



October 8, 2015

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

Re: GM 31-1 Historical Produced Water 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 GM 31-1 well pad and was discovered on September 10, 2015.

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. The excavated material was landfarmed on location. One composite sample was collected from the landfarm. All samples were analyzed for an abbreviated list of constituents permitted with COGCC with the supplemental form 19. One grab sample was collected from nearby non-impacted, native soil; in accordance with the COGCC Rule 910.b.(3)E. the 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.

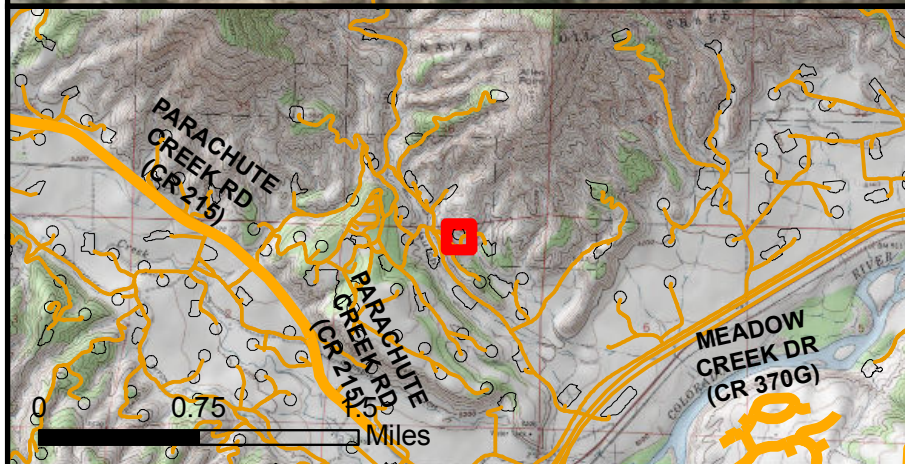
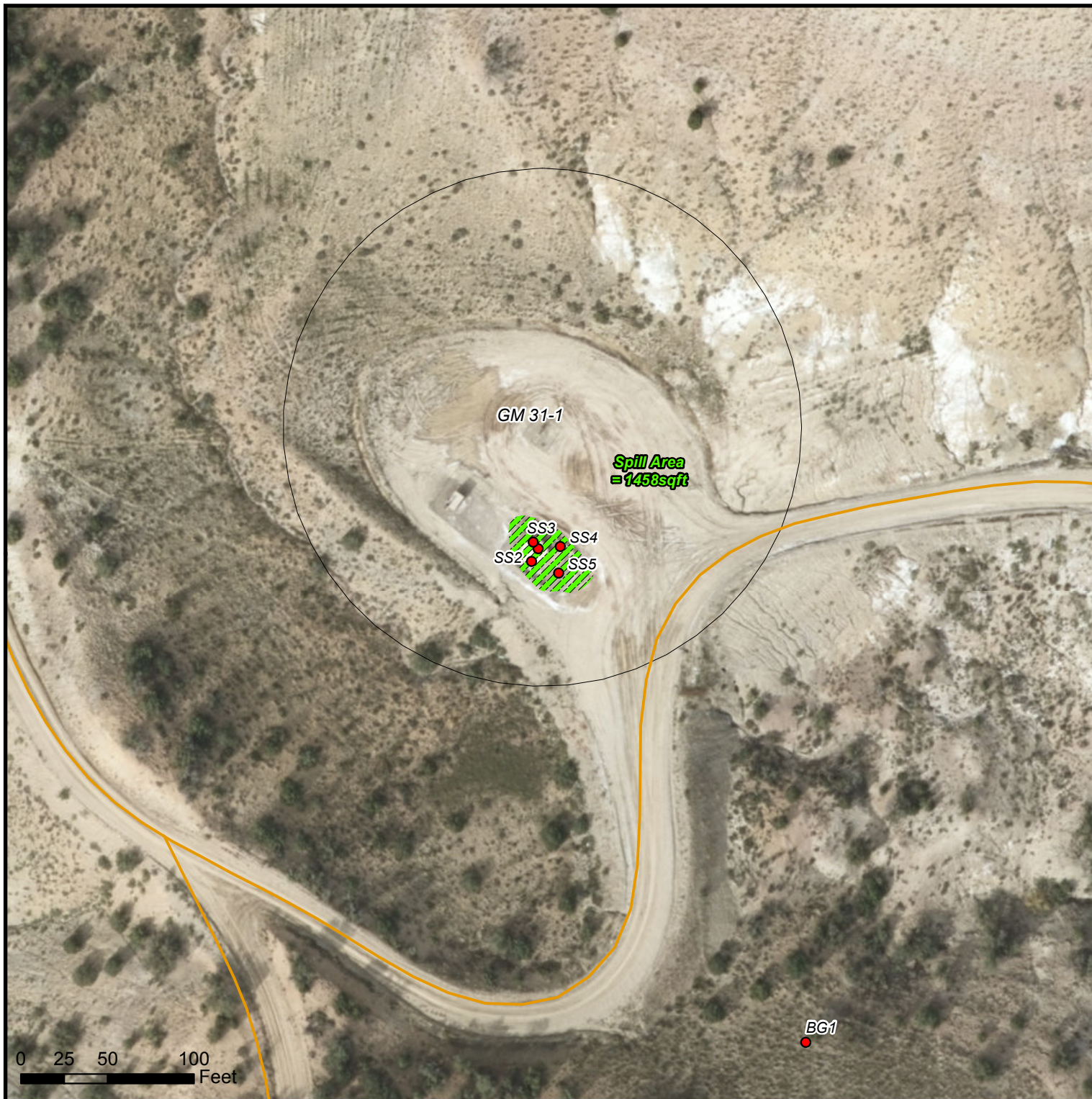
Sincerely,

A handwritten signature in blue ink that reads "Karolina Blaney".

Karolina Blaney
Environmental Specialist

Attachments (2)

- Sampling Location Map
- Laboratory Reports



Spill Closure Map

GM 31-1

39.472581 -108.056504

Section 1, Township 7 South, Range 96 West

- Sample Location
- ▨ Impacted Area
- Road (from Garfield County)
- Existing Road
- Stream
- Existing Pad
- River



Contaminant of Concern ↓	COGCC standards	Location →	GM 31-1 SS1	GM 31-1 SS2	GM 31-1 SS3	GM 31-1 SS4	GM 31-1 SS5	GM 31-1 CS1 (landfarm)	GM 31-1 CS1 (landfarm)	GM 31-1 BG 1
		Date Sampled →	9/15/2015	9/15/2015	9/15/2015	9/15/2015	9/15/2015	9/15/2015	9/24/2015	9/15/2015
Organic Compounds in Soil										
TPH	500	mg/kg	175	ND	ND	ND	21	539	310	
DRO		mg/kg	15.0	ND	ND	ND	21	39	100	
GRO		mg/kg	160	ND	ND	ND	ND	500	210	
Benzene	0.17	mg/kg	ND	ND	ND	ND	ND	ND		
Toluene	85	mg/kg	ND	ND	ND	ND	ND	ND		
Ethylbenzene	100	mg/kg	0.52	ND	ND	ND	0.046	0.039		
Xylenes (Total)	175	mg/kg	0.32	ND	ND	ND	0.53	3.0		
Acenaphthene	1,000	mg/kg	ND	ND	ND	ND	ND	ND		
Anthracene	1,000	mg/kg	ND	ND	ND	ND	ND	ND		
Benzo(A)anthracene	0.22	mg/kg	ND	ND	ND	ND	ND	ND		
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND	ND	ND	ND	ND		
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND	ND	ND	ND	ND		
Benzo(A)pyrene	0.022	mg/kg	ND	ND	ND	ND	ND	ND		
Chrysene	22	mg/kg	ND	ND	ND	ND	ND	ND		
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND	ND	ND	ND	ND		
Fluoranthene	1,000	mg/kg	ND	ND	ND	ND	ND	ND		
Fluorene	1,000	mg/kg	ND	ND	ND	ND	ND	ND		
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND	ND	ND	ND	ND	ND		
Naphthalene	23	mg/kg	ND	ND	ND	ND	ND	ND		
Pyrene	1,000	mg/kg	ND	ND	ND	ND	ND	ND		
Inorganics in Soil										
EC	<4 or 2 x background	mmhos/cm	5.4	11	5.3	18	12	11		0.88
SAR	<12		15	12	9.9	21	16	14		1.2
pH	6-9		9.2	8.1	9	8.2	8.7	8.3		8.8



18-Sep-2015

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

Re: **GM 31-1 Produced Water Spill**

Work Order: **1509846**

Dear Karolina,

ALS Environmental received 6 samples on 16-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 29.

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

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Environmental 

www.alsglobal.com

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Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Work Order: 1509846

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>
1509846-01	GM 31-1 CS1	Soil		9/15/2015 16:00	9/16/2015 09:00	<input type="checkbox"/>
1509846-02	GM 31-1 SS1	Soil		9/15/2015 16:10	9/16/2015 09:00	<input type="checkbox"/>
1509846-03	GM 31-1 SS2	Soil		9/15/2015 16:15	9/16/2015 09:00	<input type="checkbox"/>
1509846-04	GM 31-1 SS3	Soil		9/15/2015 16:20	9/16/2015 09:00	<input type="checkbox"/>
1509846-05	GM 31-1 SS4	Soil		9/15/2015 16:25	9/16/2015 09:00	<input type="checkbox"/>
1509846-06	GM 31-1 SS5	Soil		9/15/2015 16:35	9/16/2015 09:00	<input type="checkbox"/>

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Work Order: 1509846

Case Narrative

Samples for the above noted Work Order were received on 09/16/2015. 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:

Batch 76132, Method 8015, DRO; Sample 1509846-01A: The RPD between the MS and MSD was outside the control limit. The corresponding result in the parent sample should be considered estimated for this analyte.

No other 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: 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 CS1
Collection Date: 9/15/2015 04:00 PM

Work Order: 1509846
Lab ID: 1509846-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	39		SW8015M		Prep: SW3550 / 9/16/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	55.3		4.9	mg/Kg-dry	1	9/17/2015 11:19 AM
			39-133	%REC	1	9/17/2015 11:19 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	500		SW8015D		Prep: SW5035 / 9/16/15	Analyst: IT
<i>Surr: Toluene-d8</i>	108		3.0	mg/Kg-dry	1	9/16/2015 01:41 PM
			50-150	%REC	1	9/16/2015 01:41 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	480		5.0	mg/L	10	9/18/2015 03:04 PM
Magnesium	210		2.0	mg/L	10	9/18/2015 03:04 PM
Sodium	1,500		2.0	mg/L	10	9/18/2015 03:04 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	14		0.010	none	1	9/18/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3550 / 9/16/15	Analyst: RS
Acenaphthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Anthracene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Benzo(a)anthracene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Benzo(a)pyrene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Benzo(b)fluoranthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Benzo(k)fluoranthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Chrysene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Dibenzo(a,h)anthracene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Fluoranthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Indeno(1,2,3-cd)pyrene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Naphthalene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
Pyrene	ND		0.0078	mg/Kg-dry	1	9/16/2015 07:56 PM
<i>Surr: 2-Fluorobiphenyl</i>	62.6		12-100	%REC	1	9/16/2015 07:56 PM
<i>Surr: 4-Terphenyl-d14</i>	74.2		25-137	%REC	1	9/16/2015 07:56 PM
<i>Surr: Nitrobenzene-d5</i>	71.3		37-107	%REC	1	9/16/2015 07:56 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 9/16/15	Analyst: AK
Benzene	ND		0.036	mg/Kg-dry	1	9/17/2015 10:25 AM
Ethylbenzene	0.039		0.036	mg/Kg-dry	1	9/17/2015 10:25 AM
m,p-Xylene	2.4		0.071	mg/Kg-dry	1	9/17/2015 10:25 AM
o-Xylene	0.53		0.036	mg/Kg-dry	1	9/17/2015 10:25 AM
Toluene	ND		0.036	mg/Kg-dry	1	9/17/2015 10:25 AM
Xylenes, Total	3.0		0.11	mg/Kg-dry	1	9/17/2015 10:25 AM
<i>Surr: 1,2-Dichloroethane-d4</i>	102		70-130	%REC	1	9/17/2015 10:25 AM

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

ALS Group USA, Corp**Date:** 18-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-1 Produced Water Spill**Work Order:** 1509846**Sample ID:** GM 31-1 CS1**Lab ID:** 1509846-01**Collection Date:** 9/15/2015 04:00 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Bromofluorobenzene	96.2		70-130	%REC	1	9/17/2015 10:25 AM
Surr: Dibromofluoromethane	97.3		70-130	%REC	1	9/17/2015 10:25 AM
Surr: Toluene-d8	113		70-130	%REC	1	9/17/2015 10:25 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/18/15		Analyst: JB
Electrical Conductivity @ Saturation	11		0.050	mmhos/cm @2	10	9/18/2015 10:50 AM
MOISTURE			E160.3M			Analyst: TM
Moisture	16		0.050	% of sample	1	9/16/2015 03:34 PM
PH			SW9045D	Prep: EXTRACT / 9/16/15		Analyst: KF
pH	8.3			s.u.	1	9/16/2015 02:05 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 SS1
Collection Date: 9/15/2015 04:10 PM

Work Order: 1509846
Lab ID: 1509846-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	15		SW8015M		Prep: SW3550 / 9/16/15	Analyst: IT
			4.7	mg/Kg-dry	1	9/17/2015 11:49 AM
Surr: 4-Terphenyl-d14	42.8		39-133	%REC	1	9/17/2015 11:49 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	160		SW8015D		Prep: SW5035 / 9/16/15	Analyst: IT
			2.8	mg/Kg-dry	1	9/16/2015 02:06 PM
Surr: Toluene-d8	104		50-150	%REC	1	9/16/2015 02:06 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	140		5.0	mg/L	10	9/18/2015 03:09 PM
Magnesium	51		2.0	mg/L	10	9/18/2015 03:09 PM
Sodium	810		2.0	mg/L	10	9/18/2015 03:09 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	15		0.010	none	1	9/18/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3550 / 9/16/15	Analyst: RS
Acenaphthene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Anthracene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Benzo(a)anthracene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Benzo(a)pyrene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Benzo(b)fluoranthene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Benzo(k)fluoranthene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Chrysene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Dibenzo(a,h)anthracene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Fluoranthene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Indeno(1,2,3-cd)pyrene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Naphthalene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Pyrene	ND		0.0075	mg/Kg-dry	1	9/16/2015 08:21 PM
Surr: 2-Fluorobiphenyl	60.3		12-100	%REC	1	9/16/2015 08:21 PM
Surr: 4-Terphenyl-d14	71.4		25-137	%REC	1	9/16/2015 08:21 PM
Surr: Nitrobenzene-d5	66.6		37-107	%REC	1	9/16/2015 08:21 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 9/16/15	Analyst: AK
Benzene	ND		0.034	mg/Kg-dry	1	9/17/2015 09:59 AM
Ethylbenzene	0.52		0.034	mg/Kg-dry	1	9/17/2015 09:59 AM
m,p-Xylene	0.32		0.068	mg/Kg-dry	1	9/17/2015 09:59 AM
o-Xylene	ND		0.034	mg/Kg-dry	1	9/17/2015 09:59 AM
Toluene	ND		0.034	mg/Kg-dry	1	9/17/2015 09:59 AM
Xylenes, Total	0.32		0.10	mg/Kg-dry	1	9/17/2015 09:59 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	9/17/2015 09:59 AM

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

ALS Group USA, Corp**Date:** 18-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-1 Produced Water Spill**Work Order:** 1509846**Sample ID:** GM 31-1 SS1**Lab ID:** 1509846-02**Collection Date:** 9/15/2015 04:10 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Bromofluorobenzene	95.8		70-130	%REC	1	9/17/2015 09:59 AM
Surr: Dibromofluoromethane	99.7		70-130	%REC	1	9/17/2015 09:59 AM
Surr: Toluene-d8	104		70-130	%REC	1	9/17/2015 09:59 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/18/15		Analyst: JB
Electrical Conductivity @ Saturation	5.4		0.050	mmhos/cm @2	10	9/18/2015 10:50 AM
MOISTURE			E160.3M			Analyst: TM
Moisture	12		0.050	% of sample	1	9/16/2015 03:34 PM
PH			SW9045D	Prep: EXTRACT / 9/16/15		Analyst: KF
pH	9.2			s.u.	1	9/16/2015 02:05 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 SS2
Collection Date: 9/15/2015 04:15 PM

Work Order: 1509846
Lab ID: 1509846-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3550 / 9/16/15	Analyst: IT
DRO (C10-C28)	ND		4.9	mg/Kg-dry	1	9/17/2015 12:19 PM
Surr: 4-Terphenyl-d14	69.6		39-133	%REC	1	9/17/2015 12:19 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 9/16/15	Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	9/16/2015 02:31 PM
Surr: Toluene-d8	114		50-150	%REC	1	9/16/2015 02:31 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	460		5.0	mg/L	10	9/18/2015 03:15 PM
Magnesium	230		2.0	mg/L	10	9/18/2015 03:15 PM
Sodium	1,200		2.0	mg/L	10	9/18/2015 03:15 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	12		0.010	none	1	9/18/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3550 / 9/16/15	Analyst: RS
Acenaphthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Anthracene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Benzo(a)anthracene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Benzo(a)pyrene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Benzo(b)fluoranthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Benzo(k)fluoranthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Chrysene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Dibenzo(a,h)anthracene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Fluoranthene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Indeno(1,2,3-cd)pyrene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Naphthalene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Pyrene	ND		0.0078	mg/Kg-dry	1	9/16/2015 08:47 PM
Surr: 2-Fluorobiphenyl	65.1		12-100	%REC	1	9/16/2015 08:47 PM
Surr: 4-Terphenyl-d14	78.3		25-137	%REC	1	9/16/2015 08:47 PM
Surr: Nitrobenzene-d5	67.5		37-107	%REC	1	9/16/2015 08:47 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 9/16/15	Analyst: AK
Benzene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:02 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:02 AM
m,p-Xylene	ND		0.073	mg/Kg-dry	1	9/17/2015 01:02 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:02 AM
Toluene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:02 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	9/17/2015 01:02 AM
Surr: 1,2-Dichloroethane-d4	110		70-130	%REC	1	9/17/2015 01:02 AM

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

ALS Group USA, Corp**Date:** 18-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-1 Produced Water Spill**Work Order:** 1509846**Sample ID:** GM 31-1 SS2**Lab ID:** 1509846-03**Collection Date:** 9/15/2015 04:15 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Bromofluorobenzene	92.3		70-130	%REC	1	9/17/2015 01:02 AM
Surr: Dibromofluoromethane	108		70-130	%REC	1	9/17/2015 01:02 AM
Surr: Toluene-d8	93.0		70-130	%REC	1	9/17/2015 01:02 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO			Prep: USDA Method 20B / 9/18/15
Electrical Conductivity @ Saturation	11		0.050	mmhos/cm @2	10	Analyst: JB 9/18/2015 10:50 AM
MOISTURE			E160.3M			Analyst: TM
Moisture	17		0.050	% of sample	1	9/16/2015 03:34 PM
PH			SW9045D			Prep: EXTRACT / 9/16/15
pH	8.1			s.u.	1	Analyst: KF 9/16/2015 02:05 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 SS3
Collection Date: 9/15/2015 04:20 PM

Work Order: 1509846
Lab ID: 1509846-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3550 / 9/16/15	Analyst: IT
DRO (C10-C28)	ND		4.4	mg/Kg-dry	1	9/17/2015 12:49 PM
Surr: 4-Terphenyl-d14	43.1		39-133	%REC	1	9/17/2015 12:49 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 9/16/15	Analyst: IT
GRO (C6-C10)	ND		2.7	mg/Kg-dry	1	9/16/2015 02:55 PM
Surr: Toluene-d8	104		50-150	%REC	1	9/16/2015 02:55 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	180		5.0	mg/L	10	9/18/2015 03:21 PM
Magnesium	81		2.0	mg/L	10	9/18/2015 03:21 PM
Sodium	640		2.0	mg/L	10	9/18/2015 03:21 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	9.9		0.010	none	1	9/18/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3550 / 9/16/15	Analyst: RS
Acenaphthene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Anthracene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Benzo(a)anthracene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Benzo(a)pyrene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Benzo(b)fluoranthene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Benzo(k)fluoranthene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Chrysene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Dibenzo(a,h)anthracene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Fluoranthene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Indeno(1,2,3-cd)pyrene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Naphthalene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Pyrene	ND		0.0070	mg/Kg-dry	1	9/16/2015 09:12 PM
Surr: 2-Fluorobiphenyl	66.7		12-100	%REC	1	9/16/2015 09:12 PM
Surr: 4-Terphenyl-d14	81.1		25-137	%REC	1	9/16/2015 09:12 PM
Surr: Nitrobenzene-d5	67.8		37-107	%REC	1	9/16/2015 09:12 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 9/16/15	Analyst: AK
Benzene	ND		0.032	mg/Kg-dry	1	9/17/2015 01:27 AM
Ethylbenzene	ND		0.032	mg/Kg-dry	1	9/17/2015 01:27 AM
m,p-Xylene	ND		0.065	mg/Kg-dry	1	9/17/2015 01:27 AM
o-Xylene	ND		0.032	mg/Kg-dry	1	9/17/2015 01:27 AM
Toluene	ND		0.032	mg/Kg-dry	1	9/17/2015 01:27 AM
Xylenes, Total	ND		0.097	mg/Kg-dry	1	9/17/2015 01:27 AM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	9/17/2015 01:27 AM

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

ALS Group USA, Corp**Date:** 18-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-1 Produced Water Spill**Work Order:** 1509846**Sample ID:** GM 31-1 SS3**Lab ID:** 1509846-04**Collection Date:** 9/15/2015 04:20 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<i>Surr: 4-Bromofluorobenzene</i>	97.0		70-130	%REC	1	9/17/2015 01:27 AM
<i>Surr: Dibromofluoromethane</i>	110		70-130	%REC	1	9/17/2015 01:27 AM
<i>Surr: Toluene-d8</i>	111		70-130	%REC	1	9/17/2015 01:27 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/18/15		Analyst: JB
Electrical Conductivity @ Saturation	5.3		0.050	mmhos/cm @2	10	9/18/2015 10:50 AM
MOISTURE			E160.3M			Analyst: TM
Moisture	7.0		0.050	% of sample	1	9/16/2015 03:34 PM
PH			SW9045D			Prep: EXTRACT / 9/16/15
pH	9.0			s.u.	1	Analyst: KF 9/16/2015 02:05 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 SS4
Collection Date: 9/15/2015 04:25 PM

Work Order: 1509846
Lab ID: 1509846-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3550 / 9/16/15	Analyst: IT
DRO (C10-C28)	ND		4.8	mg/Kg-dry	1	9/17/2015 01:18 PM
Surr: 4-Terphenyl-d14	54.9		39-133	%REC	1	9/17/2015 01:18 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 9/16/15	Analyst: IT
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	9/16/2015 03:20 PM
Surr: Toluene-d8	107		50-150	%REC	1	9/16/2015 03:20 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	460		5.0	mg/L	10	9/18/2015 03:27 PM
Magnesium	380		2.0	mg/L	10	9/18/2015 03:27 PM
Sodium	2,500		2.0	mg/L	10	9/18/2015 03:27 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	21		0.010	none	1	9/18/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3550 / 9/16/15	Analyst: RS
Acenaphthene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Anthracene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Benzo(a)anthracene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Benzo(a)pyrene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Benzo(b)fluoranthene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Benzo(k)fluoranthene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Chrysene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Dibenzo(a,h)anthracene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Fluoranthene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Indeno(1,2,3-cd)pyrene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Naphthalene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Pyrene	ND		0.0077	mg/Kg-dry	1	9/16/2015 09:37 PM
Surr: 2-Fluorobiphenyl	58.6		12-100	%REC	1	9/16/2015 09:37 PM
Surr: 4-Terphenyl-d14	80.4		25-137	%REC	1	9/16/2015 09:37 PM
Surr: Nitrobenzene-d5	59.7		37-107	%REC	1	9/16/2015 09:37 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 9/16/15	Analyst: AK
Benzene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:53 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:53 AM
m,p-Xylene	ND		0.071	mg/Kg-dry	1	9/17/2015 01:53 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:53 AM
Toluene	ND		0.036	mg/Kg-dry	1	9/17/2015 01:53 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	9/17/2015 01:53 AM
Surr: 1,2-Dichloroethane-d4	110		70-130	%REC	1	9/17/2015 01:53 AM

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

ALS Group USA, Corp**Date:** 18-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-1 Produced Water Spill**Work Order:** 1509846**Sample ID:** GM 31-1 SS4**Lab ID:** 1509846-05**Collection Date:** 9/15/2015 04:25 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Bromofluorobenzene	96.2		70-130	%REC	1	9/17/2015 01:53 AM
Surr: Dibromofluoromethane	110		70-130	%REC	1	9/17/2015 01:53 AM
Surr: Toluene-d8	114		70-130	%REC	1	9/17/2015 01:53 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 9/18/15		Analyst: JB
Electrical Conductivity @ Saturation	18		0.050	mmhos/cm @2	10	9/18/2015 10:50 AM
MOISTURE			E160.3M			Analyst: TM
Moisture	16		0.050	% of sample	1	9/16/2015 03:34 PM
PH			SW9045D	Prep: EXTRACT / 9/16/15		Analyst: KF
pH	8.2			s.u.	1	9/16/2015 02:05 PM

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

ALS Group USA, Corp

Date: 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 SS5
Collection Date: 9/15/2015 04:35 PM

Work Order: 1509846
Lab ID: 1509846-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	21		SW8015M		Prep: SW3550 / 9/16/15	Analyst: IT
<i>Surr: 4-Terphenyl-d14</i>	66.6		4.7	mg/Kg-dry	1	9/17/2015 01:48 PM
			39-133	%REC	1	9/17/2015 01:48 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	57		SW8015D		Prep: SW5035 / 9/16/15	Analyst: IT
<i>Surr: Toluene-d8</i>	112		2.9	mg/Kg-dry	1	9/16/2015 03:45 PM
			50-150	%REC	1	9/16/2015 03:45 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	440		5.0	mg/L	10	9/18/2015 03:32 PM
Magnesium	180		2.0	mg/L	10	9/18/2015 03:32 PM
Sodium	1,600		2.0	mg/L	10	9/18/2015 03:32 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	16		0.010	none	1	9/18/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3550 / 9/16/15	Analyst: RS
Acenaphthene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Anthracene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Benzo(a)anthracene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Benzo(a)pyrene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Benzo(b)fluoranthene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Benzo(k)fluoranthene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Chrysene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Dibenzo(a,h)anthracene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Fluoranthene	0.011		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Indeno(1,2,3-cd)pyrene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Naphthalene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
Pyrene	ND		0.0076	mg/Kg-dry	1	9/16/2015 10:02 PM
<i>Surr: 2-Fluorobiphenyl</i>	67.3		12-100	%REC	1	9/16/2015 10:02 PM
<i>Surr: 4-Terphenyl-d14</i>	78.7		25-137	%REC	1	9/16/2015 10:02 PM
<i>Surr: Nitrobenzene-d5</i>	69.5		37-107	%REC	1	9/16/2015 10:02 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 9/16/15	Analyst: AK
Benzene	ND		0.035	mg/Kg-dry	1	9/17/2015 09:07 AM
Ethylbenzene	0.046		0.035	mg/Kg-dry	1	9/17/2015 09:07 AM
m,p-Xylene	0.49		0.070	mg/Kg-dry	1	9/17/2015 09:07 AM
o-Xylene	0.040		0.035	mg/Kg-dry	1	9/17/2015 09:07 AM
Toluene	ND		0.035	mg/Kg-dry	1	9/17/2015 09:07 AM
Xylenes, Total	0.53		0.11	mg/Kg-dry	1	9/17/2015 09:07 AM
<i>Surr: 1,2-Dichloroethane-d4</i>	103		70-130	%REC	1	9/17/2015 09:07 AM

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

ALS Group USA, Corp**Date:** 18-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-1 Produced Water Spill**Work Order:** 1509846**Sample ID:** GM 31-1 SS5**Lab ID:** 1509846-06**Collection Date:** 9/15/2015 04:35 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	9/17/2015 09:07 AM
Surr: Dibromofluoromethane	96.3		70-130	%REC	1	9/17/2015 09:07 AM
Surr: Toluene-d8	101		70-130	%REC	1	9/17/2015 09:07 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO			Prep: USDA Method 20B / 9/18/15
Electrical Conductivity @ Saturation	12		0.050	mmhos/cm @2	10	Analyst: JB 9/18/2015 10:50 AM
MOISTURE			E160.3M			Analyst: TM
Moisture	15		0.050	% of sample	1	9/16/2015 03:34 PM
PH			SW9045D			Prep: EXTRACT / 9/16/15
pH	8.7			s.u.	1	Analyst: KF 9/16/2015 02:05 PM

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

<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
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.

<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
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-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76132** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-76132-76132				Units: mg/Kg		Analysis Date: 9/16/2015 09:02 PM		
Client ID:		Run ID: GC8_150916A				SeqNo: 3461235		Prep Date: 9/16/2015		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	1.815	0	2	0	90.7	39-133		0		

LCS		Sample ID: DLCSS1-76132-76132				Units: mg/Kg		Analysis Date: 9/16/2015 09:32 PM		
Client ID:		Run ID: GC8_150916A				SeqNo: 3461237		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	195	5.0	200	0	97.5	61-109		0		
Surr: 4-Terphenyl-d14	1.559	0	2	0	78	39-133		0		

MS		Sample ID: 1509846-01A MS				Units: mg/Kg		Analysis Date: 9/17/2015 02:18 PM		
Client ID: GM 31-1 CS1		Run ID: GC8_150917A				SeqNo: 3462532		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	118.6	4.1	165.3	32.45	52.1	48-110		0		
Surr: 4-Terphenyl-d14	0.8349	0	1.653	0	50.5	39-133		0		

MSD		Sample ID: 1509846-01A MSD				Units: mg/Kg		Analysis Date: 9/17/2015 02:48 PM		
Client ID: GM 31-1 CS1		Run ID: GC8_150917A				SeqNo: 3462533		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	170.3	4.1	164.6	32.45	83.7	48-110	118.6	35.8	30	R
Surr: 4-Terphenyl-d14	1.037	0	1.646	0	63	39-133	0.8349	21.6	30	

The following samples were analyzed in this batch:

1509846-01A	1509846-02A	1509846-03A
1509846-04A	1509846-05A	1509846-06A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76127** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-76127-76127				Units: µg/Kg		Analysis Date: 9/16/2015 01:17 PM		
Client ID:		Run ID: GC9_150916A				SeqNo: 3461271		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4486	0	5000	0	89.7	50-150	0			

LCS		Sample ID: LCS-76127-76127				Units: µg/Kg		Analysis Date: 9/16/2015 12:52 PM		
Client ID:		Run ID: GC9_150916A				SeqNo: 3461270		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	531100	2,500	500000	0	106	70-130	0			
Surr: Toluene-d8	5509	0	5000	0	110	50-150	0			

MS		Sample ID: 1509846-01A MS				Units: µg/Kg		Analysis Date: 9/16/2015 04:10 PM		
Client ID: GM 31-1 CS1		Run ID: GC9_150916A				SeqNo: 3461279		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	900300	2,500	500000	418900	96.3	70-130	0			
Surr: Toluene-d8	5652	0	5000	0	113	50-150	0			

MSD		Sample ID: 1509846-01A MSD				Units: µg/Kg		Analysis Date: 9/16/2015 04:35 PM		
Client ID: GM 31-1 CS1		Run ID: GC9_150916A				SeqNo: 3461280		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	889800	2,500	500000	418900	94.2	70-130	900300	1.17	30	
Surr: Toluene-d8	5616	0	5000	0	112	50-150	5652	0.648	30	

The following samples were analyzed in this batch:

1509846-01A	1509846-02A	1509846-03A
1509846-04A	1509846-05A	1509846-06A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76091** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1509849-01BDUP				Units: mg/L		Analysis Date: 9/18/2015 03:44 PM		
Client ID:		Run ID: ICP2_150918A				SeqNo: 3464809		Prep Date: 9/18/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	108.7	5.0	0	0	0	0-0	117.6	7.83		
Magnesium	7.803	2.0	0	0	0	0-0	8.252	5.6		
Sodium	45.98	2.0	0	0	0	0-0	49.51	7.39		

DUP		Sample ID: 1509849-01BDUP				Units: none		Analysis Date: 9/18/2015		
Client ID:		Run ID: SAR_150918A				SeqNo: 3464852		Prep Date: 9/18/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	1.148	0.010	0	0	0		1.19	3.59	50	

The following samples were analyzed in this batch:

1509846-01B	1509846-02B	1509846-03B
1509846-04B	1509846-05B	1509846-06B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76131** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-76131-76131				Units: µg/Kg		Analysis Date: 9/16/2015 06:14 PM		
Client ID:		Run ID: SVMS4_150916A				SeqNo: 3461588		Prep Date: 9/16/2015		DF: 1
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(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	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>	1400	0	1667	0	84	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1533	0	1667	0	92	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1430	0	1667	0	85.8	37-107	0			

LCS		Sample ID: SLCSS1-76131-76131				Units: µg/Kg		Analysis Date: 9/16/2015 06:40 PM		
Client ID:		Run ID: SVMS4_150916A				SeqNo: 3461589		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	563.7	6.7	666.7	0	84.5	45-110	0			
Anthracene	592.3	6.7	666.7	0	88.8	55-105	0			
Benzo(a)anthracene	634.3	6.7	666.7	0	95.1	50-110	0			
Benzo(a)pyrene	610.7	6.7	666.7	0	91.6	50-110	0			
Benzo(b)fluoranthene	613	6.7	666.7	0	91.9	45-115	0			
Benzo(k)fluoranthene	675	6.7	666.7	0	101	45-115	0			
Chrysene	683.7	6.7	666.7	0	103	55-110	0			
Dibenzo(a,h)anthracene	608	6.7	666.7	0	91.2	40-125	0			
Fluoranthene	685.3	6.7	666.7	0	103	55-115	0			
Indeno(1,2,3-cd)pyrene	571.3	6.7	666.7	0	85.7	40-120	0			
Naphthalene	502	6.7	666.7	0	75.3	40-105	0			
Pyrene	616.3	6.7	666.7	0	92.4	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1280	0	1667	0	76.8	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1399	0	1667	0	83.9	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1325	0	1667	0	79.5	37-107	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76131** Instrument ID **SVMS4** Method: **SW846 8270D**

MS					Sample ID: 1509846-01A MS		Units: µg/Kg		Analysis Date: 9/16/2015 07:05 PM		
Client ID: GM 31-1 CS1			Run ID: SVMS4_150916A			SeqNo: 3461590		Prep Date: 9/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	489.2	6.6	662	0	73.9	45-110	0				
Anthracene	544.2	6.6	662	0	82.2	55-105	0				
Benzo(a)anthracene	584.9	6.6	662	0	88.3	50-110	0				
Benzo(a)pyrene	576.9	6.6	662	0	87.1	50-110	0				
Benzo(b)fluoranthene	564	6.6	662	0	85.2	45-115	0				
Benzo(k)fluoranthene	601.7	6.6	662	0	90.9	45-115	0				
Chrysene	599.4	6.6	662	0	90.5	55-110	0				
Dibenzo(a,h)anthracene	553.1	6.6	662	0	83.5	40-125	0				
Fluoranthene	632.5	6.6	662	5.564	94.7	55-115	0				
Indeno(1,2,3-cd)pyrene	506.4	6.6	662	0	76.5	40-120	0				
Naphthalene	509.4	6.6	662	0	76.9	40-105	0				
Pyrene	585.5	6.6	662	4.91	87.7	45-125	0				
Surr: 2-Fluorobiphenyl	1099	0	1655	0	66.4	12-100	0				
Surr: 4-Terphenyl-d14	1224	0	1655	0	73.9	25-137	0				
Surr: Nitrobenzene-d5	1326	0	1655	0	80.1	37-107	0				

MSD				Sample ID: 1509846-01A MSD			Units: µg/Kg		Analysis Date: 9/16/2015 07:31 PM		
Client ID: GM 31-1 CS1			Run ID: SVMS4_150916A			SeqNo: 3461591		Prep Date: 9/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	483.4	6.6	656.9	0	73.6	45-110	489.2	1.18	30		
Anthracene	521.2	6.6	656.9	0	79.3	55-105	544.2	4.31	30		
Benzo(a)anthracene	573.1	6.6	656.9	0	87.2	50-110	584.9	2.03	30		
Benzo(a)pyrene	565.2	6.6	656.9	0	86	50-110	576.9	2.05	30		
Benzo(b)fluoranthene	594.8	6.6	656.9	0	90.5	45-115	564	5.31	30		
Benzo(k)fluoranthene	595.4	6.6	656.9	0	90.6	45-115	601.7	1.05	30		
Chrysene	582.6	6.6	656.9	0	88.7	55-110	599.4	2.84	30		
Dibenzo(a,h)anthracene	535	6.6	656.9	0	81.4	40-125	553.1	3.32	30		
Fluoranthene	583.6	6.6	656.9	5.564	88	55-115	632.5	8.04	30		
Indeno(1,2,3-cd)pyrene	493	6.6	656.9	0	75	40-120	506.4	2.69	30		
Naphthalene	468	6.6	656.9	0	71.2	40-105	509.4	8.47	30		
Pyrene	595.8	6.6	656.9	4.91	89.9	45-125	585.5	1.73	30		
Surr: 2-Fluorobiphenyl	1103	0	1642	0	67.2	12-100	1099	0.39	40		
Surr: 4-Terphenyl-d14	1301	0	1642	0	79.2	25-137	1224	6.09	40		
Surr: Nitrobenzene-d5	1322	0	1642	0	80.5	37-107	1326	0.33	40		

The following samples were analyzed in this batch:

1509846-01A	1509846-02A	1509846-03A
1509846-04A	1509846-05A	1509846-06A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76126** Instrument ID **VMS9** Method: **SW8260B**

MBLK				Sample ID: MBLK-76126-76126				Units: µg/Kg			Analysis Date: 9/17/2015 02:02 AM			
Client ID:				Run ID: VMS9_150916A				SeqNo: 3461804			Prep Date: 9/16/2015		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	989	0	1000	0	98.9	70-130	0							
Surr: 4-Bromofluorobenzene	901	0	1000	0	90.1	70-130	0							
Surr: Dibromofluoromethane	985	0	1000	0	98.5	70-130	0							
Surr: Toluene-d8	939.5	0	1000	0	94	70-130	0							

LCS				Sample ID: LCS-76126-76126			Units: µg/Kg		Analysis Date: 9/17/2015 12:20 PM		
Client ID:			Run ID: VMS9_150916A			SeqNo: 3461833		Prep Date: 9/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1147	30	1000	0	115	75-125	0				
Ethylbenzene	1150	30	1000	0	115	75-125	0				
m,p-Xylene	2099	60	2000	0	105	80-125	0				
o-Xylene	1066	30	1000	0	107	75-125	0				
Toluene	1200	30	1000	0	120	70-125	0				
Xylenes, Total	3165	90	3000	0	106	75-125	0				
Surr: 1,2-Dichloroethane-d4	920	0	1000	0	92	70-130	0				
Surr: 4-Bromofluorobenzene	1048	0	1000	0	105	70-130	0				
Surr: Dibromofluoromethane	952.5	0	1000	0	95.2	70-130	0				
Surr: Toluene-d8	1000	0	1000	0	100	70-130	0				

MS				Sample ID: 1509831-18A MS			Units: µg/Kg		Analysis Date: 9/17/2015 09:16 AM		
Client ID:			Run ID: VMS9_150916A			SeqNo: 3461844		Prep Date: 9/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1087	30	1000	0	109	75-125	0				
Ethylbenzene	1114	30	1000	0	111	75-125	0				
m,p-Xylene	2077	60	2000	0	104	80-125	0				
o-Xylene	1006	30	1000	0	101	75-125	0				
Toluene	1181	30	1000	0	118	70-125	0				
Xylenes, Total	3084	90	3000	0	103	75-125	0				
Surr: 1,2-Dichloroethane-d4	952.5	0	1000	0	95.2	70-130	0				
Surr: 4-Bromofluorobenzene	1096	0	1000	0	110	70-130	0				
Surr: Dibromofluoromethane	927	0	1000	0	92.7	70-130	0				
Surr: Toluene-d8	1023	0	1000	0	102	70-130	0				

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76126** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 1509831-18A MSD			Units: µg/Kg		Analysis Date: 9/17/2015 09:42 AM		
Client ID:			Run ID: VMS9_150916A			SeqNo: 3461845		Prep Date: 9/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1072	30	1000	0	107	75-125	1087	1.39	30		
Ethylbenzene	1098	30	1000	0	110	75-125	1114	1.49	30		
m,p-Xylene	2000	60	2000	0	100	80-125	2077	3.75	30		
o-Xylene	985	30	1000	0	98.5	75-125	1006	2.16	30		
Toluene	1135	30	1000	0	114	70-125	1181	3.97	30		
Xylenes, Total	2986	90	3000	0	99.5	75-125	3084	3.23	30		
Surr: 1,2-Dichloroethane-d4	954	0	1000	0	95.4	70-130	952.5	0.157	30		
Surr: 4-Bromofluorobenzene	1051	0	1000	0	105	70-130	1096	4.24	30		
Surr: Dibromofluoromethane	962	0	1000	0	96.2	70-130	927	3.71	30		
Surr: Toluene-d8	1024	0	1000	0	102	70-130	1023	0.0977	30		

The following samples were analyzed in this batch:

1509846-01A	1509846-02A	1509846-03A
1509846-04A	1509846-05A	1509846-06A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76091** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1509849-01B DUP				Units: mmhos/cm @25°		Analysis Date: 9/18/2015 10:50 AM		
Client ID:		Run ID: WETCHEM_150918D				SeqNo: 3463846		Prep Date: 9/18/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.883	0.050	0	0	0		0.88	0.34	50	

The following samples were analyzed in this batch:

1509846-01B	1509846-02B	1509846-03B
1509846-04B	1509846-05B	1509846-06B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76138** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-76138-76138				Units: s.u.		Analysis Date: 9/16/2015 02:05 PM		
Client ID:		Run ID: WETCHEM_150916N				SeqNo: 3460067		Prep Date: 9/16/2015		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: 1509808-01B DUP				Units: s.u.		Analysis Date: 9/16/2015 02:05 PM		
Client ID:		Run ID: WETCHEM_150916N				SeqNo: 3460073		Prep Date: 9/16/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 9.79 0 0 0 0 0-0 9.57 2.27 20

DUP				Sample ID: 1509846-05A DUP				Units: s.u.		Analysis Date: 9/16/2015 02:05 PM			
Client ID: GM 31-1 SS4				Run ID: WETCHEM_150916N				SeqNo: 3460080		Prep Date: 9/16/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH 8.19 0 0 0 0 0-0 8.18 0.122 20

The following samples were analyzed in this batch:

1509846-01A	1509846-02A	1509846-03A
1509846-04A	1509846-05A	1509846-06A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509846
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **R171795** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R171795				Units: % of sample		Analysis Date: 9/16/2015 03:34 PM		
Client ID:		Run ID: MOIST_150916B				SeqNo: 3461799		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-R171795				Units: % of sample		Analysis Date: 9/16/2015 03:34 PM		
Client ID:		Run ID: MOIST_150916B				SeqNo: 3461798		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: 1509721-02B DUP				Units: % of sample		Analysis Date: 9/16/2015 03:34 PM		
Client ID:		Run ID: MOIST_150916B				SeqNo: 3461765		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 19.17 0.050 0 0 0 19.88 3.64 20

DUP		Sample ID: 1509722-05B DUP				Units: % of sample		Analysis Date: 9/16/2015 03:34 PM		
Client ID:		Run ID: MOIST_150916B				SeqNo: 3461789		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 24.65 0.050 0 0 0 22.67 8.37 20

The following samples were analyzed in this batch:

1509846-01A	1509846-02A	1509846-03A
1509846-04A	1509846-05A	1509846-06A

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



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER #

1509846

PROJECT NAME		GM 31-1 Produced Water Spill		SAMPLER		Jessica Dilka		DATE				PAGE		1 of 1	
PROJECT No.				SITE ID		GM 31-1 Produced Water Spill		TURNAROUND		24 Hours		DISPOSAL		By Lab or Return to Client	
COMPANY NAME		WPX Energy		BILL TO COMPANY		WPX Energy		DRO + GRO BTEX PAHs (see comments) EC, SAR, pH							
SEND REPORT TO		Karolina 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 tdobransky@olssonassociates.com		E-MAIL		Karolina.blaney@wpxenergy.com leo.braun@wpxenergy.com									
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC								
1	GM 31-1 CS1	S	9/15/15	1600 ^{4P}	2	8	x	x	x	x					
2	GM 31-1 SS1			1610				x	x	x	x				
3	GM 31-1 SS2			1615				x	x	x	x				
4	GM 31-1 SS3			1620				x	x	x	x				
5	GM 31-1 SS4	↓	↓	1625	↓	↓		x	x	x	x				
6	GM 31-1 SS5	S	9/15/15	1635	2	8		x	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)
Please send copy data to tdobransky@olssonassociates.com		
Table 910-1 list for anions, PAH's and metals		
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	Jessica Dilka	9/15/15	1645
RECEIVED BY		9-15-15	1645
RELINQUISHED BY	W. LEONARD	9-15-15	1700
RECEIVED BY		9-16-15	900
RELINQUISHED BY			
RECEIVED BY			

ORIGIN ID: RILA (816) 298-1033
 NICK MARTINEZ
 ALS ENVIRONMENTAL PARACHUTE
 PARACHUTE SERVICE CENTER
 127 EAST 1ST ST
 PARACHUTE, CO 81835
 UNITED STATES US

SHIP DATE: 15SEP15
 ACTWGT: 80.00 LB
 CAD: 2264840/NET3870
 DIMS: 14x26x15 IN

BILL SENDER

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424

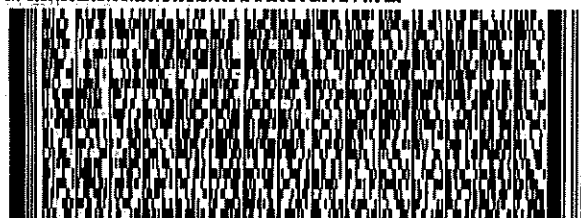
(816) 390-8070

REF: 091515-2

INV:

PO: PARACHUTE

DEPT:



FedEx
Express



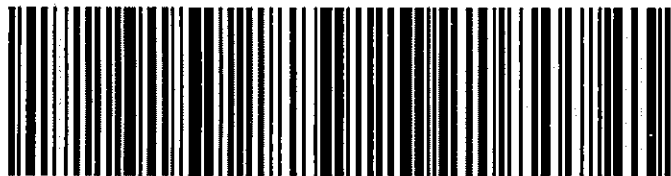
REL#
3785346

TRK#
0201 **7745 1839 5211**

WED - 16 SEP 10:30A
PRIORITY OVERNIGHT

XX HLMA

49424
GRR
 MI-US



539.12108663100

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 in additional bi

Use of this sy will not be res: misinformatic found in the of sales, incl.

limited to the greater of \$100 or the previous insur

extraordinary value is \$100. e.g. jewelry, precious metals, firearms, instruments and other items listed in our ServiceGuide. Written

ALS Parachute Custody Seal

Time 1800 Date 9-1

Name M

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **16-Sep-15 09:00**

Work Order: **1509846**

Received by: **NML**

Checklist completed by Diane Shaw
eSignature

16-Sep-15
Date

Reviewed by:

eSignature

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):

0.2/0.2 c

SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

9/16/2015 10:18:12 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:



30-Sep-2015

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

Re: **GM 31-3 CS 1**

Work Order: **15091533**

Dear Karolina,

ALS Environmental received 1 sample on 26-Sep-2015 10:45 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 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

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Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-3 CS 1
Work Order: 15091533

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>
15091533-01	GM 31-3 CS 1	Soil		9/24/2015 10:00	9/26/2015 10:45	<input type="checkbox"/>

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-3 CS 1
Work Order: 15091533

Case Narrative

Samples for the above noted Work Order were received on 09/26/2015. 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:** 30-Sep-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** GM 31-3 CS 1**Work Order:** 15091533**Sample ID:** GM 31-3 CS 1**Lab ID:** 15091533-01**Collection Date:** 9/24/2015 10:00 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	100		SW8015M			Analyst: IT
			4.6	mg/Kg-dry	1	9/29/2015 03:40 AM
<i>Surr: 4-Terphenyl-d14</i>	<i>66.5</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	9/29/2015 03:40 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	210		SW8015D		Prep: SW5035 / 9/28/15	Analyst: IT
			2.8	mg/Kg-dry	1	9/28/2015 04:15 PM
<i>Surr: Toluene-d8</i>	<i>101</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	9/28/2015 04:15 PM
MOISTURE						
Moisture	11		E160.3M			Analyst: LR
			0.050	% of sample	1	9/27/2015 08:00 PM

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

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-3 CS 1
WorkOrder: 15091533

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
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.

<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: 30-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15091533
Project: GM 31-3 CS 1

QC BATCH REPORT

Batch ID: **76642a** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-76642-76642a				Units: mg/Kg		Analysis Date: 9/29/2015 01:40 AM		
Client ID:		Run ID: GC8_150928A				SeqNo: 3480573		Prep Date: 9/28/2015		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								
<i>Surr: 4-Terphenyl-d14</i>	1.39	0	2	0	69.5	39-133	0			

LCS		Sample ID: DLCSS1-76642-76642a				Units: mg/Kg		Analysis Date: 9/29/2015 02:10 AM		
Client ID:		Run ID: GC8_150928A				SeqNo: 3480576		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	170.8	5.0	200	0	85.4	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.128	0	2	0	56.4	39-133	0			

MS		Sample ID: 15091533-01A MS				Units: mg/Kg		Analysis Date: 9/29/2015 02:40 AM		
Client ID: GM 31-3 CS 1		Run ID: GC8_150928A				SeqNo: 3480578		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	192.7	4.2	166.2	89.45	62.1	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	1.277	0	1.662	0	76.9	39-133	0			

MSD		Sample ID: 15091533-01A MSD				Units: mg/Kg		Analysis Date: 9/29/2015 03:10 AM		
Client ID: GM 31-3 CS 1		Run ID: GC8_150928A				SeqNo: 3480579		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	186.2	4.1	164.2	89.45	59	48-110	192.7	3.42	30	
<i>Surr: 4-Terphenyl-d14</i>	1.012	0	1.642	0	61.6	39-133	1.277	23.2	30	

The following samples were analyzed in this batch:

15091533-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15091533
Project: GM 31-3 CS 1

QC BATCH REPORT

Batch ID: **76659** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-76659-76659				Units: µg/Kg		Analysis Date: 9/28/2015 03:50 PM		
Client ID:		Run ID: GC9_150928A				SeqNo: 3480635		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	5655	0	5000	0	113	50-150	0			

LCS		Sample ID: LCS-76659-76659				Units: µg/Kg		Analysis Date: 9/28/2015 03:25 PM		
Client ID:		Run ID: GC9_150928A				SeqNo: 3480634		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	493400	2,500	500000	0	98.7	70-130	0			
Surr: Toluene-d8	5113	0	5000	0	102	50-150	0			

MS		Sample ID: 15091547-08A MS				Units: µg/Kg		Analysis Date: 9/28/2015 08:41 PM		
Client ID:		Run ID: GC9_150928A				SeqNo: 3480647		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	552500	2,500	500000	0	110	70-130	0			
Surr: Toluene-d8	5175	0	5000	0	104	50-150	0			

MSD		Sample ID: 15091547-08A MSD				Units: µg/Kg		Analysis Date: 9/28/2015 09:06 PM		
Client ID:		Run ID: GC9_150928A				SeqNo: 3480648		Prep Date: 9/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	552200	2,500	500000	0	110	70-130	552500	0.0548	30	
Surr: Toluene-d8	5104	0	5000	0	102	50-150	5175	1.37	30	

The following samples were analyzed in this batch:

15091533-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15091533
Project: GM 31-3 CS 1

QC BATCH REPORT

Batch ID: **R172520** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R172520				Units: % of sample		Analysis Date: 9/27/2015 08:00 PM		
Client ID:		Run ID: MOIST_150927A				SeqNo: 3479100		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-R172520				Units: % of sample		Analysis Date: 9/27/2015 08:00 PM		
Client ID:		Run ID: MOIST_150927A			SeqNo: 3479099		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

DUP		Sample ID: 15091295-07A DUP				Units: % of sample		Analysis Date: 9/27/2015 08:00 PM		
Client ID:		Run ID: MOIST_150927A			SeqNo: 3479080		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 8.53 0.050 0 0 0 8.34 2.25 20

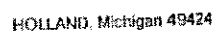
DUP				Sample ID: 15091533-01A DUP				Units: % of sample		Analysis Date: 9/27/2015 08:00 PM			
Client ID: GM 31-3 CS 1				Run ID: MOIST_150927A				SeqNo: 3479096		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture 11.42 0.050 0 0 0 11.09 2.93 20

The following samples were analyzed in this batch:

15091533-01A

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



WORKORDER
#

15091533

Form 20218

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 = filler

For metals or anions, please detail analytes below.

For metals or anions, please detail analytes below.		QC PACKAGE (check below)	
Comments:	3.0C	X	LEVEL II (Standard QC)
			LEVEL III (Std QC + forms)
			LEVEL IV (Std QC + forms + raw data)
		1-MSC 2-HSC 3-HSC 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	9/24/2015	16:00:00 PM
RECEIVED BY	<i>[Signature]</i>	<i>[Signature]</i>	9-25-15	-1600
RELINQUISHED BY	<i>[Signature]</i>	<i>[Signature]</i>	9-25-15	1700
RECEIVED BY	<i>[Signature]</i>	Diane E. Sh	9/24/15	1045
RELINQUISHED BY				
RECEIVED BY				

Derivative Key: 1-HCl 2- HNO_3 3- H_2SO_4 4-NaOH 5-NaHSO₄ 7-Other 8-4 degrees C 9-5035

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: 25SEP15
 ACTWGT: 80.00 LB
 CAD: 22648400 NET 3870
 DIMS: 24x15x15 IN
 BILL SENDER

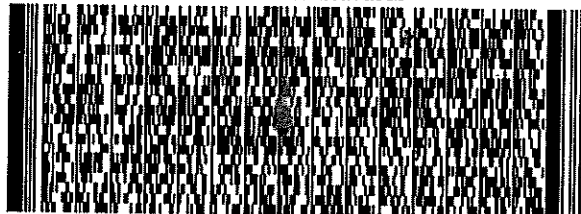
TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424

(816) 399-6070
 INV
 PO: PARACHUTE

REF: 0925151

DEPT.



FedEx
 Express



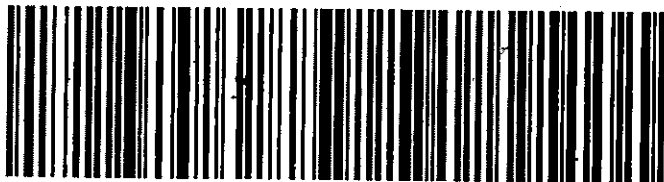
REL#
 3785346

TRK#
 0201 **7746 0244 1446**

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 HLMA

49424
MI-US GRR



539.2/c86931D0

After printing this label:

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Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **26-Sep-15 10:45**

Work Order: **15091533**

Received by: **DS**

Checklist completed by Diane Shaw 26-Sep-15
eSignature Date

Reviewed by: Lee Arnold 28-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 type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" 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>3.0/3.0 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/26/2015 11:33:12 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:



18-Sep-2015

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

Re: **GM 31-1 Produced Water Spill**

Work Order: **1509849**

Dear Karolina,

ALS Environmental received 1 sample on 16-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 10.

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 The ALS logo, a small blue triangle with a yellow flame.

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RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Work Order: 1509849

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>
1509849-01	GM 31-1 BG1	Soil		9/15/2015 15:45	9/16/2015 09:00	<input type="checkbox"/>

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Work Order: 1509849

Case Narrative

Samples for the above noted Work Order were received on 09/16/2015. 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:** 18-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
Sample ID: GM 31-1 BG1
Collection Date: 9/15/2015 03:45 PM

Work Order: 1509849
Lab ID: 1509849-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SOLUBLE CATIONS FOR SAR			SW846 6010C		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Calcium	120		5.0	mg/L	10	9/18/2015 03:38 PM
Magnesium	8.3		2.0	mg/L	10	9/18/2015 03:38 PM
Sodium	50		2.0	mg/L	10	9/18/2015 03:38 PM
SODIUM ADSORPTION RATIO			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JEC
Sodium Adsorption Ratio	1.2		0.010	none	1	9/18/2015
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO		Prep: USDA Method 20B / 9/18/15	Analyst: JB
Electrical Conductivity @ Saturation	0.88		0.050	mmhos/cm @2	10	9/18/2015 10:50 AM
PH			SW9045D		Prep: EXTRACT / 9/17/15	Analyst: KF
pH	8.8			s.u.	1	9/17/2015 01:30 PM

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

Client: WPX Energy Rocky Mountain, LLC
Project: GM 31-1 Produced Water Spill
WorkOrder: 1509849

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
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.

<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>
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-Sep-15

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509849
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76091** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1509849-01BDUP				Units: mg/L		Analysis Date: 9/18/2015 03:44 PM		
Client ID: GM 31-1 BG1		Run ID: ICP2_150918A				SeqNo: 3464809		Prep Date: 9/18/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	108.7	5.0	0	0	0	0-0	117.6	7.83		
Magnesium	7.803	2.0	0	0	0	0-0	8.252	5.6		
Sodium	45.98	2.0	0	0	0	0-0	49.51	7.39		

DUP		Sample ID: 1509849-01BDUP				Units: none		Analysis Date: 9/18/2015		
Client ID: GM 31-1 BG1		Run ID: SAR_150918A				SeqNo: 3464852		Prep Date: 9/18/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	1.148	0.010	0	0	0		1.19	3.59	50	

The following samples were analyzed in this batch:

1509849-01B

Batch ID: **76091** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1509849-01B DUP				Units: mmhos/cm @25°		Analysis Date: 9/18/2015 10:50 AM		
Client ID: GM 31-1 BG1		Run ID: WETCHEM_150918D				SeqNo: 3463846		Prep Date: 9/18/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.883	0.050	0	0	0		0.88	0.34	50	

The following samples were analyzed in this batch:

1509849-01B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1509849
Project: GM 31-1 Produced Water Spill

QC BATCH REPORT

Batch ID: **76180** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-76180-76180				Units: s.u.		Analysis Date: 9/17/2015 01:30 PM		
Client ID:		Run ID: WETCHEM_150917K				SeqNo: 3462613		Prep Date: 9/17/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4	0	4	0	100	90-110	0			

DUP				Sample ID: 1509868-21A DUP				Units: s.u.			Analysis Date: 9/17/2015 01:30 PM			
Client ID:				Run ID: WETCHEM_150917K				SeqNo: 3462616			Prep Date: 9/17/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		5.75	0	0	0	0	0-0	5.68	1.22	20				

DUP				Sample ID: 1509868-28A DUP				Units: s.u.		Analysis Date: 9/17/2015 01:30 PM		
Client ID:				Run ID: WETCHEM_150917K				SeqNo: 3462624		Prep Date: 9/17/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH	5.23	0	0	0	0	0-0	5.14	1.74	20			

The following samples were analyzed in this batch:

1509849-01A

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

WORKORDER
#

1509846

PAGE

1 of 1

DISPOSAL

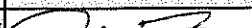





By Lab or Return to Client

[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.

Comments: Please send copy data to tdobransky@olssonassociates.com Table 910-1 list for anions and PAH's <div style="text-align: right; font-size: 2em;">0.20C</div>	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		Jessica Dillan	9/15/15	1045
RECEIVED BY			9-15-15	1645
RELINQUISHED BY			9-15-15	1645
RECEIVED BY		WLC	9-16-15	500
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: 15SEP15
ACTWGT: 80.00 LB
CAD: 2264840/INET3670
DIMS: 14x26x15 IN
BILL SENDER

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424

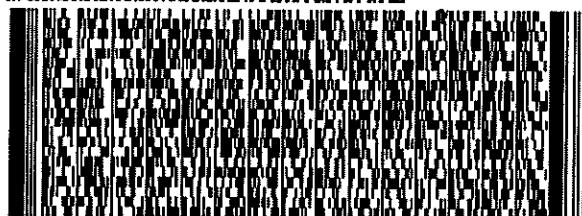
(816) 399-6070

REF: 091515-2

PO: PARACHUTE

DEPT:

539.02/CB669/3100



FedEx
Express



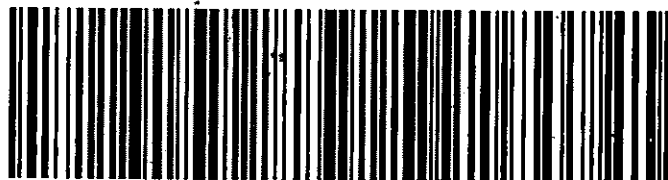
REL #
3785346

TRK#
0201 **7745 1839 5211**

WED - 16 SEP 10:30A
PRIORITY OVERNIGHT

XX HLMA

49424
MI-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 in additional by Use of this sy will not be res: misinforma found in the of sales, inc limited to the greater of \$100 or \$500 per claim. Extraordinary value is \$1,000 per claim. Claims must be filed within 90 days of the date of loss.

ALS Parachute Custody Seal

Time **10:00** Date **9-16**

Name **[Signature]**

Using a photocopy of this label for shipping purposes is fraudulent and could result in additional charges. Recoveries cannot exceed actual documented loss. Maximum for items of value. Recoveries cannot exceed actual documented loss. Maximum for items of value. Recoveries cannot exceed actual documented loss. Maximum for items of value.

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **16-Sep-15 09:00**

Work Order: **1509849**

Received by: **NML**

Checklist completed by Diane Shaw 16-Sep-15
eSignature Date

Reviewed by: Lee Arnold 17-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>0.2/0.2 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/16/2015 10:25:54 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: