	103.	92.9	75-125	3.00	20	L747123-03	WG768677
Mercury	mg/kg	0.492	0.533	104.	75-125	8.00	20	L747179-01	WG768720

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



YOUR LAB OF CHOICE

WPX Energy  
Ms.Karolina Blaney  
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report  
Level II

L747142

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

February 11, 2015

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Acenaphthene	mg/kg	0.0630	0.0616	76.9	39.4-132	2.37	20	L747142-01	WG768741
Anthracene	mg/kg	0.0588	0.0563	71.3	36.7-144	4.36	20.7	L747142-01	WG768741
Benzo(a)anthracene	mg/kg	0.0528	0.0518	66.0	28-144	1.89	24.7	L747142-01	WG768741
Benzo(a)pyrene	mg/kg	0.0507	0.0501	63.4	23.8-147	1.10	25.3	L747142-01	WG768741
Benzo(b)fluoranthene	mg/kg	0.0443	0.0449	55.4	18.2-147	1.25	29.5	L747142-01	WG768741
Benzo(k)fluoranthene	mg/kg	0.0537	0.0529	67.1	26.5-143	1.59	26.1	L747142-01	WG768741
Chrysene	mg/kg	0.0555	0.0539	68.5	27.4-150	2.79	25.7	L747142-01	WG768741
Dibenz(a,h)anthracene	mg/kg	0.0562	0.0551	70.3	13.8-150	2.06	25.8	L747142-01	WG768741
Fluoranthene	mg/kg	0.0594	0.0575	71.7	23.2-158	3.23	26	L747142-01	WG768741
Fluorene	mg/kg	0.0658	0.0662	75.0	30.8-139	0.520	20	L747142-01	WG768741
Indeno(1,2,3-cd)pyrene	mg/kg	0.0509	0.0507	63.6	10.7-155	0.310	26.9	L747142-01	WG768741
Naphthalene	mg/kg	0.0665	0.0676	77.0	34.9-133	1.65	20.4	L747142-01	WG768741
Pyrene	mg/kg	0.0568	0.0553	69.1	22.6-151	2.71	25.1	L747142-01	WG768741
2-Fluorobiphenyl				85.00	38.2-135				WG768741
Nitrobenzene-d5				114.0	28.4-151				WG768741
p-Terphenyl-d14				79.60	34.2-141				WG768741
Benzene	mg/kg	0.183	0.206	69.1	49.7-127	11.5	23.5	L747104-01	WG768838
Ethylbenzene	mg/kg	0.162	0.193	64.0	40.8-141	17.3	23.8	L747104-01	WG768838
Toluene	mg/kg	0.176	0.199	66.0	49.8-132	12.4	23.5	L747104-01	WG768838
Total Xylene	mg/kg	0.471	0.561	62.1	41.2-140	17.4	23.7	L747104-01	WG768838
a,a,a-Trifluorotoluene(PID)				99.40	54-144				WG768838
TPH (GC/FID) Low Fraction	mg/kg	16.9	18.4	61.4	28.5-138	8.81	23.6	L747104-01	WG768838
a,a,a-Trifluorotoluene(FID)				93.70	59-128				WG768838
Chromium,Hexavalent	mg/kg	20.2	20.2	94.0	75-125	0.0	20	L746878-01	WG769306

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG768677: R3018463: L747142-02  
WG768741: R3018472 R3018861: L747142-01  
WG768720: R3018514: L747142-02  
WG768775: R3018589: L747142-02  
WG768838: R3018616: L747142-01  
WG768746: R3018659: L747142-01  
WG768850: R3018773: L747142-02  
WG768938: R3018804: L747142-02  
WG768942: R3018805: L747142-02  
WG769306: R3019002: L747142-02

\* \* 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.'



**YOUR LAB OF CHOICE**

WPX Energy  
Ms. Karolina Blaney  
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Parachute, CO 81635

Quality Assurance Report  
Level II

L747142

12065 Lebanon Rd.  
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Est. 1970

February 11, 2015

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.

# ALS Group USA, Corp

Date: 11-Dec-14

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1412381  
**Project:** WPX PA 22-34 Batch 2 12.5.14

## QC BATCH REPORT

Batch ID: **65761** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-65761-65761				Units:mg/Kg		Analysis Date: 12/10/2014 09:08 AM		
Client ID:			Run ID: GC8_141210A		SeqNo:3069288		Prep Date: 12/9/2014		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	1.774	0	2	0	88.7	39-133	0			

LCS		Sample ID: <b>DLCSS1-65761-65761</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>12/10/2014 09:36 AM</b>		
Client ID:		Run ID: <b>GC8_141210A</b>			SeqNo: <b>3069289</b>		Prep Date: <b>12/9/2014</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	161.9	5.0	200	0	80.9	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	<i>1.445</i>	0	2	0	72.2	39-133	0			

MS				Sample ID: 1412273-01B MS				Units:mg/Kg			Analysis Date: 12/10/2014 10:03 AM		
Client ID:			Run ID: GC8_141210A			SeqNo:3069291		Prep Date: 12/9/2014		DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
DRO (C10-C28)	5039	83	331.3	5738	-211	48-110	0			SO			
Surr: 4-Terphenyl-d14	3.79	0	3.313	0	114	39-133	0						

MSD				Sample ID: 1412273-01B MSD				Units:mg/Kg			Analysis Date: 12/10/2014 10:31 AM		
Client ID:			Run ID: GC8_141210A				SeqNo:3069292		Prep Date: 12/9/2014		DF: 10		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
DRO (C10-C28)		5427	80	318.7	5738	-97.4	48-110	5039	7.43	30	SO		
Surr: 4-Terphenyl-d14		3.774	0	3.187	0	118	39-133	3.79	0.417	30			

The following samples were analyzed in this batch: 1412381-01A

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

Client: HRL Compliance Solutions, Inc  
 Work Order: 1412381  
 Project: WPX PA 22-34 Batch 2 12.5.14

## QC BATCH REPORT

Batch ID: **65768** Instrument ID **GC9** Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-65768-65768</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>12/9/2014 06:22 PM</b>		
Client ID:		Run ID: <b>GC9_141209A</b>				SeqNo: <b>3068713</b>		Prep Date: <b>12/9/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	<i>6148</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>123</i>	<i>50-150</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-65768-65768</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>12/9/2014 05:57 PM</b>		
Client ID:		Run ID: <b>GC9_141209A</b>				SeqNo: <b>3068712</b>		Prep Date: <b>12/9/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	507300	2,500	500000	0	101	70-130	0			
<i>Surr: Toluene-d8</i>	<i>4714</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>94.3</i>	<i>50-150</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>1412381-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>12/9/2014 08:01 PM</b>		
Client ID: <b>PA 22-34 Batch 2</b>		Run ID: <b>GC9_141209A</b>				SeqNo: <b>3068717</b>		Prep Date: <b>12/9/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	644700	2,500	500000	64330	116	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5331</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>107</i>	<i>50-150</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>1412381-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>12/9/2014 08:26 PM</b>		
Client ID: <b>PA 22-34 Batch 2</b>		Run ID: <b>GC9_141209A</b>				SeqNo: <b>3068718</b>		Prep Date: <b>12/9/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	649300	2,500	500000	64330	117	70-130	644700	0.714	30	
<i>Surr: Toluene-d8</i>	<i>5593</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>112</i>	<i>50-150</i>	<i>5331</i>	<i>4.8</i>	<i>30</i>	

The following samples were analyzed in this batch:

1412381-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1412381  
**Project:** WPX PA 22-34 Batch 2 12.5.14

## QC BATCH REPORT

Batch ID: **R154001** Instrument ID **MOIST** Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R154001</b>				Units: % of sample		Analysis Date: <b>12/9/2014 03:00 PM</b>		
Client ID:		Run ID: <b>MOIST_141209B</b>				SeqNo: <b>3069655</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

<b>LCS</b>		Sample ID: <b>LCS-R154001</b>				Units: % of sample		Analysis Date: <b>12/9/2014 03:00 PM</b>		
Client ID:		Run ID: <b>MOIST_141209B</b>				SeqNo: <b>3069654</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1412361-05B DUP</b>				Units: % of sample		Analysis Date: <b>12/9/2014 03:00 PM</b>		
Client ID:		Run ID: <b>MOIST_141209B</b>				SeqNo: <b>3069640</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 4.19 0.050 0 0 0 0-0 4.18 0.239 20

<b>DUP</b>		Sample ID: <b>1412381-01A DUP</b>				Units: % of sample		Analysis Date: <b>12/9/2014 03:00 PM</b>		
Client ID: <b>PA 22-34 Batch 2</b>		Run ID: <b>MOIST_141209B</b>				SeqNo: <b>3069651</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.46 0.050 0 0 0 0-0 13.43 0.223 20

The following samples were analyzed in this batch:

1412381-01A

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



**WORKORDER**  
#




141238

Form 202rB

\*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:

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Matt Fought	12/5/14	11:30
RECEIVED BY		MF	12-5-14	12:15
RELINQUISHED BY				
RECEIVED BY		Kenneth Wierenga	12/6/14	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

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **06-Dec-14 10:00**

Work Order: **1412381**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

08-Dec-14  
Date

Reviewed by: Ann Preston  
eSignature

08-Dec-14  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.8 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>12/8/2014 9:39:04 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



16-Mar-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA31-34 Batch 4**

Work Order: **1503373**

Dear Karolina,

ALS Environmental received 1 sample on 07-Mar-2015 10:30 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,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA31-34 Batch 4  
**Work Order:** 1503373

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1503373-01	PA 31-34 Batch 4	Soil		3/5/2015 13:50	3/7/2015 10:30	<input type="checkbox"/>

---

---

**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34, PA31-34 Batch 4**Work Order:** 1503373**Case Narrative**

---

Batch 68392, Method VOC\_8260\_S, Sample 1503373-01A: Surrogate recovery out high due to matrix interference.

Batch 68481, Method DRO\_8015\_S, Sample 1503373-01A MS/MSD: The MS and MSD recovery was above the upper control limit for DRO. The corresponding result in the parent sample may be biased high.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

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

# ALS Group USA, Corp

Date: 16-Mar-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA31-34 Batch 4  
**Sample ID:** PA 31-34 Batch 4  
**Collection Date:** 3/5/2015 01:50 PM

**Work Order:** 1503373  
**Lab ID:** 1503373-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>200</b>		<b>SW8015M</b>		Prep: SW3541 / 3/11/15	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	<i>70.1</i>		<i>4.7</i>	<i>mg/Kg-dry</i>	<i>1</i>	3/11/2015 05:06 PM
			<i>39-133</i>	<i>%REC</i>	<i>1</i>	3/11/2015 05:06 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>250</b>		<b>SW8015D</b>		Prep: SW5035 / 3/9/15	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	<i>108</i>		<i>2.9</i>	<i>mg/Kg-dry</i>	<i>1</i>	3/9/2015 08:18 PM
			<i>50-150</i>	<i>%REC</i>	<i>1</i>	3/9/2015 08:18 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.032</b>		<b>SW7471B</b>		Prep: SW7471 / 3/11/15	Analyst: <b>LR</b>
			<b>0.014</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 05:18 PM
<b>METALS ANALYSIS BY ICP</b>						
<b>Arsenic</b>	<b>12</b>		<b>SW846 6010C</b>		Prep: SW3050B / 3/10/15	Analyst: <b>JEC</b>
			<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Barium</b>	<b>220</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Cadmium</b>	<b>ND</b>		<b>0.88</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Chromium</b>	<b>13</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Copper</b>	<b>14</b>		<b>0.88</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Lead</b>	<b>12</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Nickel</b>	<b>17</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Selenium</b>	<b>ND</b>		<b>0.88</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Silver</b>	<b>ND</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>Zinc</b>	<b>72</b>		<b>0.88</b>	<b>mg/Kg-dry</b>	<b>1</b>	3/11/2015 03:12 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 3/11/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>270</b>		<b>5.0</b>	<b>mg/Kg</b>	<b>10</b>	3/11/2015 04:13 PM
<b>Magnesium</b>	<b>270</b>		<b>2.0</b>	<b>mg/Kg</b>	<b>10</b>	3/11/2015 04:13 PM
<b>Sodium</b>	<b>1,100</b>		<b>2.0</b>	<b>mg/Kg</b>	<b>10</b>	3/11/2015 04:13 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 3/11/15	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>11</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	3/11/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 3/11/15	Analyst: <b>RM</b>
<b>Acenaphthene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Anthracene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Benzo(a)anthracene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Benzo(a)pyrene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Benzo(g,h,i)perylene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Chrysene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	<b>1</b>	3/11/2015 05:47 PM

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

# ALS Group USA, Corp

Date: 16-Mar-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA31-34 Batch 4  
**Sample ID:** PA 31-34 Batch 4  
**Collection Date:** 3/5/2015 01:50 PM

**Work Order:** 1503373  
**Lab ID:** 1503373-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.6	µg/Kg-dry	1	3/11/2015 05:47 PM
<b>Fluorene</b>	<b>13</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	1	3/11/2015 05:47 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	3/11/2015 05:47 PM
<b>Naphthalene</b>	<b>97</b>		<b>7.6</b>	<b>µg/Kg-dry</b>	1	3/11/2015 05:47 PM
Pyrene	ND		7.6	µg/Kg-dry	1	3/11/2015 05:47 PM
Surr: 2,4,6-Tribromophenol	76.5		34-140	%REC	1	3/11/2015 05:47 PM
Surr: 2-Fluorobiphenyl	65.8		12-100	%REC	1	3/11/2015 05:47 PM
Surr: 2-Fluorophenol	66.7		33-117	%REC	1	3/11/2015 05:47 PM
Surr: 4-Terphenyl-d14	83.2		25-137	%REC	1	3/11/2015 05:47 PM
Surr: Nitrobenzene-d5	67.5		37-107	%REC	1	3/11/2015 05:47 PM
Surr: Phenol-d6	64.3		40-106	%REC	1	3/11/2015 05:47 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 3/9/15		Analyst: <b>AK</b>
Benzene	ND		35	µg/Kg-dry	1	3/10/2015 08:45 PM
<b>Ethylbenzene</b>	<b>380</b>		<b>35</b>	<b>µg/Kg-dry</b>	1	3/10/2015 08:45 PM
<b>m,p-Xylene</b>	<b>32,000</b>		<b>280</b>	<b>µg/Kg-dry</b>	4	3/12/2015 04:06 PM
<b>o-Xylene</b>	<b>2,000</b>		<b>35</b>	<b>µg/Kg-dry</b>	1	3/10/2015 08:45 PM
<b>Toluene</b>	<b>210</b>		<b>35</b>	<b>µg/Kg-dry</b>	1	3/10/2015 08:45 PM
<b>Xylenes, Total</b>	<b>37,000</b>		<b>420</b>	<b>µg/Kg-dry</b>	4	3/12/2015 04:06 PM
Surr: 1,2-Dichloroethane-d4	109		70-130	%REC	4	3/12/2015 04:06 PM
Surr: 1,2-Dichloroethane-d4	96.9		70-130	%REC	1	3/10/2015 08:45 PM
Surr: 4-Bromofluorobenzene	97.0		70-130	%REC	4	3/12/2015 04:06 PM
Surr: 4-Bromofluorobenzene	105		70-130	%REC	1	3/10/2015 08:45 PM
Surr: Dibromofluoromethane	95.1		70-130	%REC	4	3/12/2015 04:06 PM
Surr: Dibromofluoromethane	94.8		70-130	%REC	1	3/10/2015 08:45 PM
Surr: Toluene-d8	124		70-130	%REC	1	3/10/2015 08:45 PM
Surr: Toluene-d8	132	S	70-130	%REC	4	3/12/2015 04:06 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 3/11/15		Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>7.7</b>		<b>0.025</b>	<b>mmhos/cm @2</b>	5	3/12/2015 11:18 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JB</b>
<b>Chromium, Trivalent</b>	<b>13</b>		<b>0.58</b>	<b>mg/Kg-dry</b>	1	3/16/2015 03:30 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 3/12/15		Analyst: <b>MB</b>
<b>Chromium, Hexavalent</b>	ND		1.2	mg/Kg-dry	1	3/16/2015 03:00 PM
<b>MOISTURE</b>			<b>E160.3M</b>			Analyst: <b>EVB</b>
<b>Moisture</b>	<b>14</b>		<b>0.050</b>	<b>% of sample</b>	1	3/10/2015 02:55 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 3/10/15		Analyst: <b>JRF</b>
<b>pH</b>	<b>8.6</b>			<b>s.u.</b>	1	3/10/2015 03:30 PM

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



# ALS Group USA, Corp

Date: 16-Mar-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68481** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-68481-68481</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 03:06 PM</b>		
Client ID:		Run ID: <b>GC8_150311A</b>				SeqNo: <b>3174570</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
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	1.396	0	2	0	69.8	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-68481-68481</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 03:36 PM</b>		
Client ID:		Run ID: <b>GC8_150311A</b>				SeqNo: <b>3174571</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	172.8	5.0	200	0	86.4	61-109		0		
Surr: 4-Terphenyl-d14	1.37	0	2	0	68.5	39-133		0		

<b>MS</b>		Sample ID: <b>1503373-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 04:06 PM</b>		
Client ID: <b>PA 31-34 Batch 4</b>		Run ID: <b>GC8_150311A</b>				SeqNo: <b>3174572</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	585.2	8.2	329.5	175.2	124	48-110		0		S
Surr: 4-Terphenyl-d14	2.226	0	3.295	0	67.5	39-133		0		

<b>MSD</b>		Sample ID: <b>1503373-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 04:36 PM</b>		
Client ID: <b>PA 31-34 Batch 4</b>		Run ID: <b>GC8_150311A</b>				SeqNo: <b>3174573</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	630.5	8.2	328	175.2	139	48-110	585.2	7.44	30	S
Surr: 4-Terphenyl-d14	2.167	0	3.28	0	66.1	39-133	2.226	2.68	30	

The following samples were analyzed in this batch: 1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68405**      Instrument ID **GC9**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-68405-68405</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 03:45 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170917</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
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	5086	0	5000	0	102	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-68405-68405</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 03:20 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170916</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	489500	2,500	500000	0	97.9	70-130	0			
Surr: Toluene-d8	4396	0	5000	0	87.9	50-150	0			

<b>MS</b>		Sample ID: <b>1503349-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 07:04 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170919</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	473200	2,500	500000	0	94.6	70-130	0			
Surr: Toluene-d8	4373	0	5000	0	87.5	50-150	0			

<b>MSD</b>		Sample ID: <b>1503349-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 07:29 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170920</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	467200	2,500	500000	0	93.4	70-130	473200	1.28	30	
Surr: Toluene-d8	4320	0	5000	0	86.4	50-150	4373	1.21	30	

The following samples were analyzed in this batch:

1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68495** Instrument ID **HG1** Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-68495-68495</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 04:59 PM</b>		
Client ID:		Run ID: <b>HG1_150311A</b>				SeqNo: <b>3173771</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

<b>LCS</b>		Sample ID: <b>LCS-68495-68495</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 05:02 PM</b>		
Client ID:		Run ID: <b>HG1_150311A</b>				SeqNo: <b>3173772</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1852 0.020 0.1665 0 111 80-120 0

<b>MS</b>		Sample ID: <b>15021255-04AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 05:13 PM</b>		
Client ID:		Run ID: <b>HG1_150311A</b>				SeqNo: <b>3173777</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1347 0.013 0.1077 0.01905 107 75-125 0

<b>MSD</b>		Sample ID: <b>15021255-04AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 05:16 PM</b>		
Client ID:		Run ID: <b>HG1_150311A</b>				SeqNo: <b>3173778</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.129 0.013 0.1047 0.01905 105 75-125 0.1347 4.33 35

The following samples were analyzed in this batch: 1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68408** Instrument ID **ICP2** Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>1503327-01ADUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>3/11/2015 04:08 PM</b>		
Client ID:		Run ID: <b>ICP2_150311A</b>				SeqNo: <b>3173592</b>		Prep Date: <b>3/11/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	86.09	5.0	0	0	0	0-0	80.08	7.22		
Magnesium	12.02	2.0	0	0	0	0-0	10.78	10.9		
Sodium	794.8	2.0	0	0	0	0-0	714.8	10.6		

<b>DUP</b>		Sample ID: <b>1503327-01ADUP</b>				Units: <b>none</b>		Analysis Date: <b>3/11/2015</b>		
Client ID:		Run ID: <b>SAR_150311A</b>				SeqNo: <b>3174221</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	21.27	0.010	0	0	0		19.9	6.65	50	

The following samples were analyzed in this batch: | 1503373-01A |

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

# QC BATCH REPORT

Batch ID: **68436** Instrument ID **ICP2** Method: **SW846 6010C**

<b>MBLK</b>		Sample ID: <b>MBLK-68436-68436</b>				Units: <b>mg/L</b>		Analysis Date: <b>3/11/2015 02:44 PM</b>		
Client ID:		Run ID: <b>ICP2_150311A</b>				SeqNo: <b>3173577</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.009284	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.3434	0.50								J

<b>LCS</b>		Sample ID: <b>LCS-68436-68436</b>				Units: <b>mg/L</b>		Analysis Date: <b>3/11/2015 02:49 PM</b>		
Client ID:		Run ID: <b>ICP2_150311A</b>				SeqNo: <b>3173578</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.606	0.25	5	0	92.1	80-120	0			
Barium	4.911	0.25	5	0	98.2	80-120	0			
Cadmium	4.57	0.50	5	0	91.4	80-120	0			
Chromium	5.101	0.25	5	0	102	80-120	0			
Copper	4.826	0.50	5	0	96.5	80-120	0			
Lead	5.158	0.25	5	0	103	80-120	0			
Nickel	4.839	0.25	5	0	96.8	80-120	0			
Selenium	4.685	0.50	5	0	93.7	80-120	0			
Silver	5.189	0.25	5	0	104	80-120	0			
Zinc	5.044	0.50	5	0	101	80-120	0			

<b>MS</b>		Sample ID: <b>1503374-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 03:23 PM</b>		
Client ID:		Run ID: <b>ICP2_150311A</b>				SeqNo: <b>3173584</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	16.14	0.36	7.153	8.869	102	75-125	0			
Barium	306	0.36	7.153	287.6	258	75-125	0			SO
Cadmium	6.999	0.72	7.153	0.1487	95.8	75-125	0			
Chromium	21.6	0.36	7.153	11.54	141	75-125	0			S
Copper	18.15	0.72	7.153	10.06	113	75-125	0			
Lead	19.03	0.36	7.153	12.42	92.5	75-125	0			
Nickel	21.33	0.36	7.153	12.76	120	75-125	0			
Selenium	6.489	0.72	7.153	-0.3193	95.2	75-125	0			
Silver	8.369	0.36	7.153	-0.1213	119	75-125	0			
Zinc	66.83	0.72	7.153	51.77	210	75-125	0			SO

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68436** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: <b>1503374-01AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/11/2015 03:29 PM</b>		
Client ID:		Run ID: <b>ICP2_150311A</b>				SeqNo: <b>3173585</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.07	0.36	7.184	8.869	86.3	75-125	16.14	6.83	20	
Barium	291	0.36	7.184	287.6	47.8	75-125	306	5.03	20	SO
Cadmium	7.131	0.72	7.184	0.1487	97.2	75-125	6.999	1.87	20	
Chromium	17.56	0.36	7.184	11.54	83.8	75-125	21.6	20.7	20	R
Copper	14.73	0.72	7.184	10.06	65.1	75-125	18.15	20.8	20	SR
Lead	17.01	0.36	7.184	12.42	63.9	75-125	19.03	11.2	20	S
Nickel	17.09	0.36	7.184	12.76	60.2	75-125	21.33	22.1	20	SR
Selenium	6.934	0.72	7.184	-0.3193	101	75-125	6.489	6.63	20	
Silver	8.524	0.36	7.184	-0.1213	120	75-125	8.369	1.83	20	
Zinc	56.24	0.72	7.184	51.77	62.2	75-125	66.83	17.2	20	SO

The following samples were analyzed in this batch: 1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68480**      Instrument ID **SVMS8**      Method: **SW846 8270D**

<b>MBLK</b>		Sample ID: <b>SBLKS1-68480-68480</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/11/2015 03:06 PM</b>		
Client ID:		Run ID: <b>SVMS8_150311A</b>				SeqNo: <b>3174833</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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								
<i>Surr: 2,4,6-Tribromophenol</i>	1126	0	1667	0	67.5	34-140		0		
<i>Surr: 2-Fluorobiphenyl</i>	1201	0	1667	0	72.1	12-100		0		
<i>Surr: 2-Fluorophenol</i>	1265	0	1667	0	75.9	33-117		0		
<i>Surr: 4-Terphenyl-d14</i>	1566	0	1667	0	93.9	25-137		0		
<i>Surr: Nitrobenzene-d5</i>	1087	0	1667	0	65.2	37-107		0		
<i>Surr: Phenol-d6</i>	1205	0	1667	0	72.3	40-106		0		

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68480**      Instrument ID **SVMS8**      Method: **SW846 8270D**

LCS		Sample ID: <b>SLCSS1-68480-68480</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/11/2015 03:26 PM</b>		
Client ID:		Run ID: <b>SVMS8_150311A</b>				SeqNo: <b>3174834</b>		Prep Date: <b>3/11/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	509.7	6.7	666.7	0	76.4	45-110	0			
Anthracene	570.7	6.7	666.7	0	85.6	55-105	0			
Benzo(a)anthracene	573	6.7	666.7	0	85.9	50-110	0			
Benzo(a)pyrene	628.7	6.7	666.7	0	94.3	50-110	0			
Benzo(b)fluoranthene	635	6.7	666.7	0	95.2	45-115	0			
Benzo(g,h,i)perylene	654.7	6.7	666.7	0	98.2	40-125	0			
Benzo(k)fluoranthene	612	6.7	666.7	0	91.8	45-115	0			
Chrysene	613.3	6.7	666.7	0	92	55-110	0			
Dibenzo(a,h)anthracene	639.7	6.7	666.7	0	95.9	40-125	0			
Fluoranthene	576	6.7	666.7	0	86.4	55-115	0			
Fluorene	494.3	6.7	666.7	0	74.1	50-110	0			
Indeno(1,2,3-cd)pyrene	647.7	6.7	666.7	0	97.1	40-120	0			
Naphthalene	476	6.7	666.7	0	71.4	40-105	0			
Pyrene	651.7	6.7	666.7	0	97.7	45-125	0			
<i>Surr: 2,4,6-Tribromophenol</i>	1319	0	1667	0	79.2	34-140	0			
<i>Surr: 2-Fluorobiphenyl</i>	1209	0	1667	0	72.5	12-100	0			
<i>Surr: 2-Fluorophenol</i>	1204	0	1667	0	72.3	33-117	0			
<i>Surr: 4-Terphenyl-d14</i>	1592	0	1667	0	95.5	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1099	0	1667	0	65.9	37-107	0			
<i>Surr: Phenol-d6</i>	1134	0	1667	0	68.1	40-106	0			

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68480**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: <b>1503414-02B MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>3/11/2015 03:47 PM</b>	
Client ID:				Run ID: <b>SVMS8_150311A</b>			SeqNo: <b>3174835</b>		Prep Date: <b>3/11/2015</b>	
							DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	991.7	13	1314	0	75.4	45-110	0			
Anthracene	1110	13	1314	0	84.4	55-105	0			
Benzo(a)anthracene	1122	13	1314	20.07	83.9	50-110	0			
Benzo(a)pyrene	1207	13	1314	9.71	91.1	50-110	0			
Benzo(b)fluoranthene	1230	13	1314	13.27	92.6	45-115	0			
Benzo(g,h,i)perylene	1293	13	1314	13.27	97.4	40-125	0			
Benzo(k)fluoranthene	1124	13	1314	3.884	85.2	45-115	0			
Chrysene	1175	13	1314	6.15	88.9	55-110	0			
Dibenzo(a,h)anthracene	1243	13	1314	0	94.5	40-125	0			
Fluoranthene	1099	13	1314	7.121	83.1	55-115	0			
Fluorene	964.1	13	1314	0	73.3	50-110	0			
Indeno(1,2,3-cd)pyrene	1299	13	1314	10.36	98.1	40-120	0			
Naphthalene	938.4	13	1314	0	71.4	40-105	0			
Pyrene	1262	13	1314	9.063	95.3	45-125	0			
Surr: 2,4,6-Tribromophenol	2617	0	3286	0	79.6	34-140	0			
Surr: 2-Fluorobiphenyl	2376	0	3286	0	72.3	12-100	0			
Surr: 2-Fluorophenol	2328	0	3286	0	70.9	33-117	0			
Surr: 4-Terphenyl-d14	3031	0	3286	0	92.2	25-137	0			
Surr: Nitrobenzene-d5	2202	0	3286	0	67	37-107	0			
Surr: Phenol-d6	2214	0	3286	0	67.4	40-106	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68480**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MSD				Sample ID: <b>1503414-02B MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>3/11/2015 04:07 PM</b>	
Client ID:				Run ID: <b>SVMS8_150311A</b>			SeqNo: <b>3174836</b>		Prep Date: <b>3/11/2015</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	971.5	13	1319	0	73.6	45-110	991.7	2.05	30	
Anthracene	1097	13	1319	0	83.2	55-105	1110	1.13	30	
Benzo(a)anthracene	1116	13	1319	20.07	83.1	50-110	1122	0.579	30	
Benzo(a)pyrene	1191	13	1319	9.71	89.6	50-110	1207	1.29	30	
Benzo(b)fluoranthene	1200	13	1319	13.27	90	45-115	1230	2.45	30	
Benzo(g,h,i)perylene	1257	13	1319	13.27	94.3	40-125	1293	2.84	30	
Benzo(k)fluoranthene	1113	13	1319	3.884	84.1	45-115	1124	0.933	30	
Chrysene	1163	13	1319	6.15	87.7	55-110	1175	1.05	30	
Dibenzo(a,h)anthracene	1218	13	1319	0	92.3	40-125	1243	1.99	30	
Fluoranthene	1102	13	1319	7.121	83	55-115	1099	0.242	30	
Fluorene	968.2	13	1319	0	73.4	50-110	964.1	0.43	30	
Indeno(1,2,3-cd)pyrene	1281	13	1319	10.36	96.4	40-120	1299	1.37	30	
Naphthalene	861.4	13	1319	0	65.3	40-105	938.4	8.56	30	
Pyrene	1226	13	1319	9.063	92.3	45-125	1262	2.87	30	
<i>Surr: 2,4,6-Tribromophenol</i>	<i>2539</i>	<i>0</i>	<i>3298</i>	<i>0</i>	<i>77</i>	<i>34-140</i>	<i>2617</i>	<i>3.01</i>	<i>40</i>	
<i>Surr: 2-Fluorobiphenyl</i>	<i>2293</i>	<i>0</i>	<i>3298</i>	<i>0</i>	<i>69.5</i>	<i>12-100</i>	<i>2376</i>	<i>3.53</i>	<i>40</i>	
<i>Surr: 2-Fluorophenol</i>	<i>2175</i>	<i>0</i>	<i>3298</i>	<i>0</i>	<i>65.9</i>	<i>33-117</i>	<i>2328</i>	<i>6.83</i>	<i>40</i>	
<i>Surr: 4-Terphenyl-d14</i>	<i>2948</i>	<i>0</i>	<i>3298</i>	<i>0</i>	<i>89.4</i>	<i>25-137</i>	<i>3031</i>	<i>2.77</i>	<i>40</i>	
<i>Surr: Nitrobenzene-d5</i>	<i>2056</i>	<i>0</i>	<i>3298</i>	<i>0</i>	<i>62.4</i>	<i>37-107</i>	<i>2202</i>	<i>6.84</i>	<i>40</i>	
<i>Surr: Phenol-d6</i>	<i>2102</i>	<i>0</i>	<i>3298</i>	<i>0</i>	<i>63.7</i>	<i>40-106</i>	<i>2214</i>	<i>5.19</i>	<i>40</i>	

The following samples were analyzed in this batch: | 1503373-01A |

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68392**      Instrument ID **VMS5**      Method: **SW8260B**

MBLK				Sample ID: MBLK-68392-68392				Units: µg/Kg			Analysis Date: 3/9/2015 01:10 PM			
Client ID:				Run ID: VMS5_150309A				SeqNo: 3170853			Prep Date: 3/9/2015		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	1032	0	1000	0	103	70-130		0						
Surr: 4-Bromofluorobenzene	995.5	0	1000	0	99.6	70-130		0						
Surr: Dibromofluoromethane	1027	0	1000	0	103	70-130		0						
Surr: Toluene-d8	965.5	0	1000	0	96.6	70-130		0						

LCS				Sample ID: LCS-68392-68392			Units: µg/Kg		Analysis Date: 3/9/2015 11:53 AM		
Client ID:			Run ID: VMS5_150309A			SeqNo: 3170852		Prep Date: 3/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1148	30	1000	0	115	75-125	0				
Ethylbenzene	1112	30	1000	0	111	75-125	0				
m,p-Xylene	2224	60	2000	0	111	80-125	0				
o-Xylene	1096	30	1000	0	110	75-125	0				
Toluene	1088	30	1000	0	109	70-125	0				
Xylenes, Total	3319	90	3000	0	111	75-125	0				
Surr: 1,2-Dichloroethane-d4	1004	0	1000	0	100	70-130	0				
Surr: 4-Bromofluorobenzene	1035	0	1000	0	104	70-130	0				
Surr: Dibromofluoromethane	1025	0	1000	0	102	70-130	0				
Surr: Toluene-d8	962	0	1000	0	96.2	70-130	0				

MS				Sample ID: 1503325-01A MS				Units: µg/Kg		Analysis Date: 3/10/2015 09:35 PM	
Client ID:			Run ID: VMS7_150310A			SeqNo: 3172243		Prep Date: 3/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1158	30	1000	0	116	75-125	0				
Ethylbenzene	1078	30	1000	0	108	75-125	0				
m,p-Xylene	2190	60	2000	0	110	80-125	0				
o-Xylene	1046	30	1000	0	105	75-125	0				
Toluene	1092	30	1000	0	109	70-125	0				
Xylenes, Total	3236	90	3000	0	108	75-125	0				
Surr: 1,2-Dichloroethane-d4	964	0	1000	0	96.4	70-130	0				
Surr: 4-Bromofluorobenzene	1002	0	1000	0	100	70-130	0				
Surr: Dibromofluoromethane	972.5	0	1000	0	97.2	70-130	0				
Surr: Toluene-d8	933.5	0	1000	0	93.4	70-130	0				

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68392** Instrument ID **VMS5** Method: **SW8260B**

MSD				Sample ID: 1503325-01A MSD				Units: µg/Kg			Analysis Date: 3/10/2015 10:00 PM			
Client ID:				Run ID: VMS7_150310A				SeqNo: 3172244			Prep Date: 3/9/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Benzene	1120	30	1000	0	112	75-125	1158	3.34	30					
Ethylbenzene	1044	30	1000	0	104	75-125	1078	3.2	30					
m,p-Xylene	2124	60	2000	0	106	80-125	2190	3.04	30					
o-Xylene	1038	30	1000	0	104	75-125	1046	0.816	30					
Toluene	1074	30	1000	0	107	70-125	1092	1.66	30					
Xylenes, Total	3162	90	3000	0	105	75-125	3236	2.31	30					
Surr: 1,2-Dichloroethane-d4	953	0	1000	0	95.3	70-130	964	1.15	30					
Surr: 4-Bromofluorobenzene	1006	0	1000	0	101	70-130	1002	0.448	30					
Surr: Dibromofluoromethane	984.5	0	1000	0	98.4	70-130	972.5	1.23	30					
Surr: Toluene-d8	954	0	1000	0	95.4	70-130	933.5	2.17	30					

The following samples were analyzed in this batch: 1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68408** Instrument ID **Titration 1** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>1503327-01A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>3/12/2015 11:18 AM</b>		
Client ID:		Run ID: <b>TITRATOR 1_150312A</b>			SeqNo: <b>3174366</b>		Prep Date: <b>3/11/2015</b>		DF: <b>5</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	4.197	0.025	0	0	0		3.709	12.4	50	

The following samples were analyzed in this batch:

1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68449** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-68449-68449				Units: s.u.			Analysis Date: 3/10/2015 03:30 PM			
Client ID:				Run ID: WETCHEM_150310H				SeqNo: 3172010			Prep Date: 3/10/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		3.97	0	4	0	99.2	90-110	0						

DUP				Sample ID: 1503373-01A DUP				Units: s.u.			Analysis Date: 3/10/2015 03:30 PM			
Client ID: PA 31-34 Batch 4				Run ID: WETCHEM_150310H				SeqNo: 3172013			Prep Date: 3/10/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		8.53	0	0	0	0	0-0	8.64	1.28	20				

The following samples were analyzed in this batch:

1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **68673**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-68673-68673</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/16/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150316E</b>		SeqNo: <b>3179071</b>		Prep Date: <b>3/12/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      1.0

<b>LCS</b>		Sample ID: <b>LCS-68673-68673</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/16/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150316E</b>		SeqNo: <b>3179070</b>		Prep Date: <b>3/12/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.65      1.0      5      0      93      80-120      0

<b>MS</b>		Sample ID: <b>1503327-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/16/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150316E</b>		SeqNo: <b>3179064</b>		Prep Date: <b>3/12/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.765      0.98      4.902      0.3725      28.4      75-125      0      S

<b>MS</b>		Sample ID: <b>1503327-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/16/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150316E</b>		SeqNo: <b>3179066</b>		Prep Date: <b>3/12/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2018      100      2269      0.3725      88.9      75-125      0

<b>MSD</b>		Sample ID: <b>1503327-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/16/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150316E</b>		SeqNo: <b>3179065</b>		Prep Date: <b>3/12/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2.04      0.99      4.95      0.3725      33.7      75-125      1.765      14.5      20      S

The following samples were analyzed in this batch:

1503373-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503373  
**Project:** PA 22-34, PA31-34 Batch 4

## QC BATCH REPORT

Batch ID: **R158917** Instrument ID **MOIST** Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R158917</b>				Units: % of sample		Analysis Date: <b>3/10/2015 02:55 PM</b>		
Client ID:		Run ID: <b>MOIST_150310B</b>				SeqNo: <b>3172790</b>		Prep Date:		DF: <b>1</b>
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-R158917					Units: % of sample		Analysis Date: 3/10/2015 02:55 PM		
Client ID:			Run ID: MOIST_150310B			SeqNo: 3172789		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: 1503373-01A DUP				Units: % of sample			Analysis Date: 3/10/2015 02:55 PM			
Client ID: PA 31-34 Batch 4				Run ID: MOIST_150310B				SeqNo: 3172780			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 13.44 0.050 0 0 0 14.1 4.79 20

DUP		Sample ID: 1503414-01B DUP				Units: % of sample		Analysis Date: 3/10/2015 02:55 PM		
Client ID:		Run ID: MOIST_150310B			SeqNo: 3172785		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 9.91 0.050 0 0 0 9.46 4.65 20

The following samples were analyzed in this batch:

1503373-01A

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





# ALS Laboratory Group

HOLLAND, Michigan 49424

## Chain-of-Custody

Form 202-8

WORKORDER  
#

1503373

PAGE

1 of 1

DISPOSAL

By Lab or Return to Client

PROJECT NAME PA 22-34, PA 31-34 Batch 4

SITE ID PA 22-34, PA 322-34 Batch 2

DATE

5 day

PROJECT No.

EDD FORMAT

PURCHASE ORDER

COMPANY NAME WPX Energy

BILL TO COMPANY WPX Energy

SEND REPORT TO Blaney

INVOICE ATTN TO Karolina Blaney; Leo Braun

ADDRESS

ADDRESS 1058 Co Rd 215

CITY/STATE/ZIP

CITY/STATE/ZIP Parachure CO 81635

PHONE

PHONE 970-683-2295

FAX

FAX

E-MAIL Karolina.blaney@wpxenergy.com

E-MAIL Karolina.blaney@wpxenergy.com;  
leo.braun@wpxenergy.com

Lab ID

Field ID

Matrix

Sample  
Date

Sample  
Time

#  
Bottles

Pres.

QC

PA 31-34 Batch 4

S

3/5/2015

1:50

1

8

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:

4.0°C

QC

QC PACKAGE (check below)

X LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms  
+ raw data)

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

SIGNATURE

PRINTED NAME

DATE

TIME

RELINQUISHED BY

Karolina Blaney

karolina.blaney

3/5/2015

16:00

RECEIVED BY

RELINQUISHED BY

RECEIVED BY

RELINQUISHED BY

RECEIVED BY

3-5-15

16:00

3-5-15

17:00

3/7/15

10:30

KEITH WIERMAN

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **07-Mar-15 10:30**

Work Order: **1503373**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

07-Mar-15  
Date

Reviewed by: Chad Whelton  
eSignature

09-Mar-15  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.0 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>3/7/2015</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



26-May-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 31-34 Batch 5**

Work Order: **1505923**

Dear Karolina,

ALS Environmental received 1 sample on 16-May-2015 12:45 PM 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,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 5  
**Work Order:** 1505923

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1505923-01	PA 22-34, PA 31-34 Batch 5	Soil		5/13/2015 10:00	5/16/2015 12:45	<input type="checkbox"/>

---

**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34, PA 31-34 Batch 5**Work Order:** 1505923**Case Narrative**

---

Batch 71186, Method VOC\_8260\_S, Sample 1505923-01A: The sample ran at a dilution due to high concentration of target analytes.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
µg/Kg	Micrograms per Kilogram
mg/Kg	Milligrams per Kilogram
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

# ALS Group USA, Corp

Date: 26-May-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 5  
**Sample ID:** PA 22-34, PA 31-34 Batch 5  
**Collection Date:** 5/13/2015 10:00 AM

**Work Order:** 1505923  
**Lab ID:** 1505923-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>			<b>SW8015M</b>		Analyst: <b>IT</b>	
<b>DRO (C10-C28)</b>	<b>880</b>		<b>4.1</b>	<b>mg/Kg</b>	1	5/20/2015 09:58 PM
Surr: 4-Terphenyl-d14	88.3		39-133	%REC	1	5/20/2015 09:58 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>			<b>SW8015D</b>		Prep: SW5035 / 5/18/15	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>460</b>		<b>2.5</b>	<b>mg/Kg</b>	1	5/19/2015 02:44 AM
Surr: Toluene-d8	108		50-150	%REC	1	5/19/2015 02:44 AM
<b>MERCURY BY CVAA</b>			<b>SW7471B</b>		Prep: SW7471 / 5/19/15	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.023</b>		<b>0.013</b>	<b>mg/Kg</b>	1	5/20/2015 03:08 PM
<b>METALS ANALYSIS BY ICP</b>			<b>SW846 6010C</b>		Prep: SW3050B / 5/19/15	Analyst: <b>JEC</b>
<b>Arsenic</b>	<b>19</b>		<b>0.40</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
<b>Barium</b>	<b>260</b>		<b>0.40</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
Cadmium	ND		0.79	mg/Kg	1	5/20/2015 05:25 PM
<b>Chromium</b>	<b>11</b>		<b>0.40</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
<b>Copper</b>	<b>27</b>		<b>0.79</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
<b>Lead</b>	<b>23</b>		<b>0.40</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
<b>Nickel</b>	<b>18</b>		<b>0.40</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
Selenium	ND		0.76	mg/Kg	1	5/22/2015 02:21 AM
Silver	ND		0.38	mg/Kg	1	5/22/2015 02:21 AM
<b>Zinc</b>	<b>56</b>		<b>0.79</b>	<b>mg/Kg</b>	1	5/20/2015 05:25 PM
<b>SOLUBLE CATIONS FOR SAR</b>			<b>SW846 6010C</b>		Prep: USDA Method 20B / 5/21/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>280</b>		<b>250</b>	<b>mg/Kg</b>	10	5/21/2015 04:05 PM
<b>Magnesium</b>	<b>380</b>		<b>100</b>	<b>mg/Kg</b>	10	5/21/2015 04:05 PM
<b>Sodium</b>	<b>1,100</b>		<b>100</b>	<b>mg/Kg</b>	10	5/21/2015 04:05 PM
<b>SODIUM ADSORPTION RATIO</b>			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 5/21/15	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>10</b>		<b>0.010</b>	<b>none</b>	1	5/21/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			<b>SW846 8270D</b>		Prep: SW3541 / 5/20/15	Analyst: <b>RS</b>
Acenaphthene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Anthracene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Benzo(a)anthracene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Benzo(a)pyrene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Benzo(b)fluoranthene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Benzo(g,h,i)perylene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Benzo(k)fluoranthene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Chrysene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Dibenzo(a,h)anthracene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM

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

# ALS Group USA, Corp

Date: 26-May-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 5  
**Sample ID:** PA 22-34, PA 31-34 Batch 5  
**Collection Date:** 5/13/2015 10:00 AM

**Work Order:** 1505923  
**Lab ID:** 1505923-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Fluorene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Indeno(1,2,3-cd)pyrene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Naphthalene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Pyrene	ND		6.5	µg/Kg	1	5/20/2015 11:14 PM
Surr: 2-Fluorobiphenyl	75.0		12-100	%REC	1	5/20/2015 11:14 PM
Surr: 4-Terphenyl-d14	104		25-137	%REC	1	5/20/2015 11:14 PM
Surr: Nitrobenzene-d5	73.8		37-107	%REC	1	5/20/2015 11:14 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>		Prep: SW5035 / 5/18/15	Analyst: <b>LSY</b>
Benzene	ND		300	µg/Kg	10	5/23/2015 08:49 PM
Ethylbenzene	ND		300	µg/Kg	10	5/23/2015 08:49 PM
<b>m,p-Xylene</b>	<b>5,700</b>		<b>600</b>	<b>µg/Kg</b>	10	5/23/2015 08:49 PM
<b>o-Xylene</b>	<b>1,600</b>		<b>300</b>	<b>µg/Kg</b>	10	5/23/2015 08:49 PM
Toluene	ND		300	µg/Kg	10	5/23/2015 08:49 PM
<b>Xylenes, Total</b>	<b>7,300</b>		<b>900</b>	<b>µg/Kg</b>	10	5/23/2015 08:49 PM
Surr: 1,2-Dichloroethane-d4	94.5		70-130	%REC	10	5/23/2015 08:49 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	10	5/23/2015 08:49 PM
Surr: Dibromofluoromethane	93.9		70-130	%REC	10	5/23/2015 08:49 PM
Surr: Toluene-d8	108		70-130	%REC	10	5/23/2015 08:49 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 5/21/15	Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>10</b>		<b>0.050</b>	<b>mmhos/cm @2</b>	10	5/22/2015 12:00 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JJG</b>
<b>Chromium, Trivalent</b>	<b>11</b>		<b>0.50</b>	<b>mg/Kg</b>	1	5/22/2015 08:04 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep: SW3060A / 5/20/15	Analyst: <b>MB</b>
<b>Chromium, Hexavalent</b>	<b>ND</b>		<b>0.99</b>	<b>mg/Kg</b>	1	5/21/2015 04:00 PM
<b>PH</b>			<b>SW9045D</b>		Prep: EXTRACT / 5/19/15	Analyst: <b>KF</b>
<b>pH</b>	<b>7.9</b>			<b>s.u.</b>	1	5/20/2015 02:30 PM

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



# ALS Group USA, Corp

Date: 26-May-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71275b** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-71275-71275b</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 03:58 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285042</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.606	0	2	0	80.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-71275-71275b</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 04:28 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285043</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	168.4	5.0	200	0	84.2	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.364	0	2	0	68.2	39-133	0			

<b>MS</b>		Sample ID: <b>1505886-11A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 04:58 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285044</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	288.4	8.0	318.4	22.73	83.4	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.564	0	3.184	0	80.5	39-133	0			

<b>MSD</b>		Sample ID: <b>1505886-11A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 05:28 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285045</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	305.1	8.3	331.9	22.73	85.1	48-110	288.4	5.62	30	
<i>Surr: 4-Terphenyl-d14</i>	2.611	0	3.319	0	78.7	39-133	2.564	1.8	30	

The following samples were analyzed in this batch: 1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71190** Instrument ID **GC9** Method: **SW8015D**

<b>MBLK</b>	Sample ID: <b>MBLK-71190-71190</b>					Units: <b>µg/Kg</b>		Analysis Date: <b>5/18/2015 11:50 PM</b>		
Client ID:	Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280124</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>	
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	5614	0	5000	0	112	50-150	0			

<b>LCS</b>	Sample ID: <b>LCS-71190-71190</b>					Units: <b>µg/Kg</b>		Analysis Date: <b>5/18/2015 11:25 PM</b>		
Client ID:	Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280123</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	575700	2,500	500000	0	115	70-130	0			
Surr: Toluene-d8	5515	0	5000	0	110	50-150	0			

<b>MS</b>	Sample ID: <b>1505922-01A MS</b>					Units: <b>µg/Kg</b>		Analysis Date: <b>5/19/2015 12:40 PM</b>		
Client ID:	Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280131</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	1161000	2,500	500000	587100	115	70-130	0			
Surr: Toluene-d8	5474	0	5000	0	109	50-150	0			

<b>MSD</b>	Sample ID: <b>1505922-01A MSD</b>					Units: <b>µg/Kg</b>		Analysis Date: <b>5/19/2015 01:04 AM</b>		
Client ID:	Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280125</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	1140000	2,500	500000	587100	111	70-130	1161000	1.79	30	
Surr: Toluene-d8	5658	0	5000	0	113	50-150	5474	3.29	30	

The following samples were analyzed in this batch: 1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71252** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-71252-71252				Units: mg/Kg		Analysis Date: 5/19/2015 04:01 PM		
Client ID:		Run ID: HG1_150519A				SeqNo: 3282217		Prep Date: 5/19/2015		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-71252-71252				Units: mg/Kg		Analysis Date: 5/19/2015 04:03 PM		
Client ID:		Run ID: HG1_150519A				SeqNo: 3282218		Prep Date: 5/19/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1867 0.020 0.1665 0 112 80-120 0

MS		Sample ID: 1505726-02AMS				Units: mg/Kg		Analysis Date: 5/19/2015 04:10 PM		
Client ID:		Run ID: HG1_150519A			SeqNo: 3282221		Prep Date: 5/19/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1297 0.014 0.1199 0.001971 107 75-125 0

<b>MSD</b>		Sample ID: <b>1505726-02AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/19/2015 04:12 PM</b>		
Client ID:		Run ID: <b>HG1_150519A</b>			SeqNo: <b>3282222</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1281 0.014 0.1184 0.001971 107 75-125 0.1297 1.22 35

The following samples were analyzed in this batch:

1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71240** Instrument ID **ICP2** Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>1505922-01ADUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286877</b>		Prep Date: <b>5/21/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	257.9	5.0	0	0	0	0-0	160.1	46.8		
Magnesium	245.1	2.0	0	0	0	0-0	147.7	49.6		
Sodium	1176	2.0	0	0	0	0-0	799.8	38		

<b>DUP</b>		Sample ID: <b>1505922-01ADUP</b>				Units: <b>none</b>		Analysis Date: <b>5/21/2015</b>		
Client ID:		Run ID: <b>SAR_150521A</b>				SeqNo: <b>3287916</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	12.58	0.010	0	0	0		10.96	13.8	50	

The following samples were analyzed in this batch: | 1505923-01A |

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71241** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: <b>MBLK-71241-71241</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/20/2015 04:07 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284513</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.01465	0.25								J
Copper	0.0399	0.50								J
Lead	0.03381	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS		Sample ID: <b>LCS-71241-71241</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/20/2015 04:13 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284516</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.977	0.25	5	0	99.5	80-120	0			
Barium	5.28	0.25	5	0	106	80-120	0			
Cadmium	5.161	0.50	5	0	103	80-120	0			
Chromium	5.327	0.25	5	0	107	80-120	0			
Copper	5.466	0.50	5	0	109	80-120	0			
Lead	5.32	0.25	5	0	106	80-120	0			
Nickel	5.471	0.25	5	0	109	80-120	0			
Selenium	4.904	0.50	5	0	98.1	80-120	0			
Silver	2.834	0.25	5	0	56.7	80-120	0			S
Zinc	5.381	0.50	5	0	108	80-120	0			

MS		Sample ID: <b>1505948-02AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 05:48 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284553</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.08	0.34	6.72	11.05	89.7	75-125	0			
Barium	90.97	0.34	6.72	67.43	350	75-125	0			SO
Cadmium	7.039	0.67	6.72	0.1215	103	75-125	0			
Chromium	16.5	0.34	6.72	9.478	104	75-125	0			
Copper	102.3	0.67	6.72	88.92	199	75-125	0			SO
Lead	251.3	0.34	6.72	192.2	880	75-125	0			SO
Nickel	20.79	0.34	6.72	15.38	80.5	75-125	0			
Selenium	7.862	0.67	6.72	0.7581	106	75-125	0			
Silver	6.809	0.34	6.72	0.1588	99	75-125	0			
Zinc	128.6	0.67	6.72	104.9	353	75-125	0			SO

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71241** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: <b>1505948-02AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 05:53 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284556</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.27	0.33	6.693	11.05	92.9	75-125	17.08	1.11	20	
Barium	88.39	0.33	6.693	67.43	313	75-125	90.97	2.87	20	SO
Cadmium	7.182	0.67	6.693	0.1215	105	75-125	7.039	2.01	20	
Chromium	16.33	0.33	6.693	9.478	102	75-125	16.5	0.991	20	
Copper	101.4	0.67	6.693	88.92	186	75-125	102.3	0.912	20	SO
Lead	221.7	0.33	6.693	192.2	441	75-125	251.3	12.5	20	SO
Nickel	21.43	0.33	6.693	15.38	90.3	75-125	20.79	3	20	
Selenium	8.211	0.67	6.693	0.7581	111	75-125	7.862	4.34	20	
Silver	7.034	0.33	6.693	0.1588	103	75-125	6.809	3.25	20	
Zinc	127.8	0.67	6.693	104.9	342	75-125	128.6	0.646	20	SO

The following samples were analyzed in this batch: 1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71353** Instrument ID **ICP2** Method: **SW846 6010C**

<b>MBLK</b>		Sample ID: <b>MBLK-71353-71353</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/22/2015 12:59 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286844</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

<b>LCS</b>		Sample ID: <b>LCS-71353-71353</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/22/2015 01:05 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286845</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	3.642	0.19	3.748	0	97.2	80-120	0			
Barium	3.851	0.19	3.748	0	103	80-120	0			
Cadmium	3.7	0.37	3.748	0	98.7	80-120	0			
Chromium	3.96	0.19	3.748	0	106	80-120	0			
Copper	3.998	0.37	3.748	0	107	80-120	0			
Lead	4.005	0.19	3.748	0	107	80-120	0			
Nickel	3.864	0.19	3.748	0	103	80-120	0			
Selenium	3.748	0.37	3.748	0	100	80-120	0			
Silver	3.634	0.19	3.748	0	96.9	80-120	0			
Zinc	3.882	0.37	3.748	0	104	80-120	0			

<b>MS</b>		Sample ID: <b>1505898-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/22/2015 01:43 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286859</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.726	0.32	6.443	-0.007523	105	75-125	0			
Barium	6.806	0.32	6.443	0.008108	105	75-125	0			
Cadmium	5.925	0.64	6.443	-0.04998	92.7	75-125	0			
Chromium	7.255	0.32	6.443	0.4365	106	75-125	0			
Copper	6.607	0.64	6.443	0.01482	102	75-125	0			
Lead	6.822	0.32	6.443	0.001911	106	75-125	0			
Nickel	6.484	0.32	6.443	0.02621	100	75-125	0			
Selenium	10.57	0.64	6.443	2.751	121	75-125	0			
Silver	5.817	0.32	6.443	-0.01701	90.5	75-125	0			
Zinc	6.61	0.64	6.443	0.2825	98.2	75-125	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71353** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1505898-01AMSD				Units: mg/Kg		Analysis Date: 5/22/2015 01:49 AM		
Client ID:		Run ID: ICP2_150521A				SeqNo: 3286860		Prep Date: 5/21/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.718	0.33	6.545	-0.007523	103	75-125	6.726	0.125	20	
Barium	6.771	0.33	6.545	0.008108	103	75-125	6.806	0.512	20	
Cadmium	5.976	0.65	6.545	-0.04998	92.1	75-125	5.925	0.862	20	
Chromium	7.321	0.33	6.545	0.4365	105	75-125	7.255	0.916	20	
Copper	6.636	0.65	6.545	0.01482	101	75-125	6.607	0.444	20	
Lead	6.817	0.33	6.545	0.001911	104	75-125	6.822	0.0727	20	
Nickel	6.519	0.33	6.545	0.02621	99.2	75-125	6.484	0.538	20	
Selenium	10.72	0.65	6.545	2.751	122	75-125	10.57	1.41	20	
Silver	5.84	0.33	6.545	-0.01701	89.5	75-125	5.817	0.396	20	
Zinc	6.711	0.65	6.545	0.2825	98.2	75-125	6.61	1.5	20	

The following samples were analyzed in this batch: 1505923-01A

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71273**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-71273-71273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 07:56 PM</b>		
Client ID:		Run ID: <b>SVMS8_150520A</b>				SeqNo: <b>3287941</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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								
<i>Surr: 2-Fluorobiphenyl</i>	1314	0	1667	0	78.8	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1771	0	1667	0	106	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1601	0	1667	0	96.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-71273-71273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 08:16 PM</b>		
Client ID:		Run ID: <b>SVMS8_150520A</b>				SeqNo: <b>3287942</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	526.3	6.7	666.7	0	78.9	45-110	0			
Anthracene	568.3	6.7	666.7	0	85.2	55-105	0			
Benzo(a)anthracene	612.3	6.7	666.7	0	91.8	50-110	0			
Benzo(a)pyrene	629.3	6.7	666.7	0	94.4	50-110	0			
Benzo(b)fluoranthene	643.3	6.7	666.7	0	96.5	45-115	0			
Benzo(g,h,i)perylene	516	6.7	666.7	0	77.4	40-125	0			
Benzo(k)fluoranthene	652.3	6.7	666.7	0	97.8	45-115	0			
Chrysene	592.7	6.7	666.7	0	88.9	55-110	0			
Dibenzo(a,h)anthracene	535	6.7	666.7	0	80.2	40-125	0			
Fluoranthene	545.7	6.7	666.7	0	81.8	55-115	0			
Fluorene	537	6.7	666.7	0	80.5	50-110	0			
Indeno(1,2,3-cd)pyrene	550	6.7	666.7	0	82.5	40-120	0			
Naphthalene	485.7	6.7	666.7	0	72.8	40-105	0			
Pyrene	692	6.7	666.7	0	104	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1273	0	1667	0	76.4	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1929	0	1667	0	116	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1572	0	1667	0	94.3	37-107	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71273**      Instrument ID: **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: <b>1505950-05A MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 10:13 PM</b>	
Client ID:				Run ID: <b>SVMS8_150520A</b>			SeqNo: <b>3287943</b>		Prep Date: <b>5/20/2015</b>	
							DF: <b>10</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1403	520	1299	0	108	45-110	0			
Anthracene	1454	520	1299	0	112	55-105	0			S
Benzo(a)anthracene	1818	520	1299	798.1	78.5	50-110	0			
Benzo(a)pyrene	1610	520	1299	0	124	50-110	0			S
Benzo(b)fluoranthene	1844	520	1299	0	142	45-115	0			S
Benzo(g,h,i)perylene	1610	520	1299	0	124	40-125	0			
Benzo(k)fluoranthene	1273	520	1299	0	98	45-115	0			
Chrysene	1662	520	1299	0	128	55-110	0			S
Dibenzo(a,h)anthracene	1558	520	1299	0	120	40-125	0			
Fluoranthene	1974	520	1299	648.5	102	55-115	0			
Fluorene	1636	520	1299	0	126	50-110	0			S
Indeno(1,2,3-cd)pyrene	1558	520	1299	0	120	40-120	0			
Naphthalene	1195	520	1299	0	92	40-105	0			
Pyrene	2649	520	1299	1596	81.1	45-125	0			
Surr: 2-Fluorobiphenyl	2805	0	3247	0	86.4	12-100	0			
Surr: 4-Terphenyl-d14	3454	0	3247	0	106	25-137	0			
Surr: Nitrobenzene-d5	3428	0	3247	0	106	37-107	0			

MSD				Sample ID: <b>1505950-05A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 10:32 PM</b>	
Client ID:				Run ID: <b>SVMS8_150520A</b>			SeqNo: <b>3287945</b>		Prep Date: <b>5/20/2015</b>	
							DF: <b>10</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1485	510	1281	0	116	45-110	1403	5.74	30	S
Anthracene	1434	510	1281	0	112	55-105	1454	1.41	30	S
Benzo(a)anthracene	2049	510	1281	798.1	97.7	50-110	1818	11.9	30	
Benzo(a)pyrene	1588	510	1281	0	124	50-110	1610	1.41	30	S
Benzo(b)fluoranthene	1639	510	1281	0	128	45-115	1844	11.8	30	S
Benzo(g,h,i)perylene	1485	510	1281	0	116	40-125	1610	8.07	30	
Benzo(k)fluoranthene	1562	510	1281	0	122	45-115	1273	20.4	30	S
Chrysene	1537	510	1281	0	120	55-110	1662	7.86	30	S
Dibenzo(a,h)anthracene	1767	510	1281	0	138	40-125	1558	12.6	30	S
Fluoranthene	2074	510	1281	648.5	111	55-115	1974	4.96	30	
Fluorene	1690	510	1281	0	132	50-110	1636	3.25	30	S
Indeno(1,2,3-cd)pyrene	1690	510	1281	0	132	40-120	1558	8.12	30	S
Naphthalene	1152	510	1281	0	90	40-105	1195	3.6	30	
Pyrene	2715	510	1281	1596	87.3	45-125	2649	2.44	30	
Surr: 2-Fluorobiphenyl	2868	0	3201	0	89.6	12-100	2805	2.23	40	
Surr: 4-Terphenyl-d14	3509	0	3201	0	110	25-137	3454	1.56	40	
Surr: Nitrobenzene-d5	3252	0	3201	0	102	37-107	3428	5.27	40	

The following samples were analyzed in this batch: 1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

# QC BATCH REPORT

Batch ID: **71186**      Instrument ID **VMS7**      Method: **SW8260B**

MBLK				Sample ID: MBLK-71186-71186				Units: µg/Kg			Analysis Date: 5/18/2015 10:55 AM			
Client ID:				Run ID: VMS7_150518A				SeqNo: 3280355			Prep Date: 5/18/2015		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	1020	0	1000	0	102	70-130	0							
Surr: 4-Bromofluorobenzene	1016	0	1000	0	102	70-130	0							
Surr: Dibromofluoromethane	977	0	1000	0	97.7	70-130	0							
Surr: Toluene-d8	960.5	0	1000	0	96	70-130	0							

LCS				Sample ID: LCS-71186-71186			Units: µg/Kg		Analysis Date: 5/18/2015 09:15 AM		
Client ID:			Run ID: VMS7_150518A			SeqNo: 3280354		Prep Date: 5/18/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1040	30	1000	0	104	75-125	0				
Ethylbenzene	1004	30	1000	0	100	75-125	0				
m,p-Xylene	2024	60	2000	0	101	80-125	0				
o-Xylene	974.5	30	1000	0	97.4	75-125	0				
Toluene	1038	30	1000	0	104	70-125	0				
Xylenes, Total	2998	90	3000	0	99.9	75-125	0				
Surr: 1,2-Dichloroethane-d4	994.5	0	1000	0	99.4	70-130	0				
Surr: 4-Bromofluorobenzene	1002	0	1000	0	100	70-130	0				
Surr: Dibromofluoromethane	996.5	0	1000	0	99.6	70-130	0				
Surr: Toluene-d8	980.5	0	1000	0	98	70-130	0				

MS				Sample ID: 1505922-01A MS			Units: µg/Kg		Analysis Date: 5/22/2015 10:47 PM		
Client ID:			Run ID: VMS6_150522A		SeqNo: 3288814		Prep Date: 5/18/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	973.5	30	1000	0	97.4	75-125	0				
Ethylbenzene	1006	30	1000	0	101	75-125	0				
m,p-Xylene	2768	60	2000	741.5	101	80-125	0				
o-Xylene	1180	30	1000	188.5	99.2	75-125	0				
Toluene	1000	30	1000	10	99	70-125	0				
Xylenes, Total	3948	90	3000	930	101	75-125	0				
Surr: 1,2-Dichloroethane-d4	896.5	0	1000	0	89.6	70-130	0				
Surr: 4-Bromofluorobenzene	979	0	1000	0	97.9	70-130	0				
Surr: Dibromofluoromethane	957	0	1000	0	95.7	70-130	0				
Surr: Toluene-d8	1276	0	1000	0	128	70-130	0				

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71186**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: 1505922-01A MSD			Units: µg/Kg		Analysis Date: 5/22/2015 11:11 PM		
Client ID:		Run ID: VMS6_150522A			SeqNo: 3288815		Prep Date: 5/18/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	959	30	1000	0	95.9	75-125	973.5	1.5	30		
Ethylbenzene	1004	30	1000	0	100	75-125	1006	0.249	30		
m,p-Xylene	2786	60	2000	741.5	102	80-125	2768	0.648	30		
o-Xylene	1202	30	1000	188.5	101	75-125	1180	1.81	30		
Toluene	1018	30	1000	10	101	70-125	1000	1.78	30		
Xylenes, Total	3987	90	3000	930	102	75-125	3948	0.996	30		
Surr: 1,2-Dichloroethane-d4	875	0	1000	0	87.5	70-130	896.5	2.43	30		
Surr: 4-Bromofluorobenzene	982	0	1000	0	98.2	70-130	979	0.306	30		
Surr: Dibromofluoromethane	921.5	0	1000	0	92.2	70-130	957	3.78	30		
Surr: Toluene-d8	1370	0	1000	0	137	70-130	1276	7.18	30	S	

The following samples were analyzed in this batch: 1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71240** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>1505922-01A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>5/22/2015 12:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150522C</b>				SeqNo: <b>3287751</b>		Prep Date: <b>5/21/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	9.67	0.050	0	0	0		6.58	38	50	

The following samples were analyzed in this batch:

1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71246** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-71246-71246				Units: s.u.			Analysis Date: 5/20/2015 02:30 PM			
Client ID:				Run ID: WETCHEM_150520W				SeqNo: 3285079			Prep Date: 5/19/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		3.95	0	4	0	98.8	90-110	0						

DUP				Sample ID: 1505922-01A DUP				Units: s.u.			Analysis Date: 5/20/2015 02:30 PM		
Client ID:				Run ID: WETCHEM_150520W				SeqNo: 3285082		Prep Date: 5/19/2015		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	7.82	0.637	20	

The following samples were analyzed in this batch:

1505923-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505923  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **71347**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-71347-71347</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286549</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      1.0

<b>LCS</b>		Sample ID: <b>LCS-71347-71347</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286550</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.78      1.0      5      0      95.6      80-120      0

<b>MS</b>		Sample ID: <b>1505922-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286566</b>		Prep Date: <b>5/20/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2261      90      2537      0.1053      89.1      75-125      0

<b>MS</b>		Sample ID: <b>1505922-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286570</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      3.471      0.96      4.808      0.1053      70      75-125      0      S

<b>MSD</b>		Sample ID: <b>1505922-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286565</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.04      1.0      5.051      0.1053      77.9      75-125      3.471      15.2      20

The following samples were analyzed in this batch:

1505923-01A

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

## Chain-of-Custody

Form 202r8

**WORKORDER**  
#

1505923

**PAGE**

1 of 1

## DISPOSAL


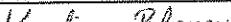

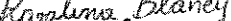



By Lab or Return to Client

[illegible]

\*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.**

<b>Comments:</b>     <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">420</div>	<b>QC PACKAGE (check below)</b>	
	<input checked="" type="checkbox"/> X	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
<b>Preservative Key:</b> 1-HCl   2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH   5-NaHSO <sub>4</sub> 7-Other   8-4 degrees C   9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Karolina Blaney	5/15/2015	15:00:00 PM
RECEIVED BY			5/15/15	1600
RELINQUISHED BY			5/16/15	1245
RECEIVED BY		KEITH W. WERNER	5/16/15	1245
RELINQUISHED BY				
RECEIVED BY				



From: (816) 298-1033  
 Nick Martinez  
 ALS Environmental  
 127 E. 1st Street

Origin ID: RILA



Ship Date: 15MAY15  
 ActWgt: 50.0 LB  
 CAD: 2264840/NET3610

Dims: 14 X 26 X 15 IN

PARACHUTE, CO 81635

Delivery Address Bar Code



SHIP TO: (616) 398-6070

BILL SENDER

sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

Ref # 051515-1  
 Invoice #  
 PO # Parachute  
 Dept #

HOLLAND, MI 49424

SATURDAY 12:00P  
 PRIORITY OVERNIGHT

TRK# 7736 1849 9282

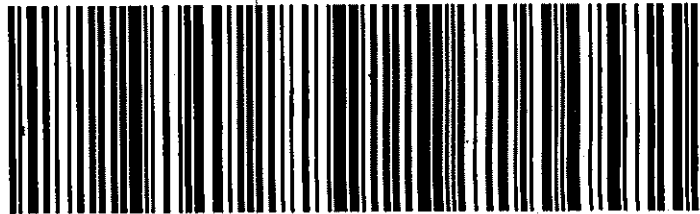
8201

49424

MI-US

GRR

X0 HLMA



537J3K918/EE4B

## 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 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 high value charge, document your actual loss, and file a timely claim. Limitations of sales, income interest, profit, attorney fees, or any loss, including intrinsic value of the package, loss her direct, incidental, consequential, or special is limited to the greater of \$100 or the actual documented loss. Maximum for items of extraordinary value is \$1,000 e.g. jewelry. Other items listed in our Service Guide. Written claims must be filed within strict time limits.

ALS Parachute Custody Seal  
 Date 5/15/15  
 Time 17:02

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **16-May-15 12:45**

Work Order: **1505923**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

18-May-15  
Date

Reviewed by: Chad Whelton  
eSignature

18-May-15  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2 C</u> <u>SR2</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>5/18/2015 10:00:40 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



13-Jul-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 31-34 Batch 5**

Work Order: **15061664**

Dear Karolina,

ALS Environmental received 1 sample on 27-Jun-2015 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 9.

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

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 5  
**Work Order:** 15061664

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15061664-01	PA 22-34, PA 31-34 Batch 5	Soil		6/25/2015 10:00	6/27/2015 10:00	<input type="checkbox"/>

---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 5  
**WorkOrder:** 15061664

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

**ALS Group USA, Corp****Date:** 13-Jul-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34, PA 31-34 Batch 5**Work Order:** 15061664**Sample ID:** PA 22-34, PA 31-34 Batch 5**Lab ID:** 15061664-01**Collection Date:** 6/25/2015 10:00 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>170</b>		<b>SW8015M</b>		Prep: SW3550 / 7/1/15	Analyst: <b>IT</b>
			<b>4.2</b>	<b>mg/Kg-dry</b>	1	7/2/2015 09:10 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>80.1</i>		<i>39-133</i>	<i>%REC</i>	1	7/2/2015 09:10 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015D</b>		Prep: SW5035 / 7/1/15	Analyst: <b>IT</b>
			<b>2.6</b>	<b>mg/Kg-dry</b>	1	7/3/2015 04:11 PM
<i>Surr: Toluene-d8</i>	<i>101</i>		<i>50-150</i>	<i>%REC</i>	1	7/3/2015 04:11 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>2.1</b>		<b>E160.3M</b>			Analyst: <b>PT</b>
			<b>0.050</b>	<b>% of sample</b>	1	6/30/2015 04:20 PM

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

# ALS Group USA, Corp

Date: 13-Jul-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15061664  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **72963** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-72963-72963</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 06:40 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352403</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.666	0	2	0	83.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-72963-72963</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 07:10 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352405</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.5	5.0	200	0	92.2	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.588	0	2	0	79.4	39-133	0			

<b>MS</b>		Sample ID: <b>15061666-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 07:40 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352407</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	477.4	8.0	320.3	240.2	74	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.462	0	3.203	0	76.9	39-133	0			

<b>MSD</b>		Sample ID: <b>15061666-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 08:10 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352409</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	484.2	8.2	327.4	240.2	74.5	48-110	477.4	1.42	30	
<i>Surr: 4-Terphenyl-d14</i>	2.624	0	3.274	0	80.1	39-133	2.462	6.36	30	

The following samples were analyzed in this batch:

15061664-01A
--------------

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15061664  
**Project:** PA 22-34, PA 31-34 Batch 5

## QC BATCH REPORT

Batch ID: **R166718** Instrument ID **MOIST** Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R166718</b>				Units: % of sample		Analysis Date: <b>6/30/2015 04:20 PM</b>		
Client ID:		Run ID: <b>MOIST_150630C</b>				SeqNo: <b>3350511</b>		Prep Date:		DF: <b>1</b>
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-R166718				Units: % of sample		Analysis Date: 6/30/2015 04:20 PM		
Client ID:		Run ID: MOIST_150630C				SeqNo: 3350510		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: 15061733-01B DUP				Units: % of sample		Analysis Date: 6/30/2015 04:20 PM		
Client ID:		Run ID: MOIST_150630C			SeqNo: 3350503		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 17.83 0.050 0 0 0 17.14 3.95 20

DUP		Sample ID: 15061780-02B DUP				Units: % of sample		Analysis Date: 6/30/2015 04:20 PM		
Client ID:		Run ID: MOIST_150630C			SeqNo: 3350509		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 16.29 0.050 0 0 0 16.65 2.19 20

The following samples were analyzed in this batch:

15061664-01A

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



## Chain-of-Custody

Form 202r8

WORKORDER  
#

15061664

**PAGE**

1 of 1

## DISPOSAL

By Lab or Return to Client

[illegible]

\*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.**

<b>Comments:</b>  <div style="text-align: center; font-size: 2em;">3.4°C</div>	<b>QC PACKAGE (check below)</b>	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
<b>Preservative Key:</b> 1-HCl    2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH    5-NaHCO <sub>3</sub> 7-Other    9-4 degrees C    9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	6/25/2015	16:00:00 PM
RECEIVED BY	<i>[Signature]</i>	<i>Nam</i>	6/26/15	1245
RELINQUISHED BY	<i>[Signature]</i>	KEITH L. FRANKA	6/27/15	1000
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Al B Parachute Custody Seal

Time 7:00 Date 6-26

Name A-1

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **27-Jun-15 10:00**

Work Order: **15061664**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

27-Jun-15  
Date

Reviewed by: Chad Whelton  
eSignature

29-Jun-15  
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): 3.4 C SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 6/27/2015 10:37:48 AM

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:



06-Aug-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 31-34 Batch 6**

Work Order: **15071722**

Dear Karolina,

ALS Environmental received 1 sample on 30-Jul-2015 09:30 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 22.

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

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 6  
**Work Order:** 15071722

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15071722-01	PA 22-34, PA 31-34 Batch 6	Soil		7/29/2015 14:30	7/30/2015 09:30	<input type="checkbox"/>

---

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 6  
**Sample ID:** PA 22-34, PA 31-34 Batch 6  
**Collection Date:** 7/29/2015 02:30 PM

**Work Order:** 15071722  
**Lab ID:** 15071722-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>640</b>		<b>SW8015M</b>		Prep: SW3541 / 7/31/15	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	74.8		4.4	mg/Kg-dry	1	8/3/2015 05:34 PM
			39-133	%REC	1	8/3/2015 05:34 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>530</b>		<b>SW8015D</b>		Prep: SW5035 / 7/31/15	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	99.8		2.7	mg/Kg-dry	1	8/1/2015 01:33 AM
			50-150	%REC	1	8/1/2015 01:33 AM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.023</b>		<b>SW7471B</b>		Prep: SW7471 / 8/3/15	Analyst: <b>LR</b>
			0.016	mg/Kg-dry	1	8/3/2015 03:37 PM
<b>METALS ANALYSIS BY ICP</b>						
<b>Arsenic</b>	<b>9.5</b>		<b>SW846 6010C</b>		Prep: SW3050B / 7/31/15	Analyst: <b>JEC</b>
<b>Barium</b>	<b>250</b>		0.36	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Cadmium</b>	<b>ND</b>		0.36	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Chromium</b>	<b>12</b>		0.72	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Copper</b>	<b>13</b>		0.36	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Lead</b>	<b>6.0</b>		0.72	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Nickel</b>	<b>26</b>		0.36	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Selenium</b>	<b>ND</b>		0.36	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Silver</b>	<b>ND</b>		0.72	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>Zinc</b>	<b>39</b>		0.36	mg/Kg-dry	1	8/4/2015 05:01 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 8/3/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>250</b>		5.0	mg/L	10	8/5/2015 12:15 PM
<b>Magnesium</b>	<b>380</b>		2.0	mg/L	10	8/5/2015 12:15 PM
<b>Sodium</b>	<b>1,300</b>		2.0	mg/L	10	8/5/2015 12:15 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 8/3/15	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>12</b>		0.010	none	1	8/5/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 7/31/15	Analyst: <b>RM</b>
<b>Acenaphthene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Anthracene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Benzo(a)anthracene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Benzo(a)pyrene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Benzo(g,h,i)perylene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Chrysene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM

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

# ALS Group USA, Corp

Date: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 31-34 Batch 6  
**Sample ID:** PA 22-34, PA 31-34 Batch 6  
**Collection Date:** 7/29/2015 02:30 PM

**Work Order:** 15071722  
**Lab ID:** 15071722-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Fluorene</b>	<b>40</b>		<b>7.1</b>	<b>µg/Kg-dry</b>	1	7/31/2015 10:33 PM
Indeno(1,2,3-cd)pyrene	ND		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
<b>Naphthalene</b>	<b>96</b>		<b>7.1</b>	<b>µg/Kg-dry</b>	1	7/31/2015 10:33 PM
Pyrene	ND		7.1	µg/Kg-dry	1	7/31/2015 10:33 PM
Surr: 2-Fluorobiphenyl	70.7		12-100	%REC	1	7/31/2015 10:33 PM
Surr: 4-Terphenyl-d14	81.4		25-137	%REC	1	7/31/2015 10:33 PM
Surr: Nitrobenzene-d5	56.4		37-107	%REC	1	7/31/2015 10:33 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 7/30/15	Analyst: <b>AK</b>	
Benzene	ND		33	µg/Kg-dry	1	8/1/2015 10:24 AM
Ethylbenzene	ND		33	µg/Kg-dry	1	8/1/2015 10:24 AM
<b>m,p-Xylene</b>	<b>710</b>		<b>66</b>	<b>µg/Kg-dry</b>	1	8/1/2015 10:24 AM
<b>o-Xylene</b>	<b>110</b>		<b>33</b>	<b>µg/Kg-dry</b>	1	8/1/2015 10:24 AM
Toluene	ND		33	µg/Kg-dry	1	8/1/2015 10:24 AM
<b>Xylenes, Total</b>	<b>820</b>		<b>99</b>	<b>µg/Kg-dry</b>	1	8/1/2015 10:24 AM
Surr: 1,2-Dichloroethane-d4	97.3		70-130	%REC	1	8/1/2015 10:24 AM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	1	8/1/2015 10:24 AM
Surr: Dibromofluoromethane	96.2		70-130	%REC	1	8/1/2015 10:24 AM
Surr: Toluene-d8	116		70-130	%REC	1	8/1/2015 10:24 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 8/3/15	Analyst: <b>JB</b>	
<b>Electrical Conductivity @ Saturation</b>	<b>11</b>		<b>0.050</b>	<b>mmhos/cm @2</b>	10	8/4/2015 10:45 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Analyst: <b>JB</b>		
<b>Chromium, Trivalent</b>	<b>12</b>		<b>0.55</b>	<b>mg/Kg-dry</b>	1	8/5/2015 08:40 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 8/3/15	Analyst: <b>MB</b>	
<b>Chromium, Hexavalent</b>	ND		1.1	mg/Kg-dry	1	8/4/2015 03:00 PM
<b>MOISTURE</b>			<b>E160.3M</b>	Analyst: <b>EVB</b>		
<b>Moisture</b>	<b>9.0</b>		<b>0.050</b>	<b>% of sample</b>	1	8/3/2015 06:00 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 7/30/15	Analyst: <b>STP</b>	
<b>pH</b>	<b>8.3</b>			<b>s.u.</b>	1	7/30/2015 06:00 PM

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



# ALS Group USA, Corp

Date: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74268** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-74268-74268</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 09:36 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3399790</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
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	1.572	0	2	0	78.6	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-74268-74268</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 10:06 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3399791</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	157.7	5.0	200	0	78.9	61-109		0		
Surr: 4-Terphenyl-d14	1.308	0	2	0	65.4	39-133		0		

<b>MS</b>		Sample ID: <b>15071742-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 10:36 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3400403</b>		Prep Date: <b>7/31/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	571.9	41	165.1	763.2	-116	48-110		0		SO
Surr: 4-Terphenyl-d14	1.103	0	1.651	0	66.8	39-133		0		

<b>MSD</b>		Sample ID: <b>15071742-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 12:33 PM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3400404</b>		Prep Date: <b>7/31/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	827.3	42	166.4	763.2	38.5	48-110	571.9	36.5	30	SRO
Surr: 4-Terphenyl-d14	1.447	0	1.664	0	87	39-133	1.103	27	30	

The following samples were analyzed in this batch:

15071722-01A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74273**      Instrument ID: **GC10**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-74273-74273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 06:16 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399299</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
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	4906	0	5000	0	98.1	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-74273-74273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 05:52 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399297</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	513400	2,500	500000	0	103	70-130	0			
Surr: Toluene-d8	4994	0	5000	0	99.9	50-150	0			

<b>MS</b>		Sample ID: <b>15071742-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 09:06 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399312</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	554900	2,500	500000	0	111	70-130	0			
Surr: Toluene-d8	4899	0	5000	0	98	50-150	0			

<b>MSD</b>		Sample ID: <b>15071742-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 09:31 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399313</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	571600	2,500	500000	0	114	70-130	554900	2.97	30	
Surr: Toluene-d8	5043	0	5000	0	101	50-150	4899	2.9	30	

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74296** Instrument ID **HG1** Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-74296-74296</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 02:27 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400187</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

<b>LCS</b>		Sample ID: <b>LCS-74296-74296</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 02:30 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400188</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1823 0.020 0.1665 0 110 80-120 0

<b>MS</b>		Sample ID: <b>15071662-04BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 03:18 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400209</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1176 0.013 0.1089 0.0005 107 75-125 0

<b>MSD</b>		Sample ID: <b>15071662-04BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 03:27 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400213</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1178 0.013 0.1078 0.0005 109 75-125 0.1176 0.159 35

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74269** Instrument ID **ICP2** Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>15071722-01ADUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>8/5/2015 12:20 PM</b>		
Client ID: <b>PA 22-34, PA 31-34 Batch 6</b>		Run ID: <b>ICP2_150805A</b>				SeqNo: <b>3403721</b>		Prep Date: <b>8/3/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	237.3	5.0	0	0	0	0-0	248.3	4.54		
Magnesium	357.4	2.0	0	0	0	0-0	381.8	6.61		
Sodium	1219	2.0	0	0	0	0-0	1327	8.47		

<b>DUP</b>		Sample ID: <b>15071722-01ADUP</b>				Units: <b>none</b>		Analysis Date: <b>8/5/2015</b>		
Client ID: <b>PA 22-34, PA 31-34 Batch 6</b>		Run ID: <b>SAR_150805A</b>				SeqNo: <b>3403811</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	11.67	0.010	0	0	0		12.33	5.46	50	

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74290**

Instrument ID **ICP2**

Method: **SW846 6010C**

Sample ID: MBLK-74290-74290				Units: mg/Kg			Analysis Date: 8/3/2015 10:57 AM			
Client ID:		Run ID: ICP2_150803A			SeqNo: 3399763		Prep Date: 7/31/2015		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	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.008327	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS				Sample ID: LCS-74290-74290			Units: mg/Kg		Analysis Date: 8/3/2015 11:03 AM		
Client ID:			Run ID: ICP2_150803A			SeqNo: 3399764		Prep Date: 7/31/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	4.79	0.25	5	0	95.8	80-120	0				
Barium	4.836	0.25	5	0	96.7	80-120	0				
Cadmium	4.502	0.50	5	0	90	80-120	0				
Chromium	5.056	0.25	5	0	101	80-120	0				
Copper	5.016	0.50	5	0	100	80-120	0				
Lead	4.955	0.25	5	0	99.1	80-120	0				
Nickel	5.172	0.25	5	0	103	80-120	0				
Selenium	4.76	0.50	5	0	95.2	80-120	0				
Silver	4.803	0.25	5	0	96.1	80-120	0				
Zinc	4.396	0.50	5	0	87.9	80-120	0				

MS				Sample ID: 15071796-03CMS			Units: mg/Kg		Analysis Date: 8/3/2015 11:19 AM		
Client ID:			Run ID: ICP2_150803A		SeqNo: 3399767		Prep Date: 7/31/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	15.49	0.34	6.793	9.672	85.6	75-125	0				
Barium	87.44	0.34	6.793	71.36	237	75-125	0			SO	
Cadmium	6.242	0.68	6.793	-0.1965	94.8	75-125	0				
Chromium	20.24	0.34	6.793	11.54	128	75-125	0			S	
Copper	22.4	0.68	6.793	17.74	68.6	75-125	0			S	
Lead	11.5	0.34	6.793	4.394	105	75-125	0				
Nickel	37.35	0.34	6.793	32.78	67.3	75-125	0			SO	
Selenium	7.22	0.68	6.793	0.04462	106	75-125	0				
Silver	6.809	0.34	6.793	-0.162	103	75-125	0				
Zinc	43.5	0.68	6.793	36	110	75-125	0			O	

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74290**

Instrument ID **ICP2**

Method: **SW846 6010C**

MSD				Sample ID: 15071796-03CMSD			Units: mg/Kg		Analysis Date: 8/3/2015 02:18 PM		
Client ID:		Run ID: ICP2_150803B			SeqNo: 3400126		Prep Date: 7/31/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	16.72	0.34	6.803	9.672	104	75-125	15.49	7.67	20		
Barium	83.36	0.34	6.803	71.36	176	75-125	87.44	4.78	20	SO	
Cadmium	6.159	0.68	6.803	0	90.5	75-125	6.242	1.34	20		
Chromium	19.49	0.34	6.803	11.54	117	75-125	20.24	3.74	20		
Copper	23.93	0.68	6.803	17.74	91	75-125	22.4	6.62	20		
Lead	11.38	0.34	6.803	4.394	103	75-125	11.5	1.03	20		
Nickel	39.75	0.34	6.803	32.78	102	75-125	37.35	6.23	20	O	
Selenium	7.154	0.68	6.803	0	105	75-125	7.22	0.917	20		
Silver	6.787	0.34	6.803	0	99.8	75-125	6.809	0.334	20		
Zinc	43.73	0.68	6.803	36	114	75-125	43.5	0.535	20	O	

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

# QC BATCH REPORT

Batch ID: **74267**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-74267-74267</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 06:51 PM</b>		
Client ID:		Run ID: <b>SVMS8_150731A</b>				SeqNo: <b>3399776</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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	1002	0	1667	0	60.1	12-100	0			
Surr: 4-Terphenyl-d14	1338	0	1667	0	80.3	25-137	0			
Surr: Nitrobenzene-d5	1085	0	1667	0	65.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-74267-74267</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 07:10 PM</b>		
Client ID:		Run ID: <b>SVMS8_150731A</b>				SeqNo: <b>3399777</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	490.3	6.7	666.7	0	73.5	45-110	0			
Anthracene	583.7	6.7	666.7	0	87.5	55-105	0			
Benzo(a)anthracene	594.3	6.7	666.7	0	89.1	50-110	0			
Benzo(a)pyrene	589.7	6.7	666.7	0	88.4	50-110	0			
Benzo(b)fluoranthene	591	6.7	666.7	0	88.6	45-115	0			
Benzo(g,h,i)perylene	545.3	6.7	666.7	0	81.8	40-125	0			
Benzo(k)fluoranthene	626.7	6.7	666.7	0	94	45-115	0			
Chrysene	595.3	6.7	666.7	0	89.3	55-110	0			
Dibenzo(a,h)anthracene	542.7	6.7	666.7	0	81.4	40-125	0			
Fluoranthene	645	6.7	666.7	0	96.7	55-115	0			
Fluorene	530.3	6.7	666.7	0	79.5	50-110	0			
Indeno(1,2,3-cd)pyrene	565	6.7	666.7	0	84.7	40-120	0			
Naphthalene	452.7	6.7	666.7	0	67.9	40-105	0			
Pyrene	600.7	6.7	666.7	0	90.1	45-125	0			
Surr: 2-Fluorobiphenyl	975.7	0	1667	0	58.5	12-100	0			
Surr: 4-Terphenyl-d14	1234	0	1667	0	74	25-137	0			
Surr: Nitrobenzene-d5	1124	0	1667	0	67.5	37-107	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74267**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: <b>15071472-02C MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 08:28 PM</b>	
Client ID:				Run ID: <b>SVMS8_150731A</b>			SeqNo: <b>3399781</b>		Prep Date: <b>7/31/2015</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	439.5	6.5	652.6	0	67.3	45-110	0			
Anthracene	532.2	6.5	652.6	0	81.5	55-105	0			
Benzo(a)anthracene	526	6.5	652.6	0	80.6	50-110	0			
Benzo(a)pyrene	535.4	6.5	652.6	0	82	50-110	0			
Benzo(b)fluoranthene	541.6	6.5	652.6	0	83	45-115	0			
Benzo(g,h,i)perylene	536.7	6.5	652.6	0	82.2	40-125	0			
Benzo(k)fluoranthene	533.5	6.5	652.6	0	81.7	45-115	0			
Chrysene	500.8	6.5	652.6	0	76.7	55-110	0			
Dibenzo(a,h)anthracene	511.6	6.5	652.6	0	78.4	40-125	0			
Fluoranthene	575.6	6.5	652.6	0	88.2	55-115	0			
Fluorene	498.6	6.5	652.6	0	76.4	50-110	0			
Indeno(1,2,3-cd)pyrene	573	6.5	652.6	0	87.8	40-120	0			
Naphthalene	424.8	6.5	652.6	0	65.1	40-105	0			
Pyrene	530.2	6.5	652.6	0	81.2	45-125	0			
Surr: 2-Fluorobiphenyl	937.4	0	1631	0	57.5	12-100	0			
Surr: 4-Terphenyl-d14	1088	0	1631	0	66.7	25-137	0			
Surr: Nitrobenzene-d5	1089	0	1631	0	66.8	37-107	0			

MSD				Sample ID: <b>15071472-02C MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 08:48 PM</b>	
Client ID:				Run ID: <b>SVMS8_150731A</b>			SeqNo: <b>3399782</b>		Prep Date: <b>7/31/2015</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	431.1	6.5	652.7	0	66	45-110	439.5	1.93	30	
Anthracene	528.4	6.5	652.7	0	80.9	55-105	532.2	0.719	30	
Benzo(a)anthracene	519.2	6.5	652.7	0	79.5	50-110	526	1.29	30	
Benzo(a)pyrene	537.8	6.5	652.7	0	82.4	50-110	535.4	0.445	30	
Benzo(b)fluoranthene	543	6.5	652.7	0	83.2	45-115	541.6	0.26	30	
Benzo(g,h,i)perylene	539.8	6.5	652.7	0	82.7	40-125	536.7	0.565	30	
Benzo(k)fluoranthene	531.9	6.5	652.7	0	81.5	45-115	533.5	0.287	30	
Chrysene	503.9	6.5	652.7	0	77.2	55-110	500.8	0.604	30	
Dibenzo(a,h)anthracene	514.3	6.5	652.7	0	78.8	40-125	511.6	0.528	30	
Fluoranthene	565.9	6.5	652.7	0	86.7	55-115	575.6	1.7	30	
Fluorene	492.5	6.5	652.7	0	75.4	50-110	498.6	1.23	30	
Indeno(1,2,3-cd)pyrene	573.1	6.5	652.7	0	87.8	40-120	573	0.0196	30	
Naphthalene	426.2	6.5	652.7	0	65.3	40-105	424.8	0.326	30	
Pyrene	535.2	6.5	652.7	0	82	45-125	530.2	0.938	30	
Surr: 2-Fluorobiphenyl	940.9	0	1632	0	57.7	12-100	937.4	0.367	40	
Surr: 4-Terphenyl-d14	1086	0	1632	0	66.5	25-137	1088	0.221	40	
Surr: Nitrobenzene-d5	1082	0	1632	0	66.3	37-107	1089	0.732	40	

The following samples were analyzed in this batch:

15071722-01A

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

# QC BATCH REPORT

Batch ID: **74230** Instrument ID **VMS7** Method: **SW8260B**

MBLK				Sample ID: MBLK-74230-74230				Units: µg/Kg			Analysis Date: 7/30/2015 03:34 PM			
Client ID:				Run ID: VMS7_150730A				SeqNo: 3397304			Prep Date: 7/30/2015		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	993	0	1000	0	99.3	70-130		0						
Surr: 4-Bromofluorobenzene	953.5	0	1000	0	95.4	70-130		0						
Surr: Dibromofluoromethane	996	0	1000	0	99.6	70-130		0						
Surr: Toluene-d8	990	0	1000	0	99	70-130		0						

LCS				Sample ID: LCS-74230-74230			Units: µg/Kg		Analysis Date: 7/30/2015 01:30 PM		
Client ID:			Run ID: VMS7_150730A			SeqNo: 3397302		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	885	30	1000	0	88.5	75-125	0				
Ethylbenzene	901.5	30	1000	0	90.2	75-125	0				
m,p-Xylene	1824	60	2000	0	91.2	80-125	0				
o-Xylene	900	30	1000	0	90	75-125	0				
Toluene	912.5	30	1000	0	91.2	70-125	0				
Xylenes, Total	2724	90	3000	0	90.8	75-125	0				
Surr: 1,2-Dichloroethane-d4	990.5	0	1000	0	99	70-130	0				
Surr: 4-Bromofluorobenzene	1012	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	998.5	0	1000	0	99.8	70-130	0				
Surr: Toluene-d8	1028	0	1000	0	103	70-130	0				

MS				Sample ID: 15071669-13A MS				Units: µg/Kg		Analysis Date: 7/31/2015 01:20 PM	
Client ID:			Run ID: VMS8_150730B			SeqNo: 3398000		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1108	30	1000	0	111	75-125	0				
Ethylbenzene	1128	30	1000	0	113	75-125	0				
m,p-Xylene	2283	60	2000	0	114	80-125	0				
o-Xylene	1114	30	1000	0	111	75-125	0				
Toluene	1117	30	1000	0	112	70-125	0				
Xylenes, Total	3397	90	3000	0	113	75-125	0				
Surr: 1,2-Dichloroethane-d4	949.5	0	1000	0	95	70-130	0				
Surr: 4-Bromofluorobenzene	1076	0	1000	0	108	70-130	0				
Surr: Dibromofluoromethane	953.5	0	1000	0	95.4	70-130	0				
Surr: Toluene-d8	1026	0	1000	0	103	70-130	0				

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74230** Instrument ID **VMS7** Method: **SW8260B**

MSD				Sample ID: 15071669-13A MSD			Units: µg/Kg		Analysis Date: 7/31/2015 01:45 PM		
Client ID:			Run ID: VMS8_150730B			SeqNo: 3398001		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1052	30	1000	0	105	75-125	1108	5.18	30		
Ethylbenzene	1106	30	1000	0	111	75-125	1128	1.97	30		
m,p-Xylene	2205	60	2000	0	110	80-125	2283	3.48	30		
o-Xylene	1052	30	1000	0	105	75-125	1114	5.68	30		
Toluene	1084	30	1000	0	108	70-125	1117	3	30		
Xylenes, Total	3258	90	3000	0	109	75-125	3397	4.19	30		
Surr: 1,2-Dichloroethane-d4	973	0	1000	0	97.3	70-130	949.5	2.44	30		
Surr: 4-Bromofluorobenzene	987.5	0	1000	0	98.8	70-130	1076	8.53	30		
Surr: Dibromofluoromethane	968.5	0	1000	0	96.8	70-130	953.5	1.56	30		
Surr: Toluene-d8	1020	0	1000	0	102	70-130	1026	0.635	30		

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74248** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-74248-74248				Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150730K				SeqNo: 3396219		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	4.02	0	4	0	100	90-110	0			
----	------	---	---	---	-----	--------	---	--	--	--

DUP		Sample ID: 15071541-01A DUP				Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150730K				SeqNo: 3396223		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	6.32	0	0	0	0	0-0	6.5	2.81	20	H
----	------	---	---	---	---	-----	-----	------	----	---

DUP		Sample ID: 15071628-02A DUP					Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:			Run ID: WETCHEM_150730K			SeqNo: 3396229		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.01	0	0	0	0	0-0	8.06	0.622	20	
----	------	---	---	---	---	-----	------	-------	----	--

The following samples were analyzed in this batch:

15071722-01A
--------------

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74269** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>15071722-01A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>8/4/2015 10:45 AM</b>		
Client ID: <b>PA 22-34, PA 31-34 Batch 6</b>			Run ID: <b>WETCHEM_150804C</b>			SeqNo: <b>3401404</b>		Prep Date: <b>8/3/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	6.7	0.050	0	0	0		10.88	47.6	50	

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **74416**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-74416-74416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402316</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      1.0

<b>LCS</b>		Sample ID: <b>LCS-74416-74416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402315</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.3      1.0      5      0      86      80-120      0

<b>MS</b>		Sample ID: <b>15071709-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402307</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.51      1.0      5.102      0      29.6      75-125      0      S

<b>MS</b>		Sample ID: <b>15071709-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402309</b>		Prep Date: <b>8/3/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2483      99      2565      0      96.8      75-125      0

<b>MSD</b>		Sample ID: <b>15071709-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402308</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.61      1.0      5      0      32.2      75-125      1.51      6.4      20      S

The following samples were analyzed in this batch:

15071722-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071722  
**Project:** PA 22-34, PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **R168972**      Instrument ID **MOIST**      Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R168972</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>		
Client ID:		Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402069</b>		Prep Date:		DF: <b>1</b>
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-R168972				Units: % of sample		Analysis Date: 8/3/2015 06:00 PM		
Client ID:		Run ID: MOIST_150803D			SeqNo: 3402068		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

<b>DUP</b>				Sample ID: <b>15071665-07B DUP</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402041</b>		Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

Moisture      31.13      0.050      0      0      0      36.33      15.4      20

<b>DUP</b>				Sample ID: <b>1508026-01A DUP</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402062</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture      6.91      0.050      0      0      0      6.41      7.51      20

The following samples were analyzed in this batch:

15071722-01A

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

**WORKORDER**  
#

15071722

**PAGE**

1 of 1

## DISPOSAL







By Lab or Return to Client

[illegible]

\*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.**

<b>Comments:</b>  <div style="text-align: center;">1.4°C</div>	<b>QC PACKAGE (check below)</b>	
	<input checked="" type="checkbox"/> X	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
<b>Preservative Key:</b> 1-HCl   2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH   5-NaHSO <sub>4</sub> 7-Other   8-4 degrees C   9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	7/29/2015	18:00:00 PM
RECEIVED BY			7-29-15	1600
RELINQUISHED BY			7-29-15	1600
RECEIVED BY		KETU WIERENKA	7/20/15	0930
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID: RILA (816) 288-1033  
 NICK MARTINEZ  
 ALS ENVIRONMENTAL PARACHUTE  
 PARACHUTE SERVICE CENTER  
 127 EAST 1ST ST  
 PARACHUTE, CO 81635  
 UNITED STATES US

SHIP DATE: 29 JUL 15  
 ACTWGT: 59.00 LB  
 CAD: 2264840/NET3870  
 DIMS: 24x18x18 IN  
 BILL SENDER

TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

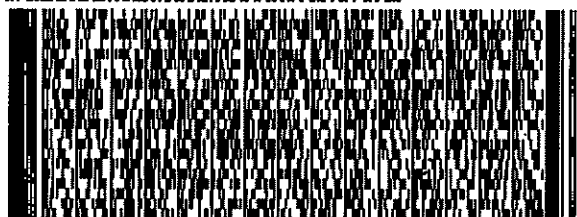
(816) 399-8070

REF: 072915-1

INV:  
 PO: PARACHUTE

DEPT:

539.03/1A15G100



**FedEx**  
 Express



REL#  
 3785346

1 of 2

TRK#  
 0201 **7741 6789 7421**

## MASTER ##

**XX HLMA**

**THU - 30 JUL 10:30A**  
**PRIORITY OVERNIGHT**

**49424**

MM-US

**GRR**



#### 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. Use of this system constitutes your agreement to the set of terms and conditions found in the current FedEx Service Guide apply. Your use of sales, income interest, profit, attorney's fees, costs, a limited to the greater of \$100 or the authorized declared value, extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Parachute Custody Seal  
 Time 15:45 Date 7-29  
 Name Nick Martinez  
 Title 15:45 Date 7-29  
 Signature Nick Martinez  
 Title 15:45 Date 7-29  
 Signature Nick Martinez



Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **30-Jul-15 09:30**

Work Order: **15071722**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

30-Jul-15  
Date

Reviewed by: Chad Whelton  
eSignature

30-Jul-15  
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): 1.4 c SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 7/30/2015 2:03:41 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:



23-Sep-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34\_PA 31-34 Batch 6**

Work Order: **15091191**

Dear Karolina,

ALS Environmental received 1 sample on 22-Sep-2015 09:00 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 11.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Les Arnold

Les Arnold  
Senior Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental The ALS logo, a stylized blue triangle with a yellow flame.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 31-34 Batch 6  
**Work Order:** 15091191

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15091191-01	PA 22-34, PA 31-34 Batch 6	Soil		9/21/2015	9/22/2015 09:00	<input type="checkbox"/>

---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 31-34 Batch 6  
**Work Order:** 15091191

---

**Case Narrative**

Samples for the above noted Work Order were received on 09/22/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

**Sample Receiving:**

No deviations or anomalies were noted.

**Volatile Organics:**

No deviations or anomalies were noted.

**Extractable Organics:**

No deviations or anomalies were noted.

**Metals:**

No deviations or anomalies were noted.

**Wet Chemistry:**

No deviations or anomalies were noted.

**ALS Group USA, Corp****Date:** 23-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34\_PA 31-34 Batch 6**Work Order:** 15091191**Sample ID:** PA 22-34, PA 31-34 Batch 6**Lab ID:** 15091191-01**Collection Date:** 9/21/2015**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>47</b>		<b>SW8015M</b>		Prep: SW3541 / 9/22/15	Analyst: <b>IT</b>
			<b>5.1</b>	<b>mg/Kg-dry</b>	1	9/22/2015 05:21 PM
<i>Surr: 4-Terphenyl-d14</i>	63.1		39-133	%REC	1	9/22/2015 05:21 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015D</b>		Prep: SW5035 / 9/22/15	Analyst: <b>IT</b>
			3.1	mg/Kg-dry	1	9/22/2015 03:23 PM
<i>Surr: Toluene-d8</i>	100		50-150	%REC	1	9/22/2015 03:23 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>20</b>		<b>E160.3M</b>			Analyst: <b>EVB</b>
			0.050	% of sample	1	9/22/2015 02:40 PM

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 31-34 Batch 6  
**WorkOrder:** 15091191

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

# ALS Group USA, Corp

Date: 23-Sep-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091191  
**Project:** PA 22-34\_PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **76354** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-76354-76354</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 04:22 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470217</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.662	0	2	0	83.1	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-76354-76354</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 04:51 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470218</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.5	5.0	200	0	92.3	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.4	0	2	0	70	39-133	0			

<b>MS</b>		Sample ID: <b>15091099-04A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 07:51 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470224</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.2	4.1	165.3	69.24	69.5	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	1.347	0	1.653	0	81.5	39-133	0			

<b>MSD</b>		Sample ID: <b>15091099-04A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 08:21 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470225</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	238	4.1	164.1	69.24	103	48-110	184.2	25.5	30	
<i>Surr: 4-Terphenyl-d14</i>	1.345	0	1.641	0	81.9	39-133	1.347	0.168	30	

The following samples were analyzed in this batch:

15091191-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091191  
**Project:** PA 22-34\_PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **76357**      Instrument ID **GC9**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-76357-76357</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 02:58 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470229</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
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	5478	0	5000	0	110	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-76357-76357</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 02:33 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470228</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	449800	2,500	500000	0	90	70-130	0			
Surr: Toluene-d8	5320	0	5000	0	106	50-150	0			

<b>MS</b>		Sample ID: <b>15091203-02A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 05:27 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470235</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	505600	2,500	500000	0	101	70-130	0			
Surr: Toluene-d8	5194	0	5000	0	104	50-150	0			

<b>MSD</b>		Sample ID: <b>15091203-02A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 05:52 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470236</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	512200	2,500	500000	0	102	70-130	505600	1.29	30	
Surr: Toluene-d8	5472	0	5000	0	109	50-150	5194	5.21	30	

The following samples were analyzed in this batch:

15091191-01A

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091191  
**Project:** PA 22-34\_PA 31-34 Batch 6

## QC BATCH REPORT

Batch ID: **R172207** Instrument ID **MOIST** Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R172207</b>				Units: % of sample		Analysis Date: <b>9/22/2015 02:40 PM</b>		
Client ID:			Run ID: <b>MOIST_150922A</b>			SeqNo: <b>3470910</b>		Prep Date:		DF: <b>1</b>
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-R172207					Units: % of sample		Analysis Date: 9/22/2015 02:40 PM		
Client ID:			Run ID: MOIST_150922A			SeqNo: 3470909		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: 15091191-01A DUP				Units: % of sample			Analysis Date: 9/22/2015 02:40 PM			
Client ID: PA 22-34, PA 31-34 Batch 6				Run ID: MOIST_150922A				SeqNo: 3470893			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 19.3 0.050 0 0 0 19.96 3.36 20

DUP		Sample ID: 1509712-03B DUP				Units: % of sample		Analysis Date: 9/22/2015 02:40 PM		
Client ID:		Run ID: MOIST_150922A			SeqNo: 3470899		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 18.86 0.050 0 0 0 18.89 0.159 20

The following samples were analyzed in this batch:

15091191-01A

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



# ALS Laboratory Group

HOLLAND, Michigan 49424

## Chain-of-Custody

Form 282r8

WORKORDER #	15091191
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PROJECT NAME		PA 22-34, PA 31-34 Batch 6		SAMPLER				DATE		9/21/2015		PAGE		1 of 1	
PROJECT No.				SITE ID		PA 22-34, PA 31-34 Batch 6		TURNAROUND		24 hrs		DISPOSAL		By Lab or Return to Client	
EDD FORMAT				PURCHASE ORDER				DRO + GRO							
COMPANY NAME		WPX Energy		BILL TO COMPANY		WPX Energy									
SEND REPORT TO		Blaney		INVOICE ATTN TO		Karolina Blaney; Leo Braun									
ADDRESS				ADDRESS		1058 Co Rd 215									
CITY / STATE / ZIP				CITY / STATE / ZIP		Parachute CO 81635									
PHONE				PHONE		970-683-2295									
FAX				FAX											
E-MAIL		Karolina.blaney@wpxenergy.com;		E-MAIL		Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com									
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC								
/	PA 22-34, PA 31-34 Batch 6	S	9/21/2015		1		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:	QC PACKAGE (check below)	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	9/21/2015	9:30
RECEIVED BY	<i>[Signature]</i>	9-21-15	1600
RELINQUISHED BY	<i>[Signature]</i>	9-21-15	1610
RECEIVED BY	Diane E. Shea	9/22/15	0900
RELINQUISHED BY			
RECEIVED BY			

ORIGIN ID: RILA (816) 298-1033  
 NICK MARTINEZ  
 ALS ENVIRONMENTAL PARACHUTE  
 PARACHUTE SERVICE CENTER  
 127 EAST 1ST ST  
 PARACHUTE, CO 81635  
 UNITED STATES US

SHIP DATE: 21SEP15  
 ACTWGT: 55.00 LB  
 CAD: 2284840/NET3870  
 DIMS: 14x26x15 IN

BILL SENDER

TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

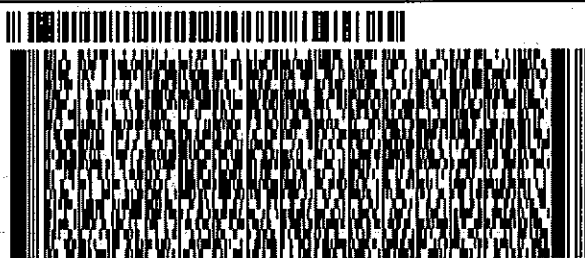
**HOLLAND MI 49424**

(816) 399-6070  
 INV  
 PO. PARACHUTE

REF: 092115-1

DEPT:

539.12/CB693100



**FedEx**  
 Express



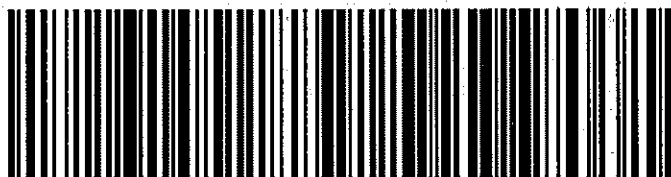
REL#  
 3785346

1 of 2  
 TRK# 7745 6089 1062  
 0201  
 ## MASTER ##

**TUE - 22 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XX HLMA**

**49424**  
**GRR**  
 MI-US



**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.

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ALS Parachute Cust

by Seal

Time 9:11-5

Day 9-11-5

Name

Address

City

State

Zip

Phone

Fax

E-mail

Comments

Special Instructions

Signature

Date

Initials

Printed Name

Printed Address

Printed City

Printed State

Printed Zip

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **22-Sep-15 09:00**

Work Order: **15091191**

Received by: **DS**

Checklist completed by Diane Shaw 22-Sep-15  
eSignature Date

Reviewed by: Lee Arnold 22-Sep-15  
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.8/1.8 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/22/2015 10:54:16 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



24-Sep-2014

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

Re: **WPX PA22-34, PA322-34 Batch 1 9.18.14**

Work Order: **1409942**

Dear Mark,

ALS Environmental received 1 sample on 19-Sep-2014 09:00 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,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14  
**Work Order:** 1409942

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1409942-01	Batch 1	Soil		9/18/2014 14:20	9/19/2014 09:00	<input type="checkbox"/>

---

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14  
**Work Order:** 1409942

---

**Case Narrative**

Batch 62960 MS/MSD data for PAHs is not related to this project's samples. No data requires qualification.

Batch 62961 MS/MSD data for DRO is not related to this project's samples. No data requires qualification.

Batch 62981 MS/MSD data for Metals is not related to this project's samples. No data requires qualification. Sample 1409942-01 reporting limits for Metals are elevated due to dilution for high concentrations of non-target analytes.

Batch 63060 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 24-Sep-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14  
**Sample ID:** Batch 1  
**Collection Date:** 9/18/2014 02:20 PM

**Work Order:** 1409942  
**Lab ID:** 1409942-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 9/19/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>190</b>		<b>4.7</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/20/2014 02:30 AM
Surr: 4-Terphenyl-d14	65.6		39-133	%REC	1	9/20/2014 02:30 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 9/19/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>140</b>		<b>2.9</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/20/2014 03:09 PM
Surr: Toluene-d8	136		50-150	%REC	1	9/20/2014 03:09 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471</b>		Prep: SW7471 / 9/22/14	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.027</b>		<b>0.014</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/22/2014 06:14 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 9/23/14	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>460</b>		<b>5.0</b>	<b>mg/L</b>	<b>10</b>	9/23/2014 12:23 PM
<b>Magnesium</b>	<b>320</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	9/23/2014 12:23 PM
<b>Sodium</b>	<b>780</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	9/23/2014 12:23 PM
<b>METALS BY ICP-MS</b>						
			<b>SW6020A</b>		Prep: SW3050B / 9/19/14	Analyst: <b>ML</b>
<b>Arsenic</b>	<b>6.5</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Barium</b>	<b>250</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Cadmium</b>	<b>0.66</b>		<b>0.66</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Chromium</b>	<b>14</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Copper</b>	<b>11</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Lead</b>	<b>11</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Nickel</b>	<b>13</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>Selenium</b>	<b>2.0</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
Silver	ND		1.6	mg/Kg-dry	4	9/20/2014 04:52 AM
<b>Zinc</b>	<b>42</b>		<b>3.3</b>	<b>mg/Kg-dry</b>	<b>4</b>	9/20/2014 04:52 AM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHOD</b>		Prep: USDA Method 20B / 9/23/14	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>6.9</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	9/23/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 9/19/14	Analyst: <b>RM</b>
Acenaphthene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Acenaphthylene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Anthracene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Chrysene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM

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

# ALS Group USA, Corp

Date: 24-Sep-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14  
**Sample ID:** Batch 1  
**Collection Date:** 9/18/2014 02:20 PM

**Work Order:** 1409942  
**Lab ID:** 1409942-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Fluoranthene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Fluorene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Naphthalene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Pyrene	ND		7.5	µg/Kg-dry	1	9/20/2014 09:05 PM
Surr: 2-Fluorobiphenyl	65.4		12-100	%REC	1	9/20/2014 09:05 PM
Surr: 4-Terphenyl-d14	88.5		25-137	%REC	1	9/20/2014 09:05 PM
Surr: Nitrobenzene-d5	71.1		37-107	%REC	1	9/20/2014 09:05 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/19/14		Analyst: BG
Benzene	ND		34	µg/Kg-dry	1	9/22/2014 05:17 PM
Ethylbenzene	ND		34	µg/Kg-dry	1	9/22/2014 05:17 PM
m,p-Xylene	300		69	µg/Kg-dry	1	9/22/2014 05:17 PM
o-Xylene	ND		34	µg/Kg-dry	1	9/22/2014 05:17 PM
Toluene	ND		34	µg/Kg-dry	1	9/22/2014 05:17 PM
Xylenes, Total	320		100	µg/Kg-dry	1	9/22/2014 05:17 PM
Surr: 1,2-Dichloroethane-d4	78.0		70-130	%REC	1	9/22/2014 05:17 PM
Surr: 4-Bromofluorobenzene	91.2		70-130	%REC	1	9/22/2014 05:17 PM
Surr: Dibromofluoromethane	93.2		70-130	%REC	1	9/22/2014 05:17 PM
Surr: Toluene-d8	117		70-130	%REC	1	9/22/2014 05:17 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 9/23/14		Analyst: JB
Electrical Conductivity @ Saturation	8.7		0.050	mmhos/cm @25	10	9/23/2014 03:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	13		0.57	mg/Kg-dry	1	9/23/2014 04:00 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/19/14		Analyst: MB
Chromium, Hexavalent	ND		0.57	mg/Kg-dry	1	9/22/2014 03:30 PM
MOISTURE			A2540 G			Analyst: RLM
Moisture	12		0.050	% of sample	1	9/19/2014 04:40 PM
PH			SW9045D	Prep: EXTRACT / 9/22/14		Analyst: JB
pH	7.9			s.u.	1	9/23/2014 08:45 AM

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

**QC BATCH REPORT**

Batch ID: **62961** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-62961-62961</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 05:19 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946281</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
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	1.647	0	2	0	82.4	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-62961-62961</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 05:46 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946284</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	177.4	5.0	200	0	88.7	61-109		0		
Surr: 4-Terphenyl-d14	1.541	0	2	0	77.1	39-133		0		

<b>MS</b>		Sample ID: <b>1409892-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 06:14 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946286</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	612	8.3	331.3	72.35	163	48-110		0		S
Surr: 4-Terphenyl-d14	2.654	0	3.313	0	80.1	39-133		0		

<b>MSD</b>		Sample ID: <b>1409892-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/19/2014 06:41 PM</b>		
Client ID:		Run ID: <b>GC8_140919B</b>				SeqNo: <b>2946288</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	336	8.1	325.3	72.35	81	48-110	612	58.2	30	R
Surr: 4-Terphenyl-d14	2.433	0	3.253	0	74.8	39-133	2.654	8.68	30	

The following samples were analyzed in this batch: | 1409942-01B |

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62991**      Instrument ID **GC9**      Method: **SW8015C**

<b>MBLK</b>		Sample ID: <b>MBLK-62991-62991</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 02:00 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945644</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	<i>4800</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>96</i>	<i>50-150</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-62991-62991</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 01:34 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945643</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	548800	2,500	500000	0	110	70-130	0			
<i>Surr: Toluene-d8</i>	<i>4410</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>88.2</i>	<i>50-150</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>1409920-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 03:16 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945646</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	552100	2,500	500000	0	110	70-130	0			
<i>Surr: Toluene-d8</i>	<i>6310</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>126</i>	<i>50-150</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>1409920-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 03:41 AM</b>		
Client ID:		Run ID: <b>GC9_140919A</b>				SeqNo: <b>2945647</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	531300	2,500	500000	0	106	70-130	552100	3.85	30	
<i>Surr: Toluene-d8</i>	<i>6062</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>121</i>	<i>50-150</i>	<i>6310</i>	<i>4.02</i>	<i>30</i>	

The following samples were analyzed in this batch: 1409942-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **63044**      Instrument ID **HG1**      Method: **SW7471**

Sample ID: <b>MBLK-63044-63044</b>				Units: <b>mg/Kg</b>			Analysis Date: <b>9/22/2014 06:09 PM</b>				
Client ID:			Run ID: <b>HG1_140922A</b>			SeqNo: <b>2947030</b>		Prep Date: <b>9/22/2014</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.003167	0.020								J	

LCS				Sample ID: LCS-63044-63044				Units:mg/Kg			Analysis Date: 9/22/2014 06:11 PM			
Client ID:				Run ID: HG1_140922A				SeqNo:2947031			Prep Date: 9/22/2014		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury				0.1798	0.020	0.1665	0	108	80-120	0				

MS				Sample ID: 1409942-01BMS				Units:mg/Kg			Analysis Date: 9/22/2014 06:16 PM			
Client ID: Batch 1				Run ID: HG1_140922A				SeqNo:2947033			Prep Date: 9/22/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Mercury		0.144	0.013	0.1066	0.0239	113	75-125		0					

MSD				Sample ID: 1409942-01BMSD				Units:mg/Kg			Analysis Date: 9/22/2014 06:18 PM			
Client ID: Batch 1				Run ID: HG1_140922A				SeqNo:2947034			Prep Date: 9/22/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Mercury		0.1475	0.013	0.1049	0.0239	118	75-125	0.144	2.37	35				

The following samples were analyzed in this batch:

1409942-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62992** Instrument ID **ICP2** Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>1409967-02B DUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>9/23/2014 01:23 PM</b>		
Client ID:		Run ID: <b>ICP2_140923A</b>				SeqNo: <b>2948639</b>		Prep Date: <b>9/23/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	1063	5.0	0	0	0	0-0	0			
Magnesium	186.8	2.0	0	0	0	0-0	0			

<b>DUP</b>		Sample ID: <b>1409967-02B DUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>9/23/2014 02:17 PM</b>		
Client ID:		Run ID: <b>ICP2_140923A</b>				SeqNo: <b>2948647</b>		Prep Date: <b>9/23/2014</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	8911	20	0	0	0	0-0	0			

The following samples were analyzed in this batch:

1409942-01C

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62981**      Instrument ID **ICPMS1**      Method: **SW6020A**

Sample ID: MBLK-62981-62981				Units:mg/Kg			Analysis Date: 9/20/2014 01:48 AM			
Client ID:		Run ID: ICPMS1_140919A			SeqNo:2945336		Prep Date: 9/19/2014		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	0.008235	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	0.03875	0.25								J
Silver	ND	0.25								
Zinc	0.1595	0.50								J

LCS				Sample ID: LCS-62981-62981				Units:mg/Kg			Analysis Date: 9/20/2014 02:37 AM			
Client ID:				Run ID: ICPMS1_140919A				SeqNo:2945349			Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	4.591	0.25	5	0	91.8	80-120	0							
Barium	4.777	0.25	5	0	95.5	80-120	0							
Cadmium	4.825	0.10	5	0	96.5	80-120	0							
Chromium	4.854	0.25	5	0	97.1	80-120	0							
Copper	4.638	0.25	5	0	92.8	80-120	0							
Lead	4.714	0.25	5	0	94.3	80-120	0							
Nickel	4.78	0.25	5	0	95.6	80-120	0							
Selenium	4.539	0.25	5	0	90.8	80-120	0							
Silver	4.696	0.25	5	0	93.9	80-120	0							
Zinc	4.86	0.50	5	0	97.2	80-120	0							

MS					Sample ID: 1409900-09BMS		Units:mg/Kg		Analysis Date: 9/22/2014 03:58 PM		
Client ID:			Run ID: ICPMS1_140922A			SeqNo:2946886		Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	6.702	0.33	6.596	0.896	88	75-125	0				
Barium	30.48	0.33	6.596	17.81	192	75-125	0			S	
Cadmium	6.241	0.13	6.596	0.05485	93.8	75-125	0				
Chromium	11.41	0.33	6.596	4.301	108	75-125	0				
Copper	7.942	0.33	6.596	1.676	95	75-125	0				
Lead	9.096	0.33	6.596	2.559	99.1	75-125	0				
Nickel	9.96	0.33	6.596	3.197	103	75-125	0				
Selenium	6.379	0.33	6.596	0.6284	87.2	75-125	0				
Silver	5.805	0.33	6.596	0.006848	87.9	75-125	0				
Zinc	20.17	0.66	6.596	11.56	131	75-125	0			S	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62981**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>1409900-09BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 04:04 PM</b>		
Client ID:		Run ID: <b>ICPMS1_140922A</b>				SeqNo: <b>2946887</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.718	0.33	6.684	0.896	87.1	75-125	6.702	0.239	25	
Barium	25.98	0.33	6.684	17.81	122	75-125	30.48	15.9	25	
Cadmium	6.282	0.13	6.684	0.05485	93.2	75-125	6.241	0.649	25	
Chromium	13.44	0.33	6.684	4.301	137	75-125	11.41	16.3	25	S
Copper	8.175	0.33	6.684	1.676	97.2	75-125	7.942	2.89	25	
Lead	9.452	0.33	6.684	2.559	103	75-125	9.096	3.83	25	
Nickel	10.83	0.33	6.684	3.197	114	75-125	9.96	8.35	25	
Selenium	6.656	0.33	6.684	0.6284	90.2	75-125	6.379	4.24	25	
Silver	5.912	0.33	6.684	0.006848	88.3	75-125	5.805	1.83	25	
Zinc	21.65	0.67	6.684	11.56	151	75-125	20.17	7.08	25	S

The following samples were analyzed in this batch:      1409942-01B

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62960**      Instrument ID **SVMS5**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-62960-62960</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 01:45 PM</b>		
Client ID:		Run ID: <b>SVMS5_140920A</b>				SeqNo: <b>2946208</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
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								
<i>Surr: 2-Fluorobiphenyl</i>	1408	0	1667	0	84.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	2048	0	1667	0	123	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1352	0	1667	0	81.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-62960-62960</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 02:07 PM</b>		
Client ID:		Run ID: <b>SVMS5_140920A</b>				SeqNo: <b>2946211</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	674.3	6.7	666.7	0	101	45-110	0			
Acenaphthylene	666	6.7	666.7	0	99.9	45-105	0			
Anthracene	676.7	6.7	666.7	0	101	55-105	0			
Benzo(a)anthracene	718	6.7	666.7	0	108	50-110	0			
Benzo(a)pyrene	731.7	6.7	666.7	0	110	50-110	0			
Benzo(b)fluoranthene	727	6.7	666.7	0	109	45-115	0			
Benzo(g,h,i)perylene	746.3	6.7	666.7	0	112	40-125	0			
Benzo(k)fluoranthene	731	6.7	666.7	0	110	45-115	0			
Chrysene	732.7	6.7	666.7	0	110	55-110	0			
Dibenzo(a,h)anthracene	621	6.7	666.7	0	93.1	40-125	0			
Fluoranthene	732.7	6.7	666.7	0	110	55-115	0			
Fluorene	694.7	6.7	666.7	0	104	50-110	0			
Indeno(1,2,3-cd)pyrene	639	6.7	666.7	0	95.8	40-120	0			
Naphthalene	665.3	6.7	666.7	0	99.8	40-105	0			
Pyrene	779.3	6.7	666.7	0	117	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1368	0	1667	0	82.1	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1823	0	1667	0	109	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1373	0	1667	0	82.4	37-107	0			

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62960**      Instrument ID: **SVMS5**      Method: **SW846 8270D**

MS				Sample ID: <b>1409698-03B MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 07:02 PM</b>	
Client ID:				Run ID: <b>SVMS5_140920A</b>			SeqNo: <b>2946213</b>		Prep Date: <b>9/19/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1185	13	1291	0	91.8	45-110	0			
Acenaphthylene	1328	13	1291	0	103	45-105	0			
Anthracene	1464	13	1291	0	113	55-105	0			S
Benzo(a)anthracene	1731	13	1291	221.2	117	50-110	0			S
Benzo(a)pyrene	1633	13	1291	0	126	50-110	0			S
Benzo(b)fluoranthene	1767	13	1291	0	137	45-115	0			S
Benzo(g,h,i)perylene	1723	13	1291	0	133	40-125	0			S
Benzo(k)fluoranthene	1757	13	1291	0	136	45-115	0			S
Chrysene	1790	13	1291	0	139	55-110	0			S
Dibenzo(a,h)anthracene	1375	13	1291	40.28	103	40-125	0			
Fluoranthene	1784	13	1291	0	138	55-115	0			S
Fluorene	1355	13	1291	0	105	50-110	0			
Indeno(1,2,3-cd)pyrene	1468	13	1291	166.6	101	40-120	0			
Naphthalene	1105	13	1291	0	85.6	40-105	0			
Pyrene	2137	13	1291	0	166	45-125	0			S
Surr: 2-Fluorobiphenyl	2327	0	3227	0	72.1	12-100	0			
Surr: 4-Terphenyl-d14	3762	0	3227	0	117	25-137	0			
Surr: Nitrobenzene-d5	2339	0	3227	0	72.5	37-107	0			

MSD				Sample ID: <b>1409698-03B MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 07:23 PM</b>	
Client ID:				Run ID: <b>SVMS5_140920A</b>			SeqNo: <b>2946216</b>		Prep Date: <b>9/19/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1323	13	1299	0	102	45-110	1185	11	30	
Acenaphthylene	1448	13	1299	0	111	45-105	1328	8.6	30	S
Anthracene	1568	13	1299	0	121	55-105	1464	6.9	30	S
Benzo(a)anthracene	1820	13	1299	221.2	123	50-110	1731	5.04	30	S
Benzo(a)pyrene	1720	13	1299	0	132	50-110	1633	5.22	30	S
Benzo(b)fluoranthene	1881	13	1299	0	145	45-115	1767	6.28	30	S
Benzo(g,h,i)perylene	1728	13	1299	0	133	40-125	1723	0.254	30	S
Benzo(k)fluoranthene	1794	13	1299	0	138	45-115	1757	2.05	30	S
Chrysene	1875	13	1299	0	144	55-110	1790	4.66	30	S
Dibenzo(a,h)anthracene	1448	13	1299	40.28	108	40-125	1375	5.12	30	
Fluoranthene	1904	13	1299	0	146	55-115	1784	6.46	30	S
Fluorene	1462	13	1299	0	112	50-110	1355	7.61	30	S
Indeno(1,2,3-cd)pyrene	1582	13	1299	166.6	109	40-120	1468	7.46	30	
Naphthalene	1277	13	1299	0	98.2	40-105	1105	14.4	30	
Pyrene	2116	13	1299	0	163	45-125	2137	0.977	30	S
Surr: 2-Fluorobiphenyl	2659	0	3249	0	81.8	12-100	2327	13.3	40	
Surr: 4-Terphenyl-d14	3825	0	3249	0	118	25-137	3762	1.66	40	
Surr: Nitrobenzene-d5	2706	0	3249	0	83.3	37-107	2339	14.6	40	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

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Batch ID: **62960** Instrument ID **SVMS5** Method: **SW846 8270D**

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The following samples were analyzed in this batch:

1409942-01B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62983**      Instrument ID **VMS7**      Method: **SW8260B**

MBLK				Sample ID: MBLK-62983-62983				Units: µg/Kg			Analysis Date: 9/20/2014 02:07 AM		
Client ID:			Run ID: VMS7_140919A				SeqNo:2944776			Prep Date: 9/19/2014		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	985.5	0	1000	0	98.6	70-130		0					
Surr: 4-Bromofluorobenzene	1004	0	1000	0	100	70-130		0					
Surr: Dibromofluoromethane	968.5	0	1000	0	96.8	70-130		0					
Surr: Toluene-d8	994	0	1000	0	99.4	70-130		0					

LCS				Sample ID: LCS-62983-62983			Units: µg/Kg		Analysis Date: 9/19/2014 10:48 PM		
Client ID:			Run ID: VMS7_140919A			SeqNo:2944775		Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	982	30	1000	0	98.2	75-125	0				
Ethylbenzene	1018	30	1000	0	102	75-125	0				
m,p-Xylene	2020	60	2000	0	101	80-125	0				
o-Xylene	993.5	30	1000	0	99.4	75-125	0				
Toluene	980	30	1000	0	98	70-125	0				
Xylenes, Total	3014	90	3000	0	100	75-125	0				
Surr: 1,2-Dichloroethane-d4	992.5	0	1000	0	99.2	70-130	0				
Surr: 4-Bromofluorobenzene	981	0	1000	0	98.1	70-130	0				
Surr: Dibromofluoromethane	1004	0	1000	0	100	70-130	0				
Surr: Toluene-d8	999.5	0	1000	0	100	70-130	0				

MS					Sample ID: 1409903-13A MS			Units: µg/Kg		Analysis Date: 9/20/2014 07:57 AM	
Client ID:			Run ID: VMS7_140919A			SeqNo:2944778		Prep Date: 9/19/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	960.5	30	1000	0	96	75-125	0				
Ethylbenzene	977	30	1000	0	97.7	75-125	0				
m,p-Xylene	1934	60	2000	0	96.7	80-125	0				
o-Xylene	977	30	1000	0	97.7	75-125	0				
Toluene	948.5	30	1000	0	94.8	70-125	0				
Xylenes, Total	2910	90	3000	0	97	75-125	0				
Surr: 1,2-Dichloroethane-d4	991	0	1000	0	99.1	70-130	0				
Surr: 4-Bromofluorobenzene	985.5	0	1000	0	98.6	70-130	0				
Surr: Dibromofluoromethane	987	0	1000	0	98.7	70-130	0				
Surr: Toluene-d8	978	0	1000	0	97.8	70-130	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62983**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: <b>1409903-13A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2014 08:22 AM</b>	
Client ID:				Run ID: <b>VMS7_140919A</b>			SeqNo: <b>2944779</b>		Prep Date: <b>9/19/2014</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	954.5	30	1000	0	95.4	75-125	960.5	0.627	30	
Ethylbenzene	977	30	1000	0	97.7	75-125	977	0	30	
m,p-Xylene	1950	60	2000	0	97.5	80-125	1934	0.824	30	
o-Xylene	970	30	1000	0	97	75-125	977	0.719	30	
Toluene	944	30	1000	0	94.4	70-125	948.5	0.476	30	
Xylenes, Total	2920	90	3000	0	97.3	75-125	2910	0.309	30	
Surr: 1,2-Dichloroethane-d4	989	0	1000	0	98.9	70-130	991	0.202	30	
Surr: 4-Bromofluorobenzene	987	0	1000	0	98.7	70-130	985.5	0.152	30	
Surr: Dibromofluoromethane	982.5	0	1000	0	98.2	70-130	987	0.457	30	
Surr: Toluene-d8	986.5	0	1000	0	98.6	70-130	978	0.865	30	

The following samples were analyzed in this batch: 1409942-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **62992** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1409967-02B DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>9/23/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140923J</b>				SeqNo: <b>2948682</b>		Prep Date: <b>9/23/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	60.9	0.050	0	0	0		60.8	0.164	50	

The following samples were analyzed in this batch:

1409942-01C

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **63060**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-63060-63060</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946917</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.50

<b>LCS</b>		Sample ID: <b>LCS-63060-63060</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946916</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.924      0.50      2      0      96.2      80-120      0

<b>MS</b>		Sample ID: <b>1409966-02A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946898</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.1633      0.50      1.992      0.3651      -10.1      75-125      0      JS

<b>MS</b>		Sample ID: <b>1409966-02A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946900</b>		Prep Date: <b>9/19/2014</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1321      50      1352      0.3651      97.7      75-125      0

<b>MSD</b>		Sample ID: <b>1409966-02A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2014 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_140922Q</b>				SeqNo: <b>2946899</b>		Prep Date: <b>9/19/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.2609      0.49      1.976      0.3651      -5.27      75-125      0.1633      0      20      JS

The following samples were analyzed in this batch:

1409942-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **63074**      Instrument ID **WETCHEM**      Method: **SW9045D**

LCS				Sample ID: LCS-63074-63074				Units:s.u.		Analysis Date: 9/23/2014 08:45 AM				
Client ID:				Run ID: WETCHEM_140923A				SeqNo:2947366		Prep Date: 9/22/2014		DF: 1		
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      4.01      0      4      0      100      90-110      0

<b>DUP</b>				Sample ID: <b>14091025-01B DUP</b>				Units: <b>s.u.</b>		Analysis Date: <b>9/23/2014 08:45 AM</b>			
Client ID:				Run ID: <b>WETCHEM_140923A</b>				SeqNo: <b>2947368</b>		Prep Date: <b>9/22/2014</b>		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH      9      0      0      0      0      0-0      9.02      0.222      20

DUP				Sample ID: 1409946-01B DUP				Units: s.u.			Analysis Date: 9/23/2014 08:45 AM		
Client ID:				Run ID: WETCHEM_140923A				SeqNo: 2947378		Prep Date: 9/22/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH      8.23      0      0      0      0      0-0      8.24      0.121      20

The following samples were analyzed in this batch:

1409942-01B

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1409942  
**Project:** WPX PA22-34, PA322-34 Batch 1 9.18.14

## QC BATCH REPORT

Batch ID: **R148637**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS-R148637</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946143</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R148637</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946142</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1409891-09A DUP</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946133</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      11.16      0.050      0      0      0      0-0      11.14      0.179      20

<b>DUP</b>		Sample ID: <b>1409915-01A DUP</b>				Units: % of sample		Analysis Date: <b>9/19/2014 04:40 PM</b>		
Client ID:		Run ID: <b>MOIST_140919A</b>				SeqNo: <b>2946141</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      73.79      0.050      0      0      0      0-0      73.56      0.312      20

The following samples were analyzed in this batch:

1409942-01B

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



1409942

Form 202rd

PAGE

1 of 1

## DISPOSAL

By Lab or Return to Client

\*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.**

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Reed Webb</i>	Reed Webb	9/18/14	3:00
RECEIVED BY	<i>MM</i>	<i>MM</i>	9-18-14	3:00
RELINQUISHED BY	<i>MM</i>	<i>W. Webb</i>	9-18-14	3:00
RECEIVED BY	<i>T. B. Webb</i>	<i>T. B. Webb</i>	09/19/14	0900
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **19-Sep-14 09:00**

Work Order: **1409942**

Received by: **TBB**

Checklist completed by <u>Joseph Ribar</u>	19-Sep-14	Reviewed by: <u>Ann Preston</u>	19-Sep-14
eSignature	Date	eSignature	Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.8 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>9/19/2014 11:26:58 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (616) 399-6070  
 Neil Martinez  
 ALS Environmental  
 127 E. 1st Street  
 PARACHUTE, CO 81035

Origin ID: RLA



Ship Date: 18SEP14  
 ActWgt: 86.0 LB  
 CAD: 2284440MET3550

Dim: 24 X 15 X 15 IN

Delivery Address Bar Code



SHIP TO: (616) 399-6070  
 sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

BILL BENDER

Ref # 001814-1  
 Invoice #  
 PO # Parachute  
 Dept #

HOLLAND, MI 49424

2 of 2

FRI - 19 SEP 10:30A  
 PRIORITY OVERNIGHT

SHIP# 7712 0858 2208  
 6263

Matr# 7712 0856 2103

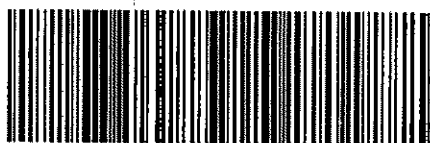
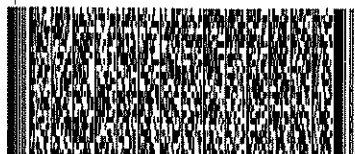
6291

49424

MS-UR

GRR

XX HLMA



9225 UC0848AC3

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1. Use the "Print" button on this page to print your label to your laser or inkjet printer.
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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.

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**ALS Environmental**

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 Fax. +1 616 399 6185

**CUSTODY SEAL**

Date: 19 SEP 14 Time: 17:30  
 Name: [Signature]  
 Company: [Signature]

Seal Broken

Date

RT 828  
 ST 14  
 5  
 2208  
 09/19  
 B



29-Oct-2014

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

Re: **WPX PA 322-34 Batch 2 10.23.14**

Work Order: **14101449**

Dear Mark,

ALS Environmental received 1 sample on 24-Oct-2014 09:30 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,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental The ALS logo, a stylized blue triangle with a yellow flame inside.

[www.alsglobal.com](http://www.alsglobal.com)

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 322-34 Batch 2 10.23.14  
**Work Order:** 14101449

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**Work Order Sample Summary**

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
14101449-01	Batch 2 PA 322-34	Soil		10/23/2014 12:20	10/24/2014 09:30	<input type="checkbox"/>

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 322-34 Batch 2 10.23.14  
**Work Order:** 14101449

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**Case Narrative**

Batch 64301 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 64349 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

Batch 64351 sample 14101449-01 BTEX surrogate recovery was high due to matrix interference. Toluene was non-detect in this sample. No data requires qualification.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 29-Oct-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 322-34 Batch 2 10.23.14  
**Sample ID:** Batch 2 PA 322-34  
**Collection Date:** 10/23/2014 12:20 PM

**Work Order:** 14101449  
**Lab ID:** 14101449-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 10/26/14	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>300</b>		<b>4.7</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/27/2014 09:13 PM
Surr: 4-Terphenyl-d14	65.0		39-133	%REC	1	10/27/2014 09:13 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>		Prep: SW5035 / 10/27/14	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>960</b>		<b>2.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/27/2014 03:24 PM
Surr: Toluene-d8	123		50-150	%REC	1	10/27/2014 03:24 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471</b>		Prep: SW7471 / 10/24/14	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.026</b>		<b>0.017</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/27/2014 01:43 PM
<b>METALS ANALYSIS BY ICP</b>						
			<b>SW846 6010C</b>		Prep: SW3050B / 10/24/14	Analyst: <b>JEC</b>
<b>Arsenic</b>	<b>7.4</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
<b>Barium</b>	<b>330</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
Cadmium	ND		0.35	mg/Kg-dry	1	10/24/2014 07:24 PM
<b>Chromium</b>	<b>12</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
<b>Copper</b>	<b>13</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
<b>Lead</b>	<b>18</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
<b>Nickel</b>	<b>12</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
<b>Selenium</b>	<b>0.46</b>		<b>0.44</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
Silver	ND		0.44	mg/Kg-dry	1	10/24/2014 07:24 PM
<b>Zinc</b>	<b>52</b>		<b>0.89</b>	<b>mg/Kg-dry</b>	<b>1</b>	10/24/2014 07:24 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 10/27/14	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>260</b>		<b>5.0</b>	<b>mg/L</b>	<b>10</b>	10/27/2014 01:57 PM
<b>Magnesium</b>	<b>260</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	10/27/2014 01:57 PM
<b>Sodium</b>	<b>800</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	10/27/2014 01:57 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHOD</b>		Prep: USDA Method 20B / 10/27/14	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>8.3</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	10/27/2014
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 10/25/14	Analyst: <b>RM</b>
Acenaphthene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Acenaphthylene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Anthracene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Chrysene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM

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

# ALS Group USA, Corp

Date: 29-Oct-14

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX PA 322-34 Batch 2 10.23.14  
**Sample ID:** Batch 2 PA 322-34  
**Collection Date:** 10/23/2014 12:20 PM

**Work Order:** 14101449  
**Lab ID:** 14101449-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Fluoranthene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Fluorene	27		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Naphthalene	68		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Pyrene	ND		7.5	µg/Kg-dry	1	10/27/2014 03:51 PM
Surr: 2-Fluorobiphenyl	67.6		12-100	%REC	1	10/27/2014 03:51 PM
Surr: 4-Terphenyl-d14	93.3		25-137	%REC	1	10/27/2014 03:51 PM
Surr: Nitrobenzene-d5	60.9		37-107	%REC	1	10/27/2014 03:51 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 10/27/14		Analyst: RS
Benzene	ND		34	µg/Kg-dry	1	10/27/2014 02:35 PM
Ethylbenzene	330		34	µg/Kg-dry	1	10/27/2014 02:35 PM
m,p-Xylene	12,000		130	µg/Kg-dry	2	10/27/2014 03:27 PM
o-Xylene	670		34	µg/Kg-dry	1	10/27/2014 02:35 PM
Toluene	ND		34	µg/Kg-dry	1	10/27/2014 02:35 PM
Xylenes, Total	13,000		200	µg/Kg-dry	2	10/27/2014 03:27 PM
Surr: 1,2-Dichloroethane-d4	86.4		70-130	%REC	2	10/27/2014 03:27 PM
Surr: 1,2-Dichloroethane-d4	86.6		70-130	%REC	1	10/27/2014 02:35 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	2	10/27/2014 03:27 PM
Surr: 4-Bromofluorobenzene	95.6		70-130	%REC	1	10/27/2014 02:35 PM
Surr: Dibromofluoromethane	90.1		70-130	%REC	1	10/27/2014 02:35 PM
Surr: Dibromofluoromethane	90.4		70-130	%REC	2	10/27/2014 03:27 PM
Surr: Toluene-d8	154	S	70-130	%REC	1	10/27/2014 02:35 PM
Surr: Toluene-d8	136	S	70-130	%REC	2	10/27/2014 03:27 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 10/27/14		Analyst: JB
Electrical Conductivity @ Saturation	7.0		0.050	mmhos/cm @25	10	10/27/2014 05:00 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JJG		
Chromium, Trivalent	12		0.56	mg/Kg-dry	1	10/27/2014 04:32 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 10/24/14		Analyst: MB
Chromium, Hexavalent	ND		0.57	mg/Kg-dry	1	10/27/2014 03:00 PM
MOISTURE			A2540 G	Analyst: RLM		
Moisture	11		0.050	% of sample	1	10/24/2014 02:00 PM
PH			SW9045D	Prep: EXTRACT / 10/24/14		Analyst: STP
pH	8.1			s.u.	1	10/24/2014 02:00 PM

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

# ALS Group USA, Corp

Date: 29-Oct-14

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64331** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-64331-64331</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 08:17 PM</b>		
Client ID:		Run ID: <b>GC8_141027B</b>				SeqNo: <b>3003455</b>		Prep Date: <b>10/26/2014</b>		DF: <b>1</b>
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	1.601	0	2	0	80	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-64331-64331</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 08:45 PM</b>		
Client ID:		Run ID: <b>GC8_141027B</b>				SeqNo: <b>3003457</b>		Prep Date: <b>10/26/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	166.2	5.0	200	0	83.1	61-109	0			
Surr: 4-Terphenyl-d14	1.188	0	2	0	59.4	39-133	0			

<b>MS</b>		Sample ID: <b>14101448-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 10:36 PM</b>		
Client ID:		Run ID: <b>GC8_141027B</b>				SeqNo: <b>3003526</b>		Prep Date: <b>10/26/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	613.5	8.3	332.1	287.7	98.1	48-110	0			
Surr: 4-Terphenyl-d14	2.088	0	3.321	0	62.9	39-133	0			

<b>MSD</b>		Sample ID: <b>14101448-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 11:04 PM</b>		
Client ID:		Run ID: <b>GC8_141027B</b>				SeqNo: <b>3003463</b>		Prep Date: <b>10/26/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	547.9	8.3	330.4	287.7	78.8	48-110	613.5	11.3	30	
Surr: 4-Terphenyl-d14	2.077	0	3.304	0	62.9	39-133	2.088	0.562	30	

The following samples were analyzed in this batch: 14101449-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64353**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-64353-64353</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/27/2014 02:59 PM</b>		
Client ID:		Run ID: <b>GC9_141027A</b>				SeqNo: <b>3004158</b>		Prep Date: <b>10/27/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
<i>Surr: Toluene-d8</i>	<i>5772</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>115</i>	<i>50-150</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-64353-64353</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/27/2014 02:34 PM</b>		
Client ID:		Run ID: <b>GC9_141027A</b>				SeqNo: <b>3004157</b>		Prep Date: <b>10/27/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	471300	2,500	500000	0	94.3	70-130	0			
<i>Surr: Toluene-d8</i>	<i>4648</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>93</i>	<i>50-150</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>14101450-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/27/2014 09:19 PM</b>		
Client ID:		Run ID: <b>GC9_141027A</b>				SeqNo: <b>3004175</b>		Prep Date: <b>10/27/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	1216000	2,500	500000	580500	127	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5399</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>108</i>	<i>50-150</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>14101450-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/27/2014 09:44 PM</b>		
Client ID:		Run ID: <b>GC9_141027A</b>				SeqNo: <b>3004176</b>		Prep Date: <b>10/27/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	1196000	2,500	500000	580500	123	70-130	1216000	1.74	30	
<i>Surr: Toluene-d8</i>	<i>5444</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>109</i>	<i>50-150</i>	<i>5399</i>	<i>0.83</i>	<i>30</i>	

The following samples were analyzed in this batch:

14101449-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64310** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-64310-64310				Units:mg/Kg		Analysis Date: 10/27/2014 01:33 PM			
Client ID:		Run ID: HG1_141027A			SeqNo: 3002231		Prep Date: 10/24/2014		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-64310-64310					Units:mg/Kg		Analysis Date: 10/27/2014 01:36 PM		
Client ID:			Run ID: HG1_141027A			SeqNo: 3002233		Prep Date: 10/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1722 0.020 0.1665 0 103 80-120 0

<b>MS</b>		Sample ID: <b>14101370-06BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 01:59 PM</b>			
Client ID:			Run ID: <b>HG1_141027A</b>		SeqNo: <b>3002246</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1257 0.014 0.113 0.000167 111 75-125 0

MSD				Sample ID: 14101370-06BMSD				Units:mg/Kg			Analysis Date: 10/27/2014 02:01 PM		
Client ID:				Run ID: HG1_141027A				SeqNo: 3002247		Prep Date: 10/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Mercury 0.1263 0.013 0.1108 0.000167 114 75-125 0.1257 0.428 35

The following samples were analyzed in this batch:

14101449-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64301** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: <b>MBLK-64301-64301</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/24/2014 06:38 PM</b>		
Client ID:		Run ID: <b>ICP2_141024B</b>				SeqNo: <b>3000582</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.1167	0.50								J

LCS		Sample ID: <b>LCS-64301-64301</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/24/2014 06:44 PM</b>		
Client ID:		Run ID: <b>ICP2_141024B</b>				SeqNo: <b>3000583</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.775	0.25	5	0	95.5	80-120	0			
Barium	4.627	0.25	5	0	92.5	80-120	0			
Cadmium	4.545	0.50	5	0	90.9	80-120	0			
Chromium	4.782	0.25	5	0	95.6	80-120	0			
Copper	4.85	0.50	5	0	97	80-120	0			
Lead	4.822	0.25	5	0	96.4	80-120	0			
Nickel	4.784	0.25	5	0	95.7	80-120	0			
Selenium	4.687	0.50	5	0	93.7	80-120	0			
Silver	5.164	0.25	5	0	103	80-120	0			
Zinc	5.046	0.50	5	0	101	80-120	0			

MS		Sample ID: <b>14101431-01BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/24/2014 06:55 PM</b>		
Client ID:		Run ID: <b>ICP2_141024B</b>				SeqNo: <b>3000586</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.72	0.33	6.64	3.648	106	75-125	0			
Barium	3157	0.33	6.64	3834	-10200	75-125	0			SEO
Cadmium	6.332	0.66	6.64	0.07307	94.3	75-125	0			
Chromium	17.3	0.33	6.64	9.182	122	75-125	0			
Copper	18.92	0.66	6.64	12.19	101	75-125	0			
Lead	22.16	0.33	6.64	15.44	101	75-125	0			
Nickel	18.3	0.33	6.64	10.06	124	75-125	0			
Selenium	6.268	0.66	6.64	0.4874	87.1	75-125	0			
Silver	7.507	0.33	6.64	-0.04836	114	75-125	0			
Zinc	61.16	0.66	6.64	44.66	248	75-125	0			SO

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64301** Instrument ID **ICP2** Method: **SW846 6010C**

MS	Sample ID: 14101431-01BMS					Units:mg/Kg		Analysis Date: 10/27/2014 12:50 PM			
	Client ID:			Run ID: ICP2_141027A		SeqNo:3002143		Prep Date: 10/24/2014		DF: 10	
	Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
	Barium	3587	3.3	6.64	3766	-2690	75-125	0			SO

MSD				Sample ID: 14101431-01BMSD			Units:mg/Kg		Analysis Date: 10/24/2014 07:01 PM		
Client ID:			Run ID: ICP2_141024B			SeqNo: 3000587		Prep Date: 10/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	11.09	0.33	6.649	3.648	112	75-125	10.72	3.45	20	SRO	
Barium	1737	0.33	6.649	3834	-31500	75-125	3157	58	20		
Cadmium	6.179	0.66	6.649	0.07307	91.8	75-125	6.332	2.45	20		
Chromium	17.23	0.33	6.649	9.182	121	75-125	17.3	0.373	20		
Copper	17.37	0.66	6.649	12.19	78	75-125	18.92	8.56	20		
Lead	22.6	0.33	6.649	15.44	108	75-125	22.16	1.94	20	S	
Nickel	18.62	0.33	6.649	10.06	129	75-125	18.3	1.72	20		
Selenium	6.177	0.66	6.649	0.4874	85.6	75-125	6.268	1.47	20		
Silver	7.346	0.33	6.649	-0.04836	111	75-125	7.507	2.18	20		
Zinc	63.8	0.66	6.649	44.66	288	75-125	61.16	4.24	20		SO

MSD				Sample ID: 14101431-01BMSD				Units:mg/Kg		Analysis Date: 10/27/2014 12:55 PM	
Client ID:			Run ID: ICP2_141027A			SeqNo:3002145		Prep Date: 10/24/2014		DF: 10	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium		1969	3.3	6.649	3766	-27000	75-125	3587	58.2	20	SRO

The following samples were analyzed in this batch: 14101449-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64304**      Instrument ID **ICP2**      Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>14101449-01CDUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>10/27/2014 02:03 PM</b>		
Client ID: <b>Batch 2 PA 322-34</b>		Run ID: <b>ICP2_141027A</b>				SeqNo: <b>3002338</b>		Prep Date: <b>10/27/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	210.3	5.0	0	0	0	0-0	263.3	22.4		
Magnesium	208.6	2.0	0	0	0	0-0	262	22.7		
Sodium	665.8	2.0	0	0	0	0-0	799.4	18.2		

<b>DUP</b>		Sample ID: <b>14101449-01CDUP</b>				Units: <b>none</b>		Analysis Date: <b>10/27/2014</b>		
Client ID: <b>Batch 2 PA 322-34</b>		Run ID: <b>SAR_141027A</b>				SeqNo: <b>3002349</b>		Prep Date: <b>10/27/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	7.788	0.010	0	0	0		8.347	6.93	50	

The following samples were analyzed in this batch:

14101449-01C

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64324**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MBLK				Sample ID: <b>SBLKS1-64324-64324</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>10/27/2014 03:12 PM</b>		
Client ID:			Run ID: <b>SVMS8_141027A</b>			SeqNo: <b>3002687</b>		Prep Date: <b>10/25/2014</b>		DF: <b>1</b>	
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									
<i>Surr: 2-Fluorobiphenyl</i>	<i>1272</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>76.3</i>	<i>12-100</i>	<i>0</i>				
<i>Surr: 4-Terphenyl-d14</i>	<i>1951</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>117</i>	<i>25-137</i>	<i>0</i>				
<i>Surr: Nitrobenzene-d5</i>	<i>940</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>56.4</i>	<i>37-107</i>	<i>0</i>				

LCS				Sample ID: SLCSS1-64324-64324				Units: µg/Kg		Analysis Date: 10/27/2014 03:32 PM	
Client ID:			Run ID: SVMS8_141027A			SeqNo: 3002688		Prep Date: 10/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	506	6.7	666.7	0	75.9	45-110	0				
Acenaphthylene	560	6.7	666.7	0	84	45-105	0				
Anthracene	619	6.7	666.7	0	92.8	55-105	0				
Benzo(a)anthracene	605	6.7	666.7	0	90.7	50-110	0				
Benzo(a)pyrene	649	6.7	666.7	0	97.3	50-110	0				
Benzo(b)fluoranthene	668	6.7	666.7	0	100	45-115	0				
Benzo(g,h,i)perylene	618.3	6.7	666.7	0	92.7	40-125	0				
Benzo(k)fluoranthene	673.7	6.7	666.7	0	101	45-115	0				
Chrysene	662	6.7	666.7	0	99.3	55-110	0				
Dibenzo(a,h)anthracene	650.7	6.7	666.7	0	97.6	40-125	0				
Fluoranthene	642.3	6.7	666.7	0	96.3	55-115	0				
Fluorene	548.3	6.7	666.7	0	82.2	50-110	0				
Indeno(1,2,3-cd)pyrene	662.3	6.7	666.7	0	99.3	40-120	0				
Naphthalene	512	6.7	666.7	0	76.8	40-105	0				
Pyrene	681.3	6.7	666.7	0	102	45-125	0				
Surr: 2-Fluorobiphenyl	1325	0	1667	0	79.5	12-100	0				
Surr: 4-Terphenyl-d14	1914	0	1667	0	115	25-137	0				
Surr: Nitrobenzene-d5	994	0	1667	0	59.6	37-107	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64324**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: 14101322-03B MS			Units: µg/Kg		Analysis Date: 10/27/2014 04:11 PM	
Client ID:		Run ID: SVMS8_141027A			SeqNo: 3002690		Prep Date: 10/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1376	20	1955	0	70.3	45-110	0			
Acenaphthylene	1549	20	1955	66.93	75.8	45-105	0			
Anthracene	1753	20	1955	72.93	85.9	55-105	0			
Benzo(a)anthracene	2067	20	1955	453.5	82.5	50-110	0			
Benzo(a)pyrene	2296	20	1955	602.4	86.6	50-110	0			
Benzo(b)fluoranthene	2344	20	1955	627.4	87.8	45-115	0			
Benzo(g,h,i)perylene	2300	20	1955	410.6	96.6	40-125	0			
Benzo(k)fluoranthene	1953	20	1955	226.8	88.3	45-115	0			
Chrysene	2224	20	1955	505.5	87.9	55-110	0			
Dibenzo(a,h)anthracene	2137	20	1955	92.91	105	40-125	0			
Fluoranthene	2191	20	1955	578.4	82.5	55-115	0			
Fluorene	1557	20	1955	18.98	78.7	50-110	0			
Indeno(1,2,3-cd)pyrene	2389	20	1955	391.6	102	40-120	0			
Naphthalene	1216	20	1955	13.99	61.5	40-105	0			
Pyrene	2416	20	1955	673.3	89.1	45-125	0			
Surr: 2-Fluorobiphenyl	3257	0	4888	0	66.6	12-100	0			
Surr: 4-Terphenyl-d14	5049	0	4888	0	103	25-137	0			
Surr: Nitrobenzene-d5	2335	0	4888	0	47.8	37-107	0			

MSD				Sample ID: 14101322-03B MSD			Units: µg/Kg		Analysis Date: 10/27/2014 04:31 PM	
Client ID:		Run ID: SVMS8_141027A			SeqNo: 3002691		Prep Date: 10/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1525	20	1971	0	77.4	45-110	1376	10.3	30	
Acenaphthylene	1700	20	1971	66.93	82.8	45-105	1549	9.32	30	
Anthracene	1843	20	1971	72.93	89.8	55-105	1753	5	30	
Benzo(a)anthracene	2186	20	1971	453.5	87.9	50-110	2067	5.6	30	
Benzo(a)pyrene	2353	20	1971	602.4	88.8	50-110	2296	2.44	30	
Benzo(b)fluoranthene	2266	20	1971	627.4	83.2	45-115	2344	3.38	30	
Benzo(g,h,i)perylene	2136	20	1971	410.6	87.6	40-125	2300	7.39	30	
Benzo(k)fluoranthene	1965	20	1971	226.8	88.2	45-115	1953	0.595	30	
Chrysene	2350	20	1971	505.5	93.6	55-110	2224	5.52	30	
Dibenzo(a,h)anthracene	1888	20	1971	92.91	91.1	40-125	2137	12.4	30	
Fluoranthene	2319	20	1971	578.4	88.3	55-115	2191	5.67	30	
Fluorene	1673	20	1971	18.98	83.9	50-110	1557	7.18	30	
Indeno(1,2,3-cd)pyrene	2255	20	1971	391.6	94.5	40-120	2389	5.8	30	
Naphthalene	1504	20	1971	13.99	75.6	40-105	1216	21.1	30	
Pyrene	2577	20	1971	673.3	96.6	45-125	2416	6.46	30	
Surr: 2-Fluorobiphenyl	3908	0	4927	0	79.3	12-100	3257	18.2	40	
Surr: 4-Terphenyl-d14	5200	0	4927	0	106	25-137	5049	2.94	40	
Surr: Nitrobenzene-d5	2872	0	4927	0	58.3	37-107	2335	20.6	40	

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

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Batch ID: **64324** Instrument ID **SVMS8** Method: **SW846 8270D**

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The following samples were analyzed in this batch:

14101449-01B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc  
 Work Order: 14101449  
 Project: WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64351** Instrument ID **VMS8** Method: **SW8260B**

MBLK				Sample ID: MBLK-64351-64351				Units: µg/Kg			Analysis Date: 10/27/2014 05:19 PM			
Client ID:				Run ID: VMS8_141027A				SeqNo:3003610			Prep Date: 10/27/2014		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	1024	0	1000	0	102	70-130	0							
Surr: 4-Bromofluorobenzene	1090	0	1000	0	109	70-130	0							
Surr: Dibromofluoromethane	958	0	1000	0	95.8	70-130	0							
Surr: Toluene-d8	1034	0	1000	0	103	70-130	0							

LCS				Sample ID: LCS-64351-64351			Units: µg/Kg		Analysis Date: 10/27/2014 02:51 PM		
Client ID:			Run ID: VMS8_141027A			SeqNo:3003607		Prep Date: 10/27/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1052	30	1000	0	105	75-125	0				
Ethylbenzene	1052	30	1000	0	105	75-125	0				
m,p-Xylene	2114	60	2000	0	106	80-125	0				
o-Xylene	1054	30	1000	0	105	75-125	0				
Toluene	1052	30	1000	0	105	70-125	0				
Xylenes, Total	3168	90	3000	0	106	75-125	0				
Surr: 1,2-Dichloroethane-d4	1012	0	1000	0	101	70-130	0				
Surr: 4-Bromofluorobenzene	1079	0	1000	0	108	70-130	0				
Surr: Dibromofluoromethane	956.5	0	1000	0	95.6	70-130	0				
Surr: Toluene-d8	1062	0	1000	0	106	70-130	0				

MS					Sample ID: 14101485-10A MS			Units: µg/Kg		Analysis Date: 10/28/2014 08:39 AM	
Client ID:			Run ID: VMS7_141027B			SeqNo:3004013		Prep Date: 10/27/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	978.5	30	1000	0	97.8	75-125	0				
Ethylbenzene	996	30	1000	0	99.6	75-125	0				
m,p-Xylene	1976	60	2000	0	98.8	80-125	0				
o-Xylene	982.5	30	1000	0	98.2	75-125	0				
Toluene	981	30	1000	0	98.1	70-125	0				
Xylenes, Total	2958	90	3000	0	98.6	75-125	0				
Surr: 1,2-Dichloroethane-d4	983	0	1000	0	98.3	70-130	0				
Surr: 4-Bromofluorobenzene	1012	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	974.5	0	1000	0	97.4	70-130	0				
Surr: Toluene-d8	979	0	1000	0	97.9	70-130	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64351**      Instrument ID **VMS8**      Method: **SW8260B**

MSD				Sample ID: 14101485-10A MSD				Units: µg/Kg		Analysis Date: 10/28/2014 09:04 AM	
Client ID:			Run ID: VMS7_141027B			SeqNo: 3004023		Prep Date: 10/27/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	970.5	30	1000	0	97	75-125	978.5	0.821	30		
Ethylbenzene	993.5	30	1000	0	99.4	75-125	996	0.251	30		
m,p-Xylene	1990	60	2000	0	99.5	80-125	1976	0.706	30		
o-Xylene	980	30	1000	0	98	75-125	982.5	0.255	30		
Toluene	975.5	30	1000	0	97.6	70-125	981	0.562	30		
Xylenes, Total	2970	90	3000	0	99	75-125	2958	0.388	30		
Surr: 1,2-Dichloroethane-d4	992	0	1000	0	99.2	70-130	983	0.911	30		
Surr: 4-Bromofluorobenzene	1009	0	1000	0	101	70-130	1012	0.297	30		
Surr: Dibromofluoromethane	959.5	0	1000	0	96	70-130	974.5	1.55	30		
Surr: Toluene-d8	992.5	0	1000	0	99.2	70-130	979	1.37	30		

The following samples were analyzed in this batch: 14101449-01A

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64288** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-64288-64288				Units:s.u.			Analysis Date: 10/24/2014 02:00 PM			
Client ID:				Run ID: WETCHEM_141024H				SeqNo:2998951			Prep Date: 10/24/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		3.99	0	4	0	99.8	90-110	0						

DUP				Sample ID: 14101404-01A DUP				Units:s.u.			Analysis Date: 10/24/2014 02:00 PM		
Client ID:				Run ID: WETCHEM_141024H				SeqNo:2998955		Prep Date: 10/24/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH		7.77	0	0	0	0	0-0	7.84	0.897	20			

DUP				Sample ID: 14101431-01B DUP				Units: s.u.			Analysis Date: 10/24/2014 02:00 PM			
Client ID:				Run ID: WETCHEM_141024H				SeqNo: 2998960			Prep Date: 10/24/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		8.37	0	0	0	0	0-0	8.43	0.714	20				

The following samples were analyzed in this batch:

14101449-01B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64304** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>14101449-01C DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>10/27/2014 05:00 PM</b>		
Client ID: <b>Batch 2 PA 322-34</b>			Run ID: <b>WETCHEM_141027P</b>			SeqNo: <b>3002615</b>		Prep Date: <b>10/27/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	6.84	0.050	0	0	0		6.97	1.88	50	

The following samples were analyzed in this batch:

14101449-01C

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **64349**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-64349-64349</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_141027J</b>				SeqNo: <b>3002457</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.50

<b>LCS</b>		Sample ID: <b>LCS-64349-64349</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_141027J</b>				SeqNo: <b>3002456</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.82      0.50      2      0      91      80-120      0

<b>MS</b>		Sample ID: <b>14101431-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_141027J</b>				SeqNo: <b>3002449</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.49      1.961      0.06275      -3.2      75-125      0      S

<b>MS</b>		Sample ID: <b>14101431-01B MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_141027J</b>				SeqNo: <b>3002451</b>		Prep Date: <b>10/24/2014</b>		DF: <b>100</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      594      50      664      0.06275      89.5      75-125      0

<b>MSD</b>		Sample ID: <b>14101431-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>10/27/2014 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_141027J</b>				SeqNo: <b>3002450</b>		Prep Date: <b>10/24/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.49      1.961      0.06275      -3.2      75-125      0.1137      0      20      S

The following samples were analyzed in this batch:

14101449-01B

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 14101449  
**Project:** WPX PA 322-34 Batch 2 10.23.14

## QC BATCH REPORT

Batch ID: **R151111** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R151111				Units: % of sample		Analysis Date: 10/24/2014 02:00 PM			
Client ID:			Run ID: MOIST_141024B			SeqNo: 3000376		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-R151111				Units: % of sample		Analysis Date: 10/24/2014 02:00 PM			
Client ID:		Run ID: MOIST_141024B				SeqNo: 3000375		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 99.99 0.050 100 0 100 99.5-100.5 0

<b>DUP</b>				Sample ID: <b>14101327-02A DUP</b>				Units: % of sample			Analysis Date: <b>10/24/2014 02:00 PM</b>			
Client ID:				Run ID: <b>MOIST_141024B</b>				SeqNo: <b>3000355</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 58.61 0.050 0 0 0 0-0 57.96 1.12 20

<b>DUP</b>				Sample ID: <b>14101327-11A DUP</b>				Units: % of sample			Analysis Date: <b>10/24/2014 02:00 PM</b>			
Client ID:				Run ID: <b>MOIST_141024B</b>				SeqNo: <b>3000365</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 22.76 0.050 0 0 0 0-0 24.13 5.84 20

The following samples were analyzed in this batch:

14101449-01B

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



Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **24-Oct-14 09:30**

Work Order: **14101449**

Received by: **DS**

Checklist completed by <u>Diane Shaw</u>	24-Oct-14	Reviewed by: <u>Ann Preston</u>	24-Oct-14
eSignature	Date	eSignature	Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>10/24/2014 12:26:18 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

**FedEx** NEW Package  
Express US Airbill

FedEx  
Tracking  
Number

8022 0273 2111

Form  
ID No. 0200

1 From  
Date 10/23/11  
Sender's Name Mike Lobato Phone 970 361-2216  
Company HRL Compliance Solutions Inc.  
Address 2385 Fk Rd.  
City Grand Junction State CO ZIP 81505

2 Your Internal Billing Reference

3 To  
Recipient's Name Sample Receiving Phone 616 399-6070  
Company ALS Environmental  
Address 3352 128th Ave  
City Holland State MI ZIP 49424

HOLD Weekday  
FedEx location address  
REQUIRED. NOT available for  
FedEx First Overnight.

HOLD Saturday  
FedEx location address  
REQUIRED. Available ONLY for  
FedEx Priority Overnight and  
FedEx 2Day to select locations.

4 Express Package Service \*To meet business  
NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.  
For packages over 150 lbs., see the new  
FedEx Express Freight US Airbill.

Next Business Day

2 or 3 Business Days

☐ FedEx First Overnight  
Earliest next business morning delivery to select  
locations. Friday shipments will be delivered on  
Monday unless SATURDAY Delivery is selected.

☐ FedEx 2Day A.M.  
Second business morning.  
Saturday Delivery NOT available.

☒ FedEx Priority Overnight  
Next business morning. \*Friday shipments will be  
delivered on Monday unless SATURDAY Delivery  
is selected.

☐ FedEx 2Day  
Second business afternoon. \*Thursday shipments  
will be delivered on Monday unless SATURDAY  
Delivery is selected.

☐ FedEx Standard Overnight  
Next business afternoon.  
Saturday Delivery NOT available.

☐ FedEx Express Saver  
Third business day.  
Saturday Delivery NOT available.

5 Packaging \*Declared value limit \$500.

☐ FedEx Envelope\* ☐ FedEx Pak\* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ No Signature Required  
Packages may be left without  
receiving a signature for delivery.

☐ Direct Signature  
Signature of recipient's address  
may sign for delivery. Fee applies.

☐ Indirect Signature  
If no one is available at recipient's  
address, someone at a neighboring  
address may sign for delivery. Fee  
recommended delivery only. Fee applies.

Does this shipment contain dangerous goods?

Use box must be checked.

☒ No ☐ Yes  
Do you attached  
Shipper's Declaration.

☐ Yes  
Shipper's Declaration  
NOT required.

☐ Dry Ice  
Dry Ice, A, UN 1845

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging  
or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment Bill to:

Sender  
Account No. in Section  
I will be billed.

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip.  
Acct. No.

☒ Recipient

☐ Third Party

☐ Credit Card

☐ Cash/Check

Total Packages Total Weight

Credit Card Acct.

\*Our liability is limited to \$5000 unless you declare a higher value. See the current FedEx Service Guide for details.

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8022 0273 2111



**ALS Environmental**

3352 128th Avenue  
Holland, Michigan 49424  
Tel. +1 616 399 6070  
Fax +1 616 399 6185

**CUSTODY SEAL**

Date: 10/23/11 Time: 1734  
Name: Mike Lobato  
Company: HRL

Seal Broken By:

Date:



11-Mar-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 322-34 Batch 2**

Work Order: **1503375**

Dear Karolina,

ALS Environmental received 1 sample on 07-Mar-2015 10:30 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 9.

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

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 2  
**Work Order:** 1503375

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1503375-01	PA 322-34 Batch 2	Soil		3/5/2015 13:40	3/7/2015 10:30	<input type="checkbox"/>

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 2  
**WorkOrder:** 1503375

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

# ALS Group USA, Corp

Date: 11-Mar-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 2  
**Sample ID:** PA 322-34 Batch 2  
**Collection Date:** 3/5/2015 01:40 PM

**Work Order:** 1503375  
**Lab ID:** 1503375-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>74</b>		<b>SW8015M</b>		Prep: SW3541 / 3/10/15	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	<i>39.1</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	<i>3/11/2015 07:07 AM</i>
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>92</b>		<b>SW8015</b>		Prep: SW5035 / 3/9/15	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	<i>105</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	<i>3/9/2015 09:33 PM</i>
<b>MOISTURE</b>						
<b>Moisture</b>	<b>16</b>		<b>E160.3M</b>			Analyst: <b>EVB</b>
			<b>0.050</b>	<b>% of sample</b>	<b>1</b>	<b>3/10/2015 02:55 PM</b>

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



# ALS Group USA, Corp

Date: 11-Mar-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503375  
**Project:** PA 22-34, PA 322-34 Batch 2

## QC BATCH REPORT

Batch ID: **68431** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-68431-68431</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/10/2015 10:08 PM</b>		
Client ID:		Run ID: <b>GC8_150310A</b>				SeqNo: <b>3172356</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.458	0	2	0	72.9	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-68431-68431</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/10/2015 10:38 PM</b>		
Client ID:		Run ID: <b>GC8_150310A</b>				SeqNo: <b>3172357</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	170	5.0	200	0	85	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.372	0	2	0	68.6	39-133	0			

<b>MS</b>		Sample ID: <b>1503349-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/10/2015 11:08 PM</b>		
Client ID:		Run ID: <b>GC8_150310A</b>				SeqNo: <b>3172358</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	301.5	8.3	331	16.43	86.1	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.236	0	3.31	0	67.6	39-133	0			

<b>MSD</b>		Sample ID: <b>1503349-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>3/10/2015 11:38 PM</b>		
Client ID:		Run ID: <b>GC8_150310A</b>				SeqNo: <b>3172359</b>		Prep Date: <b>3/10/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	304.9	8.3	331.6	16.43	87	48-110	301.5	1.11	30	
<i>Surr: 4-Terphenyl-d14</i>	2.283	0	3.316	0	68.8	39-133	2.236	2.06	30	

The following samples were analyzed in this batch: 1503375-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503375  
**Project:** PA 22-34, PA 322-34 Batch 2

## QC BATCH REPORT

Batch ID: **68405**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-68405-68405</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 03:45 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170917</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
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	5086	0	5000	0	102	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-68405-68405</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 03:20 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170916</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	489500	2,500	500000	0	97.9	70-130	0			
Surr: Toluene-d8	4396	0	5000	0	87.9	50-150	0			

<b>MS</b>		Sample ID: <b>1503349-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 07:04 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170919</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	473200	2,500	500000	0	94.6	70-130	0			
Surr: Toluene-d8	4373	0	5000	0	87.5	50-150	0			

<b>MSD</b>		Sample ID: <b>1503349-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>3/9/2015 07:29 PM</b>		
Client ID:		Run ID: <b>GC9_150309A</b>				SeqNo: <b>3170920</b>		Prep Date: <b>3/9/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	467200	2,500	500000	0	93.4	70-130	473200	1.28	30	
Surr: Toluene-d8	4320	0	5000	0	86.4	50-150	4373	1.21	30	

The following samples were analyzed in this batch:

1503375-01A

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1503375  
**Project:** PA 22-34, PA 322-34 Batch 2

## QC BATCH REPORT

Batch ID: **R158917** Instrument ID **MOIST** Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R158917</b>				Units: % of sample		Analysis Date: <b>3/10/2015 02:55 PM</b>		
Client ID:		Run ID: <b>MOIST_150310B</b>				SeqNo: <b>3172790</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

<b>LCS</b>		Sample ID: <b>LCS-R158917</b>				Units: % of sample		Analysis Date: <b>3/10/2015 02:55 PM</b>		
Client ID:		Run ID: <b>MOIST_150310B</b>				SeqNo: <b>3172789</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1503373-01A DUP</b>				Units: % of sample		Analysis Date: <b>3/10/2015 02:55 PM</b>		
Client ID:		Run ID: <b>MOIST_150310B</b>				SeqNo: <b>3172780</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.44 0.050 0 0 0 14.1 4.79 20

<b>DUP</b>		Sample ID: <b>1503414-01B DUP</b>				Units: % of sample		Analysis Date: <b>3/10/2015 02:55 PM</b>		
Client ID:		Run ID: <b>MOIST_150310B</b>				SeqNo: <b>3172785</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 9.91 0.050 0 0 0 9.46 4.65 20

The following samples were analyzed in this batch:

1503375-01A

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



# ALS Laboratory Group

HOLLAND, Michigan 49424

## Chain-of-Custody

Form 202r6

WORKORDER #

1503375

PAGE

1 of 1

DISPOSAL

By Lab or Return to Client

PROJECT NAME PA 22-34, PA 322-34 Batch 2

SITE ID PA 22-34, PA 322-34 Batch 2

DATE

5 day

PROJECT No.

EDD FORMAT

PURCHASE ORDER

COMPANY NAME WPX Energy

BILL TO COMPANY WPX Energy

SEND REPORT TO Blaney

INVOICE ATTN TO Karolina Blaney; Leo Braun

ADDRESS

ADDRESS 1058 Co Rd 215

CITY / STATE / ZIP

CITY / STATE / ZIP Parachute CO 81635

PHONE

PHONE 970-683-2285

FAX

FAX

E-MAIL

Karolina.blaney@wpxenergy.com

E-MAIL

Karolina.blaney@wpxenergy.com;  
leo.braun@wpxenergy.com

Lab ID

Field ID

Matrix

Sample Date

Sample Time

# Bottles

Pres.

QC

1

PA 322-34 Batch 2

S

3/5/2015

1:40

1

8

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:

4.0°C  
@

QC PACKAGE (check below)

X

LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms + raw data)

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

SIGNATURE

PRINTED NAME

DATE

TIME

RELINQUISHED BY

Karolina Blaney

Karolina Blaney

3/5/2015

18:00

RECEIVED BY

LA

LA

3-5-15

16:00

RELINQUISHED BY

LA

LA

3-5-15

17:00

RECEIVED BY

LA

LA

3/7/15

1030

RELINQUISHED BY

LA

LA

RECEIVED BY

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **07-Mar-15 10:30**

Work Order: **1503375**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

07-Mar-15  
Date

Reviewed by: Chad Whelton  
eSignature

09-Mar-15  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.0 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>3/7/2015</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

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Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



26-May-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 322-34 Batch 3**

Work Order: **1505922**

Dear Karolina,

ALS Environmental received 1 sample on 16-May-2015 12:45 PM 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,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 3  
**Work Order:** 1505922

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1505922-01	PA 22-34, PA 322-34 Batch 3	Soil		5/13/2015 10:30	5/16/2015 12:45	<input type="checkbox"/>

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**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34, PA 322-34 Batch 3**Work Order:** 1505922**Case Narrative**

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Batch 71186, Method VOC\_8260\_S, Sample 1505922-01A: VOC surrogate recovery high due to matrix interference.

Batch 71347, Method CR6\_7196\_S, Sample 1505922-01A MS: The MS recovery was outside of the control limit for Hexavalent Chromium. However, the MSD recovery and the RPD between the MS and MSD were in control. No qualification is required.



<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
µg/Kg	Micrograms per Kilogram
mg/Kg	Milligrams per Kilogram
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: 26-May-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 3  
**Sample ID:** PA 22-34, PA 322-34 Batch 3  
**Collection Date:** 5/13/2015 10:30 AM

**Work Order:** 1505922  
**Lab ID:** 1505922-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>			<b>SW8015M</b>		Analyst: <b>IT</b>	
<b>DRO (C10-C28)</b>	<b>180</b>		<b>4.1</b>	<b>mg/Kg</b>	1	5/20/2015 09:28 PM
Surr: 4-Terphenyl-d14	60.1		39-133	%REC	1	5/20/2015 09:28 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>			<b>SW8015D</b>		Prep: SW5035 / 5/18/15	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>590</b>		<b>2.5</b>	<b>mg/Kg</b>	1	5/19/2015 12:15 PM
Surr: Toluene-d8	111		50-150	%REC	1	5/19/2015 12:15 PM
<b>MERCURY BY CVAA</b>			<b>SW7471B</b>		Prep: SW7471 / 5/19/15	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.024</b>		<b>0.012</b>	<b>mg/Kg</b>	1	5/20/2015 03:06 PM
<b>METALS ANALYSIS BY ICP</b>			<b>SW846 6010C</b>		Prep: SW3050B / 5/19/15	Analyst: <b>JEC</b>
<b>Arsenic</b>	<b>8.6</b>		<b>0.38</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
<b>Barium</b>	<b>180</b>		<b>0.38</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
Cadmium	ND		0.75	mg/Kg	1	5/20/2015 05:20 PM
<b>Chromium</b>	<b>9.0</b>		<b>0.38</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
<b>Copper</b>	<b>12</b>		<b>0.75</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
<b>Lead</b>	<b>11</b>		<b>0.38</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
<b>Nickel</b>	<b>11</b>		<b>0.38</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
Selenium	ND		0.77	mg/Kg	1	5/22/2015 02:16 AM
Silver	ND		0.38	mg/Kg	1	5/22/2015 02:16 AM
<b>Zinc</b>	<b>42</b>		<b>0.75</b>	<b>mg/Kg</b>	1	5/20/2015 05:20 PM
<b>SOLUBLE CATIONS FOR SAR</b>			<b>SW846 6010C</b>		Prep: USDA Method 20B / 5/21/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>160</b>		<b>5.0</b>	<b>mg/L</b>	10	5/21/2015 03:51 PM
<b>Magnesium</b>	<b>150</b>		<b>2.0</b>	<b>mg/L</b>	10	5/21/2015 03:51 PM
<b>Sodium</b>	<b>800</b>		<b>2.0</b>	<b>mg/L</b>	10	5/21/2015 03:51 PM
<b>SODIUM ADSORPTION RATIO</b>			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 5/21/15	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>11</b>		<b>0.010</b>	<b>none</b>	1	5/21/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			<b>SW846 8270D</b>		Prep: SW3541 / 5/20/15	Analyst: <b>RS</b>
Acenaphthene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Anthracene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Benzo(a)anthracene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Benzo(a)pyrene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Benzo(b)fluoranthene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Benzo(g,h,i)perylene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Benzo(k)fluoranthene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Chrysene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Dibenzo(a,h)anthracene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM

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

# ALS Group USA, Corp

Date: 26-May-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 3  
**Sample ID:** PA 22-34, PA 322-34 Batch 3  
**Collection Date:** 5/13/2015 10:30 AM

**Work Order:** 1505922  
**Lab ID:** 1505922-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Fluorene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Indeno(1,2,3-cd)pyrene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
<b>Naphthalene</b>	<b>60</b>		<b>6.5</b>	<b>µg/Kg</b>	1	5/20/2015 10:52 PM
Pyrene	ND		6.5	µg/Kg	1	5/20/2015 10:52 PM
Surr: 2-Fluorobiphenyl	58.4		12-100	%REC	1	5/20/2015 10:52 PM
Surr: 4-Terphenyl-d14	75.2		25-137	%REC	1	5/20/2015 10:52 PM
Surr: Nitrobenzene-d5	54.3		37-107	%REC	1	5/20/2015 10:52 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>		Prep: SW5035 / 5/18/15	Analyst: <b>JNJ</b>
Benzene	ND		30	µg/Kg	1	5/22/2015 09:33 PM
Ethylbenzene	ND		30	µg/Kg	1	5/22/2015 09:33 PM
<b>m,p-Xylene</b>	<b>740</b>		<b>60</b>	<b>µg/Kg</b>	1	5/22/2015 09:33 PM
<b>o-Xylene</b>	<b>190</b>		<b>30</b>	<b>µg/Kg</b>	1	5/22/2015 09:33 PM
Toluene	ND		30	µg/Kg	1	5/22/2015 09:33 PM
<b>Xylenes, Total</b>	<b>930</b>		<b>90</b>	<b>µg/Kg</b>	1	5/22/2015 09:33 PM
Surr: 1,2-Dichloroethane-d4	84.6		70-130	%REC	1	5/22/2015 09:33 PM
Surr: 4-Bromofluorobenzene	96.4		70-130	%REC	1	5/22/2015 09:33 PM
Surr: Dibromofluoromethane	95.0		70-130	%REC	1	5/22/2015 09:33 PM
Surr: Toluene-d8	136	S	70-130	%REC	1	5/22/2015 09:33 PM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 5/21/15	Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>6.6</b>		<b>0.050</b>	<b>mmhos/cm @2</b>	10	5/22/2015 12:00 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JJG</b>
<b>Chromium, Trivalent</b>	<b>9.0</b>		<b>0.50</b>	<b>mg/Kg</b>	1	5/22/2015 08:04 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep: SW3060A / 5/20/15	Analyst: <b>MB</b>
<b>Chromium, Hexavalent</b>	ND		0.88	mg/Kg	1	5/21/2015 04:00 PM
<b>PH</b>			<b>SW9045D</b>		Prep: EXTRACT / 5/19/15	Analyst: <b>KF</b>
<b>pH</b>	<b>7.8</b>			<b>s.u.</b>	1	5/20/2015 02:30 PM

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

# ALS Group USA, Corp

Date: 26-May-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71275b** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-71275-71275b</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 03:58 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285042</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.606	0	2	0	80.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-71275-71275b</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 04:28 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285043</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	168.4	5.0	200	0	84.2	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.364	0	2	0	68.2	39-133	0			

<b>MS</b>		Sample ID: <b>1505886-11A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 04:58 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285044</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	288.4	8.0	318.4	22.73	83.4	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.564	0	3.184	0	80.5	39-133	0			

<b>MSD</b>		Sample ID: <b>1505886-11A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 05:28 PM</b>		
Client ID:		Run ID: <b>GC8_150520A</b>				SeqNo: <b>3285045</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	305.1	8.3	331.9	22.73	85.1	48-110	288.4	5.62	30	
<i>Surr: 4-Terphenyl-d14</i>	2.611	0	3.319	0	78.7	39-133	2.564	1.8	30	

The following samples were analyzed in this batch: 1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71190**      Instrument ID **GC9**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-71190-71190</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/18/2015 11:50 PM</b>		
Client ID:		Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280124</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>
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	5614	0	5000	0	112	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-71190-71190</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/18/2015 11:25 PM</b>		
Client ID:		Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280123</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	575700	2,500	500000	0	115	70-130	0			
Surr: Toluene-d8	5515	0	5000	0	110	50-150	0			

<b>MS</b>		Sample ID: <b>1505922-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/19/2015 12:40 PM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280131</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	1161000	2,500	500000	587100	115	70-130	0			
Surr: Toluene-d8	5474	0	5000	0	109	50-150	0			

<b>MSD</b>		Sample ID: <b>1505922-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/19/2015 01:04 AM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>GC9_150518A</b>				SeqNo: <b>3280125</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	1140000	2,500	500000	587100	111	70-130	1161000	1.79	30	
Surr: Toluene-d8	5658	0	5000	0	113	50-150	5474	3.29	30	

The following samples were analyzed in this batch:

1505922-01A

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71252** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-71252-71252					Units: mg/Kg		Analysis Date: 5/19/2015 04:01 PM		
Client ID:			Run ID: HG1_150519A				SeqNo: 3282217		Prep Date: 5/19/2015		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-71252-71252				Units: mg/Kg		Analysis Date: 5/19/2015 04:03 PM		
Client ID:		Run ID: HG1_150519A				SeqNo: 3282218		Prep Date: 5/19/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1867 0.020 0.1665 0 112 80-120 0

MS		Sample ID: 1505726-02AMS					Units: mg/Kg		Analysis Date: 5/19/2015 04:10 PM		
Client ID:			Run ID: HG1_150519A			SeqNo: 3282221		Prep Date: 5/19/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1297 0.014 0.1199 0.001971 107 75-125 0

<b>MSD</b>		Sample ID: <b>1505726-02AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/19/2015 04:12 PM</b>		
Client ID:		Run ID: <b>HG1_150519A</b>			SeqNo: <b>3282222</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1281 0.014 0.1184 0.001971 107 75-125 0.1297 1.22 35

The following samples were analyzed in this batch:

1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71240** Instrument ID **ICP2** Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>1505922-01ADUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286877</b>		Prep Date: <b>5/21/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	257.9	5.0	0	0	0	0-0	160.1	46.8		
Magnesium	245.1	2.0	0	0	0	0-0	147.7	49.6		
Sodium	1176	2.0	0	0	0	0-0	799.8	38		

<b>DUP</b>		Sample ID: <b>1505922-01ADUP</b>				Units: <b>none</b>		Analysis Date: <b>5/21/2015</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>SAR_150521A</b>				SeqNo: <b>3287916</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	12.58	0.010	0	0	0		10.96	13.8	50	

The following samples were analyzed in this batch: | 1505922-01A |

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

# QC BATCH REPORT

Batch ID: **71241** Instrument ID **ICP2** Method: **SW846 6010C**

<b>MBLK</b>		Sample ID: <b>MBLK-71241-71241</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/20/2015 04:07 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284513</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.01465	0.25								J
Copper	0.0399	0.50								J
Lead	0.03381	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

<b>LCS</b>		Sample ID: <b>LCS-71241-71241</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/20/2015 04:13 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284516</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.977	0.25	5	0	99.5	80-120	0			
Barium	5.28	0.25	5	0	106	80-120	0			
Cadmium	5.161	0.50	5	0	103	80-120	0			
Chromium	5.327	0.25	5	0	107	80-120	0			
Copper	5.466	0.50	5	0	109	80-120	0			
Lead	5.32	0.25	5	0	106	80-120	0			
Nickel	5.471	0.25	5	0	109	80-120	0			
Selenium	4.904	0.50	5	0	98.1	80-120	0			
Silver	2.834	0.25	5	0	56.7	80-120	0			S
Zinc	5.381	0.50	5	0	108	80-120	0			

<b>MS</b>		Sample ID: <b>1505948-02AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 05:48 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284553</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.08	0.34	6.72	11.05	89.7	75-125	0			
Barium	90.97	0.34	6.72	67.43	350	75-125	0			SO
Cadmium	7.039	0.67	6.72	0.1215	103	75-125	0			
Chromium	16.5	0.34	6.72	9.478	104	75-125	0			
Copper	102.3	0.67	6.72	88.92	199	75-125	0			SO
Lead	251.3	0.34	6.72	192.2	880	75-125	0			SO
Nickel	20.79	0.34	6.72	15.38	80.5	75-125	0			
Selenium	7.862	0.67	6.72	0.7581	106	75-125	0			
Silver	6.809	0.34	6.72	0.1588	99	75-125	0			
Zinc	128.6	0.67	6.72	104.9	353	75-125	0			SO

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71241** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: <b>1505948-02AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/20/2015 05:53 PM</b>		
Client ID:		Run ID: <b>ICP2_150520A</b>				SeqNo: <b>3284556</b>		Prep Date: <b>5/19/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.27	0.33	6.693	11.05	92.9	75-125	17.08	1.11	20	
Barium	88.39	0.33	6.693	67.43	313	75-125	90.97	2.87	20	SO
Cadmium	7.182	0.67	6.693	0.1215	105	75-125	7.039	2.01	20	
Chromium	16.33	0.33	6.693	9.478	102	75-125	16.5	0.991	20	
Copper	101.4	0.67	6.693	88.92	186	75-125	102.3	0.912	20	SO
Lead	221.7	0.33	6.693	192.2	441	75-125	251.3	12.5	20	SO
Nickel	21.43	0.33	6.693	15.38	90.3	75-125	20.79	3	20	
Selenium	8.211	0.67	6.693	0.7581	111	75-125	7.862	4.34	20	
Silver	7.034	0.33	6.693	0.1588	103	75-125	6.809	3.25	20	
Zinc	127.8	0.67	6.693	104.9	342	75-125	128.6	0.646	20	SO

The following samples were analyzed in this batch: 1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71353** Instrument ID **ICP2** Method: **SW846 6010C**

<b>MBLK</b>		Sample ID: <b>MBLK-71353-71353</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/22/2015 12:59 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286844</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

<b>LCS</b>		Sample ID: <b>LCS-71353-71353</b>				Units: <b>mg/L</b>		Analysis Date: <b>5/22/2015 01:05 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286845</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	3.642	0.19	3.748	0	97.2	80-120	0			
Barium	3.851	0.19	3.748	0	103	80-120	0			
Cadmium	3.7	0.37	3.748	0	98.7	80-120	0			
Chromium	3.96	0.19	3.748	0	106	80-120	0			
Copper	3.998	0.37	3.748	0	107	80-120	0			
Lead	4.005	0.19	3.748	0	107	80-120	0			
Nickel	3.864	0.19	3.748	0	103	80-120	0			
Selenium	3.748	0.37	3.748	0	100	80-120	0			
Silver	3.634	0.19	3.748	0	96.9	80-120	0			
Zinc	3.882	0.37	3.748	0	104	80-120	0			

<b>MS</b>		Sample ID: <b>1505898-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/22/2015 01:43 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286859</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.726	0.32	6.443	-0.007523	105	75-125	0			
Barium	6.806	0.32	6.443	0.008108	105	75-125	0			
Cadmium	5.925	0.64	6.443	-0.04998	92.7	75-125	0			
Chromium	7.255	0.32	6.443	0.4365	106	75-125	0			
Copper	6.607	0.64	6.443	0.01482	102	75-125	0			
Lead	6.822	0.32	6.443	0.001911	106	75-125	0			
Nickel	6.484	0.32	6.443	0.02621	100	75-125	0			
Selenium	10.57	0.64	6.443	2.751	121	75-125	0			
Silver	5.817	0.32	6.443	-0.01701	90.5	75-125	0			
Zinc	6.61	0.64	6.443	0.2825	98.2	75-125	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71353** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: <b>1505898-01AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/22/2015 01:49 AM</b>		
Client ID:		Run ID: <b>ICP2_150521A</b>				SeqNo: <b>3286860</b>		Prep Date: <b>5/21/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.718	0.33	6.545	-0.007523	103	75-125	6.726	0.125	20	
Barium	6.771	0.33	6.545	0.008108	103	75-125	6.806	0.512	20	
Cadmium	5.976	0.65	6.545	-0.04998	92.1	75-125	5.925	0.862	20	
Chromium	7.321	0.33	6.545	0.4365	105	75-125	7.255	0.916	20	
Copper	6.636	0.65	6.545	0.01482	101	75-125	6.607	0.444	20	
Lead	6.817	0.33	6.545	0.001911	104	75-125	6.822	0.0727	20	
Nickel	6.519	0.33	6.545	0.02621	99.2	75-125	6.484	0.538	20	
Selenium	10.72	0.65	6.545	2.751	122	75-125	10.57	1.41	20	
Silver	5.84	0.33	6.545	-0.01701	89.5	75-125	5.817	0.396	20	
Zinc	6.711	0.65	6.545	0.2825	98.2	75-125	6.61	1.5	20	

The following samples were analyzed in this batch: 1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71273**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-71273-71273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 07:56 PM</b>		
Client ID:		Run ID: <b>SVMS8_150520A</b>				SeqNo: <b>3287941</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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								
<i>Surr: 2-Fluorobiphenyl</i>	1314	0	1667	0	78.8	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1771	0	1667	0	106	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1601	0	1667	0	96.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-71273-71273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 08:16 PM</b>		
Client ID:		Run ID: <b>SVMS8_150520A</b>				SeqNo: <b>3287942</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	526.3	6.7	666.7	0	78.9	45-110	0			
Anthracene	568.3	6.7	666.7	0	85.2	55-105	0			
Benzo(a)anthracene	612.3	6.7	666.7	0	91.8	50-110	0			
Benzo(a)pyrene	629.3	6.7	666.7	0	94.4	50-110	0			
Benzo(b)fluoranthene	643.3	6.7	666.7	0	96.5	45-115	0			
Benzo(g,h,i)perylene	516	6.7	666.7	0	77.4	40-125	0			
Benzo(k)fluoranthene	652.3	6.7	666.7	0	97.8	45-115	0			
Chrysene	592.7	6.7	666.7	0	88.9	55-110	0			
Dibenzo(a,h)anthracene	535	6.7	666.7	0	80.2	40-125	0			
Fluoranthene	545.7	6.7	666.7	0	81.8	55-115	0			
Fluorene	537	6.7	666.7	0	80.5	50-110	0			
Indeno(1,2,3-cd)pyrene	550	6.7	666.7	0	82.5	40-120	0			
Naphthalene	485.7	6.7	666.7	0	72.8	40-105	0			
Pyrene	692	6.7	666.7	0	104	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1273	0	1667	0	76.4	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1929	0	1667	0	116	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1572	0	1667	0	94.3	37-107	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

# QC BATCH REPORT

Batch ID: **71273**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: <b>1505950-05A MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 10:13 PM</b>	
Client ID:				Run ID: <b>SVMS8_150520A</b>			SeqNo: <b>3287943</b>		Prep Date: <b>5/20/2015</b>	
									DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1403	520	1299	0	108	45-110	0			
Anthracene	1454	520	1299	0	112	55-105	0			S
Benzo(a)anthracene	1818	520	1299	798.1	78.5	50-110	0			
Benzo(a)pyrene	1610	520	1299	0	124	50-110	0			S
Benzo(b)fluoranthene	1844	520	1299	0	142	45-115	0			S
Benzo(g,h,i)perylene	1610	520	1299	0	124	40-125	0			
Benzo(k)fluoranthene	1273	520	1299	0	98	45-115	0			
Chrysene	1662	520	1299	0	128	55-110	0			S
Dibenzo(a,h)anthracene	1558	520	1299	0	120	40-125	0			
Fluoranthene	1974	520	1299	648.5	102	55-115	0			
Fluorene	1636	520	1299	0	126	50-110	0			S
Indeno(1,2,3-cd)pyrene	1558	520	1299	0	120	40-120	0			
Naphthalene	1195	520	1299	0	92	40-105	0			
Pyrene	2649	520	1299	1596	81.1	45-125	0			
Surr: 2-Fluorobiphenyl	2805	0	3247	0	86.4	12-100	0			
Surr: 4-Terphenyl-d14	3454	0	3247	0	106	25-137	0			
Surr: Nitrobenzene-d5	3428	0	3247	0	106	37-107	0			

MSD				Sample ID: <b>1505950-05A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2015 10:32 PM</b>	
Client ID:				Run ID: <b>SVMS8_150520A</b>			SeqNo: <b>3287945</b>		Prep Date: <b>5/20/2015</b>	
									DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1485	510	1281	0	116	45-110	1403	5.74	30	S
Anthracene	1434	510	1281	0	112	55-105	1454	1.41	30	S
Benzo(a)anthracene	2049	510	1281	798.1	97.7	50-110	1818	11.9	30	
Benzo(a)pyrene	1588	510	1281	0	124	50-110	1610	1.41	30	S
Benzo(b)fluoranthene	1639	510	1281	0	128	45-115	1844	11.8	30	S
Benzo(g,h,i)perylene	1485	510	1281	0	116	40-125	1610	8.07	30	
Benzo(k)fluoranthene	1562	510	1281	0	122	45-115	1273	20.4	30	S
Chrysene	1537	510	1281	0	120	55-110	1662	7.86	30	S
Dibenzo(a,h)anthracene	1767	510	1281	0	138	40-125	1558	12.6	30	S
Fluoranthene	2074	510	1281	648.5	111	55-115	1974	4.96	30	
Fluorene	1690	510	1281	0	132	50-110	1636	3.25	30	S
Indeno(1,2,3-cd)pyrene	1690	510	1281	0	132	40-120	1558	8.12	30	S
Naphthalene	1152	510	1281	0	90	40-105	1195	3.6	30	
Pyrene	2715	510	1281	1596	87.3	45-125	2649	2.44	30	
Surr: 2-Fluorobiphenyl	2868	0	3201	0	89.6	12-100	2805	2.23	40	
Surr: 4-Terphenyl-d14	3509	0	3201	0	110	25-137	3454	1.56	40	
Surr: Nitrobenzene-d5	3252	0	3201	0	102	37-107	3428	5.27	40	

The following samples were analyzed in this batch: 1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

# QC BATCH REPORT

Batch ID: **71186** Instrument ID **VMS7** Method: **SW8260B**

MBLK Sample ID: <b>MBLK-71186-71186</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>5/18/2015 10:55 AM</b>			
Client ID:		Run ID: <b>VMS7_150518A</b>		SeqNo: <b>3280355</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>		
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	1020	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	1016	0	1000	0	102	70-130	0			
Surr: Dibromofluoromethane	977	0	1000	0	97.7	70-130	0			
Surr: Toluene-d8	960.5	0	1000	0	96	70-130	0			

LCS Sample ID: <b>LCS-71186-71186</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>5/18/2015 09:15 AM</b>			
Client ID:		Run ID: <b>VMS7_150518A</b>		SeqNo: <b>3280354</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1040	30	1000	0	104	75-125	0			
Ethylbenzene	1004	30	1000	0	100	75-125	0			
m,p-Xylene	2024	60	2000	0	101	80-125	0			
o-Xylene	974.5	30	1000	0	97.4	75-125	0			
Toluene	1038	30	1000	0	104	70-125	0			
Xylenes, Total	2998	90	3000	0	99.9	75-125	0			
Surr: 1,2-Dichloroethane-d4	994.5	0	1000	0	99.4	70-130	0			
Surr: 4-Bromofluorobenzene	1002	0	1000	0	100	70-130	0			
Surr: Dibromofluoromethane	996.5	0	1000	0	99.6	70-130	0			
Surr: Toluene-d8	980.5	0	1000	0	98	70-130	0			

MS Sample ID: <b>1505922-01A MS</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>5/22/2015 10:47 PM</b>			
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>VMS6_150522A</b>		SeqNo: <b>3288814</b>		Prep Date: <b>5/18/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	973.5	30	1000	0	97.4	75-125	0			
Ethylbenzene	1006	30	1000	0	101	75-125	0			
m,p-Xylene	2768	60	2000	741.5	101	80-125	0			
o-Xylene	1180	30	1000	188.5	99.2	75-125	0			
Toluene	1000	30	1000	10	99	70-125	0			
Xylenes, Total	3948	90	3000	930	101	75-125	0			
Surr: 1,2-Dichloroethane-d4	896.5	0	1000	0	89.6	70-130	0			
Surr: 4-Bromofluorobenzene	979	0	1000	0	97.9	70-130	0			
Surr: Dibromofluoromethane	957	0	1000	0	95.7	70-130	0			
Surr: Toluene-d8	1276	0	1000	0	128	70-130	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71186**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: 1505922-01A MSD			Units: µg/Kg		Analysis Date: 5/22/2015 11:11 PM	
Client ID: PA 22-34, PA 322-34 Batch 3				Run ID: VMS6_150522A			SeqNo: 3288815		Prep Date: 5/18/2015	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	959	30	1000	0	95.9	75-125	973.5	1.5	30	
Ethylbenzene	1004	30	1000	0	100	75-125	1006	0.249	30	
m,p-Xylene	2786	60	2000	741.5	102	80-125	2768	0.648	30	
o-Xylene	1202	30	1000	188.5	101	75-125	1180	1.81	30	
Toluene	1018	30	1000	10	101	70-125	1000	1.78	30	
Xylenes, Total	3987	90	3000	930	102	75-125	3948	0.996	30	
Surr: 1,2-Dichloroethane-d4	875	0	1000	0	87.5	70-130	896.5	2.43	30	
Surr: 4-Bromofluorobenzene	982	0	1000	0	98.2	70-130	979	0.306	30	
Surr: Dibromofluoromethane	921.5	0	1000	0	92.2	70-130	957	3.78	30	
Surr: Toluene-d8	1370	0	1000	0	137	70-130	1276	7.18	30	S

The following samples were analyzed in this batch:

1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71240** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>1505922-01A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>5/22/2015 12:00 PM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>			Run ID: <b>WETCHEM_150522C</b>		SeqNo: <b>3287751</b>		Prep Date: <b>5/21/2015</b>		DF: <b>10</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	9.67	0.050	0	0	0		6.58	38	50	

The following samples were analyzed in this batch:

1505922-01A

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71246** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-71246-71246				Units: s.u.		Analysis Date: 5/20/2015 02:30 PM		
Client ID:		Run ID: WETCHEM_150520W				SeqNo: 3285079		Prep Date: 5/19/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.95	0	4	0	98.8	90-110	0			

DUP				Sample ID: 1505922-01A DUP				Units: s.u.		Analysis Date: 5/20/2015 02:30 PM			
Client ID: PA 22-34, PA 322-34 Batch 3				Run ID: WETCHEM_150520W				SeqNo: 3285082		Prep Date: 5/19/2015		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	7.82	0.637	20				

The following samples were analyzed in this batch:

1505922-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 1505922  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **71347**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-71347-71347</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286549</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      1.0

<b>LCS</b>		Sample ID: <b>LCS-71347-71347</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286550</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.78      1.0      5      0      95.6      80-120      0

<b>MS</b>		Sample ID: <b>1505922-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286566</b>		Prep Date: <b>5/20/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2261      90      2537      0.1053      89.1      75-125      0

<b>MS</b>		Sample ID: <b>1505922-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286570</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      3.471      0.96      4.808      0.1053      70      75-125      0      S

<b>MSD</b>		Sample ID: <b>1505922-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2015 04:00 PM</b>		
Client ID: <b>PA 22-34, PA 322-34 Batch 3</b>		Run ID: <b>WETCHEM_150521L</b>		SeqNo: <b>3286565</b>		Prep Date: <b>5/20/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.04      1.0      5.051      0.1053      77.9      75-125      3.471      15.2      20

The following samples were analyzed in this batch: 1505922-01A

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



From: (616) 298-1033  
 Nick Martinez  
 ALS Environmental  
 127 E. 1st Street

Origin ID: RILA

**FedEx**  
 Express



J1512150223031W

Ship Date: 15MAY15  
 ActWgt: 50.0 LB  
 CAD: 2264840/NET3610

Dims: 14 X 26 X 15 IN

PARACHUTE, CO 81635

Delivery Address Bar Code



Ref # 051515-1  
 Invoice #  
 PO # Parachute  
 Dept #

SHIP TO: (616) 399-6070

BILL SENDER

sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

HOLLAND, MI 49424

SATURDAY 12:00P  
 PRIORITY OVERNIGHT

TRK# 7736 1849 9282

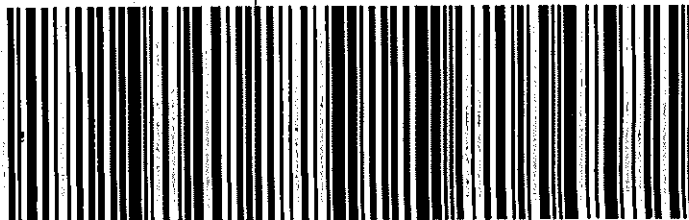
0201

49424

MI-US

GRR

X0 HLMA



537J3C818EE4B

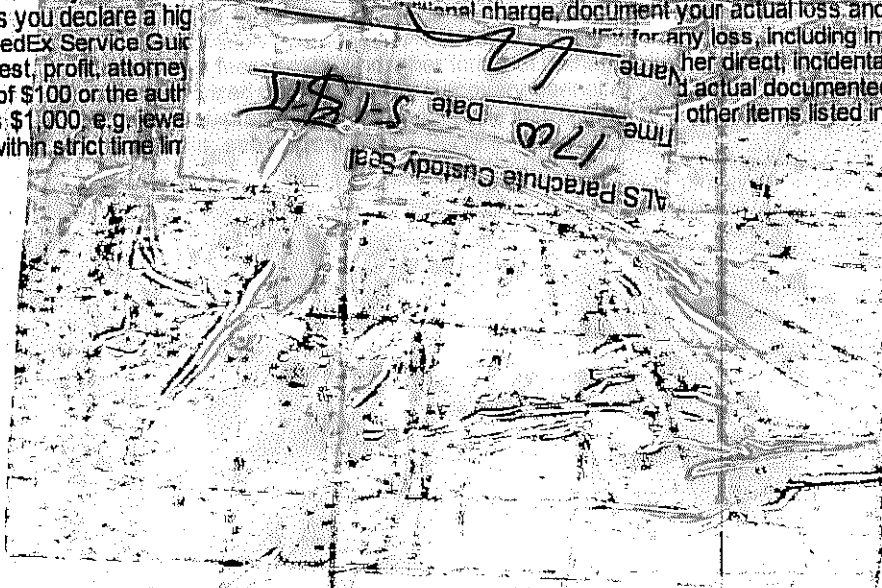
**After printing this label:**

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 high value charge, document your actual loss and file a timely claim. Limitations of sales, income interest, profit, attorney's fee, or other damages are excluded. For any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fee, or other damages, the maximum recovery is the actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, art, etc. Claims must be filed within strict time limits.



Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **16-May-15 12:45**

Work Order: **1505922**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

18-May-15  
Date

Reviewed by: Chad Whelton  
eSignature

18-May-15  
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 SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 5/18/2015 9:58:49 AM

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:



13-Jul-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 322-34 Batch 3**

Work Order: **15061665**

Dear Karolina,

ALS Environmental received 1 sample on 27-Jun-2015 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 9.

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

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 3  
**Work Order:** 15061665

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15061665-01	PA 22-34, PA 322-34 Batch 3	Soil		6/25/2015 10:30	6/27/2015 10:00	<input type="checkbox"/>

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 3  
**WorkOrder:** 15061665

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight



**ALS Group USA, Corp****Date:** 13-Jul-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34, PA 322-34 Batch 3**Work Order:** 15061665**Sample ID:** PA 22-34, PA 322-34 Batch 3**Lab ID:** 15061665-01**Collection Date:** 6/25/2015 10:30 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>190</b>		<b>SW8015M</b>		Prep: SW3550 / 7/1/15	Analyst: <b>IT</b>
			<b>4.3</b>	<b>mg/Kg-dry</b>	<b>1</b>	7/2/2015 09:40 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>77.9</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	7/2/2015 09:40 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>130</b>		<b>SW8015D</b>		Prep: SW5035 / 7/1/15	Analyst: <b>IT</b>
			<b>2.6</b>	<b>mg/Kg-dry</b>	<b>1</b>	7/3/2015 03:23 PM
<i>Surr: Toluene-d8</i>	<i>101</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	7/3/2015 03:23 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>3.4</b>		<b>E160.3M</b>			Analyst: <b>PT</b>
			<b>0.050</b>	<b>% of sample</b>	<b>1</b>	6/30/2015 04:20 PM

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

# ALS Group USA, Corp

Date: 13-Jul-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15061665  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **72963** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-72963-72963</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 06:40 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352403</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.666	0	2	0	83.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-72963-72963</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 07:10 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352405</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.5	5.0	200	0	92.2	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.588	0	2	0	79.4	39-133	0			

<b>MS</b>		Sample ID: <b>15061666-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 07:40 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352407</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	477.4	8.0	320.3	240.2	74	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	2.462	0	3.203	0	76.9	39-133	0			

<b>MSD</b>		Sample ID: <b>15061666-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/2/2015 08:10 AM</b>		
Client ID:		Run ID: <b>GC8_150701A</b>				SeqNo: <b>3352409</b>		Prep Date: <b>7/1/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	484.2	8.2	327.4	240.2	74.5	48-110	477.4	1.42	30	
<i>Surr: 4-Terphenyl-d14</i>	2.624	0	3.274	0	80.1	39-133	2.462	6.36	30	

The following samples were analyzed in this batch:

15061665-01A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15061665  
**Project:** PA 22-34, PA 322-34 Batch 3

## QC BATCH REPORT

Batch ID: **R166718** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R166718				Units: % of sample		Analysis Date: 6/30/2015 04:20 PM		
Client ID:		Run ID: MOIST_150630C				SeqNo: 3350511		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-R166718				Units: % of sample		Analysis Date: 6/30/2015 04:20 PM		
Client ID:		Run ID: MOIST_150630C				SeqNo: 3350510		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: 15061733-01B DUP				Units: % of sample		Analysis Date: 6/30/2015 04:20 PM		
Client ID:		Run ID: MOIST_150630C			SeqNo: 3350503		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 17.83 0.050 0 0 0 17.14 3.95 20

<b>DUP</b>				Sample ID: <b>15061780-02B DUP</b>				Units: % of sample			Analysis Date: <b>6/30/2015 04:20 PM</b>			
Client ID:				Run ID: <b>MOIST_150630C</b>				SeqNo: <b>3350509</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 16.29 0.050 0 0 0 16.65 2.19 20

The following samples were analyzed in this batch:

15061665-01A

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

## Chain-of-Custody

Form 202r8

WORKORDER  
#

15061665

PAGE

1 of 1

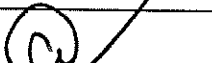
**DISPOSAL**

By Lab or Return to Client

[illegible]

\*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.**

<b>Comments:</b> <div style="text-align: center;">  </div>	<b>QC PACKAGE (check below)</b>	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
<b>Preservative Key:</b> 1-HCl   2-HNO3   3-H2SO4   4-NaOH   5-NaHSO4   7-Other   8-4 degrees C   9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Karolina Blaney</i>	Karolina Blaney	6/25/2015	16:00:00 PM
RECEIVED BY	<i>[Signature]</i>	<i>[Signature]</i>	6/26/16	1200
RELINQUISHED BY	<i>[Signature]</i>	<i>[Signature]</i>	6/26/15	1245
RECEIVED BY	<i>[Signature]</i>	Kerry Wierman	6/27/15	1000
RELINQUISHED BY	<i>[Signature]</i>			
RECEIVED BY				

ALS Parachute Custody Seal

Time 1700 Date 6-26

Name PA-1

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **27-Jun-15 10:00**

Work Order: **15061665**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

27-Jun-15  
Date

Reviewed by: Chad Whelton  
eSignature

29-Jun-15  
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): 3.4 C SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 6/27/2015 10:39:24 AM

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:



06-Aug-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 322-34 Batch 4**

Work Order: **15071724**

Dear Karolina,

ALS Environmental received 1 sample on 30-Jul-2015 09:30 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 22.

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

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 4  
**Work Order:** 15071724

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15071724-01	PA 22-34, PA 322-34 Batch 4	Soil		7/29/2015 14:00	7/30/2015 09:30	<input type="checkbox"/>

---



<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 4  
**Sample ID:** PA 22-34, PA 322-34 Batch 4  
**Collection Date:** 7/29/2015 02:00 PM

**Work Order:** 15071724  
**Lab ID:** 15071724-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>640</b>		<b>SW8015M</b>		Prep: SW3541 / 7/31/15	Analyst: <b>IT</b>
<i>Surr: 4-Terphenyl-d14</i>	75.7		4.5	mg/Kg-dry	1	8/3/2015 06:04 PM
			39-133	%REC	1	8/3/2015 06:04 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>220</b>		<b>SW8015D</b>		Prep: SW5035 / 7/31/15	Analyst: <b>IT</b>
<i>Surr: Toluene-d8</i>	96.9		2.7	mg/Kg-dry	1	8/1/2015 01:57 AM
			50-150	%REC	1	8/1/2015 01:57 AM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.026</b>		<b>SW7471B</b>		Prep: SW7471 / 8/3/15	Analyst: <b>LR</b>
			0.014	mg/Kg-dry	1	8/3/2015 08:13 PM
<b>METALS ANALYSIS BY ICP</b>						
<b>Arsenic</b>	<b>9.9</b>		<b>SW846 6010C</b>		Prep: SW3050B / 7/31/15	Analyst: <b>JEC</b>
<b>Barium</b>	<b>220</b>		0.43	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Cadmium</b>	<b>ND</b>		0.43	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Chromium</b>	<b>12</b>		0.86	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Copper</b>	<b>13</b>		0.43	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Lead</b>	<b>7.2</b>		0.86	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Nickel</b>	<b>26</b>		0.43	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Selenium</b>	<b>ND</b>		0.86	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Silver</b>	<b>ND</b>		0.43	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>Zinc</b>	<b>45</b>		0.86	mg/Kg-dry	1	8/4/2015 05:07 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
<b>Calcium</b>	<b>190</b>		<b>SW846 6010C</b>		Prep: USDA Method 20B / 8/3/15	Analyst: <b>JEC</b>
<b>Magnesium</b>	<b>350</b>		5.0	mg/L	10	8/5/2015 12:26 PM
<b>Sodium</b>	<b>1,300</b>		2.0	mg/L	10	8/5/2015 12:26 PM
			2.0	mg/L	10	8/5/2015 12:26 PM
<b>SODIUM ADSORPTION RATIO</b>						
<b>Sodium Adsorption Ratio</b>	<b>13</b>		<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 8/3/15	Analyst: <b>JEC</b>
			0.010	none	1	8/5/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>Acenaphthene</b>	<b>ND</b>		<b>SW846 8270D</b>		Prep: SW3541 / 7/31/15	Analyst: <b>RM</b>
<b>Anthracene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Benzo(a)anthracene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Benzo(a)pyrene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Benzo(g,h,i)perylene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Chrysene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM

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

# ALS Group USA, Corp

Date: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 322-34 Batch 4  
**Sample ID:** PA 22-34, PA 322-34 Batch 4  
**Collection Date:** 7/29/2015 02:00 PM

**Work Order:** 15071724  
**Lab ID:** 15071724-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	8.6		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
Fluorene	78		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
Indeno(1,2,3-cd)pyrene	ND		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
Naphthalene	140		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
Pyrene	ND		7.2	µg/Kg-dry	1	8/4/2015 01:41 AM
Surr: 2-Fluorobiphenyl	64.2		12-100	%REC	1	8/4/2015 01:41 AM
Surr: 4-Terphenyl-d14	68.8		25-137	%REC	1	8/4/2015 01:41 AM
Surr: Nitrobenzene-d5	40.4		37-107	%REC	1	8/4/2015 01:41 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 7/30/15	Analyst: <b>LSY</b>	
Benzene	ND		32	µg/Kg-dry	1	8/1/2015 11:27 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	8/1/2015 11:27 AM
m,p-Xylene	970		65	µg/Kg-dry	1	8/1/2015 11:27 AM
o-Xylene	200		32	µg/Kg-dry	1	8/1/2015 11:27 AM
Toluene	ND		32	µg/Kg-dry	1	8/1/2015 11:27 AM
Xylenes, Total	1,200		97	µg/Kg-dry	1	8/1/2015 11:27 AM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	8/1/2015 11:27 AM
Surr: 4-Bromofluorobenzene	111		70-130	%REC	1	8/1/2015 11:27 AM
Surr: Dibromofluoromethane	92.8		70-130	%REC	1	8/1/2015 11:27 AM
Surr: Toluene-d8	107		70-130	%REC	1	8/1/2015 11:27 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 8/3/15	Analyst: <b>JB</b>	
Electrical Conductivity @ Saturation	11		0.050	mmhos/cm @2	10	8/4/2015 10:45 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Analyst: <b>JB</b>		
Chromium, Trivalent	12		0.54	mg/Kg-dry	1	8/5/2015 08:40 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 8/3/15	Analyst: <b>MB</b>	
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	8/4/2015 03:00 PM
<b>MOISTURE</b>			<b>E160.3M</b>	Analyst: <b>EVB</b>		
Moisture	7.5		0.050	% of sample	1	8/3/2015 06:00 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 7/30/15	Analyst: <b>STP</b>	
pH	8.3			s.u.	1	7/30/2015 06:00 PM

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

# ALS Group USA, Corp

Date: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74268** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-74268-74268</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 09:36 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3399790</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
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	1.572	0	2	0	78.6	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-74268-74268</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 10:06 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3399791</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	157.7	5.0	200	0	78.9	61-109		0		
Surr: 4-Terphenyl-d14	1.308	0	2	0	65.4	39-133		0		

<b>MS</b>		Sample ID: <b>15071742-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 10:36 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3400403</b>		Prep Date: <b>7/31/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	571.9	41	165.1	763.2	-116	48-110		0		SO
Surr: 4-Terphenyl-d14	1.103	0	1.651	0	66.8	39-133		0		

<b>MSD</b>		Sample ID: <b>15071742-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 12:33 PM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3400404</b>		Prep Date: <b>7/31/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	827.3	42	166.4	763.2	38.5	48-110	571.9	36.5	30	SRO
Surr: 4-Terphenyl-d14	1.447	0	1.664	0	87	39-133	1.103	27	30	

The following samples were analyzed in this batch:

15071724-01A
--------------

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74273**      Instrument ID: **GC10**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-74273-74273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 06:16 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399299</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
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	4906	0	5000	0	98.1	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-74273-74273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 05:52 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399297</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	513400	2,500	500000	0	103	70-130	0			
Surr: Toluene-d8	4994	0	5000	0	99.9	50-150	0			

<b>MS</b>		Sample ID: <b>15071742-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 09:06 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399312</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	554900	2,500	500000	0	111	70-130	0			
Surr: Toluene-d8	4899	0	5000	0	98	50-150	0			

<b>MSD</b>		Sample ID: <b>15071742-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 09:31 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399313</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	571600	2,500	500000	0	114	70-130	554900	2.97	30	
Surr: Toluene-d8	5043	0	5000	0	101	50-150	4899	2.9	30	

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

# QC BATCH REPORT

Batch ID: **74335** Instrument ID **HG1** Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-74335-74335</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 07:38 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3401197</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

<b>LCS</b>		Sample ID: <b>LCS-74335-74335</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 07:40 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3401199</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1802 0.020 0.1665 0 108 80-120 0

<b>MS</b>		Sample ID: <b>15071665-07CMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 08:06 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3401212</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.114 0.013 0.1058 0.0736 38.2 75-125 0 S

<b>MS</b>		Sample ID: <b>15071774-01BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 08:24 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3401220</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1424 0.014 0.1181 0.02176 102 75-125 0

<b>MSD</b>		Sample ID: <b>15071665-07CMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 08:08 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3401213</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1218 0.012 0.104 0.0736 46.4 75-125 0.114 6.58 35 S

<b>MSD</b>		Sample ID: <b>15071774-01BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 08:27 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3401221</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.145 0.014 0.1181 0.02176 104 75-125 0.1424 1.77 35

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74269** Instrument ID **ICP2** Method: **SW846 6010C**

DUP				Sample ID: 15071722-01ADUP				Units: mg/L			Analysis Date: 8/5/2015 12:20 PM			
Client ID:				Run ID: ICP2_150805A				SeqNo: 3403721			Prep Date: 8/3/2015		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Calcium	237.3	5.0	0	0	0	0-0	248.3	4.54						
Magnesium	357.4	2.0	0	0	0	0-0	381.8	6.61						
Sodium	1219	2.0	0	0	0	0-0	1327	8.47						

DUP				Sample ID: 15071722-01ADUP				Units: none			Analysis Date: 8/5/2015			
Client ID:				Run ID: SAR_150805A				SeqNo: 3403811			Prep Date: 8/3/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Sodium Adsorption Ratio		11.67	0.010	0	0	0		12.33	5.46	50				

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74290**      Instrument ID **ICP2**      Method: **SW846 6010C**

Sample ID: <b>MBLK-74290-74290</b>				Units: <b>mg/Kg</b>			Analysis Date: <b>8/3/2015 10:57 AM</b>			
Client ID:		Run ID: <b>ICP2_150803A</b>			SeqNo: <b>3399763</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.008327	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS				Sample ID: LCS-74290-74290				Units: mg/Kg			Analysis Date: 8/3/2015 11:03 AM			
Client ID:				Run ID: ICP2_150803A				SeqNo: 3399764			Prep Date: 7/31/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	4.79	0.25	5	0	95.8	80-120	0							
Barium	4.836	0.25	5	0	96.7	80-120	0							
Cadmium	4.502	0.50	5	0	90	80-120	0							
Chromium	5.056	0.25	5	0	101	80-120	0							
Copper	5.016	0.50	5	0	100	80-120	0							
Lead	4.955	0.25	5	0	99.1	80-120	0							
Nickel	5.172	0.25	5	0	103	80-120	0							
Selenium	4.76	0.50	5	0	95.2	80-120	0							
Silver	4.803	0.25	5	0	96.1	80-120	0							
Zinc	4.396	0.50	5	0	87.9	80-120	0							

MS				Sample ID: 15071796-03CMS			Units: mg/Kg		Analysis Date: 8/3/2015 11:19 AM		
Client ID:			Run ID: ICP2_150803A		SeqNo: 3399767		Prep Date: 7/31/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	15.49	0.34	6.793	9.672	85.6	75-125	0				
Barium	87.44	0.34	6.793	71.36	237	75-125	0			SO	
Cadmium	6.242	0.68	6.793	-0.1965	94.8	75-125	0				
Chromium	20.24	0.34	6.793	11.54	128	75-125	0			S	
Copper	22.4	0.68	6.793	17.74	68.6	75-125	0			S	
Lead	11.5	0.34	6.793	4.394	105	75-125	0				
Nickel	37.35	0.34	6.793	32.78	67.3	75-125	0			SO	
Selenium	7.22	0.68	6.793	0.04462	106	75-125	0				
Silver	6.809	0.34	6.793	-0.162	103	75-125	0				
Zinc	43.5	0.68	6.793	36	110	75-125	0			O	

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74290**

Instrument ID **ICP2**

Method: **SW846 6010C**

MSD				Sample ID: 15071796-03CMSD			Units: mg/Kg		Analysis Date: 8/3/2015 02:18 PM		
Client ID:			Run ID: ICP2_150803B			SeqNo: 3400126		Prep Date: 7/31/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	16.72	0.34	6.803	9.672	104	75-125	15.49	7.67	20		
Barium	83.36	0.34	6.803	71.36	176	75-125	87.44	4.78	20	SO	
Cadmium	6.159	0.68	6.803	0	90.5	75-125	6.242	1.34	20		
Chromium	19.49	0.34	6.803	11.54	117	75-125	20.24	3.74	20		
Copper	23.93	0.68	6.803	17.74	91	75-125	22.4	6.62	20		
Lead	11.38	0.34	6.803	4.394	103	75-125	11.5	1.03	20		
Nickel	39.75	0.34	6.803	32.78	102	75-125	37.35	6.23	20	O	
Selenium	7.154	0.68	6.803	0	105	75-125	7.22	0.917	20		
Silver	6.787	0.34	6.803	0	99.8	75-125	6.809	0.334	20		
Zinc	43.73	0.68	6.803	36	114	75-125	43.5	0.535	20	O	

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74267**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-74267-74267</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 06:51 PM</b>		
Client ID:		Run ID: <b>SVMS8_150731A</b>				SeqNo: <b>3399776</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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								
<i>Surr: 2-Fluorobiphenyl</i>	1002	0	1667	0	60.1	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1338	0	1667	0	80.3	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1085	0	1667	0	65.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-74267-74267</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 07:10 PM</b>		
Client ID:		Run ID: <b>SVMS8_150731A</b>				SeqNo: <b>3399777</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	490.3	6.7	666.7	0	73.5	45-110	0			
Anthracene	583.7	6.7	666.7	0	87.5	55-105	0			
Benzo(a)anthracene	594.3	6.7	666.7	0	89.1	50-110	0			
Benzo(a)pyrene	589.7	6.7	666.7	0	88.4	50-110	0			
Benzo(b)fluoranthene	591	6.7	666.7	0	88.6	45-115	0			
Benzo(g,h,i)perylene	545.3	6.7	666.7	0	81.8	40-125	0			
Benzo(k)fluoranthene	626.7	6.7	666.7	0	94	45-115	0			
Chrysene	595.3	6.7	666.7	0	89.3	55-110	0			
Dibenzo(a,h)anthracene	542.7	6.7	666.7	0	81.4	40-125	0			
Fluoranthene	645	6.7	666.7	0	96.7	55-115	0			
Fluorene	530.3	6.7	666.7	0	79.5	50-110	0			
Indeno(1,2,3-cd)pyrene	565	6.7	666.7	0	84.7	40-120	0			
Naphthalene	452.7	6.7	666.7	0	67.9	40-105	0			
Pyrene	600.7	6.7	666.7	0	90.1	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	975.7	0	1667	0	58.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1234	0	1667	0	74	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1124	0	1667	0	67.5	37-107	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

# QC BATCH REPORT

Batch ID: **74267**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: 15071472-02C MS			Units: µg/Kg		Analysis Date: 7/31/2015 08:28 PM		
Client ID:			Run ID: SVMS8_150731A			SeqNo: 3399781		Prep Date: 7/31/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	439.5	6.5	652.6	0	67.3	45-110	0				
Anthracene	532.2	6.5	652.6	0	81.5	55-105	0				
Benzo(a)anthracene	526	6.5	652.6	0	80.6	50-110	0				
Benzo(a)pyrene	535.4	6.5	652.6	0	82	50-110	0				
Benzo(b)fluoranthene	541.6	6.5	652.6	0	83	45-115	0				
Benzo(g,h,i)perylene	536.7	6.5	652.6	0	82.2	40-125	0				
Benzo(k)fluoranthene	533.5	6.5	652.6	0	81.7	45-115	0				
Chrysene	500.8	6.5	652.6	0	76.7	55-110	0				
Dibenzo(a,h)anthracene	511.6	6.5	652.6	0	78.4	40-125	0				
Fluoranthene	575.6	6.5	652.6	0	88.2	55-115	0				
Fluorene	498.6	6.5	652.6	0	76.4	50-110	0				
Indeno(1,2,3-cd)pyrene	573	6.5	652.6	0	87.8	40-120	0				
Naphthalene	424.8	6.5	652.6	0	65.1	40-105	0				
Pyrene	530.2	6.5	652.6	0	81.2	45-125	0				
Surr: 2-Fluorobiphenyl	937.4	0	1631	0	57.5	12-100	0				
Surr: 4-Terphenyl-d14	1088	0	1631	0	66.7	25-137	0				
Surr: Nitrobenzene-d5	1089	0	1631	0	66.8	37-107	0				

MSD				Sample ID: 15071472-02C MSD			Units: µg/Kg		Analysis Date: 7/31/2015 08:48 PM		
Client ID:		Run ID: SVMS8_150731A			SeqNo: 3399782		Prep Date: 7/31/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	431.1	6.5	652.7	0	66	45-110	439.5	1.93	30		
Anthracene	528.4	6.5	652.7	0	80.9	55-105	532.2	0.719	30		
Benzo(a)anthracene	519.2	6.5	652.7	0	79.5	50-110	526	1.29	30		
Benzo(a)pyrene	537.8	6.5	652.7	0	82.4	50-110	535.4	0.445	30		
Benzo(b)fluoranthene	543	6.5	652.7	0	83.2	45-115	541.6	0.26	30		
Benzo(g,h,i)perylene	539.8	6.5	652.7	0	82.7	40-125	536.7	0.565	30		
Benzo(k)fluoranthene	531.9	6.5	652.7	0	81.5	45-115	533.5	0.287	30		
Chrysene	503.9	6.5	652.7	0	77.2	55-110	500.8	0.604	30		
Dibenzo(a,h)anthracene	514.3	6.5	652.7	0	78.8	40-125	511.6	0.528	30		
Fluoranthene	565.9	6.5	652.7	0	86.7	55-115	575.6	1.7	30		
Fluorene	492.5	6.5	652.7	0	75.4	50-110	498.6	1.23	30		
Indeno(1,2,3-cd)pyrene	573.1	6.5	652.7	0	87.8	40-120	573	0.0196	30		
Naphthalene	426.2	6.5	652.7	0	65.3	40-105	424.8	0.326	30		
Pyrene	535.2	6.5	652.7	0	82	45-125	530.2	0.938	30		
Surr: 2-Fluorobiphenyl	940.9	0	1632	0	57.7	12-100	937.4	0.367	40		
Surr: 4-Terphenyl-d14	1086	0	1632	0	66.5	25-137	1088	0.221	40		
Surr: Nitrobenzene-d5	1082	0	1632	0	66.3	37-107	1089	0.732	40		

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

# QC BATCH REPORT

Batch ID: **74230** Instrument ID **VMS7** Method: **SW8260B**

MBLK				Sample ID: MBLK-74230-74230				Units: µg/Kg			Analysis Date: 7/30/2015 03:34 PM			
Client ID:				Run ID: VMS7_150730A				SeqNo: 3397304			Prep Date: 7/30/2015		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	993	0	1000	0	99.3	70-130		0						
Surr: 4-Bromofluorobenzene	953.5	0	1000	0	95.4	70-130		0						
Surr: Dibromofluoromethane	996	0	1000	0	99.6	70-130		0						
Surr: Toluene-d8	990	0	1000	0	99	70-130		0						

LCS				Sample ID: LCS-74230-74230			Units: µg/Kg		Analysis Date: 7/30/2015 01:30 PM		
Client ID:			Run ID: VMS7_150730A			SeqNo: 3397302		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	885	30	1000	0	88.5	75-125	0				
Ethylbenzene	901.5	30	1000	0	90.2	75-125	0				
m,p-Xylene	1824	60	2000	0	91.2	80-125	0				
o-Xylene	900	30	1000	0	90	75-125	0				
Toluene	912.5	30	1000	0	91.2	70-125	0				
Xylenes, Total	2724	90	3000	0	90.8	75-125	0				
Surr: 1,2-Dichloroethane-d4	990.5	0	1000	0	99	70-130	0				
Surr: 4-Bromofluorobenzene	1012	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	998.5	0	1000	0	99.8	70-130	0				
Surr: Toluene-d8	1028	0	1000	0	103	70-130	0				

MS				Sample ID: 15071669-13A MS				Units: µg/Kg		Analysis Date: 7/31/2015 01:20 PM	
Client ID:			Run ID: VMS8_150730B			SeqNo: 3398000		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1108	30	1000	0	111	75-125	0				
Ethylbenzene	1128	30	1000	0	113	75-125	0				
m,p-Xylene	2283	60	2000	0	114	80-125	0				
o-Xylene	1114	30	1000	0	111	75-125	0				
Toluene	1117	30	1000	0	112	70-125	0				
Xylenes, Total	3397	90	3000	0	113	75-125	0				
Surr: 1,2-Dichloroethane-d4	949.5	0	1000	0	95	70-130	0				
Surr: 4-Bromofluorobenzene	1076	0	1000	0	108	70-130	0				
Surr: Dibromofluoromethane	953.5	0	1000	0	95.4	70-130	0				
Surr: Toluene-d8	1026	0	1000	0	103	70-130	0				

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74230**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: <b>15071669-13A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 01:45 PM</b>	
Client ID:				Run ID: <b>VMS8_150730B</b>			SeqNo: <b>3398001</b>		Prep Date: <b>7/30/2015</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1052	30	1000	0	105	75-125	1108	5.18	30	
Ethylbenzene	1106	30	1000	0	111	75-125	1128	1.97	30	
m,p-Xylene	2205	60	2000	0	110	80-125	2283	3.48	30	
o-Xylene	1052	30	1000	0	105	75-125	1114	5.68	30	
Toluene	1084	30	1000	0	108	70-125	1117	3	30	
Xylenes, Total	3258	90	3000	0	109	75-125	3397	4.19	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	973	0	1000	0	97.3	70-130	949.5	2.44	30	
<i>Surr: 4-Bromofluorobenzene</i>	987.5	0	1000	0	98.8	70-130	1076	8.53	30	
<i>Surr: Dibromofluoromethane</i>	968.5	0	1000	0	96.8	70-130	953.5	1.56	30	
<i>Surr: Toluene-d8</i>	1020	0	1000	0	102	70-130	1026	0.635	30	

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74248** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-74248-74248					Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150730K					SeqNo: 3396219		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	4.02	0	4	0	100	90-110	0			
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DUP		Sample ID: 15071541-01A DUP				Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150730K				SeqNo: 3396223		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	6.32	0	0	0	0	0-0	6.5	2.81	20	H
----	------	---	---	---	---	-----	-----	------	----	---

DUP				Sample ID: 15071628-02A DUP				Units: s.u.			Analysis Date: 7/30/2015 06:00 PM			
Client ID:				Run ID: WETCHEM_150730K				SeqNo: 3396229			Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH	8.01	0	0	0	0	0-0	8.06	0.622	20	
----	------	---	---	---	---	-----	------	-------	----	--

The following samples were analyzed in this batch:

15071724-01A
--------------

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74269** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>15071722-01A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>8/4/2015 10:45 AM</b>		
Client ID:		Run ID: <b>WETCHEM_150804C</b>				SeqNo: <b>3401404</b>		Prep Date: <b>8/3/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	6.7	0.050	0	0	0		10.88	47.6	50	

The following samples were analyzed in this batch:

15071724-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **74416**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-74416-74416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402316</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      1.0

<b>LCS</b>		Sample ID: <b>LCS-74416-74416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402315</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      4.3      1.0      5      0      86      80-120      0

<b>MS</b>		Sample ID: <b>15071709-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402307</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.51      1.0      5.102      0      29.6      75-125      0      S

<b>MS</b>		Sample ID: <b>15071709-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402309</b>		Prep Date: <b>8/3/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      2483      99      2565      0      96.8      75-125      0

<b>MSD</b>		Sample ID: <b>15071709-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402308</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.61      1.0      5      0      32.2      75-125      1.51      6.4      20      S

The following samples were analyzed in this batch:

15071724-01A

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071724  
**Project:** PA 22-34, PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **R168972**      Instrument ID **MOIST**      Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R168972</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>		
Client ID:		Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402069</b>		Prep Date:		DF: <b>1</b>
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-R168972					Units: % of sample		Analysis Date: 8/3/2015 06:00 PM		
Client ID:			Run ID: MOIST_150803D			SeqNo: 3402068		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

<b>DUP</b>				Sample ID: <b>15071665-07B DUP</b>				Units: <b>% of sample</b>		Analysis Date: <b>8/3/2015 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402041</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture      31.13      0.050      0      0      0      36.33      15.4      20

<b>DUP</b>				Sample ID: <b>1508026-01A DUP</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402062</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture      6.91      0.050      0      0      0      6.41      7.51      20

The following samples were analyzed in this batch:

15071724-01A

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



WORKORDER # 15071724

PAGE

1 of 1

**DISPOSAL**







By Lab or Return to Client

[illegible]

\*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.**

<b>Comments:</b>  <div style="text-align: center; font-size: 2em;"> <math>1.6^{\circ}\text{C}</math> </div>	<b>QC PACKAGE (check below)</b>	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QG + forms)
		LEVEL IV (Std QC + forms + raw data)
<b>Preservative Key:</b> 1-HCl   2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH   5-NaHSO <sub>4</sub> 7-Other   8-4 degrees C   9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	7/28/20015	16:00:00 PM
RECEIVED BY			7/29/15	1600
RELINQUISHED BY			7-29-15	1600
RECEIVED BY		KEITH WERENA	7/30/15	0930
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID: RILA (616) 298-1033  
 NICK MARTINEZ  
 ALS ENVIRONMENTAL PARACHUTE  
 PARACHUTE SERVICE CENTER  
 127 EAST 1ST ST  
 PARACHUTE, CO 81835  
 UNITED STATES US

SHIP DATE: 29 JUL 15  
 ACTWGT: 59.00 LB  
 CAD: 2264840/NET3870  
 DMS: 24x16x16 IN  
 BILL SENDER

TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

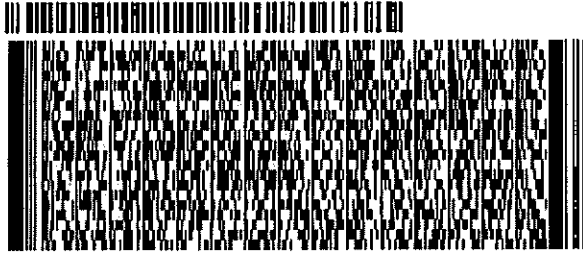
(616) 399-8070

REF 072915-1

INV

PO PARACHUTE

DEPT.



**FedEx**  
Express



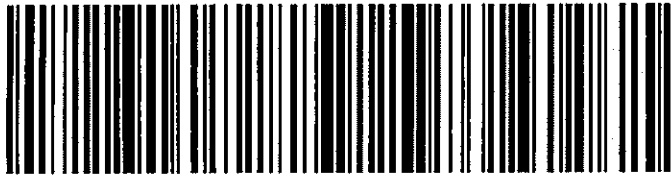
REL#  
3785346

THU - 30 JUL 10:30A  
**PRIORITY OVERNIGHT**

1 of 2  
 TRK# 7741 6789 7421  
 0201  
 ## MASTER ##

**XX HLMA**

49424  
 MI-US GRR



539.03/1A1531D0

**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. Use of this system constitutes your agreement to the service. You will not be responsible for any claim in excess of \$500 per item, unless you declare a higher value. If you are found in the current FedEx Service Guide apply. Your liability is limited to the greater of \$100 or the authorized declared value. For sales, income interest, profit, attorney's fees, costs, a extraordinary value is \$1,000. e.g. jewelry, precious metals, negotiable instruments and other items. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Parachute Custody Seal

Time 15:47 Date 7/29/15

Name Nick Martinez

e, available on fedex.com. FedEx  
 lay, non-delivery, misdelivery, or  
 d file a timely claim. Limitations  
 intrinsic value of the package, loss  
 al consequential, or special  
 ed loss. Maximum for items of  
 in our Service Guide. Written

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **30-Jul-15 09:30**

Work Order: **15071724**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

30-Jul-15  
Date

Reviewed by: Chad Whelton  
eSignature

30-Jul-15  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.6 C</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/30/2015 2:08:23 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



23-Sep-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34\_PA 322-34 Batch 4**

Work Order: **15091192**

Dear Karolina,

ALS Environmental received 1 sample on 22-Sep-2015 09:00 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 11.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Les Arnold

Les Arnold  
Senior Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental The ALS logo, a stylized blue triangle with a yellow flame.

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---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 322-34 Batch 4  
**Work Order:** 15091192

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15091192-01	PA 22-34, PA 322-34 Batch 4	Soil		9/21/2015	9/22/2015 09:00	<input type="checkbox"/>

---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 322-34 Batch 4  
**Work Order:** 15091192

---

**Case Narrative**

Samples for the above noted Work Order were received on 09/22/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

**Sample Receiving:**

No deviations or anomalies were noted.

**Volatile Organics:**

No deviations or anomalies were noted.

**Extractable Organics:**

No deviations or anomalies were noted.

**Metals:**

No deviations or anomalies were noted.

**Wet Chemistry:**

No deviations or anomalies were noted.

**ALS Group USA, Corp****Date:** 23-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34\_PA 322-34 Batch 4**Work Order:** 15091192**Sample ID:** PA 22-34, PA 322-34 Batch 4**Lab ID:** 15091192-01**Collection Date:** 9/21/2015**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>310</b>		<b>SW8015M</b>		Prep: SW3541 / 9/22/15	Analyst: <b>IT</b>
			<b>4.4</b>	<b>mg/Kg-dry</b>	1	9/22/2015 05:51 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>58.4</i>		<i>39-133</i>	<i>%REC</i>	1	9/22/2015 05:51 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>45</b>		<b>SW8015D</b>		Prep: SW5035 / 9/22/15	Analyst: <b>IT</b>
			<b>2.7</b>	<b>mg/Kg-dry</b>	1	9/22/2015 03:48 PM
<i>Surr: Toluene-d8</i>	<i>112</i>		<i>50-150</i>	<i>%REC</i>	1	9/22/2015 03:48 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>7.8</b>		<b>E160.3M</b>			Analyst: <b>EVB</b>
			<b>0.050</b>	<b>% of sample</b>	1	9/22/2015 02:40 PM

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 322-34 Batch 4  
**WorkOrder:** 15091192

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

# ALS Group USA, Corp

Date: 23-Sep-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091192  
**Project:** PA 22-34\_PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **76354** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-76354-76354</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 04:22 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470217</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.662	0	2	0	83.1	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-76354-76354</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 04:51 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470218</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.5	5.0	200	0	92.3	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.4	0	2	0	70	39-133	0			

<b>MS</b>		Sample ID: <b>15091099-04A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 07:51 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470224</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.2	4.1	165.3	69.24	69.5	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	1.347	0	1.653	0	81.5	39-133	0			

<b>MSD</b>		Sample ID: <b>15091099-04A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 08:21 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470225</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	238	4.1	164.1	69.24	103	48-110	184.2	25.5	30	
<i>Surr: 4-Terphenyl-d14</i>	1.345	0	1.641	0	81.9	39-133	1.347	0.168	30	

The following samples were analyzed in this batch:

15091192-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091192  
**Project:** PA 22-34\_PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **76357**      Instrument ID **GC9**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-76357-76357</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 02:58 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470229</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
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	5478	0	5000	0	110	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-76357-76357</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 02:33 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470228</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	449800	2,500	500000	0	90	70-130	0			
Surr: Toluene-d8	5320	0	5000	0	106	50-150	0			

<b>MS</b>		Sample ID: <b>15091203-02A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 05:27 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470235</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	505600	2,500	500000	0	101	70-130	0			
Surr: Toluene-d8	5194	0	5000	0	104	50-150	0			

<b>MSD</b>		Sample ID: <b>15091203-02A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 05:52 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470236</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	512200	2,500	500000	0	102	70-130	505600	1.29	30	
Surr: Toluene-d8	5472	0	5000	0	109	50-150	5194	5.21	30	

The following samples were analyzed in this batch:

15091192-01A
--------------

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091192  
**Project:** PA 22-34\_PA 322-34 Batch 4

## QC BATCH REPORT

Batch ID: **R172207**      Instrument ID **MOIST**      Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R172207</b>				Units: % of sample		Analysis Date: <b>9/22/2015 02:40 PM</b>		
Client ID:			Run ID: <b>MOIST_150922A</b>			SeqNo: <b>3470910</b>		Prep Date:		DF: <b>1</b>
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-R172207					Units: % of sample		Analysis Date: 9/22/2015 02:40 PM		
Client ID:			Run ID: MOIST_150922A			SeqNo: 3470909		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

<b>DUP</b>				Sample ID: <b>15091191-01A DUP</b>				Units: <b>% of sample</b>			Analysis Date: <b>9/22/2015 02:40 PM</b>												
Client ID:				Run ID: <b>MOIST_150922A</b>				SeqNo: <b>3470893</b>			Prep Date:		DF: <b>1</b>										
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Moisture      19.3      0.050      0      0      0      19.96      3.36      20

<b>DUP</b>				Sample ID: <b>1509712-03B DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2015 02:40 PM</b>			
Client ID:				Run ID: <b>MOIST_150922A</b>				SeqNo: <b>3470899</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture      18.86      0.050      0      0      0      18.89      0.159      20

The following samples were analyzed in this batch:

15091192-01A

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



# ALS Laboratory Group

HOLLAND, Michigan 49424

## Chain-of-Custody

Form 202r6

WORKORDER #

15091192

PAGE

1 of 1

PROJECT NAME	PA 22-34, PA 322-34 Batch 4	SAMPLER								DATE	9/21/2015				DISPOSAL	By Lab or Return to Client			
PROJECT No.		SITE ID	PA 22-34, PA 322-34 Batch 4							TURNAROUND	24 hrs								
		EDD FORMAT																	
		PURCHASE ORDER																	
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy																
SEND REPORT TO	Blaney	INVOICE ATTN TO	Karolina Blaney; Leo Braun																
ADDRESS		ADDRESS	1058 Co Rd 215																
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachure CO 81635																
PHONE		PHONE	970-683-2295																
FAX		FAX																	
E-MAIL	Karolina.blaney@wpxenergy.com;	E-MAIL	Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com																
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC												
1	PA 22-34, PA 322-34 Batch 4	S	9/21/2015		1		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:	1800	QC PACKAGE (check below)
		X LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)

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

SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY Karolina Blaney	Karolina Blaney	9/21/2015	10:00
RECEIVED BY [Signature]	[Signature]	9-21-15	16:01
RELINQUISHED BY [Signature]	[Signature]	9-21-15	16:10
RECEIVED BY [Signature]	[Signature]	9-22-15	9:00
RELINQUISHED BY			
RECEIVED BY			

ORIGIN ID:RILA (616) 298-1033  
NICK MARTINEZ  
ALS ENVIRONMENTAL PARACHUTE  
PARACHUTE SERVICE CENTER  
127 EAST 1ST. ST  
PARACHUTE, CO 81635  
UNITED STATES US

SHIP DATE: 21SEP15  
ACTWGT: 55.00 LB  
CAD: 2264840/NET3870  
DMS: 14x26x15 IN  
BILL SENDER

TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

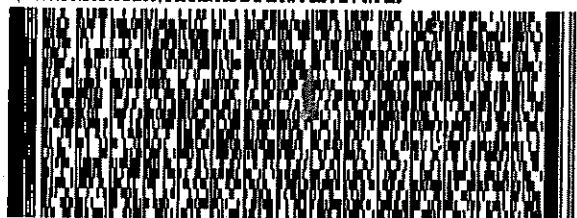
**(616) 388-6070**

REF: 092115-1

lv.

PO: PARACHUTE

DEPT:



**FedEx**  
Express



REL#  
3785346

**1 of 2**

**TRK#**

0201

**7745 6089 1062**

**## MASTER ##**

# XX HLMA

**TUE - 22 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**49424**

MI-US

# GRR

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529.12/CB89.91D0

**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 it in additional billing charges, along with the cancellation of your FedEx account. Use of this system constitutes your agreement to the service conditions in the contract. You will not be responsible for any claim in excess of \$100 per package, whether the claim is for loss or damage. For more information, see the current FedEx Service Guide. Your right to recover from FedEx is limited to the greater of \$100 or the authorized declared value. Recovery is limited to the greater of \$1,000, e.g. jewelry, precious metals, negotiable instruments, or other items of extraordinary value is \$1,000. For more information, see current FedEx Service Guide.

ALS Parachute Craft by Seal.

ALS Paragum Co., Dry Seal

Time 11:15 1777 5-12-5

**Walne**

and other items listed below. Service guide. Written

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **22-Sep-15 09:00**

Work Order: **15091192**

Received by: **NML**

Checklist completed by Diane Shaw 22-Sep-15  
eSignature Date

Reviewed by: Lee Arnold 22-Sep-15  
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.8/1.8 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/22/2015 10:56:03 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



06-Aug-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34, PA 21-34 Batch 1**

Work Order: **15071709**

Dear Karolina,

ALS Environmental received 1 sample on 30-Jul-2015 09:30 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 23.

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

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 21-34 Batch 1  
**Work Order:** 15071709

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15071709-01	PA 22-34, PA 21-34 Batch 1	Soil		7/29/2015 14:15	7/30/2015 09:30	<input type="checkbox"/>

---

**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34, PA 21-34 Batch 1**Work Order:** 15071709**Case Narrative**

---

Batch 74416, Method CR6\_7196\_S, Sample 15071709-01A MS/MSD: The MS and MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% 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: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 21-34 Batch 1  
**Sample ID:** PA 22-34, PA 21-34 Batch 1  
**Collection Date:** 7/29/2015 02:15 PM

**Work Order:** 15071709  
**Lab ID:** 15071709-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 7/31/15	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>280</b>		<b>4.6</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/3/2015 05:04 PM
Surr: 4-Terphenyl-d14	44.1		39-133	%REC	1	8/3/2015 05:04 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015D</b>		Prep: SW5035 / 7/31/15	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>380</b>		<b>2.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/1/2015 01:09 AM
Surr: Toluene-d8	98.3		50-150	%REC	1	8/1/2015 01:09 AM
<b>MERCURY BY CVAA</b>						
			<b>SW7471B</b>		Prep: SW7471 / 8/3/15	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.021</b>		<b>0.014</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/3/2015 03:35 PM
<b>METALS ANALYSIS BY ICP</b>						
			<b>SW846 6010C</b>		Prep: SW3050B / 7/31/15	Analyst: <b>JEC</b>
<b>Arsenic</b>	<b>9.7</b>		<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
<b>Barium</b>	<b>250</b>		<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
Cadmium	ND		0.84	mg/Kg-dry	1	8/4/2015 04:56 PM
<b>Chromium</b>	<b>14</b>		<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
<b>Copper</b>	<b>16</b>		<b>0.84</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
<b>Lead</b>	<b>5.7</b>		<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
<b>Nickel</b>	<b>28</b>		<b>0.42</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
Selenium	ND		0.84	mg/Kg-dry	1	8/4/2015 04:56 PM
Silver	ND		0.42	mg/Kg-dry	1	8/4/2015 04:56 PM
<b>Zinc</b>	<b>44</b>		<b>0.84</b>	<b>mg/Kg-dry</b>	<b>1</b>	8/4/2015 04:56 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 8/3/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>190</b>		<b>5.0</b>	<b>mg/L</b>	<b>10</b>	8/5/2015 12:32 PM
<b>Magnesium</b>	<b>380</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	8/5/2015 12:32 PM
<b>Sodium</b>	<b>1,300</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	8/5/2015 12:32 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 8/3/15	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>12</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	8/5/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 7/31/15	Analyst: <b>RM</b>
Acenaphthene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Anthracene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Benzo(a)anthracene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Benzo(a)pyrene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Benzo(b)fluoranthene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Benzo(g,h,i)perylene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Benzo(k)fluoranthene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Chrysene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Dibenzo(a,h)anthracene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM

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

# ALS Group USA, Corp

Date: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34, PA 21-34 Batch 1  
**Sample ID:** PA 22-34, PA 21-34 Batch 1  
**Collection Date:** 7/29/2015 02:15 PM

**Work Order:** 15071709  
**Lab ID:** 15071709-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
<b>Fluorene</b>	<b>49</b>		<b>7.4</b>	<b>µg/Kg-dry</b>	1	8/1/2015 04:54 AM
Indeno(1,2,3-cd)pyrene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
<b>Naphthalene</b>	<b>130</b>		<b>7.4</b>	<b>µg/Kg-dry</b>	1	8/1/2015 04:54 AM
Pyrene	ND		7.4	µg/Kg-dry	1	8/1/2015 04:54 AM
Surr: 2-Fluorobiphenyl	39.8		12-100	%REC	1	8/1/2015 04:54 AM
Surr: 4-Terphenyl-d14	47.2		25-137	%REC	1	8/1/2015 04:54 AM
Surr: Nitrobenzene-d5	39.6		37-107	%REC	1	8/1/2015 04:54 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 7/30/15	Analyst: <b>LSY</b>	
Benzene	ND		33	µg/Kg-dry	1	8/1/2015 11:02 AM
Ethylbenzene	ND		33	µg/Kg-dry	1	8/1/2015 11:02 AM
<b>m,p-Xylene</b>	<b>860</b>		<b>66</b>	<b>µg/Kg-dry</b>	1	8/1/2015 11:02 AM
<b>o-Xylene</b>	<b>160</b>		<b>33</b>	<b>µg/Kg-dry</b>	1	8/1/2015 11:02 AM
Toluene	ND		33	µg/Kg-dry	1	8/1/2015 11:02 AM
<b>Xylenes, Total</b>	<b>1,000</b>		<b>99</b>	<b>µg/Kg-dry</b>	1	8/1/2015 11:02 AM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	8/1/2015 11:02 AM
Surr: 4-Bromofluorobenzene	120		70-130	%REC	1	8/1/2015 11:02 AM
Surr: Dibromofluoromethane	97.4		70-130	%REC	1	8/1/2015 11:02 AM
Surr: Toluene-d8	111		70-130	%REC	1	8/1/2015 11:02 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 8/3/15	Analyst: <b>JB</b>	
<b>Electrical Conductivity @ Saturation</b>	<b>11</b>		<b>0.050</b>	<b>mmhos/cm @2</b>	10	8/4/2015 10:45 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Analyst: <b>JB</b>		
<b>Chromium, Trivalent</b>	<b>14</b>		<b>0.55</b>	<b>mg/Kg-dry</b>	1	8/5/2015 08:40 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 8/3/15	Analyst: <b>MB</b>	
<b>Chromium, Hexavalent</b>	ND		1.1	mg/Kg-dry	1	8/4/2015 03:00 PM
<b>MOISTURE</b>			<b>E160.3M</b>	Analyst: <b>EVB</b>		
<b>Moisture</b>	<b>9.5</b>		<b>0.050</b>	<b>% of sample</b>	1	8/3/2015 06:00 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 7/30/15	Analyst: <b>STP</b>	
<b>pH</b>	<b>8.4</b>			<b>s.u.</b>	1	7/30/2015 06:00 PM

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

# ALS Group USA, Corp

Date: 06-Aug-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74268** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-74268-74268</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 09:36 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3399790</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
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	1.572	0	2	0	78.6	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-74268-74268</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 10:06 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3399791</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	157.7	5.0	200	0	78.9	61-109		0		
Surr: 4-Terphenyl-d14	1.308	0	2	0	65.4	39-133		0		

<b>MS</b>		Sample ID: <b>15071742-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 10:36 AM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3400403</b>		Prep Date: <b>7/31/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	571.9	41	165.1	763.2	-116	48-110		0		SO
Surr: 4-Terphenyl-d14	1.103	0	1.651	0	66.8	39-133		0		

<b>MSD</b>		Sample ID: <b>15071742-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 12:33 PM</b>		
Client ID:		Run ID: <b>GC8_150803A</b>				SeqNo: <b>3400404</b>		Prep Date: <b>7/31/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	827.3	42	166.4	763.2	38.5	48-110	571.9	36.5	30	SRO
Surr: 4-Terphenyl-d14	1.447	0	1.664	0	87	39-133	1.103	27	30	

The following samples were analyzed in this batch:

15071709-01A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74273** Instrument ID **GC10** Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-74273-74273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 06:16 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399299</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
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	4906	0	5000	0	98.1	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-74273-74273</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 05:52 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399297</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	513400	2,500	500000	0	103	70-130	0			
Surr: Toluene-d8	4994	0	5000	0	99.9	50-150	0			

<b>MS</b>		Sample ID: <b>15071742-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 09:06 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399312</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	554900	2,500	500000	0	111	70-130	0			
Surr: Toluene-d8	4899	0	5000	0	98	50-150	0			

<b>MSD</b>		Sample ID: <b>15071742-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 09:31 PM</b>		
Client ID:		Run ID: <b>GC10_150731A</b>				SeqNo: <b>3399313</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	571600	2,500	500000	0	114	70-130	554900	2.97	30	
Surr: Toluene-d8	5043	0	5000	0	101	50-150	4899	2.9	30	

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74296** Instrument ID **HG1** Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-74296-74296</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 02:27 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400187</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

<b>LCS</b>		Sample ID: <b>LCS-74296-74296</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 02:30 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400188</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1823 0.020 0.1665 0 110 80-120 0

<b>MS</b>		Sample ID: <b>15071662-04BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 03:18 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400209</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1176 0.013 0.1089 0.0005 107 75-125 0

<b>MSD</b>		Sample ID: <b>15071662-04BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/3/2015 03:27 PM</b>		
Client ID:		Run ID: <b>HG1_150803A</b>				SeqNo: <b>3400213</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1178 0.013 0.1078 0.0005 109 75-125 0.1176 0.159 35

The following samples were analyzed in this batch:

15071709-01A

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



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74269** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: <b>15071722-01ADUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>8/5/2015 12:20 PM</b>		
Client ID:		Run ID: <b>ICP2_150805A</b>				SeqNo: <b>3403721</b>		Prep Date: <b>8/3/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	237.3	5.0	0	0	0	0-0	248.3	4.54		
Magnesium	357.4	2.0	0	0	0	0-0	381.8	6.61		
Sodium	1219	2.0	0	0	0	0-0	1327	8.47		

DUP		Sample ID: <b>15071722-01ADUP</b>				Units: <b>none</b>		Analysis Date: <b>8/5/2015</b>		
Client ID:		Run ID: <b>SAR_150805A</b>				SeqNo: <b>3403811</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	11.67	0.010	0	0	0		12.33	5.46	50	

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74290**

Instrument ID **ICP2**

Method: **SW846 6010C**

Sample ID: <b>MBLK-74290-74290</b>				Units: <b>mg/Kg</b>			Analysis Date: <b>8/3/2015 10:57 AM</b>			
Client ID:		Run ID: <b>ICP2_150803A</b>			SeqNo: <b>3399763</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.008327	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS				Sample ID: LCS-74290-74290			Units: mg/Kg		Analysis Date: 8/3/2015 11:03 AM		
Client ID:			Run ID: ICP2_150803A			SeqNo: 3399764		Prep Date: 7/31/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	4.79	0.25	5	0	95.8	80-120	0				
Barium	4.836	0.25	5	0	96.7	80-120	0				
Cadmium	4.502	0.50	5	0	90	80-120	0				
Chromium	5.056	0.25	5	0	101	80-120	0				
Copper	5.016	0.50	5	0	100	80-120	0				
Lead	4.955	0.25	5	0	99.1	80-120	0				
Nickel	5.172	0.25	5	0	103	80-120	0				
Selenium	4.76	0.50	5	0	95.2	80-120	0				
Silver	4.803	0.25	5	0	96.1	80-120	0				
Zinc	4.396	0.50	5	0	87.9	80-120	0				

MS				Sample ID: 15071796-03CMS			Units: mg/Kg		Analysis Date: 8/3/2015 11:19 AM		
Client ID:			Run ID: ICP2_150803A		SeqNo: 3399767		Prep Date: 7/31/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	15.49	0.34	6.793	9.672	85.6	75-125	0				
Barium	87.44	0.34	6.793	71.36	237	75-125	0			SO	
Cadmium	6.242	0.68	6.793	-0.1965	94.8	75-125	0				
Chromium	20.24	0.34	6.793	11.54	128	75-125	0			S	
Copper	22.4	0.68	6.793	17.74	68.6	75-125	0			S	
Lead	11.5	0.34	6.793	4.394	105	75-125	0				
Nickel	37.35	0.34	6.793	32.78	67.3	75-125	0			SO	
Selenium	7.22	0.68	6.793	0.04462	106	75-125	0				
Silver	6.809	0.34	6.793	-0.162	103	75-125	0				
Zinc	43.5	0.68	6.793	36	110	75-125	0			O	

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74290**

Instrument ID **ICP2**

Method: **SW846 6010C**

MSD				Sample ID: 15071796-03CMSD				Units: mg/Kg		Analysis Date: 8/3/2015 02:18 PM		
Client ID:			Run ID: ICP2_150803B			SeqNo: 3400126		Prep Date: 7/31/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	16.72	0.34	6.803	9.672	104	75-125	15.49	7.67	20			
Barium	83.36	0.34	6.803	71.36	176	75-125	87.44	4.78	20	SO		
Cadmium	6.159	0.68	6.803	0	90.5	75-125	6.242	1.34	20			
Chromium	19.49	0.34	6.803	11.54	117	75-125	20.24	3.74	20			
Copper	23.93	0.68	6.803	17.74	91	75-125	22.4	6.62	20			
Lead	11.38	0.34	6.803	4.394	103	75-125	11.5	1.03	20			
Nickel	39.75	0.34	6.803	32.78	102	75-125	37.35	6.23	20	O		
Selenium	7.154	0.68	6.803	0	105	75-125	7.22	0.917	20			
Silver	6.787	0.34	6.803	0	99.8	75-125	6.809	0.334	20			
Zinc	43.73	0.68	6.803	36	114	75-125	43.5	0.535	20	O		

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

# QC BATCH REPORT

Batch ID: **74267**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-74267-74267</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 06:51 PM</b>		
Client ID:		Run ID: <b>SVMS8_150731A</b>				SeqNo: <b>3399776</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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								
<i>Surr: 2-Fluorobiphenyl</i>	1002	0	1667	0	60.1	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1338	0	1667	0	80.3	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1085	0	1667	0	65.1	37-107	0			

LCS		Sample ID: <b>SLCSS1-74267-74267</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 07:10 PM</b>		
Client ID:		Run ID: <b>SVMS8_150731A</b>				SeqNo: <b>3399777</b>		Prep Date: <b>7/31/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	490.3	6.7	666.7	0	73.5	45-110	0			
Anthracene	583.7	6.7	666.7	0	87.5	55-105	0			
Benzo(a)anthracene	594.3	6.7	666.7	0	89.1	50-110	0			
Benzo(a)pyrene	589.7	6.7	666.7	0	88.4	50-110	0			
Benzo(b)fluoranthene	591	6.7	666.7	0	88.6	45-115	0			
Benzo(g,h,i)perylene	545.3	6.7	666.7	0	81.8	40-125	0			
Benzo(k)fluoranthene	626.7	6.7	666.7	0	94	45-115	0			
Chrysene	595.3	6.7	666.7	0	89.3	55-110	0			
Dibenzo(a,h)anthracene	542.7	6.7	666.7	0	81.4	40-125	0			
Fluoranthene	645	6.7	666.7	0	96.7	55-115	0			
Fluorene	530.3	6.7	666.7	0	79.5	50-110	0			
Indeno(1,2,3-cd)pyrene	565	6.7	666.7	0	84.7	40-120	0			
Naphthalene	452.7	6.7	666.7	0	67.9	40-105	0			
Pyrene	600.7	6.7	666.7	0	90.1	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	975.7	0	1667	0	58.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1234	0	1667	0	74	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1124	0	1667	0	67.5	37-107	0			

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74267**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: <b>15071472-02C MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 08:28 PM</b>	
Client ID:				Run ID: <b>SVMS8_150731A</b>			SeqNo: <b>3399781</b>		Prep Date: <b>7/31/2015</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	439.5	6.5	652.6	0	67.3	45-110	0			
Anthracene	532.2	6.5	652.6	0	81.5	55-105	0			
Benzo(a)anthracene	526	6.5	652.6	0	80.6	50-110	0			
Benzo(a)pyrene	535.4	6.5	652.6	0	82	50-110	0			
Benzo(b)fluoranthene	541.6	6.5	652.6	0	83	45-115	0			
Benzo(g,h,i)perylene	536.7	6.5	652.6	0	82.2	40-125	0			
Benzo(k)fluoranthene	533.5	6.5	652.6	0	81.7	45-115	0			
Chrysene	500.8	6.5	652.6	0	76.7	55-110	0			
Dibenzo(a,h)anthracene	511.6	6.5	652.6	0	78.4	40-125	0			
Fluoranthene	575.6	6.5	652.6	0	88.2	55-115	0			
Fluorene	498.6	6.5	652.6	0	76.4	50-110	0			
Indeno(1,2,3-cd)pyrene	573	6.5	652.6	0	87.8	40-120	0			
Naphthalene	424.8	6.5	652.6	0	65.1	40-105	0			
Pyrene	530.2	6.5	652.6	0	81.2	45-125	0			
Surr: 2-Fluorobiphenyl	937.4	0	1631	0	57.5	12-100	0			
Surr: 4-Terphenyl-d14	1088	0	1631	0	66.7	25-137	0			
Surr: Nitrobenzene-d5	1089	0	1631	0	66.8	37-107	0			

MSD				Sample ID: <b>15071472-02C MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>7/31/2015 08:48 PM</b>	
Client ID:				Run ID: <b>SVMS8_150731A</b>			SeqNo: <b>3399782</b>		Prep Date: <b>7/31/2015</b>	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	431.1	6.5	652.7	0	66	45-110	439.5	1.93	30	
Anthracene	528.4	6.5	652.7	0	80.9	55-105	532.2	0.719	30	
Benzo(a)anthracene	519.2	6.5	652.7	0	79.5	50-110	526	1.29	30	
Benzo(a)pyrene	537.8	6.5	652.7	0	82.4	50-110	535.4	0.445	30	
Benzo(b)fluoranthene	543	6.5	652.7	0	83.2	45-115	541.6	0.26	30	
Benzo(g,h,i)perylene	539.8	6.5	652.7	0	82.7	40-125	536.7	0.565	30	
Benzo(k)fluoranthene	531.9	6.5	652.7	0	81.5	45-115	533.5	0.287	30	
Chrysene	503.9	6.5	652.7	0	77.2	55-110	500.8	0.604	30	
Dibenzo(a,h)anthracene	514.3	6.5	652.7	0	78.8	40-125	511.6	0.528	30	
Fluoranthene	565.9	6.5	652.7	0	86.7	55-115	575.6	1.7	30	
Fluorene	492.5	6.5	652.7	0	75.4	50-110	498.6	1.23	30	
Indeno(1,2,3-cd)pyrene	573.1	6.5	652.7	0	87.8	40-120	573	0.0196	30	
Naphthalene	426.2	6.5	652.7	0	65.3	40-105	424.8	0.326	30	
Pyrene	535.2	6.5	652.7	0	82	45-125	530.2	0.938	30	
Surr: 2-Fluorobiphenyl	940.9	0	1632	0	57.7	12-100	937.4	0.367	40	
Surr: 4-Terphenyl-d14	1086	0	1632	0	66.5	25-137	1088	0.221	40	
Surr: Nitrobenzene-d5	1082	0	1632	0	66.3	37-107	1089	0.732	40	

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

# QC BATCH REPORT

Batch ID: **74230** Instrument ID **VMS7** Method: **SW8260B**

MBLK				Sample ID: MBLK-74230-74230				Units: µg/Kg			Analysis Date: 7/30/2015 03:34 PM			
Client ID:				Run ID: VMS7_150730A				SeqNo: 3397304			Prep Date: 7/30/2015		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	993	0	1000	0	99.3	70-130		0						
Surr: 4-Bromofluorobenzene	953.5	0	1000	0	95.4	70-130		0						
Surr: Dibromofluoromethane	996	0	1000	0	99.6	70-130		0						
Surr: Toluene-d8	990	0	1000	0	99	70-130		0						

LCS				Sample ID: LCS-74230-74230			Units: µg/Kg		Analysis Date: 7/30/2015 01:30 PM		
Client ID:			Run ID: VMS7_150730A			SeqNo: 3397302		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	885	30	1000	0	88.5	75-125	0				
Ethylbenzene	901.5	30	1000	0	90.2	75-125	0				
m,p-Xylene	1824	60	2000	0	91.2	80-125	0				
o-Xylene	900	30	1000	0	90	75-125	0				
Toluene	912.5	30	1000	0	91.2	70-125	0				
Xylenes, Total	2724	90	3000	0	90.8	75-125	0				
Surr: 1,2-Dichloroethane-d4	990.5	0	1000	0	99	70-130	0				
Surr: 4-Bromofluorobenzene	1012	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	998.5	0	1000	0	99.8	70-130	0				
Surr: Toluene-d8	1028	0	1000	0	103	70-130	0				

MS				Sample ID: 15071669-13A MS				Units: µg/Kg		Analysis Date: 7/31/2015 01:20 PM	
Client ID:			Run ID: VMS8_150730B			SeqNo: 3398000		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1108	30	1000	0	111	75-125	0				
Ethylbenzene	1128	30	1000	0	113	75-125	0				
m,p-Xylene	2283	60	2000	0	114	80-125	0				
o-Xylene	1114	30	1000	0	111	75-125	0				
Toluene	1117	30	1000	0	112	70-125	0				
Xylenes, Total	3397	90	3000	0	113	75-125	0				
Surr: 1,2-Dichloroethane-d4	949.5	0	1000	0	95	70-130	0				
Surr: 4-Bromofluorobenzene	1076	0	1000	0	108	70-130	0				
Surr: Dibromofluoromethane	953.5	0	1000	0	95.4	70-130	0				
Surr: Toluene-d8	1026	0	1000	0	103	70-130	0				

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74230**      Instrument ID **VMS7**      Method: **SW8260B**

MSD				Sample ID: 15071669-13A MSD			Units: µg/Kg		Analysis Date: 7/31/2015 01:45 PM		
Client ID:			Run ID: VMS8_150730B			SeqNo: 3398001		Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1052	30	1000	0	105	75-125	1108	5.18	30		
Ethylbenzene	1106	30	1000	0	111	75-125	1128	1.97	30		
m,p-Xylene	2205	60	2000	0	110	80-125	2283	3.48	30		
o-Xylene	1052	30	1000	0	105	75-125	1114	5.68	30		
Toluene	1084	30	1000	0	108	70-125	1117	3	30		
Xylenes, Total	3258	90	3000	0	109	75-125	3397	4.19	30		
Surr: 1,2-Dichloroethane-d4	973	0	1000	0	97.3	70-130	949.5	2.44	30		
Surr: 4-Bromofluorobenzene	987.5	0	1000	0	98.8	70-130	1076	8.53	30		
Surr: Dibromofluoromethane	968.5	0	1000	0	96.8	70-130	953.5	1.56	30		
Surr: Toluene-d8	1020	0	1000	0	102	70-130	1026	0.635	30		

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74248** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-74248-74248					Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150730K					SeqNo: 3396219		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	4.02	0	4	0	100	90-110	0			
----	------	---	---	---	-----	--------	---	--	--	--

DUP		Sample ID: 15071541-01A DUP				Units: s.u.		Analysis Date: 7/30/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150730K				SeqNo: 3396223		Prep Date: 7/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	6.32	0	0	0	0	0-0	6.5	2.81	20	H
----	------	---	---	---	---	-----	-----	------	----	---

DUP				Sample ID: 15071628-02A DUP				Units: s.u.			Analysis Date: 7/30/2015 06:00 PM			
Client ID:				Run ID: WETCHEM_150730K				SeqNo: 3396229			Prep Date: 7/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

pH	8.01	0	0	0	0	0-0	8.06	0.622	20	
----	------	---	---	---	---	-----	------	-------	----	--

The following samples were analyzed in this batch:

15071709-01A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **74269** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>15071722-01A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>8/4/2015 10:45 AM</b>		
Client ID:		Run ID: <b>WETCHEM_150804C</b>				SeqNo: <b>3401404</b>		Prep Date: <b>8/3/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	6.7	0.050	0	0	0		10.88	47.6	50	

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

# QC BATCH REPORT

Batch ID: **74416** Instrument ID **WETCHEM** Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-74416-74416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402316</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

<b>LCS</b>		Sample ID: <b>LCS-74416-74416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402315</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.3 1.0 5 0 86 80-120 0

<b>MS</b>		Sample ID: <b>15071709-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID: <b>PA 22-34, PA 21-34 Batch 1</b>		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402307</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.51 1.0 5.102 0 29.6 75-125 0 S

<b>MS</b>		Sample ID: <b>15071709-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID: <b>PA 22-34, PA 21-34 Batch 1</b>		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402309</b>		Prep Date: <b>8/3/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2483 99 2565 0 96.8 75-125 0

<b>MSD</b>		Sample ID: <b>15071709-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>8/4/2015 03:00 PM</b>		
Client ID: <b>PA 22-34, PA 21-34 Batch 1</b>		Run ID: <b>WETCHEM_150804N</b>		SeqNo: <b>3402308</b>		Prep Date: <b>8/3/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.61 1.0 5 0 32.2 75-125 1.51 6.4 20 S

The following samples were analyzed in this batch:

15071709-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15071709  
**Project:** PA 22-34, PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **R168972**      Instrument ID **MOIST**      Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R168972</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>		
Client ID:		Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402069</b>		Prep Date:		DF: <b>1</b>
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-R168972					Units: % of sample		Analysis Date: 8/3/2015 06:00 PM		
Client ID:			Run ID: MOIST_150803D			SeqNo: 3402068		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

<b>DUP</b>				Sample ID: <b>15071665-07B DUP</b>				Units: <b>% of sample</b>		Analysis Date: <b>8/3/2015 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402041</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture      31.13      0.050      0      0      0      36.33      15.4      20

<b>DUP</b>				Sample ID: <b>1508026-01A DUP</b>				Units: % of sample		Analysis Date: <b>8/3/2015 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_150803D</b>				SeqNo: <b>3402062</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture      6.91      0.050      0      0      0      6.41      7.51      20

The following samples were analyzed in this batch:

15071709-01A

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



# ALS Laboratory Group

HOLLAND, Michigan 49424

## Chain-of-Custody

Form 202/8

WORKORDER #

15071709

PAGE

1 of 1

DATE

7/29/2015

TURNAROUND

5 day

DISPOSAL

By Lab or Return to Client

PROJECT NAME PA 22-34, PA 21-34 Batch 1

SITE ID PA 22-34, PA 21-34 Batch 1

PROJECT No.

EDD FORMAT

PURCHASE ORDER

COMPANY NAME WPX Energy

BILL TO COMPANY WPX Energy

SEND REPORT TO Blaney

INVOICE ATTN TO Karolina Blaney; Leo Braun

ADDRESS

ADDRESS

1058 Co Rd 215

CITY / STATE / ZIP

CITY / STATE / ZIP

Parachute CO 81635

PHONE

PHONE

970-883-2295

FAX

FAX

E-MAIL

Karolina.blaney@wpxenergy.com

E-MAIL

Karolina.blaney@wpxenergy.com;  
leo.braun@wpxenergy.com

Lab ID

Field ID

Matrix

Sample Date

Sample Time

# Bottles

Pres.

QC

910-1

PA 22-34, PA 21-34 Batch 1

S

7/29/2015

14:15

1

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:

1.4°

QC PACKAGE (check below)

X

LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms + raw data)

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

SIGNATURE

PRINTED NAME

DATE

TIME

RELINQUISHED BY

Karolina Blaney

Karolina Blaney

7/29/2015

16:00:00 PM

RECEIVED BY

RELINQUISHED BY

RECEIVED BY

RELINQUISHED BY

RECEIVED BY

7/29/15

16:00

7/29/15

16:00

7/30/15

09:30

ORIGIN ID: RILA (616) 298-1033  
 NICK MARTINEZ  
 ALS ENVIRONMENTAL PARACHUTE  
 PARACHUTE SERVICE CENTER  
 127 EAST 1ST ST  
 PARACHUTE, CO 81635  
 UNITED STATES US

SHIP DATE: 29 JUL 15  
 ACTWGT: 59.00 LB  
 CAD: 2284840/NET3870  
 DIMS: 24x16x16 IN  
 BILL SENDER

TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

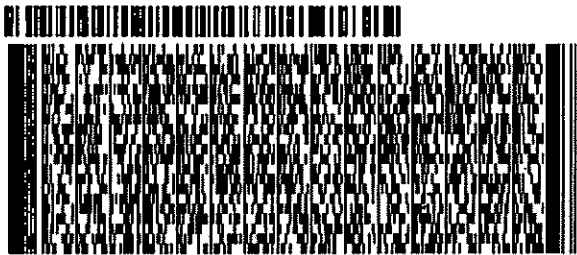
(616) 399-6070

REF: 072915-1

INV.  
 PO: PARACHUTE

DEPT:

539.03/1A15G1D0



REL#  
 3785346

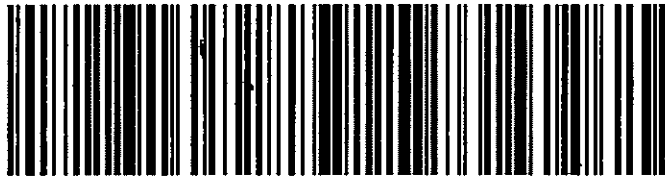
1 of 2

TRK#  
 0201 **7741 6789 7421**  
 ## MASTER ##

**THU - 30 JUL 10:30A**  
**PRIORITY OVERNIGHT**

**XX HLMA**

MI-US **49424**  
**GRR**



**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. Use of this system constitutes your agreement to the set will not be responsible for any claim in excess of \$100 of misinformation, unless you declare a higher value, pay a found in the current FedEx Service Guide apply. Your of sales, income interest, profit, attorney's fees, costs, a limited to the greater of \$100 or the authorized declared value, extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Parachute Custody Seal

Time **15:00** Date **7-29**

Name **Nick**

is available on fedex.com. FedEx may not deliver misdelivery, or to file a timely claim. Limitations on the value of the package, loss or consequential, or special is not loss. Maximum for items of value in our Service Guide. Written

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **30-Jul-15 09:30**

Work Order: **15071709**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

30-Jul-15  
Date

Reviewed by: Chad Whelton  
eSignature

30-Jul-15  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.4 C</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/30/2015 2:01:46 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



23-Sep-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34\_PA 21-34 Batch 1**

Work Order: **15091193**

Dear Karolina,

ALS Environmental received 1 sample on 22-Sep-2015 09:00 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 11.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Les Arnold

Les Arnold  
Senior Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental The ALS logo, a stylized blue triangle with a yellow flame.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 21-34 Batch 1  
**Work Order:** 15091193

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15091193-01	PA 22-34, PA 21-34 Batch 1	Soil		9/21/2015	9/22/2015 09:00	<input type="checkbox"/>



---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 21-34 Batch 1  
**Work Order:** 15091193

---

**Case Narrative**

Samples for the above noted Work Order were received on 09/22/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

**Sample Receiving:**

No deviations or anomalies were noted.

**Volatile Organics:**

No deviations or anomalies were noted.

**Extractable Organics:**

No deviations or anomalies were noted.

**Metals:**

No deviations or anomalies were noted.

**Wet Chemistry:**

No deviations or anomalies were noted.

**ALS Group USA, Corp****Date:** 23-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34\_PA 21-34 Batch 1**Work Order:** 15091193**Sample ID:** PA 22-34, PA 21-34 Batch 1**Lab ID:** 15091193-01**Collection Date:** 9/21/2015**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>250</b>		<b>SW8015M</b>		Prep: SW3541 / 9/22/15	Analyst: <b>IT</b>
			<b>4.6</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/22/2015 06:21 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>59.5</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	9/22/2015 06:21 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>240</b>		<b>SW8015D</b>		Prep: SW5035 / 9/22/15	Analyst: <b>IT</b>
			<b>2.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	9/22/2015 04:13 PM
<i>Surr: Toluene-d8</i>	<i>107</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	9/22/2015 04:13 PM
<b>MOISTURE</b>						
<b>Moisture</b>	<b>11</b>		<b>E160.3M</b>			Analyst: <b>EVB</b>
			<b>0.050</b>	<b>% of sample</b>	<b>1</b>	9/22/2015 02:40 PM

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34\_PA 21-34 Batch 1  
**WorkOrder:** 15091193

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

# ALS Group USA, Corp

Date: 23-Sep-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091193  
**Project:** PA 22-34\_PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **76354** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-76354-76354</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 04:22 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470217</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.662	0	2	0	83.1	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-76354-76354</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 04:51 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470218</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.5	5.0	200	0	92.3	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.4	0	2	0	70	39-133	0			

<b>MS</b>		Sample ID: <b>15091099-04A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 07:51 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470224</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	184.2	4.1	165.3	69.24	69.5	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	1.347	0	1.653	0	81.5	39-133	0			

<b>MSD</b>		Sample ID: <b>15091099-04A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/22/2015 08:21 PM</b>		
Client ID:		Run ID: <b>GC8_150922A</b>				SeqNo: <b>3470225</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	238	4.1	164.1	69.24	103	48-110	184.2	25.5	30	
<i>Surr: 4-Terphenyl-d14</i>	1.345	0	1.641	0	81.9	39-133	1.347	0.168	30	

The following samples were analyzed in this batch:

15091193-01A
--------------

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091193  
**Project:** PA 22-34\_PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **76357**      Instrument ID **GC9**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-76357-76357</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 02:58 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470229</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
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	5478	0	5000	0	110	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-76357-76357</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 02:33 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470228</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	449800	2,500	500000	0	90	70-130	0			
Surr: Toluene-d8	5320	0	5000	0	106	50-150	0			

<b>MS</b>		Sample ID: <b>15091203-02A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 05:27 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470235</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	505600	2,500	500000	0	101	70-130	0			
Surr: Toluene-d8	5194	0	5000	0	104	50-150	0			

<b>MSD</b>		Sample ID: <b>15091203-02A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/22/2015 05:52 PM</b>		
Client ID:		Run ID: <b>GC9_150922A</b>				SeqNo: <b>3470236</b>		Prep Date: <b>9/22/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	512200	2,500	500000	0	102	70-130	505600	1.29	30	
Surr: Toluene-d8	5472	0	5000	0	109	50-150	5194	5.21	30	

The following samples were analyzed in this batch:

15091193-01A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091193  
**Project:** PA 22-34\_PA 21-34 Batch 1

## QC BATCH REPORT

Batch ID: **R172207** Instrument ID **MOIST** Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R172207</b>				Units: % of sample		Analysis Date: <b>9/22/2015 02:40 PM</b>		
Client ID:		Run ID: <b>MOIST_150922A</b>				SeqNo: <b>3470910</b>		Prep Date:		DF: <b>1</b>
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-R172207					Units: % of sample		Analysis Date: 9/22/2015 02:40 PM		
Client ID:			Run ID: MOIST_150922A			SeqNo: 3470909		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: 15091191-01A DUP					Units: % of sample		Analysis Date: 9/22/2015 02:40 PM		
Client ID:			Run ID: MOIST_150922A			SeqNo: 3470893		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 19.3 0.050 0 0 0 19.96 3.36 20

<b>DUP</b>				Sample ID: <b>1509712-03B DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2015 02:40 PM</b>			
Client ID:				Run ID: <b>MOIST_150922A</b>				SeqNo: <b>3470899</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 18.86 0.050 0 0 0 18.89 0.159 20

The following samples were analyzed in this batch:

15091193-01A

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

**WORKORDER**  
#

15091193

PAGE

1 of 1


**DISPOSAL.**

By Lab or Return to Client

[illegible]

\*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.**

<b>Comments:</b> 	<b>QC PACKAGE (check below)</b>	
	<input checked="" type="checkbox"/> X	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
<b>Preservative Key:</b> 1-HCl   2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH   5-NaHSO <sub>4</sub> 7-Other   8-4 degrees C   9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Karolina Blaney</i>	Karolina Blaney	9/21/2015	10:30
RECEIVED BY	<i>[Signature]</i>	<i>[Signature]</i>	9-21-15	1600
RELINQUISHED BY	<i>[Signature]</i>	<i>[Signature]</i>	9-21-15	1420
RECEIVED BY	<i>[Signature]</i>	N Leon	9-22-15	900
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID: RILA (616) 288-1033  
NICK MARTINEZ  
ALS ENVIRONMENTAL PARACHUTE  
PARACHUTE SERVICE CENTER  
127 EAST 1ST. ST  
PARACHUTE, CO 81635  
UNITED STATES US

SHIP DATE: 21SEP15  
ACTWGT: 55.00 LB  
CAD: 2264840/NET3670  
DMS: 14x28x15 IN  
BILL SENDER

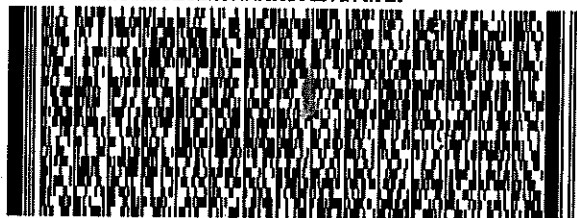
TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

HOLLAND MI 49424

(616) 399-6070  
INV.  
PO. PARACHUTE

REF: 092115-1

DEPT:



**FedEx**  
Express



REL#  
3785346

1 of 2

TRK#  
0201

**7745 6089 1062**

## MASTER ##

# XX HLMA

**TUE - 22 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**49424**

MI-US

## GRR

1000

539 12/08/2010

**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 is visible.

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 it, in addition to additional billing charges, along with the cancellation of your FedEx account in the United States. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide. You will not be responsible for any claim in excess of \$100 per package, whether the claim involves misinformation, unless you declare a higher value, pay an additional charge, document the loss or damage found in the current FedEx Service Guide apply. Your right to recover from FedEx is limited to the greater of \$100 or the authorized declared value. Recovery is not limited to sales, income interest, profit, attorney's fees, costs, and other forms of damages. The maximum extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Parachute Custody Seal

Time 0816 Date 9-21-15  
Name [Signature]  
Federal document # \_\_\_\_\_  
and other items listed in our Service Guide, written



Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **22-Sep-15 09:00**

Work Order: **15091193**

Received by: **NML**

Checklist completed by Diane Shaw 22-Sep-15  
eSignature Date

Reviewed by: Lee Arnold 22-Sep-15  
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.8/1.8 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/22/2015 10:57:55 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



05-Oct-2015

Karolina Blaney  
WPX Energy Rocky Mountain, LLC  
1058 Country Rd 215  
Parachute, CO 81635

Re: **PA 22-34 Backgrounds**

Work Order: **15091651**

Dear Karolina,

ALS Environmental received 5 samples on 29-Sep-2015 09:00 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 F1 .

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

Sincerely,

A handwritten signature in black ink that reads "Les Arnold".

Electronically approved by: Les Arnold

Les Arnold  
Senior Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

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

Environmental A small icon of a tree and a recycling symbol.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34 Backgrounds  
**Work Order:** 15091651

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15091651-01	PA 22-34-B-1	Soil		9/28/2015 12:40	9/29/2015 09:00	<input type="checkbox"/>
15091651-02	PA 22-34-B-2	Soil		9/28/2015 12:45	9/29/2015 09:00	<input type="checkbox"/>
15091651-03	PA 22-34-B-3	Soil		9/28/2015 12:50	9/29/2015 09:00	<input type="checkbox"/>
15091651-04	PA 22-34-B-4	Soil		9/28/2015 12:55	9/29/2015 09:00	<input type="checkbox"/>
15091651-05	PA 22-34-B-5	Soil		9/28/2015 13:00	9/29/2015 09:00	<input type="checkbox"/>

---

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34 Backgrounds  
**Work Order:** 15091651

---

**Case Narrative**

Samples for the above noted Work Order were received on 09/29/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

**Sample Receiving:**

No deviations or anomalies were noted.

**Volatile Organics:**

No deviations or anomalies were noted.

**Extractable Organics:**

No deviations or anomalies were noted.

**Metals:**

No deviations or anomalies were noted.

**Wet Chemistry:**

No deviations or anomalies were noted.

**ALS Group USA, Corp****Date:** 05-Oct-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34 Backgrounds**Work Order:** 15091651**Sample ID:** PA 22-34-B-1**Lab ID:** 15091651-01**Collection Date:** 9/28/2015 12:40 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS ANALYSIS BY ICP</b>						
Arsenic	5.0		SW846 6010C 0.35	mg/Kg-dry	Prep: SW3050B / 9/30/15 1	Analyst: JEC 9/30/2015 08:08 PM
<b>MOISTURE</b>						
Moisture	1.3		E160.3M 0.050	% of sample	1	Analyst: TM 9/30/2015 03:05 PM

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

**ALS Group USA, Corp****Date:** 05-Oct-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34 Backgrounds**Work Order:** 15091651**Sample ID:** PA 22-34-B-2**Lab ID:** 15091651-02**Collection Date:** 9/28/2015 12:45 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS ANALYSIS BY ICP</b>						
Arsenic	9.9		<b>SW846 6010C</b> 0.38	mg/Kg-dry	1	Prep: SW3050B / 9/30/15 Analyst: <b>JEC</b> 9/30/2015 08:14 PM
<b>MOISTURE</b>						
Moisture	2.0		<b>E160.3M</b> 0.050	% of sample	1	Analyst: <b>TM</b> 9/30/2015 03:05 PM

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

**ALS Group USA, Corp****Date:** 05-Oct-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** PA 22-34 Backgrounds**Work Order:** 15091651**Sample ID:** PA 22-34-B-3**Lab ID:** 15091651-03**Collection Date:** 9/28/2015 12:50 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS ANALYSIS BY ICP</b>						
Arsenic	6.7		<b>SW846 6010C</b> 0.33	mg/Kg-dry	1	Prep: SW3050B / 9/30/15 Analyst: <b>JEC</b> 9/30/2015 08:20 PM
<b>MOISTURE</b>						
Moisture	2.2		<b>E160.3M</b> 0.050	% of sample	1	Analyst: <b>TM</b> 9/30/2015 03:05 PM

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

# ALS Group USA, Corp

Date: 05-Oct-15

**Client:** WPX Energy Rocky Mountain, LLC  
**Project:** PA 22-34 Backgrounds  
**Sample ID:** PA 22-34-B-4  
**Collection Date:** 9/28/2015 12:55 PM

**Work Order:** 15091651  
**Lab ID:** 15091651-04  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS ANALYSIS BY ICP</b>						
Arsenic	6.8		SW846 6010C 0.32	mg/Kg-dry	Prep: SW3050B / 9/30/15 1	Analyst: JEC 9/30/2015 08:26 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
Calcium	53		SW846 6010C 5.0	mg/L	Prep: USDA Method 20B / 10/5/15 10	Analyst: JEC 10/5/2015 11:52 AM
Magnesium	7.9		2.0	mg/L	10	10/5/2015 11:52 AM
Sodium	ND		2.0	mg/L	10	10/5/2015 11:52 AM
<b>SODIUM ADSORPTION RATIO</b>						
Sodium Adsorption Ratio	0.048		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 10/5/15 1	Analyst: JEC 10/5/2015
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>						
Electrical Conductivity @ Saturation	0.30		USDA H60 METHO 0.050	mmhos/cm @2	Prep: USDA Method 20B / 10/5/15 10	Analyst: JB 10/5/2015 04:30 PM
<b>MOISTURE</b>						
Moisture	1.5		E160.3M 0.050	% of sample	1	Analyst: TM 9/30/2015 03:05 PM
<b>PH</b>						
pH	8.1		SW9045D s.u.		Prep: EXTRACT / 9/30/15 1	Analyst: STP 9/30/2015 02:30 PM

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



# ALS Group USA, Corp

Date: 05-Oct-15

Client: WPX Energy Rocky Mountain, LLC

Project: PA 22-34 Backgrounds

Sample ID: PA 22-34-B-5

Collection Date: 9/28/2015 01:00 PM

Work Order: 15091651

Lab ID: 15091651-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>METALS ANALYSIS BY ICP</b>			<b>SW846 6010C</b>		Prep: SW3050B / 9/30/15	Analyst: <b>JEC</b>
Arsenic	9.6		0.38	mg/Kg-dry	1	9/30/2015 08:31 PM
<b>MOISTURE</b>			<b>E160.3M</b>			Analyst: <b>TM</b>
Moisture	2.4		0.050	% of sample	1	9/30/2015 03:05 PM

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

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
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

Batch ID: 76771

Instrument ID SAR

Method: USDA H60 Metho

DUP		Sample ID: 15091651-04ADUP				Units: none		Analysis Date: 10/5/2015		
Client ID: PA 22-34-B-4			Run ID: SAR_151005A			SeqNo: 3490918		Prep Date: 10/5/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.05216	0.010	0	0	0		0.04793	8.45	50	

The following samples were analyzed in this batch:

15091651-04A

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091651  
**Project:** PA 22-34 Backgrounds

## QC BATCH REPORT

Batch ID: **76776** Instrument ID **ICP2** Method: **SW846 6010C**

<b>MBLK</b>		Sample ID: <b>MBLK-76776-76776</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/30/2015 07:57 PM</b>		
Client ID:		Run ID: <b>ICP2_150930B</b>				SeqNo: <b>3485247</b>		Prep Date: <b>9/30/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic ND 0.25

<b>LCS</b>		Sample ID: <b>LCS-76776-76776</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/30/2015 08:03 PM</b>		
Client ID:		Run ID: <b>ICP2_150930B</b>				SeqNo: <b>3485248</b>		Prep Date: <b>9/30/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 4.762 0.25 5 0 95.2 80-120 0

<b>MS</b>		Sample ID: <b>15091652-03AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/30/2015 09:09 PM</b>		
Client ID:		Run ID: <b>ICP2_150930B</b>				SeqNo: <b>3485260</b>		Prep Date: <b>9/30/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 19.71 0.39 7.728 5.625 182 75-125 0 S

<b>MSD</b>		Sample ID: <b>15091652-03AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/30/2015 09:15 PM</b>		
Client ID:		Run ID: <b>ICP2_150930B</b>				SeqNo: <b>3485261</b>		Prep Date: <b>9/30/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 14 0.39 7.752 5.625 108 75-125 19.71 33.9 20 R

The following samples were analyzed in this batch:

15091651-01A	15091651-02A	15091651-03A
15091651-04A	15091651-05A	

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091651  
**Project:** PA 22-34 Backgrounds

## QC BATCH REPORT

Batch ID: **76771** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>15091651-04A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>10/5/2015 04:30 PM</b>		
Client ID: <b>PA 22-34-B-4</b>		Run ID: <b>WETCHEM_151005M</b>				SeqNo: <b>3491316</b>		Prep Date: <b>10/5/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.311	0.050	0	0	0		0.305	1.95	50	

The following samples were analyzed in this batch:

15091651-04A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091651  
**Project:** PA 22-34 Backgrounds

## QC BATCH REPORT

Batch ID: **76783** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-76783-76783				Units: s.u.			Analysis Date: 9/30/2015 02:30 PM			
Client ID:				Run ID: WETCHEM_150930G				SeqNo: 3484154			Prep Date: 9/30/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		3.96	0	4	0	99	90-110	0						

DUP				Sample ID: 15091651-04A DUP				Units: s.u.			Analysis Date: 9/30/2015 02:30 PM			
Client ID: PA 22-34-B-4				Run ID: WETCHEM_150930G				SeqNo: 3484157			Prep Date: 9/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
pH	8.14	0	0	0	0	0-0	8.06	0.988	20					

The following samples were analyzed in this batch:

15091651-04A

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

**Client:** WPX Energy Rocky Mountain, LLC  
**Work Order:** 15091651  
**Project:** PA 22-34 Backgrounds

## QC BATCH REPORT

Batch ID: **R172828**      Instrument ID **MOIST**      Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R172828</b>				Units: % of sample		Analysis Date: <b>9/30/2015 03:05 PM</b>		
Client ID:		Run ID: <b>MOIST_150930B</b>				SeqNo: <b>3486283</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R172828</b>				Units: % of sample		Analysis Date: <b>9/30/2015 03:05 PM</b>		
Client ID:		Run ID: <b>MOIST_150930B</b>				SeqNo: <b>3486282</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>15091632-01A DUP</b>				Units: % of sample		Analysis Date: <b>9/30/2015 03:05 PM</b>		
Client ID:		Run ID: <b>MOIST_150930B</b>				SeqNo: <b>3486261</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      15.24      0.050      0      0      0      16.23      6.29      20

<b>DUP</b>		Sample ID: <b>15091651-01A DUP</b>				Units: % of sample		Analysis Date: <b>9/30/2015 03:05 PM</b>		
Client ID: <b>PA 22-34-B-1</b>		Run ID: <b>MOIST_150930B</b>				SeqNo: <b>3486266</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      1.34      0.050      0      0      0      1.31      2.26      20

The following samples were analyzed in this batch:

15091651-01A	15091651-02A	15091651-03A
15091651-04A	15091651-05A	

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



WORKORDER  
#

15091651

Form 202r8

\*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.**

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Karolina Blaney</i>	Karolina Blaney	9/28/2015	16:00:00 PM
RECEIVED BY	<i>[Signature]</i>	<i>[Signature]</i>	9-28-15	7690
RELINQUISHED BY	<i>[Signature]</i>	<i>[Signature]</i>	9-28-15	1630
RECEIVED BY	<i>[Signature]</i>	<i>NL</i>	9-29-15	50
RELINQUISHED BY				
RECEIVED BY				



ORIGIN ID:RILA (616) 208-1033  
NICK MARTINEZ  
ALS ENVIRONMENTAL PARACHUTE  
PARACHUTE SERVICE CENTER  
127 EAST 1ST. ST  
PARACHUTE, CO 81635  
UNITED STATES US

SHIP DATE: 28SEP15  
ACTWGT: 78.00 LB  
CAD: 2264840/NET3870  
DIMS: 24x15x15 IN  
BILL SENDER:

TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

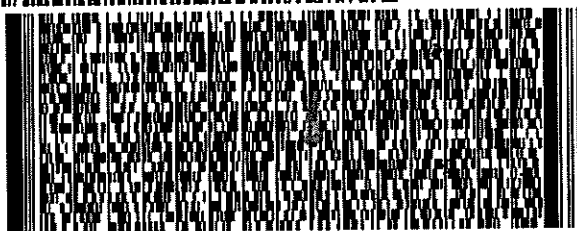
(816) 398-6070

REF: 092815-1

IV-

PO: PARACHUTE

DEPT:



**FedEx.**  
Express

REL#  
3785346

2 of 3

**HPSS\***

0283

**7746 1479 8550**

**Mstr# 7746 1479 8458**

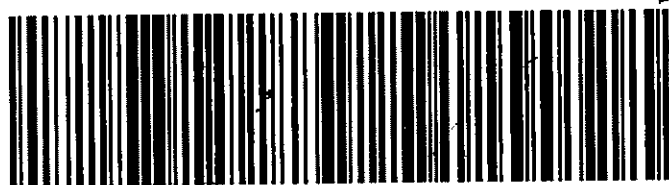
0201

# XX HLMA

MI-US

**49424**  
**GRR**

**TUE - 29 SEP 10:30A**  
**PRIORITY OVERNIGHT**



539J297D781D0

**After printing this label:**

- 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 label is visible.

be read and scanned.

[illegible]

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **29-Sep-15 09:00**

Work Order: **15091651**

Received by: **NML**

Checklist completed by Diane Shaw 29-Sep-15  
eSignature Date

Reviewed by: Lee Arnold 29-Sep-15  
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2/3.2 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/29/2015 1:26:13 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: