District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

# **Release Notification**

### **Responsible Party**

Responsible Party: WPX Energy/RKI Exploration	OGRID: 246289
Contact Name: Deborah Watson	Contact Telephone: 575-885-7561
Contact email: deborah.watson@wpxenergy.com	Incident # (assigned by OCD) 2RP-2442
Contact mailing address 5315 Buena Vista Dr., Carlsbad, NM	

### **Location of Release Source**

Start: Latitude 32.009664 Longitude -103.965325 End: Latitude 32.014536 Longitude -103.965081 (NAD 83 in decimal degrees to 5 decimal places)

Site Name: Ea	ast Pecos Fe	deral Com 22-7H	(incident located n	ear	Site Type: Well Pad		
this well)							
Date Release	Discovered:	7/8/2014 at 2:00 l	PM		API# (if applicable) 30-015-4	2287	
TTo 't To the co	G	Tr	D		C	٦	
Unit Letter	Section	Township	Range		County		
I & P	22	26 South	29 East		Eddy		
g ( 0	П а		: 1 MB:	*			,
Surface Owner	r: State	Federal Tr	ibal 🔀 Private (N	ame:			)
	Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name:)  Nature and Volume of Release						

Materia	l(s) Released (Select all that apply and attach calculations or specific	justification for the volumes provided below)
Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
□ Produced Water	Volume Released (bbls) 260	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	⊠ Yes □ No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		
Produced water spill from	n unauthorized truck unloading of two loads.	

Received by OCD: 3/27/2023 9:17:42 AM State of New Mexico Page 2 Oil Conservation Division

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Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the responsible party consider this a major release?  The release exceeded 25 bbls.
19.15.29.7(A) NMAC?	
⊠ Yes □ No	
Brandon Ripley (RKI Exp	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? oloration and Production) notified Mike Bratcher with NMOCD on July 8, 2014 at 4:00 PM, via phone call. ailed to Mike Bratcher (NMOCD) on July 17, 2014. (initial C-141 from 2014 is attached)
	Initial Response
The responsible p	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.
☐ The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	we been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☐ All free liquids and re	ecoverable materials have been removed and managed appropriately.
	d above have <u>not</u> been undertaken, explain why: nauthorized truck dump-no one was notified that the spill had occurred. The spill was discovered on July 8,
2014.	
D. 10.15.20.0 D. (4) NDA	
has begun, please attach	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environment failed to adequately investigation	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have atte and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name:	Title:
Signature:	Date:
email:	Telephone:
OCD Only	
Received by:	Date:
-	

Received by OCD: 3/27/2023	9:17:42 AM
Form C-141	State of New Mexico
Page 3	Oil Conservation Division

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Incident ID	
District RP	
Facility ID	
Application ID	

# Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following it	tems must be included in the closure report.
	1 NMAC
Photographs of the remediated site prior to backfill or photos must be notified 2 days prior to liner inspection)	of the liner integrity if applicable (Note: appropriate OCD District office
☐ Laboratory analyses of final sampling (Note: appropriate ODC	C District office must be notified 2 days prior to final sampling)
□ Description of remediation activities	
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of	tions. The responsible party acknowledges they must substantially nditions that existed prior to the release or their final land use in
Printed Name: Deborah Watson	Title: Environmental Specialist
Signature: Which Watta	Date: April 30, 2019
email: deborah.watson@wpxenergy.com	Telephone: 575-885-7561
OCD Only	
Received by:	Date:
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible or regulations.
Closure Approved by: Ashley Maxwell	Date: 3/30/2023
Printed Name: Ashley Maxwell	Title: Environmental Specialist



April 30, 2019

Mr. Bradford Billings EMNRD - OCD 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: East Pecos Fed Com 22-7H Release Closure Report (2RP-2442)

Dear Mr. Billings:

This report summarizes the initial and confirmation soil sampling activities conducted at the East Pecos Federal Com 22-7H release location. Initial sampling and remediation activities were conducted by the prior operator of the well, RKI Exploration and Production (RKI). Confirmation sampling was conducted by the present operator, WPX Energy (WPX).

### **Release Summary**

Site Name	East Pecos Federal Com	East Pecos Federal Com 22-7H						
API#	30-015-42287	RP#	2RP-2442					
Well Site Location Description	Unit Letter P, Section 22, Township 26 South, Range 29 East (N32.02077, W103.96630)							
Release Location Description	Unit Letters I& P, Section 27, Township 26 South, Range 29 East (Beginning at N32.009664, W103.965325 and ending at N32.014536, W103965081)							
Land Jurisdiction	Private							
Agency Notification	New Mexico Oil Conservation Division (NMOCD), Artesia District Office	Agency Notification Date	July 8, 2014					
Release Source	Unauthorized truck unloading	Release Contents	Produced water					
Volume Released	Estimated 260 barrels	Volume Recovered	No recovery					

### **Remediation Standards Determination**

Remediation of the release began under 19.15.29 New Mexico Authority Code (NMAC) Release Notification (filed 12/1/2008), but continued through the transition to 19.15.29 NMAC Releases (filed 8/14/2018). The remediation standards per 19.15.29 NMAC are determined by depth to groundwater with a concentration of less than 10,000 milligrams per kilogram (mg/kg) total dissolved solids (TDS) and several factors outlined in 19.15.29.12(4)(e) NMAC.

Depth to groundwater at the site is estimated to be between 45 and 55 feet below ground surface (bgs) based on local well records and the area's geology and geomorphology.

5315 Buena Vista Drive | Carlsbad, NM 88220 | 575.885.1313 | www.wpxenergy.com

East Pecos Fed Com 22-7H Release Closure Report April 30, 2019 Page 2 of 3

Therefore, closure criteria for the soils impacted at the release location are determined by the "less than or equal to 50 feet" category of Table 1, 19.15.29.12 NMAC. These remedial standards are as follows: 600 mg/kg chloride per United States Environmental Protection Agency (USEPA) Method 300.0 or SM 4500-Cl B; 100 mg/kg total petroleum hydrocarbons (TPH) per USEPA Method 8015M; 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX) per USEPA Method 8021B or 8260B; and 10 mg/kg benzene per USEPA Method 8021B or 8260B. Total TPH includes gasoline range organics (GRO), diesel range organics (DRO), and mineral oil range organics (MRO).

### **Field Activities**

On July 10, 2014, initial soil sampling of the release location was conducted by Apex Titan, Inc. (Apex) which included the collection of four soil samples from 0 to 6 inches below ground surface (bgs). Apex returned to the release location on September 11, 2014, to collect two background samples (one collected at 0 to 1 foot bgs and the other collected at 1 to 2 feet bgs). Based on elevated chloride concentrations reported in the initial sampling laboratory results, RKI performed remediation of the impacted soils.

On November 28, 2018, confirmation soil sampling was conducted by Vertex Resources Services, Inc. (Vertex) which included the collection of soil samples from ten sampling locations within the release path. At each sampling location, one discrete sample was collected from the ground surface and one discrete sample was collected from 2 feet bgs, resulting in the collection of twenty total confirmation soil samples. A site map with the soil sampling locations is included as Figure 1. A photograph log and sampling field notes are attached.

### **Soil Sampling**

Soil samples were collected in laboratory provided sample containers and analyzed for the following parameters:

- BTEX per USEPA Method 8021 or 8260,
- TPH (GRO/DRO/MRO) per USEPA Method 8015, and
- Chlorides per USEPA Method 300.0 or SM 4500.

Laboratory analytical results are summarized in Tables 1 and 2. The laboratory reports are included as attachments.

### **Laboratory Analytical Results**

Initial soil sample results reported benzene, total BTEX, and TPH concentrations below laboratory reporting limits, which are below the remediation standards for the site. However, chloride concentrations for the initial samples were reported above the remediation standards for the site. Background samples were only analyzed for chloride and the concentrations were reported below the laboratory reporting limit for both samples.

Confirmation soil sample laboratory analytical results are summarized as follows:

- Benzene concentrations are below the laboratory reporting limits.
- Total BTEX concentrations are below the laboratory reporting limits.
- TPH concentrations as GRO and DRO are below the laboratory reporting limits.
   TPH concentrations as MRO range from below the laboratory reporting limits to 7.1 mg/kg.
- Chloride concentrations are below laboratory reporting limits.

East Pecos Fed Com 22-7H Release Closure Report April 30, 2019 Page 3 of 3

Laboratory reporting limits for all constituents are below the remediation standards. No qualifier flags were indicated for the laboratory results of the confirmation soil samples. Laboratory analytical results are summarized in Table 1, and the analytical laboratory reports are attached.

### **Conclusions**

Laboratory analytical results for the confirmation soil samples collected at the release location report that concentrations of benzene, total BTEX, TPH (GRO/DRO/MRO), and chloride are below the closure criteria determined for the location per Table 1, 19.15.29.12 NMAC. Therefore, closure of the release is requested.

For additional information or questions regarding this release, please contact me at (575) 885-7561.

Sincerely,

Deborah Watson

**Environmental Specialist** 

Debruch Water

### **Attachments:**

Figure 1. Site Map with Sample Locations

Table 1. Summary of Initial Soil Sampling Laboratory Analytical Results

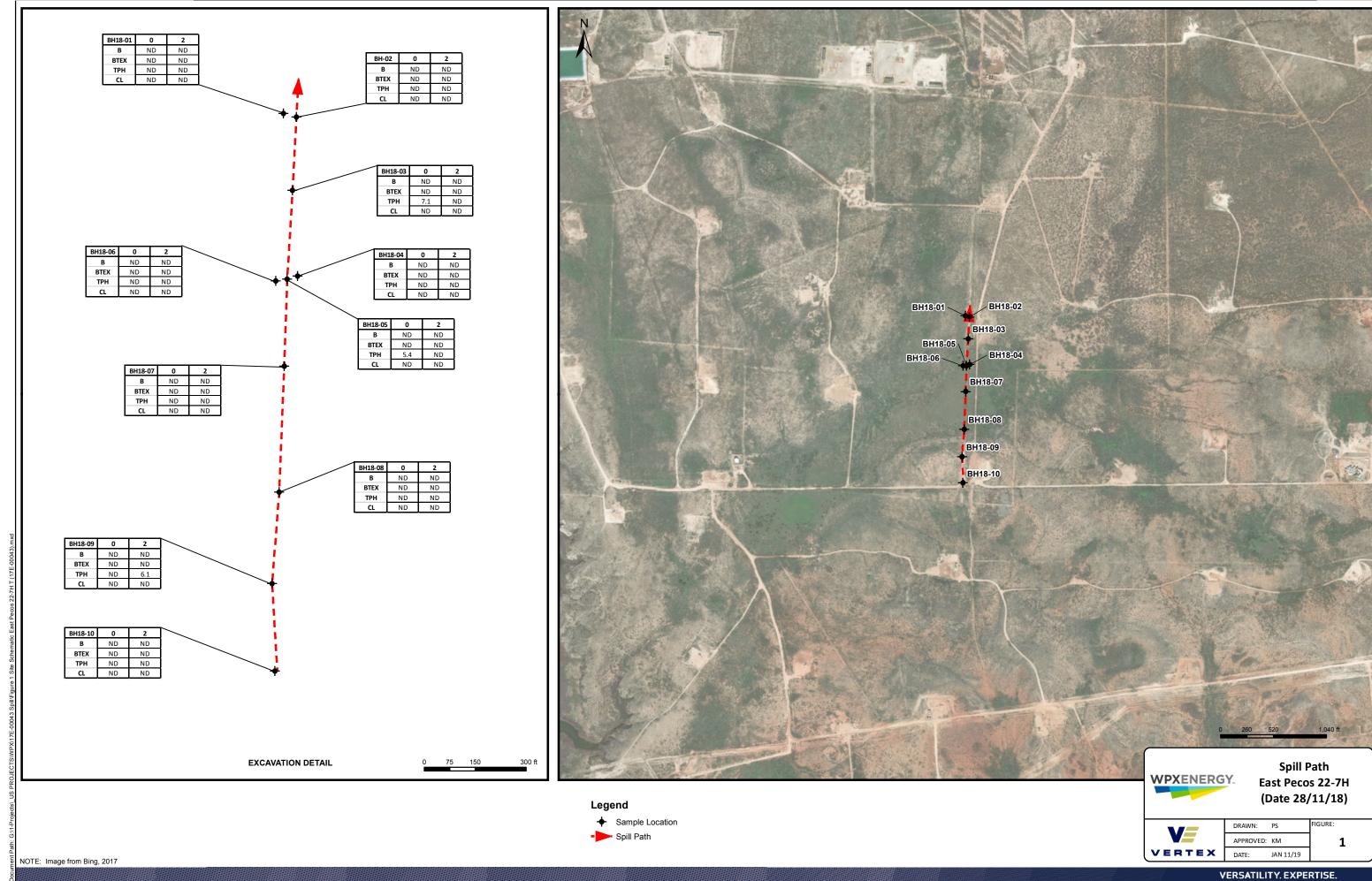
Table 2. Summary of Confirmation Soil Sampling Laboratory Analytical Results

Photographic Log

Field Notes

Analytical Laboratory Reports (Trace Analysis, Inc. – 14071115 and 14091230; ALS Environmental – 1812031, 1812014, and 1812013)

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Received by OCD: 3/27/2023 9:17:42 AM

**Table 1. Summary of Initial Soil Sampling Laboratory Analytical Results WPX Energy** East Pecos Fed Com 22-7H **Eddy County, New Mexico** 

				Laboratory Analytical Results							
Sample Name	Date	Approximate Sample Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	Chloride (mg/kg)
	Remedia	ation Standard*	10	NE	NE	NE	50	NE	NE	NE	600
AH-1 0-6"	7/10/2014	0 - 0.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0800	<4.00	<50.0	-	10,900
AH-2 0-6"	7/10/2014	0 - 0.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0800	<4.00	<50.0	-	7,390
AH-3 0-6"	7/10/2014	0 - 0.5	<0.0200	<0.0200	< 0.0200	<0.0200	<0.0800	<4.00	<50.0		14,700
AH-4 0-6"	7/10/2014	0 - 0.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0800	<4.00	<50.0		14,300
Background 1	9/11/2014	0 - 1		-		-			-	-	<20.0
Background 2	9/11/2014	0 - 2									<20.0

Notes:

ft bgs - feet below grade surface

mg/kg - milligrams per kilogram

NE - not established

ND - not detected above laboratory reporting limits

TPH - total petroleum hydrocarbons

GRO - gasoline range organics

DRO - diesel range organics

MRO - mineral oil range organics

\*Per Table 1 of 19.15.29.12 NMAC, based on category "less than or equal to 50 feet" depth to groundwater

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Table 2. Summary of Confirmation Soil Sampling Laboratory Analytical Results WPX Energy
East Pecos Fed Com 22-7H
Eddy County, New Mexico

							Laboratory A	nalytical Res	ults			
Sample Name	Date	Approximate Sample Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH as GRO/DRO/MRO (mg/kg)	Chloride (mg/kg)
	Remedia	ation Standard*	10	NE	NE	NE	50	NE	NE	NE	100	600
BH18-01 (0 ft)	11/28/2018	0	<0.031	<0.031	< 0.031	<0.094	<0.187	<5.2	<4.9	<4.9	<15.0	<10
BH18-01 (2 ft)	11/28/2018	2	<0.031	<0.031	< 0.031	<0.092	<0.185	<5.1	<4.9	<4.9	<14.9	<10
BH18-02 (0 ft)	11/28/2018	0	<0.031	<0.031	< 0.031	< 0.093	<0.186	<5.2	<5.0	<5.0	<15.2	<10
BH18-02 (2 ft)	11/28/2018	2	<0.031	<0.031	< 0.031	<0.092	<0.185	<5.1	<5.1	<5.1	<15.3	<10
BH18-03 (0 ft)	11/28/2018	0	<0.031	<0.031	< 0.031	<0.093	<0.186	<5.1	<4.9	7.1	7.1	<10
BH18-03 (2 ft)	11/28/2018	2	< 0.033	< 0.033	< 0.033	<0.099	<0.198	<5.5	<5.2	<5.2	<15.6	<10
BH18-04 (0 ft)	11/28/2018	0	< 0.030	<0.030	< 0.030	<0.091	<0.181	<5.1	<4.9	<4.9	<14.9	<9.9
BH18-04 (2 ft)	11/28/2018	2	< 0.030	<0.030	< 0.030	<0.091	<0.181	<5.1	<4.9	<4.9	<14.9	<10
BH18-05 (0 ft)	11/28/2018	0	<0.031	<0.031	< 0.031	<0.093	<0.186	<5.2	<5.0	5.4	5.4	<10
BH18-05 (2 ft)	11/28/2018	2	<0.031	<0.031	< 0.031	<0.093	<0.186	<5.2	<5.0	<5.0	<15.2	<10
BH18-06 (0 ft)	11/28/2018	0	< 0.034	<0.034	< 0.034	<0.10	<0.20	<5.7	<5.3	<5.3	<16.3	<10
BH18-06 (2 ft)	11/28/2018	2	< 0.033	< 0.033	< 0.033	<0.098	<0.197	<5.5	<5.1	<5.1	<15.7	<10
BH18-07 (0 ft)	11/28/2018	0	<0.031	<0.031	< 0.031	<0.093	<0.186	<5.2	<4.8	<4.8	<14.8	<10
BH18-07 (2 ft)	11/28/2018	2	< 0.034	<0.034	< 0.034	<0.10	<0.20	<5.6	<5.2	<5.2	<16.0	<11
BH18-08 (0 ft)	11/28/2018	0	<0.035	< 0.035	< 0.035	<0.10	<0.21	<5.8	<5.2	<5.2	<16.2	<10
BH18-08 (2 ft)	11/28/2018	2	< 0.035	< 0.035	< 0.035	<0.11	<0.22	<5.8	<5.3	<5.3	<16.4	<11
BH18-09 (0 ft)	11/28/2018	0	<0.034	< 0.034	< 0.034	<0.10	<0.20	<5.6	<5.1	<5.1	<15.8	<10
BH18-09 (2 ft)	11/28/2018	2	<0.032	< 0.032	< 0.032	<0.095	<0.191	<5.3	<4.9	6.1	6.1	<10
BH18-10 (0 ft)	11/28/2018	0	<0.033	< 0.033	< 0.033	<0.10	<0.20	<5.5	<5.2	<5.2	<15.9	<10
BH18-10 (2 ft)	11/28/2018	2	<0.031	<0.031	<0.031	<0.094	<0.187	<5.2	<4.9	<4.9	<15.0	<10

Notes:

ft bgs - feet below grade surface

mg/kg - milligrams per kilogram

NE - not established

ND - not detected above laboratory reporting limits

TPH - total petroleum hydrocarbons

GRO - gasoline range organics

DRO - diesel range organics

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MRO - mineral oil range organics

\*Per Table 1 of 19.15.29.12 NMAC, based on category "less than or equal to 50 feet" depth to groundwater

WPX Energy Inc.
East Pecos Fed Com 22-7
30-015-42287 - 2RP - 2442

**Spill Assessment** January 2019



Photo 1. Overview of spill area, looking south

Photo Date: November 26, 2018 GPS: N: 32.01439 W: -103.96499



Photo 2. Overview of spill area, looking south

Photo Date: November 26, 2018 GPS: N: 32.01354 W: -103.96507

WPXENERGY.

WPX Energy Inc.
East Pecos Fed Com 22-7
30-015-42287 - 2RP - 2442

Spill Assessment January 2019

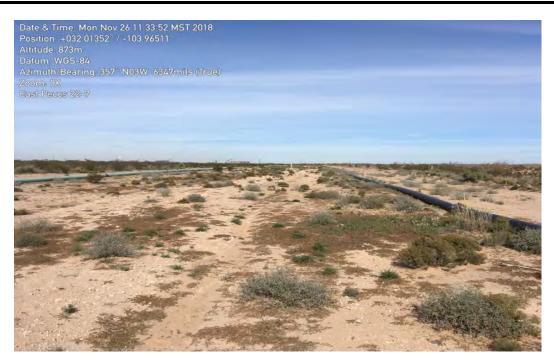


Photo 3. Spill area, looking north

Photo Date: November 26, 2018 GPS: N: 32.01352 W: -103.96511



Photo 4. Spill area, looking south

Photo Date: November 26, 2018 GPS: N: 32.01282 W: -103.96508

WPXENERGY.

Project #: 17E-00043

Page 2 of 3





WPX Energy Inc.
East Pecos Fed Com 22-7
30-015-42287 - 2RP - 2442

Spill Assessment January 2019



Photo 5. Spill area, looking north

Photo Date: November 26, 2018 GPS: N: 32.01088 W: -103.96520

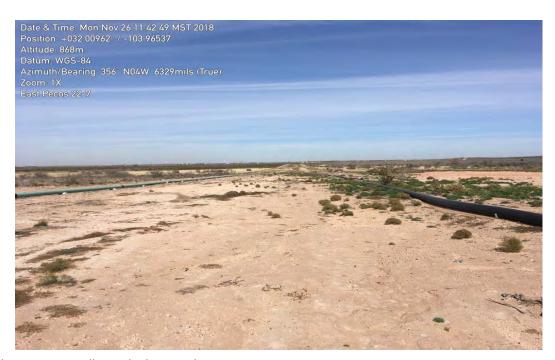


Photo 6. Spill area, looking north

Photo Date: November 26, 2018 GPS: N: 32.00962 W: -103.96537

Project #: 17E-00043

Page 3 of 3





WPX Energy Inc. East Pecos 22-7 30-015-42287 - 2RP-2442 Spill Assesment January 2019



Photo 1. BH18-01 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.089814 W: -103.874650



Photo 2. BH18-02 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.03031 W: -103.96511



Consultant: VERTEX



Photo 3. BH18-03 soil sample location

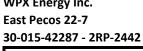
Photo Date: November 28, 2018 GPS: N: 32.011870 W: -103.565280



Photo 4. BH18-04 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.03031 W: -103.96511







BH18-05 soil sample location Photo 5.

Photo Date: November 28, 2018 GPS: N: W: 32.01277 -103.96579



Photo 6. BH18-06 soil sample location

GPS: Photo Date: November 28, 2018 W: -103.96518 32.01282

WPXENERGY.





WPX Energy Inc. East Pecos 22-7 30-015-42287 - 2RP-2442 Spill Assesment January 2019



Photo 7. BH18-07 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.01282 W: -103.96586



Photo 8. BH18-08 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.01355 W: -103.9651

WPXENERGY.



Photo 9. BH18-09 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.03406 W: -103.96508



Photo 8. BH18-10 soil sample location

Photo Date: November 28, 2018 GPS: N: 32.01439 W: -103.96509





Client:	WPX		Date:	11/26/2018
Site Location:	East Pecos 22-7		Project #:	17E-00043
Project Owner:	Jason Crabtree		API:	30-015-42287
Project Manager:	<b>Dhugal Hanton</b>		Incident Number:	2RP-2442
. Arrive onsite at Fast	Pacos 22-7 around 09	Summary of Daily		d site, found spill area using provided
				n 50 ppm anywhere in spill area, finis
and leave by 12:00	•		-	
, , , , , , , , , , , , , , , , , , , ,				
		Planned Activates and F	Recommendations	
Meet OCD to conduc	ct final campling for Ea	ast Pecos 22-7 spill on Wed		
Weet OCD to conduc	at illiai sampiilig for La	ist recos 22-7 spili on wet	ariesuay	
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IMG_	_1395 i	S	i Ed	ast Pecos 22-7 Spill Area
IMG	1396	S	Ea	ast Pecos 22-7 Spill Area
IMG_	_1397	N	Ea	ast Pecos 22-7 Spill Area
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IMG	1399	N	Ea	ast Pecos 22-7 Spill Area
	1399 1400	N N		ast Pecos 22-7 Spill Area ast Pecos 22-7 Spill Area





Client:	WPX	Date:	11/28/2018	
Site Location:	East Pecos 22-7	Project #:	17E-00043	
Project Owner:	Jason Crabtree	API:	30-015-42287	_
Project Manager:	Dhugal Hanton	Incident:	2RP-2442	

Summary of Da	ally Operations
---------------	-----------------

- Leave for East Pecos 22-7 at 11:00 arrive around 12:30
- Begin collecting samples around 13:00 and finish around 16:00
- Finish jarring samples and head back to Carlsbad, arrive around 17:30

### **Planned Activates and Recommendations**

- N/A

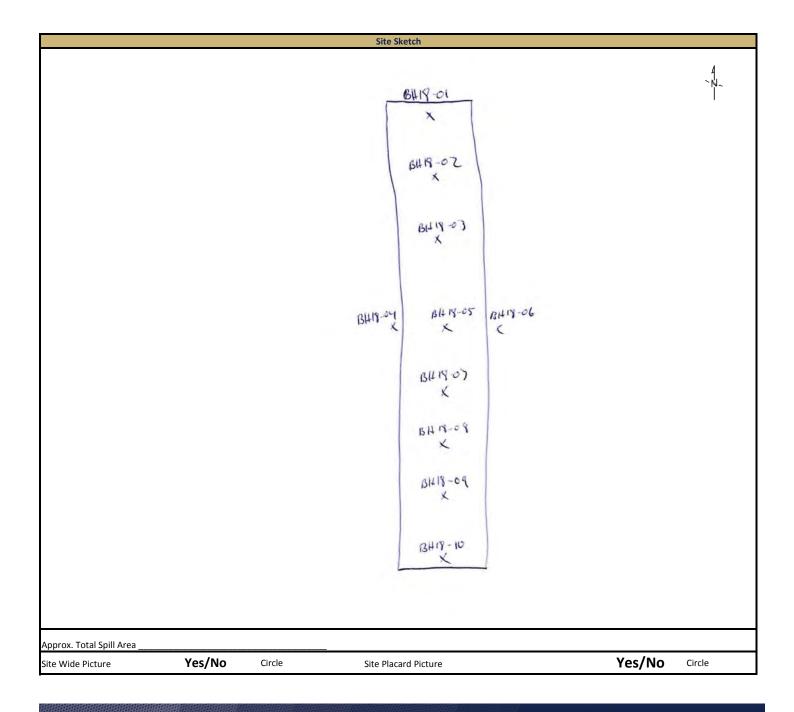
Photo Log							
Picture Number (Camera Label)	Viewing Direction	Description					
IMG_1430	N/A	BH18-01					
IMG_1431	N/A	BH18-02					
IMG_1432	N/A	BH18-03					
IMG_1433	N/A	BH18-04					
IMG_1434	N/A	BH18-05					
IMG_1435	N/A	BH18-06					
IMG_1436	N/A	BH18-07					
IMG_1437	N/A	BH18-08					
IMG_1438	N/A	BH18-09					
IMG_1439	N/A	BH18-10					
	<u> </u>						

### **Spill Response and Sampling**



Client: WPX 11-28-2018 Date: Site Name: East Pecos 22-7 32.009644, -103.965325 / 32.014536, -103.965081 Site Location: Project Owner: Jason Crabtree Project Manager: **Dhugal Hanton** Project #: 1.70E-42 API: 30-015-42287 Incident 2RP-2442

	Page of								
Initial Spill Information - Record on First Visit									
Spill Date:	November 28, 2018								
Spill Volume:	260 bbls								
Spill Cause:	Unauthorized truck dump								
Spill Product:	Salt water								
Recovered Spill Volume:	0 bbls								
Recovery Method:	None								
On Lease/Off Lease	off lease / on roadway								



# **Spill Response and Sampling**

Page 21 of 115

Client: WPX

Date: 11-28-2018

Site Name: East Pecos 22-7 32.009644, -103.965325 / 32.014536, -

Site Location: 103.965081

Project Owner: Jason Crabtree

Project Manager: Dhugal Hanton Initial Spill Information - Record on First Visit

Spill Date: July 8, 2018

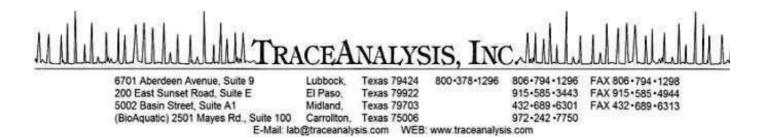
Spill Volume: 260 bbls

Spill Cause: Unauthorized truck dump

Spill Product: Salt water

Recovered Spill Volume: 0 bbls

Project #: 1.70E-42				Recovery Method: None					
		Fiel	d Screening	Sampling  Data Collection (Check for Yes)					
Sample ID	Depth (ft)	VOC (PID)	Quantab (High/Low) + or -	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch		
BH18-01	Ex. '2ft	Ex. 400 ppm	Ex. 'High +	Ex. Hydrocarbon Chloride					
BH18-01	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-01	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-02	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-02	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-03	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-03	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-04	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Υ	Y		
BH18-04	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Υ		
BH18-05	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-05	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-06	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Υ	Υ		
BH18-06	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Υ	Υ		
BH18-07	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-07	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Υ	Y		
BH18-08	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-08	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-09	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-09	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Υ	Y		
BH18-10	0 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Y	Y		
BH18-10	2 FT	N/A	<50 PPM	Hydrocarbon, Chloride	Y	Υ	Y		



### Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Tim Reed APEX/Titan 2351 W. Northwest Hwy. Suite 3321 Dallas, Tx, 75220

Project Location: Eddy Co, NM Project Name: Truck Dump Project Number: Truck Dump

Work Order: 14071115

Report Date: July 17, 2014

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
368065	AH-1 0-6"	soil	2014-07-10	00:00	2014-07-11
368067	AH-2 0-6"	soil	2014-07-10	00:00	2014-07-11
368069	AH-3 0-6"	soil	2014-07-10	00:00	2014-07-11
368071	AH-4 0-6"	soil	2014-07-10	00:00	2014-07-11

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 23 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director James Taylor, Assistant Director

# Report Contents

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Analytical Report  Sample 368065 (AH-1 0-6")  Sample 368067 (AH-2 0-6")  Sample 368069 (AH-3 0-6")  Sample 368071 (AH-4 0-6")	5 6 7 9
QC Batch 113589 - Method Blank (1)	11 11 11 11 12
QC Batch 113589 - LCS (1)	13 13 13 13 14
QC Batch 113589 - MS (1)	16 16 16 16 17
QC Batch 113589 - ICV (1) QC Batch 113589 - CCV (1) QC Batch 113610 - CCV (1) QC Batch 113610 - CCV (2) QC Batch 113610 - CCV (3) QC Batch 113653 - CCV (1) QC Batch 113653 - CCV (1) QC Batch 113663 - CCV (2) QC Batch 113663 - CCV (2)	19 19 19 19 19 20 20 21 21
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# Case Narrative

Samples for project Truck Dump were received by TraceAnalysis, Inc. on 2014-07-11 and assigned to work order 14071115. Samples for work order 14071115 were received intact at a temperature of 4.6 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	96091	2014-07-15 at 11:45	113653	2014-07-16 at 07:54
Chloride (Titration)	$\mathrm{SM}\ 4500\text{-}\mathrm{Cl}\ \mathrm{B}$	96073	2014-07-11 at 14:40	113589	2014-07-14 at 12:44
TPH DRO - NEW	S 8015 D	96138	2014-07-15 at 13:30	113663	2014-07-16 at 10:34
TPH GRO	S 8015 D	96024	2014-07-11 at 10:22	113610	2014-07-15 at 07:38

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 14071115 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 5 of 23 Truck Dump Eddy Co, NM

# **Analytical Report**

Sample: 368065 - AH-1 0-6"

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 113653 Date Analyzed: 2014-07-16 Analyzed By: AK96091 Prep Batch: Sample Preparation: 2014-07-15 Prepared By: AK

RLDilution RLParameter Flag Cert Result Units Benzene < 0.0200 mg/Kg 0.0200 1 U 5 Toluene 1 < 0.0200 mg/Kg 0.0200U 5 1 Ethylbenzene mg/Kg0.0200< 0.0200U Xylene < 0.0200 mg/Kg 1 0.0200U

						$\operatorname{Spike}$	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.56	mg/Kg	1	2.00	78	70 - 130
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	70 - 130

Sample: 368065 - AH-1 0-6"

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 2014-07-14 SC113589 Date Analyzed: Analyzed By: Prep Batch: 96073 Sample Preparation: 2014-07-11 Prepared By: SC

Sample: 368065 - AH-1 0-6"

Laboratory: Lubbock

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/AQC Batch: CM113663 Date Analyzed: 2014-07-16 Analyzed By: Prep Batch: 96138 Sample Preparation: 2014-07-15 Prepared By: CM

70 - 130

Report Date: July 17, 2014

Truck Dump

n-Tricosane

Work Order: 14071115 Truck Dump

1

Page Number: 6 of 23 Eddy Co, NM

						$_{ m Spike}$	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits

mg/Kg

109

### Sample: 368065 - AH-1 0-6"

Laboratory: Midland

Analysis: TPH GRO Analytical Method: S 8015 D QC Batch: 113610 Date Analyzed: 2014-07-15 Prep Batch: 96024 Sample Preparation: 2014-07-11

Prep Method: S 5035 Analyzed By: AK Prepared By: AK

109

100

			$\operatorname{RL}$			
Parameter	Flag	$\operatorname{Cert}$	Result	Units	Dilution	RL
GRO	U	5	< 4.00	m mg/Kg	1	4.00

						Spike	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.16	mg/Kg	1	2.00	108	70 - 130
4-Bromofluorobenzene (4-BFB)			1.78	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	89	70 - 130

### Sample: 368067 - AH-2 0-6"

Laboratory: Midland

Analysis: BTEXAnalytical Method: Prep Method: S 5035 S 8021BQC Batch: 113653 Date Analyzed: 2014 - 07 - 16Analyzed By: AKPrep Batch: 96091 Sample Preparation: 2014-07-15 Prepared By: AK

			$\operatorname{RL}$			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	5	< 0.0200	m mg/Kg	1	0.0200
Toluene	U	5	< 0.0200	$\mathrm{mg}/\mathrm{Kg}$	1	0.0200
Ethylbenzene	U	5	< 0.0200	$\mathrm{mg}/\mathrm{Kg}$	1	0.0200
Xylene	U	5	< 0.0200	mg/Kg	1	0.0200

						$_{ m Spike}$	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.33	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB) <sup>1</sup> Qss	Qsr		3.24	mg/Kg	1	2.00	162	70 - 130

Report Date: July 17, 2014	Work Order: 14071115	Page Number: 7 of 23
Truck Dump	Truck Dump	Eddy Co, NM
Sample: 368067 - AH-2 0-6"		

Laboratory: Midland

Chloride (Titration) Analysis: Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 113589 Date Analyzed: 2014-07-14 Analyzed By: SCPrep Batch: 96073 Sample Preparation: 2014-07-11 Prepared By: SC

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Qs		7390	$\mathrm{mg/Kg}$	5	4.00

### Sample: 368067 - AH-2 0-6"

Laboratory: Lubbock

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A QC Batch: Analyzed By:  ${\rm CM}$ 113663 Date Analyzed: 2014-07-16Prep Batch: 96138 Sample Preparation: 2014-07-15Prepared By: CM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1,2,3,4	< 50.0	m mg/Kg	1	50.0

						$\operatorname{Spike}$	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		3	110	${ m mg/Kg}$	1	100	110	70 - 130

### Sample: 368067 - AH-2 0-6"

Laboratory: Midland

Analysis: TPH GRO Analytical Method: S 8015 DPrep Method: S 5035 QC Batch: 113610 Date Analyzed: 2014-07-15 Analyzed By: AK Prep Batch: 96024 Sample Preparation: Prepared By: AK2014-07-11

			$\operatorname{RL}$			
Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	5	< 4.00	mg/Kg	1	4.00

0, 0	Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromoflyorobenzone (4-BER) 1.83 mg/Kg 1. 2.00 92 70.	Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	70 - 130
+Diomondologonzenzenz (+Di D) 1.89 mg/Rg 1 2.00 92 10	4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

S 5035

AK

AK

Prep Method:

Analyzed By:

Prepared By:

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 8 of 23 Truck Dump Eddy Co, NM

Sample: 368069 - AH-3 0-6"

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B QC Batch: 113653 Date Analyzed: 2014-07-16 Prep Batch: 96091 Sample Preparation: 2014-07-15

RLCert Units Dilution Parameter Flag Result RLBenzene < 0.0200mg/Kg 0.0200 U Toluene < 0.0200mg/Kg 1 0.0200U 5 Ethylbenzene mg/Kg 1 0.0200 < 0.0200 U mg/Kg 1 Xylene U < 0.0200 0.0200

						$_{ m Spike}$	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	1	2.00	86	70 - 130

Sample: 368069 - AH-3 0-6"

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 113589 Date Analyzed: 2014-07-14 Analyzed By: SCPrep Batch: 96073 Sample Preparation: 2014-07-11 Prepared By: SC

Sample: 368069 - AH-3 0-6"

Laboratory: Lubbock

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/AQC Batch: 113663 Date Analyzed: 2014-07-16 Analyzed By: CMPrep Batch: 96138 Sample Preparation: 2014-07-15 Prepared By: CM

						Spike	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		3	111	mg/Kg	1	100	111	70 - 130

AK

AK

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Sample: 368069 - AH-3 0-6"

Laboratory: Midland

Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035 QC Batch: 113610 Date Analyzed: 2014-07-15 Analyzed By: Prep Batch: 96024 Sample Preparation: 2014-07-11 Prepared By:

RLParameter Flag  $\operatorname{Cert}$ Result Units Dilution RL $\overline{GRO}$ < 4.00mg/Kg 4.00

						Бріке	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	70 - 130
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	1	2.00	82	70 - 130

Sample: 368071 - AH-4 0-6"

Laboratory: Midland

Analysis: **BTEX** Analytical Method:  $S_{8021B}$ Prep Method: S 5035QC Batch: 113653 Date Analyzed: 2014 - 07 - 16Analyzed By: AK2014-07-15 Prep Batch: 96091 Sample Preparation: Prepared By: AK

RLParameter Flag Cert Result Units Dilution RL0.0200 Benzene < 0.0200 mg/Kg 1 U 5 Toluene < 0.0200 mg/Kg1 0.0200 U 5 Ethylbenzene < 0.0200mg/Kg1 0.0200U 5 < 0.0200 mg/Kg1 0.0200Xylene U

						Spike	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	87	70 - 130

Sample: 368071 - AH-4 0-6"

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 113589 Date Analyzed: 2014-07-14 Analyzed By: SCPrep Batch: 96073 Sample Preparation: 2014-07-11 Prepared By: SC

 $\overline{continued}$  . . .

Report Date Truck Dump	e: July 17, 2014		W	ork Order: 1 Truck Du			Page Numbe Edo				
sample 3680'	71 continued										
Parameter		Flag	Cert		RL sult	Units	Dilution	$\operatorname{RL}$			
					RL						
Parameter		Flag	Cert	Re	sult	Units	Dilution	RL			
Chloride		Qs		143	300	mg/Kg	10	4.00			
Sample: 36 Laboratory: Analysis: QC Batch: Prep Batch:	8071 - AH-4 0- Lubbock TPH DRO - NF 113663 96138		Date	lytical Meth e Analyzed: .ple Prepara	2014-0	07-16	Prep Me Analyzed Prepared	By: CM			
					RL						
Parameter		Flag	Cert		sult	Units	Dilution	RL			
DRO			1,2,3,4	</td <td>50.0</td> <td>mg/Kg</td> <td>1</td> <td>50.0</td>	50.0	mg/Kg	1	50.0			
Surrogate n-Tricosane	Flag	Cert 3	Result	Units mg/Kg	Dilution 1	Spike Amount 100	Percent Recovery	Recovery Limits 70 - 130			
Sample: 36 Laboratory: Analysis: QC Batch: Prep Batch:	8071 - AH-4 0- Midland TPH GRO 113610 96024	6"	Date Ana	al Method: alyzed: Preparation:	S 8015 D 2014-07-15 2014-07-11		Prep Meth Analyzed F Prepared E	By: AK			
					RL						
Parameter		Flag	Cert		sult	Units	Dilution	RL			
GRO		U	5	<4	1.00	mg/Kg	1	4.00			
Surrogate		Fl	lag Cert	Result	Units Di	Spike lution Amoun	Percent t Recovery	Recovery Limits			

 $\frac{\mathrm{mg/Kg}}{\mathrm{mg/Kg}}$ 

1

2.00

2.00

114

100

70 - 130

70 - 130

2.29

1.99

Trifluorotoluene (TFT)

 $\underline{\text{4-Bromofluorobenzene}^{'}(\text{4-BFB})}$ 

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# Method Blanks

Method Blank (1) QC Batch: 113589

QC Batch: 113589 Date Analyzed: 2014-07-14 Analyzed By: SC Prep Batch: 96073 QC Preparation: 2014-07-11 Prepared By: SC

Method Blank (1) QC Batch: 113610

QC Batch: 113610 Date Analyzed: 2014-07-15 Analyzed By: AK Prep Batch: 96024 QC Preparation: 2014-07-11 Prepared By: AK

Surrogate	Flag	Cert	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.50	mg/Kg	1	2.00	75	70 - 130

Method Blank (1) QC Batch: 113653

QC Batch: 113653 Date Analyzed: 2014-07-16 Analyzed By: AK Prep Batch: 96091 QC Preparation: 2014-07-15 Prepared By: AK

MDL Flag Parameter Cert Result Units RLBenzene < 0.00533 mg/Kg 0.025 Toluene 0.02 < 0.00645 mg/Kg 5 Ethylbenzene mg/Kg 0.025 < 0.0116Xylene 5 < 0.00874mg/Kg 0.02 Report Date: July 17, 2014

Truck Dump

Work Order: 14071115

Truck Dump

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Eddy Co, NM

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)			1.60 1.69	$\frac{\mathrm{mg/Kg}}{\mathrm{mg/Kg}}$	1 1	2.00 2.00	80 84	70 - 130 70 - 130

QC Batch: 113663 Method Blank (1)

QC Batch: 113663Date Analyzed: 2014-07-16Prep Batch: 96138

QC Preparation: 2014-07-15

Analyzed By: CM Prepared By: CM

 $\operatorname{MDL}$  ${\bf Parameter}$ Flag  ${\bf Result}$ Units RL $\operatorname{Cert}$  $\overline{\mathrm{DRO}}$ 5.43 mg/Kg 50 1,2,3,4

						Spike	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		3	108	mg/Kg	1	100	108	70 - 130

Report Date: July 17, 2014

Truck Dump

Work Order: 14071115 Truck Dump

Laboratory Control Spikes

# Laboratory Control Spike (LCS-1)

QC Batch: 113589 Prep Batch: 96073 Date Analyzed: 2014-07-14 QC Preparation: 2014-07-11 Analyzed By: SC Prepared By: SC

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Eddy Co, NM

			LCS			Spike	Matrix		Rec.
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$
Chloride			2610	mg/Kg	5	2500	<19.2	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2610	mg/Kg	5	2500	<19.2	104	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Laboratory Control Spike (LCS-1)

QC Batch: 113610 Prep Batch: 96024 Date Analyzed: 2014-07-15 QC Preparation: 2014-07-11

Analyzed By: AK Prepared By: AK

			LCS			Spike	Matrix		Rec.
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		5	17.0	mg/Kg	1	20.0	< 2.32	85	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		5	17.0	mg/Kg	1	20.0	< 2.32	85	70 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.06	1.99	mg/Kg	1	2.00	103	100	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.80	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	94	90	70 - 130

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 14 of 23 Truck Dump Eddy Co, NM

### Laboratory Control Spike (LCS-1)

QC Batch: 113653 Date Analyzed: 2014-07-16 Analyzed By: AK Prep Batch: 96091 QC Preparation: 2014-07-15 Prepared By: AK

			LCS			$_{ m Spike}$	Matrix		Rec.
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		5	1.57	mg/Kg	1	2.00	< 0.00533	78	70 - 130
Toluene		5	1.56	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	< 0.00645	78	70 - 130
Ethylbenzene		5	1.60	mg/Kg	1	2.00	< 0.0116	80	70 - 130
Xylene		5	4.82	mg/Kg	1	6.00	< 0.00874	80	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		5	1.62	mg/Kg	1	2.00	< 0.00533	81	70 - 130	3	20
Toluene		5	1.58	mg/Kg	1	2.00	< 0.00645	79	70 - 130	1	20
Ethylbenzene		5	1.61	mg/Kg	1	2.00	< 0.0116	80	70 - 130	1	20
Xylene		5	4.85	mg/Kg	1	6.00	< 0.00874	81	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.56	1.62	mg/Kg	1	2.00	78	81	70 - 130
4-Bromofluorobenzene (4-BFB)	1.78	1.73	mg/Kg	1	2.00	89	86	70 - 130

### Laboratory Control Spike (LCS-1)

QC Batch: 113663 Date Analyzed: 2014-07-16 Analyzed By: CM Prep Batch: 96138 QC Preparation: 2014-07-15 Prepared By: CM

			LCS			Spike	Matrix		Rec.
Param	F	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1,2,3,4	241	mg/Kg	1	250	5.43	94	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			$_{\rm Spike}$	Matrix		Rec.		RPD
Param	F	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1,2,3,4	241	mg/Kg	1	250	5.43	94	70 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

 $continued \dots$ 

Report Date: July 17, 2014 Truck Dump		Wo	ork Order: 14 Truck Dun		9	er: 15 of 23 dy Co, NM		
control spikes continued	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane 3	105	106	mg/Kg	1	100	105	106	70 - 130

Page Number: 16 of 23

Analyzed By:

Prepared By:

Eddy Co, NM

SC

SC

Report Date: July 17, 2014

Truck Dump

Work Order: 14071115 Truck Dump

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 368071

 QC Batch:
 113589
 Date Analyzed:
 2014-07-14

 Prep Batch:
 96073
 QC Preparation:
 2014-07-11

MS Spike Matrix Rec. F C Units Limit Param Result Dil. Amount Result Rec. Chloride 17800 mg/Kg 10 2500 14300 140 78.9 - 121 Qs

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD RPD Spike Matrix Rec. Param С Units Dil. Limit RPD Result Amount Result Rec. Limit Chloride 17800 mg/Kg 10 2500 14300 140 78.9 - 121 20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 367977

QC Batch: 113610 Date Analyzed: 2014-07-15 Analyzed By: AK Prep Batch: 96024 QC Preparation: 2014-07-11 Prepared By: AK

MSSpike Matrix Rec. C Param Result Units Dil. Amount Result Rec. Limit  $\overline{GRO}$ 15.6 20.0 < 2.3278 mg/Kg 70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD RPD Spike Matrix Rec.  ${\bf Limit}$ Param  $\mathbf{F}$  $\mathbf{C}$ Result Units Dil. Amount Result Rec. Limit RPD GRO 15.8 20.0 < 2.3270 - 130 20 mg/Kg

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.05	1.93	mg/Kg	1	2	102	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	1.81	$\mathrm{mg}/\mathrm{Kg}$	1	2	93	90	70 - 130

Page Number: 17 of 23

Report Date: July 17, 2014 Work Order: 14071115

Truck Dump Eddy Co, NM

Matrix Spike (MS-1) Spiked Sample: 368065

QC Batch: 113653 Date Analyzed: 2014-07-16 Analyzed By: AK Prep Batch: 96091 QC Preparation: 2014-07-15 Prepared By: AK

			MS			$\operatorname{Spike}$	Matrix		Rec.
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		5	1.67	mg/Kg	1	2.00	< 0.00533	84	70 - 130
Toluene		5	1.64	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	< 0.00645	82	70 - 130
Ethylbenzene		5	1.66	mg/Kg	1	2.00	< 0.0116	83	70 - 130
Xylene		5	4.96	mg/Kg	1	6.00	< 0.00874	83	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		5	1.58	mg/Kg	1	2.00	< 0.00533	79	70 - 130	6	20
Toluene		5	1.56	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	< 0.00645	78	70 - 130	5	20
Ethylbenzene		5	1.58	mg/Kg	1	2.00	< 0.0116	79	70 - 130	5	20
Xylene		5	4.77	mg/Kg	1	6.00	< 0.00874	80	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.64	1.63	mg/Kg	1	2	82	82	70 - 130
4-Bromofluorobenzene (4-BFB)	1.79	1.68	mg/Kg	1	2	90	84	70 - 130

Matrix Spike (MS-1) Spiked Sample: 368067

QC Batch: 113663 Date Analyzed: 2014-07-16 Analyzed By: CM Prep Batch: 96138 QC Preparation: 2014-07-15 Prepared By: CM

			MS			Spike	Matrix		Rec.
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1.2.3.4	257	mg/Kg	1	250	8.26	99	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1,2,3,4	262	mg/Kg	1	250	8.26	101	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

 $continued \dots$ 

Report Date: July 17, 2014  Truck Dump	Work Order: 14071115 Truck Dump						Page Number: 18 of 23 Eddy Co, NM				
matrix spikes continued	MS	MSD			Spike	MS	MSD	Rec.			
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit			
	MS	MSD			Spike	MS	MSD	Rec.			
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit			
n-Tricosane 3	106	108	mg/Kg	1	100	106	108	70 - 130			

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 19 of 23 Truck Dump Eddy Co, NM

# Calibration Standards

### Standard (ICV-1)

QC Batch: 113589	Date Analyzed: 2014-07-14	Analyzed By: SC
------------------	---------------------------	-----------------

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2014-07-14

### Standard (CCV-1)

QC Batch: 113589 Date Analyzed: 2014-07-14 Analyzed By: SC

				CCVs	CCVs	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2014-07-14

#### Standard (CCV-1)

QC Batch: 113610 Date Analyzed: 2014-07-15 Analyzed By: AK

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		5	mg/Kg	1.00	0.916	92	80 - 120	2014-07-15

### Standard (CCV-2)

QC Batch: 113610 Date Analyzed: 2014-07-15 Analyzed By: AK

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		5	mg/Kg	1.00	0.972	97	80 - 120	2014-07-15

Report Date: July 17, 2014

Work Order: 14071115 Truck Dump Page Number: 20 of 23 Eddy Co, NM

Standard (CCV-3)

Truck Dump

 $QC\ Batch:\ 113610$ 

Date Analyzed: 2014-07-15

Analyzed By: AK

				CCVs	CCVs	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		5	mg/Kg	1.00	0.919	92	80 - 120	2014-07-15

### Standard (CCV-1)

QC Batch: 113653

Date Analyzed: 2014-07-16

Analyzed By: AK

				$\begin{array}{c} { m CCVs} \\ { m True} \end{array}$	$\begin{array}{c} {\rm CCVs} \\ {\rm Found} \end{array}$	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		5	mg/kg	0.100	0.0892	89	80 - 120	2014-07-16
Toluene		5	mg/kg	0.100	0.0845	84	80 - 120	2014-07-16
Ethylbenzene		5	mg/kg	0.100	0.0805	80	80 - 120	2014-07-16
Xylene		5	mg/kg	0.300	0.242	81	80 - 120	2014-07-16

### Standard (CCV-2)

QC Batch: 113653

Date Analyzed: 2014-07-16

Analyzed By: AK

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		5	mg/kg	0.100	0.0881	88	80 - 120	2014-07-16
Toluene		5	mg/kg	0.100	0.0833	83	80 - 120	2014-07-16
Ethylbenzene		5	mg/kg	0.100	0.0814	81	80 - 120	2014-07-16
Xylene		5	mg/kg	0.300	0.242	81	80 - 120	2014-07-16

### Standard (CCV-1)

 $QC\ Batch{:}\quad 113663$ 

 $Date\ Analyzed:\ \ 2014\text{-}07\text{-}16$ 

Analyzed By: CM

				CCVs	CCVs	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1,2,3,4	mg/Kg	250	239	96	80 - 120	2014-07-16

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 21 of 23
Truck Dump Truck Dump Eddy Co, NM

Standard (CCV-2)

QC Batch: 113663 Date Analyzed: 2014-07-16 Analyzed By: CM

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1,2,3,4	mg/Kg	250	247	99	80 - 120	2014-07-16

Standard (CCV-3)

QC Batch: 113663 Date Analyzed: 2014-07-16 Analyzed By: CM

 $\mathrm{CCVs}$  $\mathrm{CCVs}$  $\operatorname{CCVs}$ Percent True Found Percent Recovery Date Units Conc. Param Flag Cert  ${\rm Conc.}$ Recovery Limits Analyzed  $\overline{\mathrm{DRO}}$ 250 241 80 - 120 2014-07-16 1,2,3,4 mg/Kg 96

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 22 of 23 Truck Dump Eddy Co, NM

# **Appendix**

### Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### **Laboratory Certifications**

	Certifying	Certification	Laboratory
$\mathbf{C}$	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-93	Lubbock
2	Kansas	Kansas E- $10317$	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-14-10	Lubbock
5	NELAP	T104704392-14-8	Midland
6		2013-083	Lubbock

## Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.

Report Date: July 17, 2014 Work Order: 14071115 Page Number: 23 of 23 Truck Dump Eddy Co, NM

F Description

Qsr Surrogate recovery outside of laboratory limits.

U The analyte is not detected above the SDL

### Result Comments

1 Power surge caused GC to stop leaving excess surrogate in the transfer line upon re-analysis.

### Attachments

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

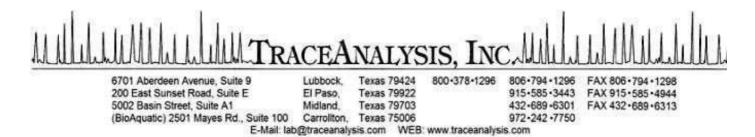
# **Chloride Titration Data Review Checklist**

QC Batch:	Primary Review	Secondary Review
	v =′Yes	v.= Yes
Date of analysis and analyst identified	/	
Check transcription from logbook to spreadsheet	<b>✓</b>	
ICV within 85-115%	<b>✓</b>	
CCV within 85-115%	/	
Traceability of Standards, AgNO₃, K₂CrO₄ and Soil Extration Complete	/	
Check dilutions vs. prep and additional notes	<b>√</b>	
LCS/D within acceptance range; re-run if not	✓	
LCSD RPD ≤ 20	V	
MS/D within acceptance range; flagged if not	✓	
MSD RPD ≤ 20	✓	
Check transcription from spreadsheet to LIMS	/	
Validation complete by initials of person validating and date of validation	25 4 C.	
Validate QC batch in LIMS		
Notes: Sam des 2108021 and 212041.	7.77	

Notes: Samples 368031 and 368041 were prepped @ 10:10am on 1/11/14 and added to PB 96022 for analysis.
Sample 368031 is a 5day RUSH. Dom: 07.11.14

Primary Reviewer:	Secondary Reviewer:
&mc	
Date:	Date:
07.11.14	

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### Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Tim Reed APEX/Titan 2351 W. Northwest Hwy. Suite 3321 Dallas, Tx, 75220

Project Location: Eddy Co, NM Project Name: RKI-Truck Dump Project Number: 7030714G031 Report Date: September 17, 2014

Work Order: 14091230

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	11110	Date
Sample	Description	Matrix	Taken	Taken	Received
374404	Background 1	soil	2014-09-11	00:00	2014-09-12
374405	Background 2	soil	2014-09-11	00:00	2014-09-12

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 10 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director James Taylor, Assistant Director Brian Pellam, Operations Manager

# Report Contents

Case Narrative	3
Analytical Report           Sample 374404 (Background 1)	<b>4</b> 4 4
Method Blanks           QC Batch 115495 - Method Blank (1)	<b>5</b>
Laboratory Control Spikes           QC Batch 115495 - LCS (1)	<b>6</b>
Matrix Spikes           QC Batch 115495 - MS (1)	<b>7</b> 7
Calibration Standards           QC Batch 115495 - ICV (1)            QC Batch 115495 - CCV (1)	<b>8</b> 8
Appendix Report Definitions	9

## Case Narrative

Samples for project RKI-Truck Dump were received by TraceAnalysis, Inc. on 2014-09-12 and assigned to work order 14091230. Samples for work order 14091230 were received intact at a temperature of 6.0 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	97668	2014-09-15 at 15:43	115495	2014-09-16 at 10:21

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 14091230 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: September 17, 2014 Work Order: 14091230 Page Number: 4 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

# **Analytical Report**

Sample: 374404 - Background 1

Laboratory: Midland

Prep Method: Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B N/AQC Batch: 115495 Date Analyzed: 2014-09-16 Analyzed By: MMPrep Batch: 97668 Sample Preparation: 2014-09-15 Prepared By: MM

Sample: 374405 - Background 2

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 115495 Date Analyzed: 2014-09-16 Analyzed By: MMPrep Batch: 97668 Sample Preparation: 2014-09-15 Prepared By: MM

Report Date: September 17, 2014 Work Order: 14091230 Page Number: 5 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

# **Method Blanks**

Method Blank (1) QC Batch: 115495

QC Batch: 115495 Date Analyzed: 2014-09-16 Analyzed By: MM Prep Batch: 97668 QC Preparation: 2014-09-15 Prepared By: SS

Parameter Flag Cert Result Units RL

 Report Date: September 17, 2014 Work Order: 14091230 Page Number: 6 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

# Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

 QC Batch:
 115495
 Date Analyzed:
 2014-09-16

 Prep Batch:
 97668
 QC Preparation:
 2014-09-15

Analyzed By: MM Prepared By: SS

LCS Spike Matrix Rec. F  $\mathbf{C}$ Param Result Units Dil. Amount Result Limit Rec. Chloride 2500 <19.2 85 - 115 2680 mg/Kg 107

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			LCSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2580	mg/Kg	5	2500	<19.2	103	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: September 17, 2014 Work Order: 14091230 Page Number: 7 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

# Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 374407

QC Batch: 115495 Date Analyzed: 2014-09-16 Analyzed By: MM Prep Batch: 97668 QC Preparation: 2014-09-15 Prepared By: SS

MSSpike Matrix Rec. F  $\mathbf{C}$ Param Result Units Dil. Amount Result Limit Rec. Chloride 8660 78.9 - 121 9860 mg/Kg 5 2500 48  $_{\mathrm{Qs}}$ 

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

				MSD			Spike	Matrix		Rec.		RPD
Param		$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	Qs	Qs		10300	mg/Kg	5	2500	8660	66	78.9 - 121	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: September 17, 2014 Work Order: 14091230 Page Number: 8 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

# Calibration Standards

Standard (ICV-1)

QC Batch: 115495 Date Analyzed: 2014-09-16 Analyzed By: MM

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2014-09-16

Standard (CCV-1)

QC Batch: 115495 Date Analyzed: 2014-09-16 Analyzed By: MM

				$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2014-09-16

Report Date: September 17, 2014 Work Order: 14091230 Page Number: 9 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

# **Appendix**

### Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### **Laboratory Certifications**

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
_	WBE	237019	TraceAnalysis

## Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
  - Qc Calibration check outside of laboratory limits.
  - Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
  - U The analyte is not detected above the SDL

#### Attachments

Report Date: September 17, 2014 Work Order: 14091230 Page Number: 10 of 10 7030714G031 RKI-Truck Dump Eddy Co, NM

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

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Office Location Midland	X								/	when received (C°):
		Contact:								1 2 3 4
		Phone:							/ /	Page of
Project Manager Tim Roed		PO/SO#:	f:							
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ш	me				No/Type (	No/Type of Containers	10			
7030714G031 RKI	- Thuck	ch Down	4		3	Glass	br	/ / /	/ / /	
Matrix Date Time C G G P Matrix	Identifying M	Identifying Marks of Sample(s)	Start Depth	Depth End	AOV Đ\A	1 Lt. S50 Ml Glass Jar	0/9 (1/10)			Lab Sample ID (Lab Use Only)
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Apex TITAN, Inc. • 505 N. Big Springs Drive, Suite 301A • Midland, Texas 79701 • Office: 432-695-6016



10-Dec-2018

James Raley WPX Energy 5315 Buena Vista Dr. Carlsbad, NM 88220

Re: East Pecos 22-7 Work Order: 1812031

Dear James,

ALS Environmental received 8 samples on 01-Dec-2018 11:15 AM for the analyses presented in the following report.

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

Sample results are compliant with industry accepted practices and Quality Control 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 19.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton Project Manager

#### **Report of Laboratory Analysis**

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Enuironmental 🏬

www.alsglobal.com

RIGHT SOLUTIONS BIGHT PARTNER

Date: 10-Dec-18

## **ALS Group, USA**

Client: WPX Energy
Project: East Pecos 22-7
Work Order: 1812031

## **Work Order Sample Summary**

Lab Samp ID Client Sample ID	<u>Matrix</u>	Γag Number	<b>Collection Date</b>	<b>Date Received</b>	<u>Hold</u>
1812031-01 BH18-01 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-02 BH18-01 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-03 BH18-02 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-04 BH18-02 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-05 BH18-03 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-06 BH18-03 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-07 BH18-04 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812031-08 BH18-04 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	

Date: 10-Dec-18

## **ALS Group, USA**

Client: WPX Energy
Project: East Pecos 22-7
WorkOrder: 1812031

QUALIFIERS,
ACRONYMS, UNITS

Qualifier	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O P	Sample amount is > 4 times amount spiked
R	Dual Column results percent difference > 40%  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 Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.
Acronym	<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

### **Units Reported Description**

**EPA** 

% of sample Percent of Sample

 $mg/Kg\text{-}dry \hspace{1cm} Milligrams \hspace{1mm} per \hspace{1mm} Kilogram \hspace{1mm} Dry \hspace{1mm} Weight$ 

SW-846 Update III

E

SW

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-01 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812031

**Lab ID:** 1812031-01 **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	<b>5C</b> Pr	ep: SW3546 12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		4.9	mg/Kg-dry	1	12/5/2018 09:06 PM
ORO (C28-C40)	ND		4.9	mg/Kg-dry	1	12/5/2018 09:06 PM
Surr: 4-Terphenyl-d14	68.6		34-130	%REC	1	12/5/2018 09:06 PM
GASOLINE RANGE ORGANICS BY GC-F	ID		SW801	<b>5D</b> Pr	ep: SW5035 12/4/18 12:13	Analyst: RP
GRO (C6-C10)	ND		5.2	mg/Kg-dry	1	12/6/2018 11:13 PM
Surr: Toluene-d8	86.6		71-123	%REC	1	12/6/2018 11:13 PM
VOLATILE ORGANIC COMPOUNDS			SW826	<b>0C</b> Pr	ep: SW5035 12/3/18 15:01	Analyst: WH
Benzene	ND		0.031	mg/Kg-dry	1	12/6/2018 04:19 PM
Ethylbenzene	ND		0.031	mg/Kg-dry	1	12/6/2018 04:19 PM
m,p-Xylene	ND		0.062	mg/Kg-dry	1	12/6/2018 04:19 PM
o-Xylene	ND		0.031	mg/Kg-dry	1	12/6/2018 04:19 PM
Toluene	ND		0.031	mg/Kg-dry	1	12/6/2018 04:19 PM
Xylenes, Total	ND		0.094	mg/Kg-dry	1	12/6/2018 04:19 PM
Surr: 1,2-Dichloroethane-d4	94.4		70-130	%REC	1	12/6/2018 04:19 PM
Surr: 4-Bromofluorobenzene	97.2		70-130	%REC	1	12/6/2018 04:19 PM
Surr: Dibromofluoromethane	93.6		70-130	%REC	1	12/6/2018 04:19 PM
Surr: Toluene-d8	103		70-130	%REC	1	12/6/2018 04:19 PM
CHLORIDE			A4500-	CL E-11 Pr	ep: EXTRACT 12/3/18 19:0	O Analyst: <b>RLM</b>
Chloride	ND		10	mg/Kg-dry	1	12/4/2018 03:20 PM
MOISTURE			SW355	0C		Analyst: KTP
Moisture	2.0		0.10	% of sam	ple 1	12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-01 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812031

**Lab ID:** 1812031-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C	Prep: SW3546 12/5/	18 10:43 Analyst: <b>RP</b>
DRO (C10-C28)	ND		4.9	mg/Kg-d	dry 1	12/5/2018 02:17 PM
ORO (C28-C40)	ND		4.9	mg/Kg-d	dry 1	12/5/2018 02:17 PM
Surr: 4-Terphenyl-d14	77.6		34-130	%REC	1	12/5/2018 02:17 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW5035 12/4/	18 12:13 Analyst: <b>RP</b>
GRO (C6-C10)	ND		5.1	mg/Kg-d	dry 1	12/6/2018 11:42 PM
Surr: Toluene-d8	88.5		71-123	%REC	1	12/6/2018 11:42 PM
VOLATILE ORGANIC COMPOUNDS			SW826	oC .	Prep: SW5035 12/3/	18 15:01 Analyst: <b>WH</b>
Benzene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:35 PM
Ethylbenzene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:35 PM
m,p-Xylene	ND		0.061	mg/Kg-d	dry 1	12/6/2018 04:35 PM
o-Xylene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:35 PM
Toluene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:35 PM
Xylenes, Total	ND		0.092	mg/Kg-d	dry 1	12/6/2018 04:35 PM
Surr: 1,2-Dichloroethane-d4	93.7		70-130	%REC	1	12/6/2018 04:35 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	12/6/2018 04:35 PM
Surr: Dibromofluoromethane	91.3		70-130	%REC	1	12/6/2018 04:35 PM
Surr: Toluene-d8	100		70-130	%REC	1	12/6/2018 04:35 PM
CHLORIDE			A4500-0	CL E-11	Prep: EXTRACT 12/3	3/18 19:00 Analyst: <b>RLM</b>
Chloride	ND		10	mg/Kg-d	dry 1	12/4/2018 03:20 PM
MOISTURE			SW355	OC .		Analyst: KTP
Moisture	1.2		0.10	% of sa	mple 1	12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-02 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

Work Order: 1812031

**Lab ID:** 1812031-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C	Prep: SW3546 12/5/18 10:4	43 Analyst: <b>RP</b>
DRO (C10-C28)	ND		5.0	mg/Kg-d	dry 1	12/5/2018 09:35 PM
ORO (C28-C40)	ND		5.0	mg/Kg-d	dry 1	12/5/2018 09:35 PM
Surr: 4-Terphenyl-d14	58.1		34-130	%REC	1	12/5/2018 09:35 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW5035 12/4/18 12:	Analyst: <b>RP</b>
GRO (C6-C10)	ND		5.2	mg/Kg-d	dry 1	12/7/2018 12:10 PM
Surr: Toluene-d8	89.6		71-123	%REC	1	12/7/2018 12:10 PM
VOLATILE ORGANIC COMPOUNDS			SW8260	С	Prep: SW5035 12/3/18 15:0	O1 Analyst: <b>WH</b>
Benzene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:50 PM
Ethylbenzene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:50 PM
m,p-Xylene	ND		0.062	mg/Kg-d	dry 1	12/6/2018 04:50 PM
o-Xylene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:50 PM
Toluene	ND		0.031	mg/Kg-d	dry 1	12/6/2018 04:50 PM
Xylenes, Total	ND		0.093	mg/Kg-d	dry 1	12/6/2018 04:50 PM
Surr: 1,2-Dichloroethane-d4	97.4		70-130	%REC	1	12/6/2018 04:50 PM
Surr: 4-Bromofluorobenzene	96.4		70-130	%REC	1	12/6/2018 04:50 PM
Surr: Dibromofluoromethane	90.6		70-130	%REC	1	12/6/2018 04:50 PM
Surr: Toluene-d8	102		70-130	%REC	1	12/6/2018 04:50 PM
CHLORIDE			A4500-0	CL E-11	Prep: EXTRACT 12/3/18 19	9:00 Analyst: <b>RLM</b>
Chloride	ND		10	mg/Kg-d	dry 1	12/4/2018 03:20 PM
MOISTURE			SW3550	OC		Analyst: KTP
Moisture	1.6		0.10	% of sa	mple 1	12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-02 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812031

**Lab ID:** 1812031-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID	)		SW801	5C	Prep: SW3546	12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.1	mg/Kg-d	dry 1		12/5/2018 10:04 PM
ORO (C28-C40)	ND		5.1	mg/Kg-d	dry 1		12/5/2018 10:04 PM
Surr: 4-Terphenyl-d14	69.1		34-130	%REC	1		12/5/2018 10:04 PM
GASOLINE RANGE ORGANICS BY GC	·FID		SW801	5D	Prep: SW5035	12/4/18 12:13	Analyst: RP
GRO (C6-C10)	ND		5.1	mg/Kg-d	dry 1		12/7/2018 12:39 PM
Surr: Toluene-d8	91.1		71-123	%REC	1		12/7/2018 12:39 PM
VOLATILE ORGANIC COMPOUNDS			SW826	0C	Prep: SW5035	12/3/18 15:01	Analyst: WH
Benzene	ND		0.031	mg/Kg-d	dry 1		12/6/2018 05:06 PM
Ethylbenzene	ND		0.031	mg/Kg-d	dry 1		12/6/2018 05:06 PM
m,p-Xylene	ND		0.061	mg/Kg-d	dry 1		12/6/2018 05:06 PM
o-Xylene	ND		0.031	mg/Kg-d	dry 1		12/6/2018 05:06 PM
Toluene	ND		0.031	mg/Kg-d	dry 1		12/6/2018 05:06 PM
Xylenes, Total	ND		0.092	mg/Kg-d	dry 1		12/6/2018 05:06 PM
Surr: 1,2-Dichloroethane-d4	100		70-130	%REC	1		12/6/2018 05:06 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1		12/6/2018 05:06 PM
Surr: Dibromofluoromethane	93.6		70-130	%REC	1		12/6/2018 05:06 PM
Surr: Toluene-d8	98.8		70-130	%REC	1		12/6/2018 05:06 PM
CHLORIDE			A4500-	CL E-11	Prep: EXTRACT	12/3/18 19:00	Analyst: <b>RLM</b>
Chloride	ND		10	mg/Kg-d	dry 1		12/4/2018 03:20 PM
MOISTURE			SW355	0C			Analyst: <b>KTP</b>
Moisture	1.2		0.10	% of sa	mple 1		12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-03 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

Work Order: 1812031

**Lab ID:** 1812031-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C	Prep: SW3546 1	2/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		4.9	mg/Kg-c	lry 1		12/5/2018 11:02 PM
ORO (C28-C40)	7.1		4.9	mg/Kg-	dry 1		12/5/2018 11:02 PM
Surr: 4-Terphenyl-d14	78.1		34-130	%REC	1		12/5/2018 11:02 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW5035 1	2/4/18 12:13	Analyst: RP
GRO (C6-C10)	ND		5.1	mg/Kg-c	lry 1		12/7/2018 01:08 AM
Surr: Toluene-d8	85.1		71-123	%REC	1		12/7/2018 01:08 AM
VOLATILE ORGANIC COMPOUNDS			SW826	OC .	Prep: SW5035 1	2/3/18 15:01	Analyst: WH
Benzene	ND		0.031	mg/Kg-c	lry 1		12/6/2018 05:21 PM
Ethylbenzene	ND		0.031	mg/Kg-c	lry 1		12/6/2018 05:21 PM
m,p-Xylene	ND		0.062	mg/Kg-c	lry 1		12/6/2018 05:21 PM
o-Xylene	ND		0.031	mg/Kg-c	lry 1		12/6/2018 05:21 PM
Toluene	ND		0.031	mg/Kg-c	lry 1		12/6/2018 05:21 PM
Xylenes, Total	ND		0.093	mg/Kg-c	lry 1		12/6/2018 05:21 PM
Surr: 1,2-Dichloroethane-d4	98.0		70-130	%REC	1		12/6/2018 05:21 PM
Surr: 4-Bromofluorobenzene	99.5		70-130	%REC	1		12/6/2018 05:21 PM
Surr: Dibromofluoromethane	92.2		70-130	%REC	1		12/6/2018 05:21 PM
Surr: Toluene-d8	99.4		70-130	%REC	1		12/6/2018 05:21 PM
CHLORIDE			A4500-	CL E-11	Prep: EXTRACT	12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-c	dry 1		12/4/2018 03:20 PM
MOISTURE			SW355	OC .			Analyst: KTP
Moisture	1.4		0.10	% of sa	mple 1		12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-03 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812031

**Lab ID:** 1812031-06

Matrix: SOIL

Analyses	Result	Report Dilution Qual Limit Units Factor				Date Analyzed		
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C F	Prep: SW3546 12/5/18 10:43	Analyst: RP		
DRO (C10-C28)	ND		5.2	mg/Kg-dı	ry 1	12/5/2018 11:32 PM		
ORO (C28-C40)	ND		5.2	mg/Kg-dı	ry 1	12/5/2018 11:32 PM		
Surr: 4-Terphenyl-d14	75.6		34-130	%REC	1	12/5/2018 11:32 PM		
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D F	Prep: SW5035 12/4/18 12:13	Analyst: RP		
GRO (C6-C10)	ND		5.5	mg/Kg-dı	ry 1	12/7/2018 01:37 AM		
Surr: Toluene-d8	89.4		71-123	%REC	1	12/7/2018 01:37 AM		
VOLATILE ORGANIC COMPOUNDS			SW826	0C F	Prep: SW5035 12/3/18 15:01	Analyst: WH		
Benzene	ND		0.033	mg/Kg-dı	ry 1	12/6/2018 05:36 PM		
Ethylbenzene	ND		0.033	mg/Kg-dı	ry 1	12/6/2018 05:36 PM		
m,p-Xylene	ND		0.066	mg/Kg-dı	ry 1	12/6/2018 05:36 PM		
o-Xylene	ND		0.033	mg/Kg-dı	ry 1	12/6/2018 05:36 PM		
Toluene	ND		0.033	mg/Kg-dı	ry 1	12/6/2018 05:36 PM		
Xylenes, Total	ND		0.099	mg/Kg-dı	ry 1	12/6/2018 05:36 PM		
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	12/6/2018 05:36 PM		
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	12/6/2018 05:36 PM		
Surr: Dibromofluoromethane	94.0		70-130	%REC	1	12/6/2018 05:36 PM		
Surr: Toluene-d8	104		70-130	%REC	1	12/6/2018 05:36 PM		
CHLORIDE			A4500-	CL E-11	Prep: EXTRACT 12/3/18 19:0	OO Analyst: <b>RLM</b>		
Chloride	ND		10	mg/Kg-dı	ry 1	12/4/2018 03:20 PM		
MOISTURE			SW355	0C		Analyst: KTP		
Moisture	4.7		0.10	% of san	nple 1	12/4/2018 01:45 PM		

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-04 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

Work Order: 1812031

**Lab ID:** 1812031-07

Matrix: SOIL

Analyses	Result	Qual	Report Limit	- Dilution			Date Analyzed
DIESEL RANGE ORGANICS BY GC-FIL	)		SW801	5C F	Prep: SW3546	12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		4.9	mg/Kg-d	ry 1		12/6/2018 12:01 PM
ORO (C28-C40)	ND		4.9	mg/Kg-d	ry 1		12/6/2018 12:01 PM
Surr: 4-Terphenyl-d14	63.6		34-130	%REC	1		12/6/2018 12:01 PM
GASOLINE RANGE ORGANICS BY GC	-FID		SW801	5D F	Prep: SW5035	12/4/18 12:13	Analyst: RP
GRO (C6-C10)	ND		5.1	mg/Kg-d	ry 1		12/7/2018 02:06 AM
Surr: Toluene-d8	88.5		71-123	%REC	1		12/7/2018 02:06 AM
VOLATILE ORGANIC COMPOUNDS			SW826	0C	Prep: SW5035	12/3/18 15:01	Analyst: WH
Benzene	ND		0.030	mg/Kg-d	ry 1		12/6/2018 05:52 PM
Ethylbenzene	ND		0.030	mg/Kg-d	ry 1		12/6/2018 05:52 PM
m,p-Xylene	ND		0.061	mg/Kg-d	ry 1		12/6/2018 05:52 PM
o-Xylene	ND		0.030	mg/Kg-d	ry 1		12/6/2018 05:52 PM
Toluene	ND		0.030	mg/Kg-d	ry 1		12/6/2018 05:52 PM
Xylenes, Total	ND		0.091	mg/Kg-d	ry 1		12/6/2018 05:52 PM
Surr: 1,2-Dichloroethane-d4	99.2		70-130	%REC	1		12/6/2018 05:52 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1		12/6/2018 05:52 PM
Surr: Dibromofluoromethane	92.6		70-130	%REC	1		12/6/2018 05:52 PM
Surr: Toluene-d8	103		70-130	%REC	1		12/6/2018 05:52 PM
CHLORIDE			A4500-	CL E-11	Prep: EXTRAC	T 12/3/18 19:00	Analyst: RLM
Chloride	ND		9.9	mg/Kg-d	ry 1		12/4/2018 03:20 PM
MOISTURE			SW355	0C			Analyst: KTP
Moisture	0.79		0.10	% of sar	nple 1		12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-04 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

Work Order: 1812031

**Lab ID:** 1812031-08

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID	ı		SW801	5C	Prep: SW3546	12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		4.9	mg/Kg-	dry 1		12/6/2018 12:30 PM
ORO (C28-C40)	ND		4.9	mg/Kg-	dry 1		12/6/2018 12:30 PM
Surr: 4-Terphenyl-d14	82.6		34-130	%REC	1		12/6/2018 12:30 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW5035	12/4/18 12:13	Analyst: RP
GRO (C6-C10)	ND		5.1	mg/Kg-	dry 1		12/7/2018 02:35 AM
Surr: Toluene-d8	88.5		71-123	%REC	1		12/7/2018 02:35 AM
VOLATILE ORGANIC COMPOUNDS			SW826	oC .	Prep: SW5035	12/3/18 15:01	Analyst: WH
Benzene	ND		0.030	mg/Kg-	dry 1		12/6/2018 06:07 PM
Ethylbenzene	ND		0.030	mg/Kg-	dry 1		12/6/2018 06:07 PM
m,p-Xylene	ND		0.061	mg/Kg-	dry 1		12/6/2018 06:07 PM
o-Xylene	ND		0.030	mg/Kg-	dry 1		12/6/2018 06:07 PM
Toluene	ND		0.030	mg/Kg-	dry 1		12/6/2018 06:07 PM
Xylenes, Total	ND		0.091	mg/Kg-	dry 1		12/6/2018 06:07 PM
Surr: 1,2-Dichloroethane-d4	97.8		70-130	%REC	1		12/6/2018 06:07 PM
Surr: 4-Bromofluorobenzene	99.2		70-130	%REC	1		12/6/2018 06:07 PM
Surr: Dibromofluoromethane	91.6		70-130	%REC	1		12/6/2018 06:07 PM
Surr: Toluene-d8	100		70-130	%REC	1		12/6/2018 06:07 PM
CHLORIDE			A4500-0	CL E-11	Prep: EXTRACT	12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-	dry 1		12/4/2018 03:20 PM
MOISTURE			SW355	OC .			Analyst: KTP
Moisture	0.50		0.10	% of sa	mple 1		12/4/2018 01:45 PM

WPX Energy **Client:** Work Order: 1812031 **Project:** 

East Pecos 22-7

Date: 10-Dec-18

## QC BATCH REPORT

Batch ID: 128868	Instrument ID GC8	3		Method	d: <b>SW80</b>	15C						
MBLK :	Sample ID: DBLKS1-12	8868-128	868			ι	Jnits: <b>mg/</b>	'Kg	Analy	sis Date: 1	2/5/2018 1	2:21 PN
Client ID:		Run IE	): GC8_1	81205B		Se	eqNo: <b>542</b>	2200	Prep Date: 12/	/5/2018	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									
ORO (C28-C40)		ND	5.0									
Surr: 4-Terphenyl-d1	14	2.517	0	3.33		0	75.6	34-130	(	)		
LCS	Sample ID: DLCSS1-12	8868-128	868			ι	Jnits: <b>mg/</b>	'Kg	Analy	sis Date: 1	2/5/2018 1	2:50 PN
Client ID:		Run ID	C GC8_1	81205B		Se	eqNo: <b>542</b>	2201	Prep Date: 12/	/5/2018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
		333.4	5.0	333		0	100	65-122		)		
DRO (C10-C28) ORO (C28-C40)		330.1	5.0	333		0	99.1	81-116		)		
Surr: 4-Terphenyl-d1	14	3.217	0.0	3.33		0	96.6	34-130		)		
MS	Sample ID: <b>1812031-02</b>	A MS				ı	Jnits: <b>mg/</b>	'Ka	Analys	sis Date: 1	2/5/2018 0	1-19 PM
Client ID: <b>BH18-01 (2</b> )			): GC8_1	81205B		SeqNo: <b>5422202</b>			Prep Date: 12/		DF: 1	1.1011
	· <del>·</del>				SPK Ref			Control	RPD Ref	0.2010	RPD	
Analyte		Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
DRO (C10-C28)		311.3	4.8	317.3		0	98.1	65-122	(	)		
ORO (C28-C40)		312.6	4.8	317.3	4.1	41	97.2	81-116	(	)		
Surr: 4-Terphenyl-d1	14	2.525	0	3.173		0	79.6	34-130	(	)		
MSD :	Sample ID: <b>1812031-02</b>	A MSD				ι	Jnits: <b>mg/</b>	'Kg	Analy	sis Date: 1	2/5/2018 0	1:48 PN
Client ID: BH18-01 (21	ft)	Run ID	C GC8_1	81205B		Se	eqNo: <b>542</b>	2203	Prep Date: 12/	/5/2018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)		315.4	4.7	312.9		0	101	65-122	311.3	3 1.32	30	
ORO (C28-C40)		308	4.7	312.9	4.1	41	97.1	81-116	312.6	5 1.48	30	
Surr: 4-Terphenyl-d1	14	2.631	0	3.129		0	84.1	34-130	2.525	5 4.1	30	
The following sample	s were analyzed in this	s batch:		312031-01A 312031-04A		-	031-02A 031-05A	_	12031-03A 12031-06A			

1812031-07A

1812031-08A

Note:

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

Client: WPX Energy
Work Order: 1812031

# QC BATCH REPORT

work Oraer:	1812031
Project:	East Pecos 22-7

Batch ID: 128849	Instrument ID GCS	)		Method	: SW80	15D						
MBLK	Sample ID: MBLK-1288	49-128849	ı			ι	Jnits: µg/k	(g-dry	Analys	sis Date: 1	2/6/2018 0	2:29 PM
Client ID:		Run ID:	GC9_1	181206A		Se	eqNo: <b>542</b> 4	4782	Prep Date: 12/	4/2018	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	5,000									
Surr: Toluene-d8		4346	0	5000		0	86.9	71-123	C	)		
LCS	Sample ID: LCS-128849	9-128849				ι	Jnits: µg/k	(g-dry	Analys	sis Date: 1	2/6/2018 1	2:05 PM
Client ID:		Run ID:	GC9_1	181206A		Se	qNo: <b>542</b>	4778	Prep Date: 12/	4/2018	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)	2	64200	5,000	250000		0	106	71-123	C	)		
Surr: Toluene-d8		5062	0	5000		0	101	71-123	C	)		
MS	Sample ID: 1812013-01	A MS				ι	Jnits: µg/k	(g-dry	Analys	sis Date: 1	2/7/2018 0	7:53 AM
Client ID:		Run ID:	GC9_1	181206A		Se	qNo: <b>542</b>	4813	Prep Date: 12/	4/2018	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)	5	61700	5,600	563800		0	99.6	71-123	C	)		
Surr: Toluene-d8		5831	0	5638		0	103	71-123	C	)		
MSD	Sample ID: <b>1812013-01</b>	A MSD				ι	Jnits: µg/k	(g-dry	Analys	sis Date: 1	2/7/2018 0	8:22 AM
Client ID:		Run ID:	GC9_1	181206A		Se	qNo: <b>542</b> 4	4814	Prep Date: 12/	4/2018	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)	5	85000	5,600	563800		0	104	71-123	561700	4.07	30	
Surr: Toluene-d8		6275	0	5638		0	111	71-123	5831	7.33	30	
The following samp	oles were analyzed in this	s batch:	1	812031-01A 812031-04A 812031-07A	18	3120	)31-02A )31-05A )31-08A	_	12031-03A 12031-06A			

**Client:** WPX Energy Work Order: 1812031 **Project:** 

East Pecos 22-7

QC BATCH REPORT

Batch ID: 128804	Instrument ID VMS9	Method: SW8260C
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MBLK San	nple ID: MBLK-128804				ι	Jnits: µg/K	(g-dry	Anal	ysis Date:	12/5/2018 1	2:24 PM	
Client ID:		Run ID: VMS9_181204B				SeqNo: <b>5419563</b>			Prep Date: 1	2/3/2018	DF: <b>1</b>	
Analyte	Re	sult	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		ND	30	0		0	0	0-0		0		
Ethylbenzene		ND	30	0		0	0	0-0		0		
m,p-Xylene		21	60	0		0	0	0-0		0		J
o-Xylene		ND	30	0		0	0	0-0		0		
Toluene		ND	30	0		0	0	0-0		0		
Xylenes, Total		ND	90	0		0	0	0-0		0		
Surr: 1,2-Dichloroethane	e-d4 1	024	0	1000		0	102	70-130		0		
Surr: 4-Bromofluoroben:	zene 92	21.5	0	1000		0	92.2	70-130		0		
Surr: Dibromofluorometi	hane	866	0	1000		0	86.6	70-130		0		
Surr: Toluene-d8		954	0	1000		0	95.4	70-130		0		

LCS	Sample ID: LCS-128804	I-128804				ι	Jnits: µg/k	(g-dry	A	Analysi	s Date:	12/4/2018 1	1:22 PM
Client ID:		Run ID:	VMS9_	181204B		Se	qNo: <b>541</b> 9	9532	Prep Date	e: <b>12/3</b>	/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD F Valu		%RPD	RPD Limit	Qual
Benzene		1062	30	1000		0	106	75-125		0			
Ethylbenzene		1075	30	1000		0	108	75-125		0			
m,p-Xylene		2066	60	2000		0	103	80-125		0			
o-Xylene		1124	30	1000		0	112	75-125		0			
Toluene		1047	30	1000		0	105	70-125		0			
Xylenes, Total		3190	90	3000		0	106	75-125		0			
Surr: 1,2-Dichloroe	thane-d4	986.5	0	1000		0	98.6	70-130		0			
Surr: 4-Bromofluor	obenzene	1001	0	1000		0	100	70-130		0			
Surr: Dibromofluor	omethane	1012	0	1000		0	101	70-130		0			
Surr: Toluene-d8		989	0	1000		0	98.9	70-130		0			

MS Sample ID: 1812013-01A MS						Units: µg/Kg-dry			Analysis Date:		12/5/2018 06:50 PM	
Client ID:	Run ID	Run ID: VMS9_181205A			SeqNo: <b>5421631</b>		Prep Da	Prep Date: 12/3/2018		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Val		%RPD	RPD Limit	Qual
Benzene	1057	34	1128		0	93.7	75-125		0			
Ethylbenzene	1114	34	1128		0	98.8	75-125		0			
m,p-Xylene	2095	68	2255		0	92.9	80-125		0			
o-Xylene	1132	34	1128		0	100	75-125		0			
Toluene	1156	34	1128		0	102	70-125		0			
Xylenes, Total	3227	100	3383		0	95.4	75-125		0			
Surr: 1,2-Dichloroethane-d4	1145	0	1128		0	102	70-130		0			
Surr: 4-Bromofluorobenzene	1151	0	1128		0	102	70-130		0			
Surr: Dibromofluoromethane	1021	0	1128		0	90.5	70-130		0			
Surr: Toluene-d8	1123	0	1128		0	99.6	70-130		0			

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

QC BATCH REPORT

**Client:** WPX Energy Work Order: 1812031 **Project:** 

East Pecos 22-7

Batch ID: 128804 Instrument ID VMS9 Method: SW8260C

MSD Sample ID: 1812013-01A MSD						Jnits: µg/h	(g-dry	Analysis Date: 12/5/2018 07:06 PM			
Client ID:	Run ID:	Run ID: VMS9_181205A			SeqNo: <b>5421632</b>			Prep Date: 12/3	DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1071	34	1128		0	95	75-125	1057	1.38	30	
Ethylbenzene	1146	34	1128		0	102	75-125	1114	2.84	30	
m,p-Xylene	2140	68	2255		0	94.9	80-125	2095	2.13	30	
o-Xylene	1151	34	1128		0	102	75-125	1132	1.68	30	
Toluene	1132	34	1128		0	100	70-125	1156	2.12	30	
Xylenes, Total	3291	100	3383		0	97.3	75-125	3227	1.97	30	
Surr: 1,2-Dichloroethane-d4	1110	0	1128		0	98.4	70-130	1145	3.05	30	
Surr: 4-Bromofluorobenzene	1152	0	1128		0	102	70-130	1151	0.0979	30	
Surr: Dibromofluoromethane	1009	0	1128		0	89.4	70-130	1021	1.17	30	
Surr: Toluene-d8	1113	0	1128		0	98.7	70-130	1123	0.908	30	
The following samples were analyzed in this batch:			1812031-01A 1812031-04A		1812031-02A 1812031-05A		_	12031-03A 12031-06A			

1812031-08A

1812031-07A

Note: See Qualifiers Page for a list of Qualifiers and their explanation. **Client:** WPX Energy Work Order: 1812031 **Project:** 

East Pecos 22-7

QC BATCH REPORT

Batch ID: 128862	Instrument ID GALLERY	•	Method	: A4500	-CI E-11					
MBLK	Sample ID: MBLK-128862-12	8862			Units: mg	/Kg	Analys	sis Date: 1	2/4/2018 0	3:20 PM
Client ID:	Ru	n ID: <b>GALLE</b>	RY_1812040	:	SeqNo: <b>54</b> 1	17176	Prep Date: 12/	3/2018	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	NE	10								
MS	Sample ID: <b>1812014-01AMS</b>				Units: mg	/Kg	Analy	sis Date: 1	2/4/2018 0	3:20 PM
Client ID:	Ru	n ID: GALLE	RY_1812040		SeqNo: <b>54</b> 1	17235	Prep Date: 12/	3/2018	DF: <b>1</b>	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	506.8	3 10	498	2.2	43 101	75-125	(	)		
MSD	Sample ID: <b>1812014-01AMSD</b>	)			Units: mg	/Kg	Analy	sis Date: 1	2/4/2018 0	3:20 PM
Client ID:	Ru	n ID: <b>GALLE</b>	RY_1812040	3	SeqNo: <b>54</b> 1	17236	Prep Date: 12/	3/2018	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	509.4	9.8	492.1	2.2	43 103	75-125	506.8	3 0.527	25	
LCS1	Sample ID: <b>LCS1-128862-128</b>	862			Units: mg	/Kg	Analy	sis Date: 1	2/4/2018 0	3:20 PM
Client ID:	Ru	n ID: GALLE	RY_1812040		SeqNo: <b>54</b> 1	17177	Prep Date: 12/	3/2018	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	99.51	10	100		0 99.5	80-120	(	)		
LCS2	Sample ID: <b>LCS2-128862-128</b>	862			Units: mg	/Kg	Analy	sis Date: 1	2/4/2018 0	3:20 PM
Client ID:	Ru	n ID: <b>GALLE</b>	RY_1812040	3	SeqNo: <b>54</b> 1	17239	Prep Date: 12/	3/2018	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	559.2	2 10	500		0 112	80-120	(	)		
The following sam	ples were analyzed in this batc	18	812031-01A 812031-04A 812031-07A	18	812031-02A 812031-05A 812031-08A	-	12031-03A 12031-06A			

Note: See Qualifiers Page for a list of Qualifiers and their explanation. Client: WPX Energy
Work Order: 1812031

QC BATCH REPORT

**Project:** East Pecos 22-7

Batch ID: <b>R250614</b>	Instrument ID MOI	IST		Method	: SW35	50C					
MBLK	Sample ID: MB-R25061	4-R250614				Units: % d	of sample	Analy	sis Date: 1	12/4/2018 0	1:45 PM
Client ID:		Run ID:	MOIST	_181204C		SeqNo: <b>54</b> 1	18972	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	0.10								
LCS	Sample ID: LCS-R2506	14-R25061	4			Units: % d	of sample	Analy	sis Date: 1	12/4/2018 0	1:45 PM
Client ID:		Run ID:	MOIST	_181204C		SeqNo: <b>54</b> 1	18973	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture		100	0.10	100		0 100	99.5-100	.5	0		
DUP	Sample ID: 1812013-04	A DUP				Units: % d	of sample	Analy	/sis Date: 1	12/4/2018 0	1:45 PM
Client ID:		Run ID:	MOIST	_181204C		SeqNo: <b>54</b> 1	18977	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture		2.33	0.10	0		0 0	0-0	2.4	3 4.2	2 10	
DUP	Sample ID: 1812014-01	A DUP				Units: % d	of sample	Analy	sis Date: 1	12/4/2018 0	1:45 PM
Client ID:		Run ID:	MOIST	_181204C		SeqNo: <b>54</b> 1	18979	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture		1.7	0.10	0		0 0	0-0	1.7	5 2.9	9 10	
The following samp	les were analyzed in this	s batch:	18	812031-01A 812031-04A 812031-07A	18	812031-02A 812031-05A 812031-08A	-	12031-03A 12031-06A			

Note:

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

# ALS

### **ALS Laboratory Group**

HOLLAND, Michigan 49424

Chain-of-Custody

WORKORDER #	1812031
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														Fon	n 202r8									
(ALS)		SAN	IPLER							D	ATÉ		29/11	/2018				PAGE		1		of		1
PROJECT NAME	East Pecos 22-7	S	ITE ID Eas	st Pecos 22-7				1	rurn	AROL	סאנ		5 d	ays			DiS	POSAL	Ву	Lab	or	Retu	m to	Client
PROJECT No.	17E-00043	EDD FO	RMAT																					
		PURCHASE O	RDER																					
COMPANY NAME	WPX Energy	BILL TO COM	IPANY WP	PX Energy																				
SEND REPORT TO	Raley	INVOICE AT	TN TO Jim	n Raley							İ											- 1		
ADDRESS		ADI		15 Buena Vista D				ı																
CITY / STATE / ZIP		CITY / STAT		ırlsbad, NM 8822	0																			
PHONE		Р		5-885-1313																				
FAX				5-885-3509				ORO SO																
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com; dhanton@vertex.ca; kmeadows@vertex.ca; jcrabtree@vertex.ca		iam -MAIL dha km	rolina.blaney@wj nes.raley@wpxer anton@vertex.ca neadows@vertex abtree@vertex.c	nergy.co i; .ca;			-GRO+	втех	Chloride		Hoid												
Lab ID	Field ID	Matrix	Sample Date		# Bottles	Pres.	QC																	
	BH18-01 (0 ft)	S	28/11/201	118	2			×	х	×														
	BH18-01 (2 ft)	S	28/11/20	)18	2			х	x	х														
	BH18-02 (0 ft)	S	28/11/20	)18	2			x	х	х						<u> </u>			_	ļ			_	
	BH18-02 (2 ft)	S	28/11/20 <sup>-</sup>	)18	2			х	х	х						ļ								
	BH18-03 (0 ft)	S	28/11/20	)18	2			х	х	x													_	
	BH18-03 (2 ft)	s	28/11/20	)18	2			х	х	x														
	BH18-04 (0 ft)	s	28/11/20	)18	2			х	х	х														
	BH18-04 (2 ft)	s	28/11/20	)18	2			х	x	х														
															***************************************									

Comments:	ļ	2C PACK	AGE (check below)
		х	LEVEL II (Standard QC)
	4.2° spe		LEVEL III (Std QC + forms
			LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karalina Blaney	Karolina Blaney	29/11/2018	12:00
RECEIVED BY	70070000000			
RELINQUISHED BY		·		
RECEIVED BY	1-6	Jason Crabbel	29/11/201	7:30
RELINQUISHED BY		1		
RECEIVED BY		KEM WIELENKO	Polis	1113

#### Sample Receipt Checklist

Client Name: <u>WPX - NM</u>			Date/Time I	Received:	01-Dec-18	11:15	
Work Order: <u>1812031</u>			Received by	y: <u> </u>	<u>KRW</u>		
Checklist completed by Keith	Vierenga	03-Dec-18	Reviewed by:	Chad Whe	Uton		04-Dec-18
eSignature  Matrices: <u>Soil</u> Carrier name: <u>FedEx</u>		Date		eSignature			Date
Shipping container/cooler in good co	ndition?	Yes 🗸	No 🗆	Not Preser	nt $\square$		
Custody seals intact on shipping cor	tainer/cooler?	Yes	No 🗆	Not Preser	nt 🗸		
Custody seals intact on sample bottl	es?	Yes	No 🗌	Not Preser	nt 🗸		
Chain of custody present?		Yes 🗸	No 🗌				
Chain of custody signed when relinq	uished and received?	Yes 🗸	No 🗌				
Chain of custody agrees with sample	e labels?	Yes 🗸	No 🗌				
Samples in proper container/bottle?		Yes 🗸	No 🗌				
Sample containers intact?		Yes 🗸	No 🗌				
Sufficient sample volume for indicate	ed test?	Yes 🗸	No 🗆				
All samples received within holding t	ime?	Yes 🗸	No 🗌				
Container/Temp Blank temperature i	n compliance?	Yes 🗹	No 🗌				
Sample(s) received on ice? Temperature(s)/Thermometer(s):		Yes <b>✓</b> 4.2/4.2 C	No 🗆	SR2			
Cooler(s)/Kit(s):							
Date/Time sample(s) sent to storage			10:58:40 AM	No VOA viole (	aubmittad	<b>✓</b>	
Water - VOA vials have zero headsp		Yes □		No VOA vials s	submilled		
Water - pH acceptable upon receipt? pH adjusted?		Yes ☐	_	N/A ✓			
pH adjusted by:		-	NO 🗀	N/A			
Login Notes:							
			. — — — —				
Client Contacted:	Date Contacted:		Person	Contacted:			
Contacted By:	Regarding:						
·	g g						
Comments:							
CorrectiveAction:							
						SRC P	age 1 of 1



10-Dec-2018

James Raley WPX Energy 5315 Buena Vista Dr. Carlsbad, NM 88220

Re: East Pecos 22-7 Work Order: 1812014

Dear James,

ALS Environmental received 8 samples on 01-Dec-2018 11:15 AM for the analyses presented in the following report.

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

Sample results are compliant with industry accepted practices and Quality Control 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 20.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton Project Manager

#### **Report of Laboratory Analysis**

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 30

www.alsglobal.com

RIGHT SOLUTIONS BIGHT PARTIER

Date: 10-Dec-18

### **ALS Group, USA**

Client: WPX Energy
Project: East Pecos 22-7
Work Order: 1812014

# **Work Order Sample Summary**

<u>Lab Samp II</u>	O Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	<u>Hold</u>
1812014-01	BH18-05 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-02	BH18-05 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-03	BH18-06 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-04	BH18-06 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-05	BH18-07 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-06	BH18-07 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-07	BH18-08 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812014-08	BH18-08 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	

Date: 10-Dec-18

### **ALS Group, USA**

Client: WPX Energy
Project: East Pecos 22-7
WorkOrder: 1812014

QUALIFIERS,
ACRONYMS, UNITS

Qualifier	<b>Description</b>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
О	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 Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.
Acronym	<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
Α	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III
Units Reported	d Description
% of sample	Percent of Sample

mg/Kg-dry

Milligrams per Kilogram Dry Weight

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-05 (0 ft)

**Collection Date:** 11/28/2018

**MOISTURE** 

Moisture

**Date:** 10-Dec-18

**Work Order:** 1812014

Matrix: SOIL

**Lab ID:** 1812014-01

Analyses	Result	Qual	Report Limit	Units	Dilut Fac		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID	1		SW801	5C	Prep: SW3	3546 12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.0	mg/Kg-	dry	1	12/5/2018 04:43 PM
ORO (C28-C40)	5.4		5.0	mg/Kg	-dry	1	12/5/2018 04:43 PM
Surr: 4-Terphenyl-d14	71.6		34-130	%REC		1	12/5/2018 04:43 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW	5035 12/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.2	mg/Kg-	dry	1	12/6/2018 06:52 PM
Surr: Toluene-d8	88.4		71-123	%REC		1	12/6/2018 06:52 PM
VOLATILE ORGANIC COMPOUNDS			SW826	0C	Prep: SW	5035 12/3/18 11:09	Analyst: <b>EMR</b>
Benzene	ND		0.031	mg/Kg-	dry	1	12/5/2018 04:44 AM
Ethylbenzene	ND		0.031	mg/Kg-	dry	1	12/5/2018 04:44 AM
m,p-Xylene	ND		0.062	mg/Kg-	dry	1	12/5/2018 04:44 AM
o-Xylene	ND		0.031	mg/Kg-	dry	1	12/5/2018 04:44 AM
Toluene	ND		0.031	mg/Kg-	dry	1	12/5/2018 04:44 AM
Xylenes, Total	ND		0.093	mg/Kg-	dry	1	12/5/2018 04:44 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC		1	12/5/2018 04:44 AM
Surr: 4-Bromofluorobenzene	95.3		70-130	%REC		1	12/5/2018 04:44 AM
Surr: Dibromofluoromethane	80.6		70-130	%REC		1	12/5/2018 04:44 AM
Surr: Toluene-d8	98.4		70-130	%REC		1	12/5/2018 04:44 AM
CHLORIDE			A4500-	CL E-11	Prep: EXT	RACT 12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-	dry	1	12/4/2018 03:20 PM

SW3550C

% of sample

0.10

1.8

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

Analyst: KTP

12/4/2018 01:45 PM

**Client:** WPX Energy **Project:** East Pecos 22-7 BH18-05 (2 ft) Sample ID:

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

Matrix: SOIL

**Lab ID:** 1812014-02

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FIL	)		SW801	5C	Prep: SW3546 1	2/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.0	mg/Kg-d	dry 1		12/5/2018 05:41 PM
ORO (C28-C40)	ND		5.0	mg/Kg-d	dry 1		12/5/2018 05:41 PM
Surr: 4-Terphenyl-d14	72.1		34-130	%REC	1		12/5/2018 05:41 PM
GASOLINE RANGE ORGANICS BY GC	-FID		SW801	5D	Prep: SW5035 1	2/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.2	mg/Kg-d	dry 1		12/6/2018 07:22 PM
Surr: Toluene-d8	91.3		71-123	%REC	1		12/6/2018 07:22 PM
VOLATILE ORGANIC COMPOUNDS			SW826	0C	Prep: SW5035 1	2/3/18 11:09	Analyst: <b>EMR</b>
Benzene	ND		0.031	mg/Kg-d	dry 1		12/5/2018 04:59 AM
Ethylbenzene	ND		0.031	mg/Kg-d	dry 1		12/5/2018 04:59 AM
m,p-Xylene	ND		0.062	mg/Kg-d	dry 1		12/5/2018 04:59 AM
o-Xylene	ND		0.031	mg/Kg-d	dry 1		12/5/2018 04:59 AM
Toluene	ND		0.031	mg/Kg-d	dry 1		12/5/2018 04:59 AM
Xylenes, Total	ND		0.093	mg/Kg-d	dry 1		12/5/2018 04:59 AM
Surr: 1,2-Dichloroethane-d4	99.6		70-130	%REC	1		12/5/2018 04:59 AM
Surr: 4-Bromofluorobenzene	93.8		70-130	%REC	1		12/5/2018 04:59 AM
Surr: Dibromofluoromethane	81.6		70-130	%REC	1		12/5/2018 04:59 AM
Surr: Toluene-d8	97.4		70-130	%REC	1		12/5/2018 04:59 AM
CHLORIDE			A4500-	CL E-11	Prep: EXTRACT	12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-d	dry 1		12/4/2018 03:20 PM
MOISTURE			SW355	0C			Analyst: KTP
Moisture	1.5		0.10	% of sa	mple 1		12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-06 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

**Lab ID:** 1812014-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C	Prep: SW3546	12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.3	mg/Kg-d	dry 1		12/5/2018 06:10 PM
ORO (C28-C40)	ND		5.3	mg/Kg-d	dry 1		12/5/2018 06:10 PM
Surr: 4-Terphenyl-d14	71.6		34-130	%REC	1		12/5/2018 06:10 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW5035	12/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.7	mg/Kg-d	dry 1		12/6/2018 07:50 PM
Surr: Toluene-d8	109		71-123	%REC	1		12/6/2018 07:50 PM
VOLATILE ORGANIC COMPOUNDS			SW826	oC .	Prep: SW5035	12/3/18 11:09	Analyst: EMR
Benzene	ND		0.034	mg/Kg-d	dry 1		12/5/2018 05:14 AM
Ethylbenzene	ND		0.034	mg/Kg-d	dry 1		12/5/2018 05:14 AM
m,p-Xylene	ND		0.068	mg/Kg-d	dry 1		12/5/2018 05:14 AM
o-Xylene	ND		0.034	mg/Kg-d	dry 1		12/5/2018 05:14 AM
Toluene	ND		0.034	mg/Kg-d	dry 1		12/5/2018 05:14 AM
Xylenes, Total	ND		0.10	mg/Kg-d	dry 1		12/5/2018 05:14 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1		12/5/2018 05:14 AM
Surr: 4-Bromofluorobenzene	89.3		70-130	%REC	1		12/5/2018 05:14 AM
Surr: Dibromofluoromethane	79.8		70-130	%REC	1		12/5/2018 05:14 AM
Surr: Toluene-d8	96.3		70-130	%REC	1		12/5/2018 05:14 AM
CHLORIDE			A4500-0	CL E-11	Prep: EXTRACT	12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-d	dry 1		12/4/2018 03:20 PM
MOISTURE			SW355	OC .			Analyst: KTP
Moisture	6.6		0.10	% of sa	mple 1		12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-06 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

**Lab ID:** 1812014-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units		ıtion ctor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-F	ID		SW801	5C	Prep: SV	V3546 12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.1	mg/Kg-	-dry	1	12/5/2018 06:40 PM
ORO (C28-C40)	ND		5.1	mg/Kg-	-dry	1	12/5/2018 06:40 PM
Surr: 4-Terphenyl-d14	70.6		34-130	%REC		1	12/5/2018 06:40 PM
GASOLINE RANGE ORGANICS BY G	C-FID		SW801	5D	Prep: SV	V5035 12/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.5	mg/Kg-	-dry	1	12/6/2018 08:19 PM
Surr: Toluene-d8	90.5		71-123	%REC		1	12/6/2018 08:19 PM
VOLATILE ORGANIC COMPOUNDS			SW826	0C	Prep: SV	V5035 12/3/18 11:09	Analyst: PM
Benzene	ND		0.033	mg/Kg-	dry	1	12/5/2018 05:50 AM
Ethylbenzene	ND		0.033	mg/Kg-	dry	1	12/5/2018 05:50 AM
m,p-Xylene	ND		0.066	mg/Kg-	dry	1	12/5/2018 05:50 AM
o-Xylene	ND		0.033	mg/Kg-	dry	1	12/5/2018 05:50 AM
Toluene	ND		0.033	mg/Kg-	dry	1	12/5/2018 05:50 AM
Xylenes, Total	ND		0.098	mg/Kg-	dry	1	12/5/2018 05:50 AM
Surr: 1,2-Dichloroethane-d4	88.5		70-130	%REC		1	12/5/2018 05:50 AM
Surr: 4-Bromofluorobenzene	95.2		70-130	%REC		1	12/5/2018 05:50 AM
Surr: Dibromofluoromethane	101		70-130	%REC		1	12/5/2018 05:50 AM
Surr: Toluene-d8	99.6		70-130	%REC		1	12/5/2018 05:50 AM
CHLORIDE			A4500-	CL E-11	Prep: EX	TRACT 12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-	-dry	1	12/4/2018 03:20 PM
MOISTURE			SW355	0C			Analyst: KTP
Moisture	4.5		0.10	% of sa	ample	1	12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-07 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

**Lab ID:** 1812014-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilut Fac		Date Analyzed
DIESEL RANGE ORGANICS BY GC-F	D		SW801	5C	Prep: SW3	3546 12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		4.8	mg/Kg-	dry	1	12/5/2018 07:09 PM
ORO (C28-C40)	ND		4.8	mg/Kg-	dry	1	12/5/2018 07:09 PM
Surr: 4-Terphenyl-d14	65.1		34-130	%REC		1	12/5/2018 07:09 PM
GASOLINE RANGE ORGANICS BY GO	C-FID		SW801	5D	Prep: SW5	6035 12/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.2	mg/Kg-	dry	1	12/6/2018 08:48 PM
Surr: Toluene-d8	98.8		71-123	%REC		1	12/6/2018 08:48 PM
VOLATILE ORGANIC COMPOUNDS			SW826	0C	Prep: SW5	6035 12/3/18 11:09	Analyst: PM
Benzene	ND		0.031	mg/Kg-	dry	1	12/5/2018 06:06 AM
Ethylbenzene	ND		0.031	mg/Kg-	dry	1	12/5/2018 06:06 AM
m,p-Xylene	ND		0.062	mg/Kg-	dry	1	12/5/2018 06:06 AM
o-Xylene	ND		0.031	mg/Kg-	dry	1	12/5/2018 06:06 AM
Toluene	ND		0.031	mg/Kg-	dry	1	12/5/2018 06:06 AM
Xylenes, Total	ND		0.093	mg/Kg-	dry	1	12/5/2018 06:06 AM
Surr: 1,2-Dichloroethane-d4	86.6		70-130	%REC		1	12/5/2018 06:06 AM
Surr: 4-Bromofluorobenzene	92.8		70-130	%REC		1	12/5/2018 06:06 AM
Surr: Dibromofluoromethane	91.9		70-130	%REC		1	12/5/2018 06:06 AM
Surr: Toluene-d8	102		70-130	%REC		1	12/5/2018 06:06 AM
CHLORIDE			A4500-	CL E-11	Prep: EXT	RACT 12/3/18 19:00	Analyst: RLM
Chloride	ND		10	mg/Kg-	dry	1	12/4/2018 03:20 PM
MOISTURE			SW355	0C			Analyst: KTP
Moisture	1.5		0.10	% of sa	ımple	1	12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-07 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

**Lab ID:** 1812014-06

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID	)		SW801	5C	Prep: SW3546 1	2/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.2	mg/Kg-c	dry 1		12/5/2018 07:38 PM
ORO (C28-C40)	ND		5.2	mg/Kg-c	dry 1		12/5/2018 07:38 PM
Surr: 4-Terphenyl-d14	69.1		34-130	%REC	1		12/5/2018 07:38 PM
GASOLINE RANGE ORGANICS BY GC	·FID		SW801	5D	Prep: SW5035 1	2/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.6	mg/Kg-c	dry 1		12/6/2018 09:17 PM
Surr: Toluene-d8	85.5		71-123	%REC	1		12/6/2018 09:17 PM
VOLATILE ORGANIC COMPOUNDS			SW826	OC .	Prep: SW5035 1	2/3/18 11:09	Analyst: PM
Benzene	ND		0.034	mg/Kg-c	dry 1		12/5/2018 06:22 AM
Ethylbenzene	ND		0.034	mg/Kg-c	dry 1		12/5/2018 06:22 AM
m,p-Xylene	ND		0.068	mg/Kg-c	dry 1		12/5/2018 06:22 AM
o-Xylene	ND		0.034	mg/Kg-c	dry 1		12/5/2018 06:22 AM
Toluene	ND		0.034	mg/Kg-c	dry 1		12/5/2018 06:22 AM
Xylenes, Total	ND		0.10	mg/Kg-c	dry 1		12/5/2018 06:22 AM
Surr: 1,2-Dichloroethane-d4	104		70-130	%REC	1		12/5/2018 06:22 AM
Surr: 4-Bromofluorobenzene	91.7		70-130	%REC	1		12/5/2018 06:22 AM
Surr: Dibromofluoromethane	94.1		70-130	%REC	1		12/5/2018 06:22 AM
Surr: Toluene-d8	106		70-130	%REC	1		12/5/2018 06:22 AM
CHLORIDE			A4500-0	CL E-11	Prep: EXTRACT	12/3/18 19:00	Analyst: RLM
Chloride	ND		11	mg/Kg-c	dry 1		12/4/2018 03:20 PM
MOISTURE			SW355	OC .			Analyst: KTP
Moisture	5.9		0.10	% of sa	mple 1		12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-08 (0 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

**Lab ID:** 1812014-07

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C	Prep: SW3546 12/5	5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.2	mg/Kg-d	dry 1	1	2/5/2018 08:07 PM
ORO (C28-C40)	ND		5.2	mg/Kg-d	dry 1	1	2/5/2018 08:07 PM
Surr: 4-Terphenyl-d14	68.6		34-130	%REC	1	1	2/5/2018 08:07 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	5D	Prep: SW5035 12/-	4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.8	mg/Kg-d	dry 1	1	2/6/2018 09:46 PM
Surr: Toluene-d8	85.5		71-123	%REC	1	1	2/6/2018 09:46 PM
VOLATILE ORGANIC COMPOUNDS			SW8260	С	Prep: SW5035 12/3	3/18 11:09	Analyst: PM
Benzene	ND		0.035	mg/Kg-d	dry 1	1	2/5/2018 06:39 AM
Ethylbenzene	ND		0.035	mg/Kg-d	dry 1	1	2/5/2018 06:39 AM
m,p-Xylene	ND		0.069	mg/Kg-d	dry 1	1	2/5/2018 06:39 AM
o-Xylene	ND		0.035	mg/Kg-d	dry 1	1	2/5/2018 06:39 AM
Toluene	ND		0.035	mg/Kg-d	dry 1	1	2/5/2018 06:39 AM
Xylenes, Total	ND		0.10	mg/Kg-d	dry 1	1	2/5/2018 06:39 AM
Surr: 1,2-Dichloroethane-d4	87.1		70-130	%REC	1	1	2/5/2018 06:39 AM
Surr: 4-Bromofluorobenzene	90.4		70-130	%REC	1	1	2/5/2018 06:39 AM
Surr: Dibromofluoromethane	87.6		70-130	%REC	1	1	2/5/2018 06:39 AM
Surr: Toluene-d8	100		70-130	%REC	1	1	2/5/2018 06:39 AM
CHLORIDE			A4500-0	CL E-11	Prep: EXTRACT 12	2/3/18 19:00	Analyst: <b>RLM</b>
Chloride	ND		10	mg/Kg-d	dry 1	1	2/4/2018 03:20 PM
MOISTURE			SW3550	С			Analyst: <b>KTP</b>
Moisture	7.0		0.10	% of sa	mple 1	1	2/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-08 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812014

**Lab ID:** 1812014-08

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015	5 <b>C</b> P	rep: SW3546 12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.3	mg/Kg-dr	y 1	12/5/2018 08:36 PM
ORO (C28-C40)	ND		5.3	mg/Kg-dr	y 1	12/5/2018 08:36 PM
Surr: 4-Terphenyl-d14	79.1		34-130	%REC	1	12/5/2018 08:36 PM
GASOLINE RANGE ORGANICS BY GC-F	'ID		SW8015	5 <b>D</b> P	rep: SW5035 12/4/18 10:17	Analyst: RP
GRO (C6-C10)	ND		5.8	mg/Kg-dr	y 1	12/6/2018 10:44 PM
Surr: Toluene-d8	85.1		71-123	%REC	1	12/6/2018 10:44 PM
VOLATILE ORGANIC COMPOUNDS			SW8260	C P	rep: SW5035 12/3/18 11:09	Analyst: WH
Benzene	ND		0.035	mg/Kg-dr	y 1	12/4/2018 12:51 PM
Ethylbenzene	ND		0.035	mg/Kg-dr	y 1	12/4/2018 12:51 PM
m,p-Xylene	ND		0.070	mg/Kg-dr	y 1	12/4/2018 12:51 PM
o-Xylene	ND		0.035	mg/Kg-dr	y 1	12/4/2018 12:51 PM
Toluene	ND		0.035	mg/Kg-dr	y 1	12/4/2018 12:51 PM
Xylenes, Total	ND		0.11	mg/Kg-dr	y 1	12/4/2018 12:51 PM
Surr: 1,2-Dichloroethane-d4	97.3		70-130	%REC	1	12/4/2018 12:51 PM
Surr: 4-Bromofluorobenzene	96.2		70-130	%REC	1	12/4/2018 12:51 PM
Surr: Dibromofluoromethane	90.4		70-130	%REC	1	12/4/2018 12:51 PM
Surr: Toluene-d8	99.3		70-130	%REC	1	12/4/2018 12:51 PM
CHLORIDE			A4500-0	CL E-11	rep: EXTRACT 12/3/18 19:00	Analyst: <b>RLM</b>
Chloride	ND		11	mg/Kg-dr	y 1	12/4/2018 03:20 PM
MOISTURE			SW3550			Analyst: KTP
Moisture	7.8		0.10	% of san	nple 1	12/4/2018 01:45 PM

Date: 10-Dec-18

ALS Group, USA

Client: WPX Energy
Work Order: 1812014
Project: East Pecos 22-7

# QC BATCH REPORT

Batch ID: 128868 Instrument ID GC8 Method: SW8015C

MBLK	Sample ID: DBLKS1-12	8868-12886	88			U	Jnits: <b>mg/k</b>	<b>(</b> g	An	alysis Date:	12/5/2018 1	2:21 PM
Client ID:		Run ID:	GC8_18	1205B		Se	qNo: <b>5422</b>	200	Prep Date:	12/5/2018	DF: 1	
					SPK Ref			Control	RPD Re	f	RPD	
Analyte		Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
DRO (C10-C28)		ND	5.0									
ORO (C28-C40)		ND	5.0									
Surr: 4-Terphenyl-	d14	2.517	0	3.33		0	75.6	34-130		0		

LCS	Sample ID: DLCSS1-128	8868-12886	8				Units: mg/k	<b>(</b> g	Aı	nalysis	Date:	12/5/2018 1	2:50 PM
Client ID:		Run ID:	GC8_18	31205B		S	eqNo: <b>5422</b>	201	Prep Date:	12/5/2	2018	DF: 1	
					SPK Ref			Control	RPD Re			RPD Limit	
Analyte		Result	PQL	SPK Val	Value		%REC	Limit	Value	'	%RPD	LIIIIII	Qual
DRO (C10-C28)		333.4	5.0	333		0	100	65-122		0			
ORO (C28-C40)		330.1	5.0	333		0	99.1	81-116		0			
Surr: 4-Terphenyl-	d14	3.217	0	3.33		0	96.6	34-130		0			

MS	Sample ID: 1812031-02	A MS				ι	Jnits: mg/k	<b>(</b> g	Ana	alysis Date:	12/5/2018 0	1:19 PM
Client ID:		Run ID:	GC8_18	1205B		Se	qNo: <b>5422</b>	202	Prep Date:	12/5/2018	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)		311.3	4.8	317.3		0	98.1	65-122		0		
ORO (C28-C40)		312.6	4.8	317.3	4.1	41	97.2	81-116		0		
Surr: 4-Terphenyl-	d14	2.525	0	3.173		0	79.6	34-130		0		

MSD	Sample ID: 1812031-02/	A MSD				Units: mo	g/Kg	Analysi	is Date: '	12/5/2018 0	1:48 PM
Client ID:		Run ID:	GC8_18	31205B		SeqNo: 54	22203	Prep Date: 12/5	/2018	DF: <b>1</b>	
Analyte	ı	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)		315.4	4.7	312.9		0 101	65-122	311.3	1.3	2 30	
ORO (C28-C40)		308	4.7	312.9	4.14	1 97.1	81-116	312.6	1.4	8 30	
Surr: 4-Terphenyl-	d14	2.631	0	3.129		0 84.1	34-130	2.525	4.	1 30	

The following sa	amples were anal	lyzed in this batch:
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1812014-01A	1812014-02A	1812014-03A
1812014-04A	1812014-05A	1812014-06A
1812014-07A	1812014-08A	

**Client:** WPX Energy Work Order: 1812014

QC BATCH REPORT

**Project:** East Pecos 22-7

Batch ID: 128834	Instrument ID GC	9		Metho	d: PUBL-	SW-	140					
MBLK	Sample ID: MBLK-1288	334-128834	1			U	nits: µg/k	(g-dry	Analys	sis Date: 1	2/6/2018 0	)2:37 AM
Client ID:		Run ID	GC9_1	31205A		Sec	No: <b>542</b>	1308	Prep Date: 12/4	4/2018	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									
MBLK	Sample ID: MBLK-1288	334-128834	1			U	nits: µg/k	(g-dry	Analys	sis Date: 1	2/6/2018 0	2:58 PM
Client ID:		Run ID	: GC9_1	31206A		Sec	No: <b>542</b>	1783	Prep Date: 12/4	4/2018	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) Surr: Toluene-d8		ND 4395	5,000 0	5000		0	87.9	71-123	0			
	Comple ID: LCC 42002	4 400004				11	nito //	/ a. alaa	Analys	io Doto: 4	0/0/0040.0	M-20 AM
LCS Client ID:	Sample ID: LCS-12883		: GC9_18	R1205A			nits: <b>µg/k</b> qNo: <b>542</b> ′		Prep Date: 12/4		2/6/2018 0 DF: 1	71:39 AW
Olicini ID.		Ranib	. 003_1	71203A	SPK Ref	000	41 <b>1</b> 0. <b>342</b>	Control	RPD Ref	7/2010	RPD	
Analyte		Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
GRO (C6-C10)		9564	2,500	10000		0	95.6	80-120	0			
GRO (C6-C10)	Sample ID: LCS-12883		2,500	10000			95.6 nits: <b>µg/</b>				2/6/2018 1	2:33 PM
	Sample ID: LCS-12883	4-128834	2,500 : <b>GC9_1</b>			U		(g-dry		is Date: 1	<b>2/6/2018 1</b> DF: <b>1</b>	2:33 PM
LCS Client ID:	Sample ID: LCS-12883	<b>4-128834</b> Run ID	: GC9_1	31206A	SPK Ref Value	U	nits: <b>µg/ŀ</b> qNo: <b>542</b> 4	(g-dry	Analys	is Date: 1 4/2018		
LCS Client ID: Analyte		4-128834 Run ID Result	: <b>GC9_1</b> 6	<b>31206A</b> SPK Val		U Sec	nits: <b>µg/l</b> qNo: <b>542</b> 4 %REC	(g-dry 1779 Control Limit	Analys Prep Date: 12/4 RPD Ref Value	sis Date: <b>1</b> <b>4/2018</b> %RPD	DF: 1	<b>2:33 PM</b> Qual
LCS Client ID:		<b>4-128834</b> Run ID	: GC9_1	31206A		U	nits: <b>µg/ŀ</b> qNo: <b>542</b> 4	(g-dry 1779 Control	Analys Prep Date: <b>12/</b> RPD Ref Value	sis Date: <b>1</b> <b>4/2018</b> %RPD	DF: 1	
LCS Client ID: Analyte GRO (C6-C10)		4-128834 Run ID Result 255400 5040	PQL 5,000	31206A SPK Val 250000		U Sec 0 0	nits: µg/l no: <b>542</b> %REC 102 101	(g-dry 1779 Control Limit 71-123 71-123	Analys Prep Date: <b>12/</b> RPD Ref Value  0	is Date: 1 4/2018  %RPD	DF: 1 RPD Limit	Qual
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8	2	4-128834 Run ID Result 255400 5040	PQL 5,000	31206A SPK Val 250000 5000		U Sec 0 0	nits: µg/l⁄ qNo: <b>542</b> 4 %REC 102	(g-dry 1779 Control Limit 71-123 71-123	Analys Prep Date: <b>12/</b> RPD Ref Value  0	is Date: 1 4/2018  %RPD  iis Date: 1	DF: 1	Qual
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD Client ID:	2	4-128834 Run ID Result 255400 5040 834-128834 Run ID	PQL 5,000 0	31206A SPK Val 250000 5000		U Sec 0 0	nits: μ <b>g//</b> γNo: <b>542</b> %REC 102 101 nits: μ <b>g//</b> γNo: <b>542</b>	(g-dry 1779 Control Limit 71-123 71-123	Analys Prep Date: 12/4 RPD Ref Value  0 0 Analys	is Date: 1 4/2018  %RPD  is Date: 1 4/2018	DF: 1 RPD Limit	Qual
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD	2	4-128834 Run ID Result 255400 5040	PQL 5,000	31206A SPK Val 250000 5000	Value SPK Ref	U Sec 0 0	nits: μ <b>g//</b> ηNo: <b>542</b> %REC 102 101 nits: μ <b>g//</b>	(g-dry 1779 Control Limit 71-123 71-123 (g-dry 1332 Control	Analys Prep Date: 12/4 RPD Ref Value  0 0 Analys Prep Date: 12/4 RPD Ref	%RPD sis Date: 1 4/2018 %RPD sis Date: 1 4/2018	DF: 1 RPD Limit  2/6/2018 0 DF: 1 RPD Limit	Qual 06:00 AM
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD Client ID: Analyte GRO (C6-C10)	Sample ID: LCSD-1288	4-128834 Run ID Result 255400 5040 34-128834 Run ID Result 11190	PQL 5,000 0 : GC9_16	31206A  SPK Val 250000 5000  31205A  SPK Val	Value SPK Ref	U Second O O	nits: µg/l/ qNo: <b>542</b> 4  %REC  102 101  nits: µg/l/ qNo: <b>542</b> 4  %REC  112	(g-dry 1779 Control Limit 71-123 71-123 (g-dry 1332 Control Limit 80-120	Analys Prep Date: 12/4 RPD Ref Value  0 Analys Prep Date: 12/4 RPD Ref Value	sis Date: 1 4/2018  %RPD sis Date: 1 4/2018  %RPD  15.7	DF: 1 RPD Limit  2/6/2018 0 DF: 1 RPD Limit	Qual 06:00 AM Qual
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD Client ID: Analyte	2	4-128834 Run ID  Result 255400 5040  834-128834 Run ID  Result 11190  IB MS	PQL 5,000 0 : GC9_18 PQL 2,500	31206A  SPK Val 250000 5000  31205A  SPK Val 10000	Value SPK Ref	U Second O U U U	nits: µg/l/ %REC 102 101 nits: µg/l/ nNo: <b>542</b>	(g-dry 1779 Control Limit 71-123 71-123 (g-dry 1332 Control Limit 80-120	Analys Prep Date: 12/4 RPD Ref Value  0 0 Analys Prep Date: 12/4 RPD Ref Value  9564 Analys	%RPD sis Date: 1 4/2018 %RPD 15.7 sis Date: 1	DF: 1 RPD Limit  2/6/2018 0 DF: 1 RPD Limit  20 2/7/2018 0	Qual 06:00 AM Qual
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD Client ID: Analyte GRO (C6-C10)  MS Client ID:	Sample ID: LCSD-1288	4-128834 Run ID  Result 255400 5040  834-128834 Run ID  Result 11190  B MS Run ID	PQL 5,000 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31206A  SPK Val 250000 5000  S1205A  SPK Val 10000	SPK Ref Value	U Second O U U U	nits: µg/l/ No: 5424  %REC 102 101  nits: µg/l/ qNo: 5424  nits: µg/l/ qNo: 5424	G-dry Control Limit 71-123 71-123 G-dry 1332 Control Limit 80-120 G-dry 4815 Control	Analys Prep Date: 12/4 RPD Ref Value  0 0 Analys Prep Date: 12/4 RPD Ref Value  9564 Analys Prep Date: 12/4 RPD Ref	is Date: 1 4/2018  %RPD  is Date: 1 4/2018  %RPD  15.7  is Date: 1 4/2018	DF: 1 RPD Limit  2/6/2018 0 DF: 1 RPD Limit  20 2/7/2018 0 DF: 1 RPD	Qual 06:00 AM Qual 09:20 AM
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD Client ID: Analyte GRO (C6-C10)  MS	Sample ID: LCSD-1288	4-128834 Run ID  Result 255400 5040  834-128834 Run ID  Result 11190  IB MS	PQL 5,000 0 : GC9_18 PQL 2,500	31206A  SPK Val 250000 5000  31205A  SPK Val 10000	Value  SPK Ref Value	U Second O U U U	nits: µg/l/ no: 5424 %REC 102 101 nits: µg/l/ nits: µg/l/ %REC 112 nits: µg/l/	(g-dry 4779 Control Limit 71-123 71-123 (g-dry 1332 Control Limit 80-120 (g-dry 4815	Analys Prep Date: 12/4 RPD Ref Value  0 0 Analys Prep Date: 12/4 RPD Ref Value  9564 Analys Prep Date: 12/4	%RPD sis Date: 1 4/2018 %RPD 15.7 sis Date: 1	DF: 1 RPD Limit  2/6/2018 0 DF: 1 RPD Limit  20 2/7/2018 0 DF: 1	Qual 06:00 AM Qual
LCS Client ID: Analyte GRO (C6-C10) Surr: Toluene-d8  LCSD Client ID: Analyte GRO (C6-C10)  MS Client ID:	Sample ID: LCSD-1288 Sample ID: 1812059-01	4-128834 Run ID  Result 255400 5040  834-128834 Run ID  Result 11190  B MS Run ID	PQL 5,000 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31206A  SPK Val 250000 5000  S1205A  SPK Val 10000	SPK Ref Value	U Second O U U U	nits: µg/l/ No: 5424  %REC 102 101  nits: µg/l/ qNo: 5424  nits: µg/l/ qNo: 5424	G-dry Control Limit 71-123 71-123 G-dry 1332 Control Limit 80-120 G-dry 4815 Control	Analys Prep Date: 12/4 RPD Ref Value  0 0 Analys Prep Date: 12/4 RPD Ref Value  9564  Analys Prep Date: 12/4 RPD Ref Value  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	is Date: 1 4/2018  %RPD  is Date: 1 4/2018  %RPD  15.7  is Date: 1 4/2018	DF: 1 RPD Limit  2/6/2018 0 DF: 1 RPD Limit  20 2/7/2018 0 DF: 1 RPD	Qual 06:00 AM Qual 09:20 AM

Note:

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

**Client:** WPX Energy Work Order: 1812014 **Project:** 

East Pecos 22-7

QC BATCH REPORT

Batch ID: 128834	Instrument ID GC9	Method:	PUBL-SW-140
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MSD	Sample ID: 1812059-01E	MSD				U	Inits: µg/K	g-dry	Analy	sis Date:	12/7/2018 0	9:48 AM
Client ID:		Run ID:	GC9_18	1206A		Se	qNo: <b>542</b> 4	816	Prep Date: 12	2/4/2018	DF: <b>1</b>	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10) Surr: Toluene-d8	73	34600 <i>7</i> 535	7,000 0	704800 <i>704</i> 8		0	104 107	71-123 <i>71-123</i>	72290 701	-		

The following samples were analyzed in this batch:

1812014-01A	1812014-02A	1812014-03A	
1812014-04A	1812014-05A	1812014-06A	
1812014-07A	1812014-08A		

Client: WPX Energy
Work Order: 1812014
Project: East Pecos 22-7

QC BATCH REPORT

Batch ID: 128782 Instrument ID VMS7 Method: SW8260C

MBLK Sa	ample ID: MBLK-1287	82-128782				Units: µg/	Kg-dry	Anal	ysis Date:	12/3/2018 0	8:29 PM
Client ID:		Run ID:	VMS7_	181203A		SeqNo: <b>541</b>	5941	Prep Date: 12	2/3/2018	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-Dichloroetha	ne-d4	988	0	1000		0 98.8	70-130		0		
Surr: 4-Bromofluorobe	enzene	957.5	0	1000		0 95.8	70-130	)	0		
Surr: Dibromofluorome	ethane	963	0	1000		0 96.3	70-130		0		
Surr: Toluene-d8		973	0	1000		0 97.3	70-130	)	0		

LCS	Sample ID: <b>LCS-128782</b>	2-128782				l	Jnits: µg/k	(g-dry		Analys	is Date:	12/3/2018 0	7:43 PM
Client ID:		Run ID:	VMS7_	181203A		Se	qNo: <b>541</b>	5940	Prep Da	ate: 12/3	3/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Va	Ref lue	%RPD	RPD Limit	Qual
Benzene		964	30	1000		0	96.4	75-125		0			
Ethylbenzene		1000	30	1000		0	100	75-125		0			
m,p-Xylene		2054	60	2000		0	103	80-125		0			
o-Xylene		1028	30	1000		0	103	75-125		0			
Toluene		956	30	1000		0	95.6	70-125		0			
Xylenes, Total		3082	90	3000		0	103	75-125		0			
Surr: 1,2-Dichloroe	thane-d4	981.5	0	1000		0	98.2	70-130		0			
Surr: 4-Bromofluor	obenzene	991	0	1000		0	99.1	70-130		0			
Surr: Dibromofluor	omethane	1012	0	1000		0	101	70-130		0			·
Surr: Toluene-d8		998	0	1000		0	99.8	70-130		0			

MS S	Sample ID: <b>1812014-0</b> 8	BA MS				U	nits: µg/k	(g-dry		Analys	sis Date:	12/4/201	8 01:37 AM
Client ID: BH18-08 (2 f	t)	Run ID:	VMS7_	181203A		Sec	No: <b>541</b>	5944	Prep D	ate: 12/	3/2018	DF:	1
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit		D Ref alue	%RPD	RPD Limit	Qual
Benzene		1062	35	1169		0	90.8	75-125		C	)		
Ethylbenzene		1088	35	1169		0	93	75-125		C	)		
m,p-Xylene		2185	70	2338	5.26	31	93.2	80-125		C	)		
o-Xylene		1124	35	1169	7.	.6	95.5	75-125		C	)		
Toluene		1049	35	1169		0	89.7	70-125		C	)		
Xylenes, Total		3309	110	3508		0	94.4	75-125		C	)		
Surr: 1,2-Dichloroeth	ane-d4	1176	0	1169		0	101	70-130		C	)		
Surr: 4-Bromofluorok	penzene	1207	0	1169		0	103	70-130		C	)		
Surr: Dibromofluoror	methane	1196	0	1169		0	102	70-130		C	)		
Surr: Toluene-d8		1176	0	1169		0	101	70-130		C	)		

Note:

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

WPX Energy **Client:** Work Order: 1812014 **Project:** East Pecos 22-7 QC BATCH REPORT

Batch ID: 128782 Instrument ID VMS7 Method: SW8260C

MSD	Sample ID: 1812014	-08A MSD				Units: µg/l	Kg-dry	Analysi	s Date: 12	2/4/2018 0	1:52 AM
Client ID: BH18-08	(2 ft)	Run ID	: VMS7_	181203A	Se	eqNo: <b>541</b>	5945	Prep Date: 12/3	/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		1042	35	1169	0	89.2	75-125	1062	1.83	30	
Ethylbenzene		1084	35	1169	0	92.7	75-125	1088	0.377	30	
m,p-Xylene		2200	70	2338	5.261	93.9	80-125	2185	0.693	30	
o-Xylene		1117	35	1169	7.6	94.8	75-125	1124	0.678	30	
Toluene		1014	35	1169	0	86.7	70-125	1049	3.4	30	
Xylenes, Total		3317	110	3508	0	94.6	75-125	3309	0.229	30	
Surr: 1,2-Dichloro	ethane-d4	1164	0	1169	0	99.6	70-130	1176	1.05	30	
Surr: 4-Bromofluo	robenzene	1212	0	1169	0	104	70-130	1207	0.435	30	
Surr: Dibromofluo	romethane	1177	0	1169	0	101	70-130	1196	1.53	30	
Surr: Toluene-d8		1155	0	1169	0	98.8	70-130	1176	1.86	30	
The following samp	oles were analyzed in	this batch:	-	312014-01A 312014-04A		014-02A 014-05A		12014-03A 12014-06A			

1812014-07A

1812014-08A

Note:

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

Client: WPX Energy
Work Order: 1812014
Project: East Pecos 22-7

QC BATCH REPORT

Batch ID: 128862 Instrument ID GALLERY Method: A4500-CI E-11

MBLK	Sample ID: MBLK-12886	62-128862	!			Units: mg/	Kg	/	Analysis Date	: 12/4/20	18 03:20 PM
Client ID:		Run ID:	GALLE	RY_181204	C	SeqNo: <b>541</b> 7	7176	Prep Date	e: <b>12/3/2018</b>	DF	: 1
Analyte	l	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD F Valu		RPD PD Limi	
Chlorida		ND	10								

Chloride ND 10

MS	Sample ID: 1812014-01	IAMS				Units: mg	J/Kg	An	alysis Date:	12/4/2018 0	3:20 PM
Client ID: BH18	-05 (0 ft)	Run ID	GALLE	RY_181204	С	SeqNo: 54	17235	Prep Date:	12/3/2018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Re Value	f %RPD	RPD Limit	Qual
Chloride		506.8	10	498	2.24	13 101	75-125		0		

MSD	Sample ID: 1812014-01	AMSD				Units: mg/	Kg	Ana	lysis Date:	12/4/2018 0	3:20 PM
Client ID: BH18-05 (0	ft)	Run ID:	GALLEF	RY_1812040	C	SeqNo: <b>541</b> 7	7236	Prep Date: 1	2/3/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		509.4	9.8	492.1	2.24	13 103	75-125	506	6.8 0.52	27 25	

LCS1	Sample ID: <b>LCS1-12886</b>	2-128862				U	Inits: <b>mg/l</b>	<b>K</b> g	A	nalysis Dat	e: 1	12/4/2018 03	:20 PM
Client ID:		Run ID:	GALLE	RY_181204	С	Sec	qNo: <b>5417</b>	177	Prep Date	e: <b>12/3/2018</b>	}	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD R Valu		PD	RPD Limit	Qual
Chloride		99.51	10	100		0	99.5	80-120		0			

LCS2	Sample ID: LCS2-12886	2-128862				l	Jnits: mg/k	(g	An	alysis Date:	12/4/2018 0	3:20 PM
Client ID:		Run ID	GALLE	RY_181204	C	Se	qNo: <b>5417</b>	239	Prep Date:	12/3/2018	DF: <b>1</b>	
Analyte	1	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Re Value	f %RPD	RPD Limit	Qual
Chloride		559.2	10	500		0	112	80-120		0		

The following samples were analyzed in this batch:

1812014-01A	1812014-02A	1812014-03A	
1812014-04A	1812014-05A	1812014-06A	
1812014-07A	1812014-08A		

Client: WPX Energy
Work Order: 1812014
Project: East Pecos 22-7

QC BATCH REPORT

Batch ID: R250614 Instrument ID MOIST Method: SW3550C

2.33

0.10

MBLK	Sample ID: MB-R25061	14-R25061	4			Units: %	of sample	Ana	lysis Date:	12/4/2018	01:45 PM
Client ID:		Run I	: MOIST	_181204C		SeqNo: 54	18972	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	0.10								
LCS	Sample ID: LCS-R2506	14-R2506	14			Units: %	of sample	Ana	lysis Date:	12/4/2018	01:45 PI
Client ID:		Run IE	: MOIST	_181204C		SeqNo: 54'	18973	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	0.10	100		0 100	99.5-100	.5	0		
DUP	Sample ID: <b>1812013-0</b> 4	A DUP				Units: %	of sample	Ana	lysis Date:	12/4/2018	01:45 PI
Client ID:		Run I	: MOIST	_181204C		SeqNo: 54	18977	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DUP	Sample ID: <b>1812014-01</b>	A DUP				U	nits: <b>% of</b>	sample	Ana	ysis Date:	12/4/2018 0	1:45 PM
Client ID: BH18-05 (0	ft)	Run ID:	MOIST_	181204C		Sec	No: <b>5418</b>	3979	Prep Date:		DF: 1	
Analyte	I	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture		1.7	0.10	0		0	0	0-0	1.	75 2.	9 10	

0

The following samples were analyzed in this batch:

Moisture

1812014-01A	1812014-02A	1812014-03A	
1812014-04A	1812014-05A	1812014-06A	
1812014-07A	1812014-08A		

0-0

2.43

4.2

10

### **ALS Laboratory Group**

Chain-of-Custody

WORKORDER # 1017014

	HOLLAND, Michigan 49424													F	orm 20	)2r8	#	ı		l	81	2	01'	۱ ۲
(ALS)		SAM	PLER							D/	ATE		29/	1/201	8			PAGE		1		of		1
PROJECT NAME	East Pecos 22-7	S	ITE ID East F	Pecos 22-7				•	TURN	AROL	JND		5	days			DISPOSAL		Ву	Lab	or	Retu	ırn to	o Client
PROJECT No.	17E-00043	EDD FO	RMAT																					
		PURCHASE O	RDER																					
COMPANY NAME	WPX Energy	BILL TO COM	PANY WPX	Energy					ı															
SEND REPORT TO	Raley	INVOICE AT																						
ADDRESS				Buena Vista D																	ı			
CITY/STATE/ZIP		CITY / STATI		oad, NM 8822	0																			
PHONE		P	HONE 575-8																					
FAX			FAX 575-8					OR R		ı					l							ĺ		
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com; dhanton@vertex.ca; kmeadows@vertex.ca; jcrabtree@vertex.ca	E	james -MAIL dhant kmea	75-885-3509  arolina.blaney@wpxenergy.com; mes.raley@wpxenergy.com; hanton@vertex.ca; meadows@vertex.ca; rabtree@vertex.ca		втех	Chloride		For															
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC																	
T-A	BH18-05 (0 ft)	S	28/11/2018		2			x	х	х														
2	BH18-05 (2 ft)	s	28/11/2018		2			x	×	x														
3	BH18-06 (0 ft)	S	28/11/2018		2			х	х	x														
4	BH18-06 (2 ft)	s	28/11/2018		2			x	х	х														
5	BH18-07 (0 ft)	s	28/11/2018		2			x	х	х														
Ģ	BH18-07 (2 ft)	s	28/11/2018		2			х	х	х														
7	BH18-08 (0 ft)	s	28/11/2018		2			x	х	х														
8	BH18-08 (2 ft)	S	28/11/2018		2			×	х	х														
<u> </u>																$\top$								
1	1	1		1	1					1							 			<del></del>				***************************************

Comments:		QC PACK	AGE (check below)
<del></del>		×	LEVEL II (Standard QC)
	u de Roo		LEVEL III (Std QC + forms
	4.8° (500)		LEVEL IV (Std QC + forms + raw deta)
		1	

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	29/11/2018	12:00
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY	LC	Jam Cubhe	11/29/249	2:30
RELINQUISHED BY				
RECEIVED BY	9-161	KEM WIEREN	GA 11/36/18	1115

#### Sample Receipt Checklist

Client Name:	WPX - NM			Date/Time	e Received:	01-Dec-1	<u>18 11:15</u>	
Work Order:	<u>1812014</u>			Received	by:	KRW		
Checklist comp		0;	3-Dec-18	Reviewed by:	Chad X	)helton		04-Dec-18
Matrices: Carrier name:	eSignature <u>Soil</u> <u>FedEx</u>		Date		eSignature			Date
Shipping contai	iner/cooler in good condition?		Yes	<b>✓</b> No □	Not Pre	esent		
Custody seals i	ntact on shipping container/coole	r?	Yes	No 🗆	Not Pre	esent 🗹		
Custody seals i	ntact on sample bottles?		Yes	No 🗆	Not Pre	esent 🗸		
Chain of custod	dy present?		Yes	✓ No □	]			
Chain of custoo	dy signed when relinquished and	received?	Yes	✓ No □	]			
Chain of custoo	dy agrees with sample labels?		Yes	✓ No □	]			
Samples in prop	per container/bottle?		Yes	✓ No 🗆	]			
Sample contain	ners intact?		Yes	<b>✓</b> No □	]			
Sufficient samp	le volume for indicated test?		Yes	<b>✓</b> No □	]			
All samples rec	eived within holding time?		Yes	<b>✓</b> No □	]			
Container/Temp	p Blank temperature in compliand	e?	Yes	<b>✓</b> No □	]			
Sample(s) rece Temperature(s)	ived on ice? /Thermometer(s):		Yes 4.8/4.8 0	No C		SR2		
Cooler(s)/Kit(s)	:							
	ple(s) sent to storage:			8 9:17:37 AM				
	als have zero headspace?		Yes	_ No ∟	No VOA via	als submitted		
	eptable upon receipt?		Yes L	_ No ∟	N/A ✓			
pH adjusted? pH adjusted by:	:		Yes L	No L	N/A ✓			
Login Notes:								
							. — — — —	. — — — — –
							- — — — —	· — — — — –
Client Contacte	ed:	Date Contacted:		Perso	n Contacted:			
Contacted By:		Regarding:						
Comments:								
CorrectiveActio	n:							
							SRC	Page 1 of 1



10-Dec-2018

James Raley WPX Energy 5315 Buena Vista Dr. Carlsbad, NM 88220

Re: East Pecos 22-7 Work Order: 1812013

Dear James,

ALS Environmental received 4 samples on 01-Dec-2018 11:15 AM for the analyses presented in the following report.

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

Sample results are compliant with industry accepted practices and Quality Control 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 16.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton Project Manager

#### **Report of Laboratory Analysis**

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

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www.alsglobal.com

RIGHT SOLUTIONS BIGHT PARTNER

Date: 10-Dec-18

Client:	WPX Energy
<b>Project:</b>	East Pecos 22-7
Work Order:	1812013

# **Work Order Sample Summary**

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	<b>Collection Date</b>	Date Received	Hold
1812013-01	BH18-09 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812013-02	BH18-09 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812013-03	BH18-10 (0 ft)	Soil		11/28/2018	12/1/2018 11:15	
1812013-04	BH18-10 (2 ft)	Soil		11/28/2018	12/1/2018 11:15	

Date: 10-Dec-18

#### **ALS Group, USA**

Client: WPX Energy
Project: East Pecos 22-7
WorkOrder: 1812013

QUALIFIERS,
ACRONYMS, UNITS

Qualifier **Description** Value exceeds Regulatory Limit \*\* Estimated Value a Analyte is non-accredited В Analyte detected in the associated Method Blank above the Reporting Limit Е Value above quantitation range Η Analyzed outside of Holding Time Hr BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated. I Analyte is present at an estimated concentration between the MDL and Report Limit ND Not Detected at the Reporting Limit O Sample amount is > 4 times amount spiked Р 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 Reporting Limit, sample results may exhibit background or reagent contamination at the observed level. **Acronym** Description DUP Method Duplicate LCS Laboratory Control Sample LCSD Laboratory Control Sample Duplicate LOD Limit of Detection (see MDL) LOO Limit of Quantitation (see PQL) MBLK Method Blank MDL Method Detection Limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

TDL Target Detection Limit
TNTC Too Numerous To Count

Matrix Spike

Matrix Spike Duplicate

A APHA Standard Methods

D ASTM E EPA

MS

MSD

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

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-09 (0 ft)

**Collection Date:** 11/28/2018

Work Order: 1812013 Lab ID: 1812013-01

Matrix: SOIL

**Date:** 10-Dec-18

ND ND 74.6		<b>SW801</b> 5.1 5.1 34-130	5C P mg/Kg-dr mg/Kg-dr %REC	•	Analyst: <b>RP</b> 12/5/2018 02:46 PM
ND 74.6		5.1	mg/Kg-dr	•	12/5/2018 02:46 PM
74.6		-	0 0	, 1	
		34-130	% REC	y I	12/5/2018 02:46 PM
ND			MILO	1	12/5/2018 02:46 PM
ND		SW801	<b>5D</b> P	rep: SW5035 12/4/18 12:13	Analyst: RP
		5.6	mg/Kg-dr	y 1	12/6/2018 04:28 PM
89.2		71-123	%REC	1	12/6/2018 04:28 PM
		SW826	0C P	rep: SW5035 12/3/18 15:01	Analyst: <b>EMR</b>
ND		0.034	mg/Kg-dr	y 1	12/5/2018 03:42 AM
ND		0.034	mg/Kg-dr	y 1	12/5/2018 03:42 AM
ND		0.068	mg/Kg-dr	y 1	12/5/2018 03:42 AM
ND		0.034	mg/Kg-dr	y 1	12/5/2018 03:42 AM
ND		0.034	mg/Kg-dr	y 1	12/5/2018 03:42 AM
ND		0.10	mg/Kg-dr	y 1	12/5/2018 03:42 AM
99.8		70-130	%REC	1	12/5/2018 03:42 AM
96.4		70-130	%REC	1	12/5/2018 03:42 AM
83.6		70-130	%REC	1	12/5/2018 03:42 AM
97.1		70-130	%REC	1	12/5/2018 03:42 AM
		A4500-	CL E-11 P	rep: EXTRACT 12/5/18 19:00	) Analyst: <b>RLM</b>
ND		10	mg/Kg-dr	y 1	12/6/2018 12:00 PM
		SW355 0.10	0C % of sam	ple 1	Analyst: <b>KTP</b> 12/4/2018 12:16 PM
	ND ND ND ND 99.8 96.4 83.6 97.1	ND ND ND ND ND 99.8 96.4 83.6 97.1	ND 0.034 ND 0.034 ND 0.068 ND 0.034 ND 0.034 ND 0.034 ND 0.10 99.8 70-130 96.4 70-130 83.6 70-130 97.1 70-130  A4500- ND 10  SW355	ND 0.034 mg/Kg-dry ND 0.034 mg/Kg-dry ND 0.068 mg/Kg-dry ND 0.034 mg/Kg-dry ND 0.034 mg/Kg-dry ND 0.034 mg/Kg-dry ND 0.10 mg/Kg-dry 99.8 70-130 %REC 96.4 70-130 %REC 83.6 70-130 %REC 97.1 70-130 %REC ND 10 mg/Kg-dry ND 10 mg/Kg-dry ND 10 mg/Kg-dry ND 10 mg/Kg-dry SW3550C	ND 0.034 mg/Kg-dry 1 ND 0.034 mg/Kg-dry 1 ND 0.068 mg/Kg-dry 1 ND 0.034 mg/Kg-dry 1 ND 0.034 mg/Kg-dry 1 ND 0.034 mg/Kg-dry 1 ND 0.10 mg/Kg-dry 1 99.8 70-130 %REC 1 96.4 70-130 %REC 1 83.6 70-130 %REC 1 97.1 70-130 %REC 1 WHET STRACT 12/5/18 19:00 ND 10 mg/Kg-dry 1 SW3550C

**Client:** WPX Energy East Pecos 22-7 **Project:** BH18-09 (2 ft) Sample ID:

Collection Date: 11/28/2018

Surr: Toluene-d8

**CHLORIDE** 

Chloride

**MOISTURE** 

Moisture

Work Order: 1812013 **Lab ID:** 1812013-02 Matrix: SOIL

**Date:** 10-Dec-18

Dilution Result **Analyses** Limit **Date Analyzed** Qual Units **Factor** Prep: SW3546 12/5/18 10:43 **DIESEL RANGE ORGANICS BY GC-FID** SW8015C Analyst: RP DRO (C10-C28) ND 4.9 mg/Kg-dry 12/5/2018 03:16 PM ORO (C28-C40) mg/Kg-dry 12/5/2018 03:16 PM 6.1 4.9 1 Surr: 4-Terphenyl-d14 76.1 34-130 %REC 1 12/5/2018 03:16 PM Prep: SW5035 12/4/18 12:13 **GASOLINE RANGE ORGANICS BY GC-FID** SW8015D Analyst: RP GRO (C6-C10) ND 5.3 mg/Kg-dry 1 12/6/2018 05:26 PM Surr: Toluene-d8 71-123 %REC 12/6/2018 05:26 PM 90.3 1 Prep: SW5035 12/3/18 15:01 **VOLATILE ORGANIC COMPOUNDS** SW8260C Analyst: **EMR** mg/Kg-dry Benzene ND 0.032 1 12/5/2018 03:57 AM Ethylbenzene ND 0.032 mg/Kg-dry 1 12/5/2018 03:57 AM m,p-Xylene ND 0.063 mg/Kg-dry 1 12/5/2018 03:57 AM o-Xylene ND 0.032 mg/Kg-dry 1 12/5/2018 03:57 AM Toluene ND mg/Kg-dry 1 12/5/2018 03:57 AM 0.032 Xylenes, Total ND 0.095 mg/Kg-dry 12/5/2018 03:57 AM Surr: 1,2-Dichloroethane-d4 102 70-130 %REC 1 12/5/2018 03:57 AM Surr: 4-Bromofluorobenzene 94.4 70-130 %REC 12/5/2018 03:57 AM 70-130 Surr: Dibromofluoromethane 82.7 %REC 12/5/2018 03:57 AM

70-130

10

0.10

SW3550C

%REC

mg/Kg-dry

% of sample

**A4500-CL E-11** Prep: EXTRACT 12/5/18 19:00

1

1

98.0

ND

2.7

Report

Note: See Qualifiers page for a list of qualifiers and their definitions. 12/5/2018 03:57 AM

12/6/2018 12:00 PM

Analyst: RLM

Analyst: KTP 12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-10 (0 ft)

**Collection Date:** 11/28/2018

**Work Order:** 1812013 **Lab ID:** 1812013-03

Matrix: SOIL

**Date:** 10-Dec-18

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C Pro	ep: SW3546 12/5/18 10:43	Analyst: RP
DRO (C10-C28)	ND		5.2	mg/Kg-dry	1	12/5/2018 03:45 PM
ORO (C28-C40)	ND		5.2	mg/Kg-dry	1	12/5/2018 03:45 PM
Surr: 4-Terphenyl-d14	71.6		34-130	%REC	1	12/5/2018 03:45 PM
GASOLINE RANGE ORGANICS BY GC-F	FID .		SW801	<b>5D</b> Pro	ep: SW5035 12/4/18 12:13	Analyst: RP
GRO (C6-C10)	ND		5.5	mg/Kg-dry	1	12/6/2018 05:55 PM
Surr: Toluene-d8	89.2		71-123	%REC	1	12/6/2018 05:55 PM
VOLATILE ORGANIC COMPOUNDS			SW826	OC Pro	ep: SW5035 12/3/18 15:01	Analyst: <b>EMR</b>
Benzene	ND		0.033	mg/Kg-dry	1	12/5/2018 04:13 AM
Ethylbenzene	ND		0.033	mg/Kg-dry	1	12/5/2018 04:13 AM
m,p-Xylene	ND		0.067	mg/Kg-dry	1	12/5/2018 04:13 AM
o-Xylene	ND		0.033	mg/Kg-dry	1	12/5/2018 04:13 AM
Toluene	ND		0.033	mg/Kg-dry	1	12/5/2018 04:13 AM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	12/5/2018 04:13 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	12/5/2018 04:13 AM
Surr: 4-Bromofluorobenzene	93.2		70-130	%REC	1	12/5/2018 04:13 AM
Surr: Dibromofluoromethane	81.2		70-130	%REC	1	12/5/2018 04:13 AM
Surr: Toluene-d8	99.0		70-130	%REC	1	12/5/2018 04:13 AM
CHLORIDE			A4500-	CL E-11 Pro	ep: EXTRACT 12/5/18 19:0	O Analyst: <b>RLM</b>
Chloride	ND		10	mg/Kg-dry	1	12/6/2018 12:00 PM
MOISTURE			SW355			Analyst: KTP
Moisture	5.2		0.10	% of sam	ole 1	12/4/2018 01:45 PM

Client: WPX Energy
Project: East Pecos 22-7
Sample ID: BH18-10 (2 ft)

**Collection Date:** 11/28/2018

**Date:** 10-Dec-18

**Work Order:** 1812013 **Lab ID:** 1812013-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Ana	lyzed
DIESEL RANGE ORGANICS BY GC-FID			SW801	5C F	Prep: SW3546 12/5	5/18 10:43 Analyst: <b>I</b>	RP
DRO (C10-C28)	ND		4.9	mg/Kg-d	ry 1	12/5/2018 04:1	4 PM
ORO (C28-C40)	ND		4.9	mg/Kg-d	ry 1	12/5/2018 04:1	4 PM
Surr: 4-Terphenyl-d14	52.6		34-130	%REC	1	12/5/2018 04:1	4 PM
GASOLINE RANGE ORGANICS BY GC-	FID		SW801	<b>5D</b> F	Prep: SW5035 12/4	4/18 12:13 Analyst: I	RP
GRO (C6-C10)	ND		5.2	mg/Kg-d	ry 1	12/6/2018 06:2	24 PM
Surr: Toluene-d8	90.9		71-123	%REC	1	12/6/2018 06:2	24 PM
VOLATILE ORGANIC COMPOUNDS			SW826	0C F	Prep: SW5035 12/3	3/18 15:01 Analyst: <b>I</b>	EMR
Benzene	ND		0.031	mg/Kg-d	ry 1	12/5/2018 04:2	28 AM
Ethylbenzene	ND		0.031	mg/Kg-d	ry 1	12/5/2018 04:2	28 AM
m,p-Xylene	ND		0.063	mg/Kg-d	ry 1	12/5/2018 04:2	28 AM
o-Xylene	ND		0.031	mg/Kg-d	ry 1	12/5/2018 04:2	28 AM
Toluene	ND		0.031	mg/Kg-d	ry 1	12/5/2018 04:2	28 AM
Xylenes, Total	ND		0.094	mg/Kg-d	ry 1	12/5/2018 04:2	28 AM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	12/5/2018 04:2	28 AM
Surr: 4-Bromofluorobenzene	94.2		70-130	%REC	1	12/5/2018 04:2	28 AM
Surr: Dibromofluoromethane	79.9		70-130	%REC	1	12/5/2018 04:2	28 AM
Surr: Toluene-d8	95.9		70-130	%REC	1	12/5/2018 04:2	28 AM
CHLORIDE			A4500-	CL E-11	Prep: EXTRACT 12	2/5/18 19:00 Analyst: I	RLM
Chloride	ND		10	mg/Kg-d	ry 1	12/6/2018 12:0	00 PM
MOISTURE			SW355			Analyst: I	
Moisture	2.4		0.10	% of san	nple 1	12/4/2018 01:4	5 PM

Client: WPX Energy Work Order: 1812013

**Project:** East Pecos 22-7

Date: 10-Dec-18

QC BATCH REPORT

Batch ID: 128868	Instrument ID GC	8		Metho	d: <b>SW80</b>	15C						
MBLK	Sample ID: DBLKS1-12	8868-128	868				Units: <b>mg/</b>	Kg	Analysis	Date:	12/5/2018 1	2:21 PM
Client ID:		Run ID	: GC8_18	81205B		Se	eqNo: <b>542</b>	2200	Prep Date: 12/5/	2018	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									
ORO (C28-C40)		ND	5.0									
Surr: 4-Terphenyl-d	114	2.517	0	3.33		0	75.6	34-130	0			
LCS	Sample ID: DLCSS1-12	8868-1288	368				Units: mg/	Kg	Analysis	Date:	12/5/2018 1	2:50 PM
Client ID:		Run ID	: GC8_18	81205B		Se	eqNo: <b>542</b>	2201	Prep Date: 12/5/	2018	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)		333.4	5.0	333		0	100	65-122	0			
ORO (C28-C40)		330.1	5.0	333		0	99.1	81-116	0			
Surr: 4-Terphenyl-d	114	3.217	0	3.33		0	96.6	34-130	0			
MS	Sample ID: 1812031-02	A MS					Units: <b>mg/</b>	Kg	Analysis	Date:	12/5/2018 0	1:19 PM
Client ID:		Run ID	: GC8_18	81205B		Se	eqNo: <b>542</b> :	2202	Prep Date: 12/5/	2018	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)		311.3	4.8	317.3		0	98.1	65-122	0			
ORO (C28-C40)		312.6	4.8	317.3	4.1	41	97.2	81-116	0			
Surr: 4-Terphenyl-d	114	2.525	0	3.173		0	79.6	34-130	0			
MSD	Sample ID: 1812031-02	A MSD					Units: <b>mg/</b>	Kg	Analysis	Date:	12/5/2018 0	1:48 PM
Client ID:		Run ID	: GC8_18	81205B		Se	eqNo: <b>542</b> 2	2203	Prep Date: 12/5/	2018	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)		315.4	4.7	312.9		0	101	65-122	311.3	1.3	2 30	
ORO (C28-C40)		308	4.7	312.9	4.1	41	97.1	81-116	312.6	1.4	8 30	
Surr: 4-Terphenyl-d	114	2.631	0	3.129		0	84.1	34-130	2.525	4.	1 30	
The following sample	es were analyzed in this	s batch:	18	312013-01A	18	312	013-02A	18	12013-03A			

1812013-04A

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

QC Page: 1 of 7

**Client:** WPX Energy Work Order: 1812013 **Project:** 

East Pecos 22-7

QC BATCH REPORT

Batch ID: 128849	Instrument ID GC	9		Method	d: <b>SW80</b> ′	15D						
MBLK	Sample ID: MBLK-1288	349-128849	ı			ι	Jnits: µg/l	<b>Kg-dry</b>	Analysis I	Date: 1	12/6/2018 0	2:29 PN
Client ID:		Run ID:	GC9_1	81206A		Se	eqNo: <b>542</b>	4782	Prep Date: 12/4/20	018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	6RPD	RPD Limit	Qual
GRO (C6-C10)		ND	5,000									
Surr: Toluene-d8		4346	0	5000		0	86.9	71-123	0			
LCS	Sample ID: LCS-12884	9-128849				ι	Jnits: µg/l	(g-dry	Analysis I	Date: '	12/6/2018 1	2:05 PN
Client ID:		Run ID:	GC9_1	81206A		Se	eqNo: <b>542</b>	4778	Prep Date: 12/4/20	018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	6RPD	RPD Limit	Qual
GRO (C6-C10)	2	264200	5,000	250000		0	106	71-123	0			
Surr: Toluene-d8		5062	0	5000		0	101	71-123	0			
MS	Sample ID: <b>1812013-01</b>	A MS				ι	Jnits: µg/l	<b>Kg-dry</b>	Analysis I	Date: 1	12/7/2018 0	7:53 AN
Client ID: BH18-09 (	0 ft)	Run ID:	GC9_1	81206A		Se	eqNo: <b>542</b>	4813	Prep Date: 12/4/20	018	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)		561700	5,600	563800		0	99.6	71-123	0			
Surr: Toluene-d8		5831	0	5638		0	103	71-123	0			
MSD	Sample ID: <b>1812013-01</b>	A MSD				ι	Jnits: µg/l	(g-dry	Analysis I	Date: 1	12/7/2018 0	8:22 AN
Client ID: BH18-09 (	0 ft)	Run ID:	GC9_1	81206A		Se	eqNo: <b>542</b>	4814	Prep Date: 12/4/20	018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	6RPD	RPD Limit	Qual
GRO (C6-C10)	ţ	585000	5,600	563800		0	104	71-123	561700	4.0	7 30	
Surr: Toluene-d8		6275	0	5638		0	111	71-123	5831	7.3	3 30	
The following samp	les were analyzed in thi	s batch:		812013-01A 812013-04A	18	8120	013-02A	18	12013-03A			

QC BATCH REPORT

**Client:** WPX Energy Work Order: 1812013 **Project:** 

East Pecos 22-7

Batch ID: 128804 Instrument ID VMS9 Method: SW8260C

MBLK	Sample ID: MBLK-1288	304-128804	ı			ι	Jnits: µg/k	(g-dry	Analysis	s Date:	12/5/2018 1	2:24 PM
Client ID:		Run ID	VMS9_	181204B		Se	eqNo: <b>541</b> !	9563	Prep Date: 12/3/	/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	f	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		ND	30	0		0	0	0-0	0			
Ethylbenzene		ND	30	0		0	0	0-0	0			
m,p-Xylene		21	60	0		0	0	0-0	0			J
o-Xylene		ND	30	0		0	0	0-0	0			
Toluene		ND	30	0		0	0	0-0	0			
Xylenes, Total		ND	90	0		0	0	0-0	0			
Surr: 1,2-Dichloroeth	hane-d4	1024	0	1000		0	102	70-130	0			
Surr: 4-Bromofluorol	benzene	921.5	0	1000		0	92.2	70-130	0			
Surr: Dibromofluoroi	methane	866	0	1000		0	86.6	70-130	0			
Surr: Toluene-d8		954	0	1000		0	95.4	70-130	0			

LCS	Sample ID: LCS-128804	4-128804				ι	Jnits: µg/k	(g-dry	Analys	sis Date:	12/4/2018 1	1:22 PM
Client ID:		Run ID	: VMS9_	181204B		Se	qNo: <b>541</b> 9	9532	Prep Date: 12/3	3/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		1062	30	1000		0	106	75-125	0	ı		
Ethylbenzene		1075	30	1000		0	108	75-125	0			
m,p-Xylene		2066	60	2000		0	103	80-125	0	ı		
o-Xylene		1124	30	1000		0	112	75-125	0			
Toluene		1047	30	1000		0	105	70-125	0			
Xylenes, Total		3190	90	3000		0	106	75-125	0			
Surr: 1,2-Dichloroe	thane-d4	986.5	0	1000		0	98.6	70-130	0	ı		
Surr: 4-Bromofluor	obenzene	1001	0	1000		0	100	70-130	0			
Surr: Dibromofluor	omethane	1012	0	1000		0	101	70-130	0			
Surr: Toluene-d8		989	0	1000		0	98.9	70-130	0			

MS	Sample ID: 1812013-01	IA MS				ι	Jnits: µg/k	(g-dry	Ana	alysis Date:	12/5/2018 0	6:50 PN
Client ID: BH18-09 (0	ft)	Run ID	: VMS9_	181205A		Se	qNo: <b>542</b> 1	1631	Prep Date:	12/3/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene		1057	34	1128		0	93.7	75-125		0		
Ethylbenzene		1114	34	1128		0	98.8	75-125		0		
m,p-Xylene		2095	68	2255		0	92.9	80-125		0		
o-Xylene		1132	34	1128		0	100	75-125		0		
Toluene		1156	34	1128		0	102	70-125		0		
Xylenes, Total		3227	100	3383		0	95.4	75-125		0		
Surr: 1,2-Dichloroe	thane-d4	1145	0	1128		0	102	70-130		0		
Surr: 4-Bromofluore	obenzene	1151	0	1128		0	102	70-130		0		
Surr: Dibromofluoro	omethane	1021	0	1128		0	90.5	70-130		0		
Surr: Toluene-d8		1123	0	1128		0	99.6	70-130		0		

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

QC BATCH REPORT

Client: WPX Energy
Work Order: 1812013
Project: East Pecos 22

East Pecos 22-7

Batch ID: 128804 Instrument ID VMS9 Method: SW8260C

MSD Sample	ID: 1812013-01A MSD				ι	Jnits: µg/k	<b>Kg-dry</b>	Analysi	s Date: 12	2/5/2018 0	7:06 PN
Client ID: BH18-09 (0 ft)	Run II	: VMS9_	181205A		Se	qNo: <b>542</b>	1632	Prep Date: 12/3	/2018	DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1071	34	1128		0	95	75-125	1057	1.38	30	
Ethylbenzene	1146	34	1128		0	102	75-125	1114	2.84	30	
m,p-Xylene	2140	68	2255		0	94.9	80-125	2095	2.13	30	
o-Xylene	1151	34	1128		0	102	75-125	1132	1.68	30	
Toluene	1132	34	1128		0	100	70-125	1156	2.12	30	
Xylenes, Total	3291	100	3383		0	97.3	75-125	3227	1.97	30	
Surr: 1,2-Dichloroethane-d4	1110	0	1128		0	98.4	70-130	1145	3.05	30	
Surr: 4-Bromofluorobenzene	1152	0	1128		0	102	70-130	1151	0.0979	30	
Surr: Dibromofluoromethane	1009	0	1128		0	89.4	70-130	1021	1.17	30	
Surr: Toluene-d8	1113	0	1128		0	98.7	70-130	1123	0.908	30	

The following samples were analyzed in this batch:

1812013-01A 1812013-04A 1812013-02A

1812013-03A

**Client:** WPX Energy Work Order: 1812013 **Project:** 

East Pecos 22-7

QC BATCH REPORT

Batch ID: 129027	Instrument ID GAI	LLERY		Method	d: <b>A4500</b>	-CI E-1	11					
MBLK	Sample ID: MBLK-1290	27-129027				Uni	its: <b>mg/</b> l	Kg	Aı	nalysis Date:	12/6/2018	12:00 PM
Client ID:		Run ID:	GALLE	RY_181206	A	SeqN	No: <b>542</b> 4	1325	Prep Date:	12/5/2018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Re Value		RPD Limit	Qual
Chloride		ND	10									
MS	Sample ID: 1812013-01	AMS				Uni	its: <b>mg/</b> l	Kg	Aı	nalysis Date:	12/6/2018	12:00 PM
Client ID: BH18-09 (0	ft)	Run ID:	GALLE	RY_181206	A	SeqN	lo: <b>542</b> 4	1387	Prep Date:	12/5/2018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Re Value		RPD Limit	Qual
Chloride		520.8	10	499	1.	62	104	75-125		0		
MSD	Sample ID: 1812013-01	AMSD				Uni	its: <b>mg/</b> l	Kg	Aı	nalysis Date:	12/6/2018	12:00 PM
Client ID: BH18-09 (0	ft)	Run ID:	GALLE	RY_181206	A	SeqN	No: <b>542</b> 4	1388	Prep Date:	12/5/2018	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Re Value		RPD Limit	Qual
Chloride		490.5	10	498	1.	62	98.2	75-125	5	20.8 5.9	98 25	
LCS1	Sample ID: LCS1-12902	27-129027				Uni	its: <b>mg/</b> l	Kg	Aı	nalysis Date:	12/6/2018	12:00 PM
Client ID:		Run ID:	GALLE	RY_181206	A	SeqN	No: <b>542</b> 4	1326	Prep Date:	12/5/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Re Value		RPD Limit	Qual
Chloride		94.17	10	100		0	94.2	80-120		0		
LCS2	Sample ID: LCS2-12902	27-129027				Uni	its: <b>mg/</b> l	Kg	Aı	nalysis Date:	12/6/2018	12:00 PM
Client ID:		Run ID:	GALLE	RY_181206	A	SeqN	No: <b>542</b> 4	1372	Prep Date:	12/5/2018	DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Re Value		RPD Limit	Qual
Chloride		468.8	10	500		0	93.8	80-120		0		
The following sampl	es were analyzed in this	s batch:		812013-01A 812013-04A	18	312013	3-02A	18	12013-03A			

Note: See Qualifiers Page for a list of Qualifiers and their explanation. Client: WPX Energy
Work Order: 1812013
Project: East Pecos 22-7

QC BATCH REPORT

Batch ID: R250606	Instrument ID MOIST	Method: SW	3550C
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MBLK	Sample ID: WBLKS-R25	0606				Units: % o	f sample	Ana	lysis Date:	12/4/2018 1	2:16 PM
Client ID:		Run ID:	MOIST	_181204B		SeqNo: <b>541</b>	8807	Prep Date:		DF: <b>1</b>	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture		ND	0.10								
LCS	Sample ID: LCS-R25060	6				Units: % o	f sample	Anal	lysis Date:	12/4/2018 1	2:16 PM
Client ID:		Run ID:	MOIST	_181204B		SeqNo: <b>541</b>	8806	Prep Date:		DF: <b>1</b>	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture		100	0.10	100		0 100	99.5-100.	5	0		
DUP	Sample ID: 18111942-14	C DUP				Units: % o	f sample	Anal	lysis Date:	12/4/2018 1	2:16 PM
Client ID:		Run ID:	MOIST	_181204B		SeqNo: <b>541</b>	8789	Prep Date:		DF: <b>1</b>	
Analyte	F	Result	DOI		SPK Ref		Control	RPD Ref		RPD	
	·	Count	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Moisture	·	9.59	0.10	SPK Val	Value	%REC 0 0	0-0	Value 9.			Qual
Moisture <b>DUP</b>	Sample ID: <b>18111949-03</b>	9.59			Value		0-0	9.	76 1.7		
		9.59 <b>A DUP</b>	0.10		Value	0 0	0-0	9.	76 1.7	6 10	
DUP	Sample ID: <b>18111949-03</b> .	9.59 <b>A DUP</b>	0.10	0	Value  SPK Ref Value	0 0 Units: % o	0-0	9.	76 1.7	6 10  12/4/2018 1  DF: 1	
DUP Client ID:	Sample ID: <b>18111949-03</b> F	9.59  A DUP  Run ID:	0.10	0 _ <b>181204B</b>	SPK Ref	0 0 Units: % o SeqNo: <b>541</b>	0-0 of sample 8797 Control	9. Anal Prep Date: RPD Ref Value	76 1.7 lysis Date:	76 10  12/4/2018 1  DF: 1  RPD Limit	2:16 PM

Note:

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

**Client:** WPX Energy Work Order: 1812013 **Project:** 

East Pecos 22-7

QC BATCH REPORT

Batch ID: <b>R250614</b>	Instrument ID MO	IST		Method	d: <b>SW35</b> 5	i0C					
MBLK	Sample ID: MB-R25061	4-R250614				Units: %	of sample	• Analys	sis Date: 1	12/4/2018 0	1:45 PM
Client ID:		Run ID:	MOIST	_181204C		SeqNo: 5	418972	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit		%RPD	RPD Limit	Qual
Moisture		ND	0.10								
LCS	Sample ID: LCS-R2506	14-R25061	4			Units: %	of sample	Analys	sis Date: 1	12/4/2018 0	1:45 PM
Client ID:		Run ID:	MOIST	_181204C		SeqNo: 5	418973	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit		%RPD	RPD Limit	Qual
Moisture		100	0.10	100		0 10	0 99.5-100	0.5 0	)		
DUP	Sample ID: <b>1812013-04</b>	A DUP				Units: 9	of sample	• Analys	sis Date: 1	12/4/2018 0	1:45 PM
Client ID: BH18-10 (	2 ft)	Run ID:	MOIST	_181204C		SeqNo: 5	418977	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit		%RPD	RPD Limit	Qual
Moisture		2.33	0.10	0		0	0 0-0	2.43	3 4.2	2 10	
DUD						Linita: 0	-fla	A I	sic Data: 4	12/4/2018 0	1-//5 DM
DUP	Sample ID: 1812014-01	A DUP				Units. 7	of sample	analys	ois Date.	12/7/2010 0	1.43 1 1
Client ID:	Sample ID: <b>1812014-01</b>		MOIST_	_181204C		SeqNo: 5	•	Prep Date:	sis Date.	DF: 1	1.431 1
	Sample ID: <b>1812014-01</b>		MOIST_	_ <b>181204C</b> SPK Val	SPK Ref Value		418979 Control	Prep Date:	%RPD		Qual
Client ID:	Sample ID: <b>1812014-01</b>	Run ID:	_	_	-	SeqNo: 5	418979 Control	Prep Date:	%RPD	DF: 1 RPD Limit	

# **ALS Laboratory Group**

**Chain-of-Custody** 

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DATE

29/11/2018

11-29-2018

PRINTED NAME

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Karolina Bianey

TIME

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	HOLLAND, Michigan 49424								18		#		(		1812		2013								
(ALS)		SAM	PLER			DATE			TE	29/11/2018				Р	AGE		1		of		1				
	East Pecos 22-7	Si	TEID East Pe	cos 22-7				1	URN/	AROU	ND	5 days			DISPOSAL		SAL	Ву	Lab	or	Retu	ım to	Client		
PROJECT No.	17E-00043	EDD FOR	MAT					T		T															
PROJECT NO.	1712-00040	PURCHASE OF	RDER																						
COMPANY NAME	WPX Energy	BILL TO COMI	PANY WPX E	nergy																					
SEND REPORT TO	Raley	INVOICE ATT	NTO Jim Ra	ley						-											,		1		
ADDRESS	Tady	ADD	RESS 5315 B	uena Vista D	r																				
CITY / STATE / ZIP		CITY / STATE	/ ZIP Carisba	ad, NM 88220	)				١																
PHONE			IONE 575-88																						
FAX			FAX 575-88	5-3509				8																	
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com; dhanton@vertex.ca; kmeadows@vertex.ca; jcrabtree@vertex.ca	E	james. -MAIL dhanto kmead	karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com; dhanton@vertex.ca; kmeadows@vertex.ca; jcrabtree@vertex.ca		DRO + GRO + ORO	втех	Chloride		Hold															
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC																	- Pro	
	BH18-09 (0 ft)	S	28/11/2018		2			×	х	×											<u> </u>	<u> </u>			
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For metals or anions, pleas	se detall analytes below.	Januar	(ACE (About below)
Comments:		QC PACK	(AGE (check below)
		х	LEVEL II (Standard QC)
	4.8% 382		LEVEL III (Std QC + forms)
	1.0 (1)		LEVEL IV (Std QC + forms + raw data)

Reference of the state of the s

	RELINQUISHED BY Karalina Blaney
1	RECEIVED BY
1	RELINQUISHED BY
	RECEIVED BY
1	RELINQUISHED BY
1	RECEIVED BY
J	

SIGNATURE

#### Sample Receipt Checklist

Client Name: WPX -	NW		Date/Time R	received: <u>U1-D</u>	ec-18 11:1	<u> </u>
Work Order: <u>181201</u>	<u>3</u>		Received by	: KRV	<u>/</u>	
Checklist completed by	Keith Wurenga	03-Dec-18	Reviewed by:	Chad Whelton	/	04-Dec-18 Date
Matrices: <u>Soil</u> Carrier name: <u>FedE</u>	×	l		-		
Shipping container/cool	er 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 preser	nt?	Yes 🗸	No 🗌			
Chain of custody signed	d when relinquished and received?	Yes 🗸	No 🗌			
Chain of custody agrees	s with sample labels?	Yes 🗸	No 🗌			
Samples in proper conta	ainer/bottle?	Yes 🗸	No 🗆			
Sample containers intac	ct?	Yes 🗸	No 🗆			
Sufficient sample volum	ne for indicated test?	Yes 🗸	No 🗆			
All samples received wi	thin holding time?	Yes 🗸	No 🗆			
Container/Temp Blank t	temperature in compliance?	Yes 🗸	No 🗆			
Sample(s) received on i		Yes <b>✓</b> 4.8/4.8 C	No 🗆	SR2		
Cooler(s)/Kit(s):						
Date/Time sample(s) se	•	12/3/2018 9	1 1	Na VOA viala auka	nitted 🗸	
Water - VOA vials have		Yes □		No VOA vials subn	nittea 💌	
Water - pH acceptable เ pH adjusted?	upon receipt?	Yes ☐		N/A <b>✓</b> N/A <b>✓</b>		
pH adjusted by:		-	ПО	IVA 🔻		
Login Notes:						
						. — — — — — —
Client Contacted:	Date Contac	cted:	Person (	Contacted:		
Contacted By:	Regarding:					
Comments:						
CorrectiveAction:						SDC Dogs 4 of 4
						SRC Page 1 of 1

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resource

SNMOCD ARTESIA Revised riagues 5, Submit-1-Gopy-to-appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

JUL 17 2014

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Conto Eo NIM 97505

NATURE OF RELEASE  73. 965 325  NATURE OF RELEASE  75. 965 325  NATURE OF RELEASE  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326  75. 965 326		-e, INIVI 87303
Name of Company RKI XPLORATION AND PRODUCTION   Contact BRANDON RIPLEY, PRODUCTION FOREMAN Address 5315 BUENAN VISTA DR., CARLISBAD NM   Teighbone no. 575-689-5431   Facility Type   Library   Teighbone no. 575-689-5774   Teighbone no. 575-689-5431   Facility Type   Library   Teighbone no. 575-689-5431   Teighbone no. 575-689-5441   Teighbone no. 575-689-5441   Teighbone no. 575-689-5441   Teighbone no. 575-689-5441   Te	Release Notification	on and Corrective Action
Address 5315 BUENA VISTA DR., CARLSBAD, NM Telephone No. 575-6895-9341 Facility Name near the East Peccos Fed Gom 22-7H Facility Name North ROSS Mineral Owner  LOCATION OF RELEASE  SOUTH 990 EAST Eddy  22 2 88 29E 250 SOUTH 990 EAST  LOCATION OF RELEASE  LOCATI	nAB142214+1434 #24628	390PERATOR Initial Report Final Report
Facility Name   near the East Pecos Fed Com 22-7H   Facility Type   OIL WELL	Name of Company RKI XPLORATION AND PRODUCTION	Contact BRANDON RIPLEY, PRODUCTION FOREMAN
Surface Owner WORTH ROSS   Mineral Owner   API No. 30-015- 4.2287		
LOCATION OF RELEASE	Facility Name near the East Pecos Fed Com 22-7H	Facility Type OIL WELL
Unit Letter   Section   Township   Range   Feet from the   SOUTH   SOU		API No. 30-015- 42287
Unit Letter   Section   Township   Range   Feet from the   SOUTH   SOU	LOCATIO	ON OF DELEASE
P 22 26S 29E 250 SOUTH 990 EAST Eddy  32.0079669 START Latitude 32°00.92 Longitude -103°57.88 END: LAT 32°0.0.92 LONG -103°57.9  NATURE OF RELEASE 32.04*536  NATURE OF RELEASE 93.2.04*536  NATURE OF RELEASE 93.2.04*53		
START Latitude   32°00.92   Longitude   -103°57.88   END: LAT 32°.00.92 LONG -103°.57.9     103.96.335	P   22   1   1   2   2   2   2   2   2	Fddy Fddy
NATURE OF RELEASE	1   200   292   200   00	990 EAOT ,
NATURE OF RELEASE	32.009664 \START Latitude 32°00.92	Longitude Little Bit of 100.02 for 100.02
Volume Recovered 0 BBLS   Volume Recovered Page Recovered Page Recovered Notes   Volume Recovered Page Recovered Page Recovered Notes   Volume Recovered Page Recovered Page Recovered Notes   Volume Recovered Page Recovered Notes   Volume Recovered Notes   Volume Recovered Page Recovered Notes   Volume Recovered Notes   V		<b>3</b> 2·0/4536
Was Immediate Notice Given?    Yes   No   Not Required   If YES, To Whom?   Park and Hour of Discovery JULY 8, 200 P.M.	NATURI	
Was Immediate Notice Given?  Yes No Not Required  MIKE BRATCHER, OCD  2:00 P.M.  By Whom? BRANDON RIPLEY  Was a Watercourse Reached?  Yes No  If YES, Volume Impacting the Watercourse.  If YES, Volume Impacting the Watercourse.  If YES, Volume Impacting the Watercourse.  Describe Cause of Problem and Remedial Action Taken.*  SALT WATER SPILL, APPARENTLY FROM UNAUTHORIZED TRUCK DUMP, APPROXIMATELY 2 LOADS (260 BBLS). LAN OWNER REP, OCD, RKI, APEXTITAN VISITED SITE ON JULY 10, 2014. APEX RETRIEVED SOIL SAMPLES. FURTHER WORK TO BE DETERMINED BY RESULTS OF TEST.  Describe Area Affected and Cleanup Action Taken.*  NO CLEAN-UP ACTION TAKEN UNTIL PROBLEM IS MORE CLEARLY IDENTIFIED.  I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.  OIL CONSERVATION DIVISION  Signature:  OIL CONSERVATION DIVISION  Approved by Environment Signably Marked Marked Image Printed Name: JODY NOERDLINGER  Title: REGULATORY ANALYST  E-mail Address: JNOERDLINGER@RKIXP.COM  Phone: 405-996-5774  Phone: 405-996-5774  Phone: 405-996-5774		
By Whom? BRANDON RIPLEY  Was a Watercourse Reached?  Yes No  If a Watercourse was Impacted, Describe Fully.*  Describe Cause of Problem and Remedial Action Taken.*  SALT WATER SPILL, APPARENTLY FROM UNAUTHORIZED TRUCK DUMP, APPROXIMATELY 2 LOADS (260 BBLS). LAN OWNER REP, OCD, RKI, APEXITTAN VISITED SITE ON JULY 10, 2014. APEX RETRIEVED SOIL SAMPLES. FURTHER WORK TO BE DETERMINED BY RESULTS OF TEST.  Describe Area Affected and Cleanup Action Taken.*  NO CLEAN-UP ACTION TAKEN UNTIL PROBLEM IS MORE CLEARLY IDENTIFIED.  Thereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have filled to adequately investigate and remediate contamination that pose a threat file to a many through the report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.  OIL CONSERVATION DIVISION  Signature:  JOBY NOERDLINGER  Approval Date:  OIL CONSERVATION DIVISION	Was Immediate Notice Given?	If VFS To Whom?
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SALT WATER SPILL, APPARENTLY FROM UNAUTHORIZED TRUCK DUMP, APPROXIMATELY 2 LOADS (260 BBLS). LAN OWNER REP, OCD, RKI, APEX/TITAN VISITED SITE ON JULY 10, 2014. APEX RETRIEVED SOIL SAMPLES. FURTHER WORK TO BE DETERMINED BY RESULTS OF TEST.  Describe Area Affected and Cleanup Action Taken.*  NO CLEAN-UP ACTION TAKEN UNTIL PROBLEM IS MORE CLEARLY IDENTIFIED.  I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.  OIL CONSERVATION DIVISION  Signature:  OIL CONSERVATION DIVISION  Approval Date: I Had September Submits and Submits an	If a Watercourse was Impacted, Describe Fully.*	
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Signature:   OIL CONSERVATION DIVISION		
Signature: Jody New Lings  Printed Name: JODY NOERDLINGER  Approved by Environment Signature: Mile Branch By Mi		
Printed Name: JODY NOERDLINGER  Approved by Environment Struct By. Market By. Marke		OIL CONSERVATION DIVISION
Printed Name: JODY NOERDLINGER  Approved by Environment Struct By. Market By. Marke	Signature: Under Noudliner	
Title: REGULATORY ANALYST  E-mail Address: JNOERDLINGER@RKIXP.COM  Date: 7/15/2014  Phone: 405-996-5774  Attached Additional Sheets If Necessary  Attached Additional Sheets If Necessary		All Marian Com and Maria Kanan
E-mail Address: JNOERDLINGER@RKIXP.COM  Date: 7/15/2014 Phone: 405-996-5774  Attach Additional Sheets If Necessary  Attach Additional Sheets If Necessary	Printed Name: JODY NOERDLINGER	Approved by Environmental Street, 1977 (174 E) Francisco
E-mail Address: JNOERDLINGER@RKIXP.COM  Date: 7/15/2014 Phone: 405-996-5774  Attach Additional Sheets of Necessary  Attach Additional Sheets of Necessary		Shilly MIVL
Date: 7/15/2014 Phone: 405-996-5774 Guidelines. SUBMIT REMEDIATION	Title: REGULATURT ANALYST	Approval Date: UITIT   Expiration Date:
Date: 7/15/2014 Phone: 405-996-5774 Guidelines. SUBMIT REMEDIATION	E-mail Address: JNOERDLINGER@RKIXP COM	Conditions of Approval:
Date: 7/15/2014 Phone: 405-996-57/4 Attach Additional Sheets If Necessary  Attach Additional Sheets If Necessary		Remediation per OCD Rule &
	Date: 7/15/2014 Phone: 405-996-5774	Guidelines, SUBMIT REMEDIATION
LKY-244	Attach Additional Sheets If Necessary	
		LKY-294

#### Bratcher, Mike, EMNRD

From: Jody Noerdlinger <JNoerdlinger@rkixp.com>

**Sent:** Thursday, July 17, 2014 4:33 PM

To: Brandon Ripley; Bratcher, Mike, EMNRD; treed@apexcos.com

**Cc:** Charles Ahn; Heather Brehm

**Subject:** East Pecos Spill

Attachments: EAST PECOS SPILL\_C-141.pdf

Mike, I'm sending the attached C-141 on the recent East Pecos spill to Artesia, but I thought I'd email you a copy, as well. Please let me know if you think there's anything that should be added. Thanks.

Jody Noerdlinger Regulatory Analyst RKI Exploration and Production Oklahoma Tower 210 Park Avenue, Suite 800 Oklahoma City, OK 73102 Office: 405-996-5774 Cell: 405-414-0151 jnoerdlinger@rkixp.com

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

CONDITIONS

Action 200923

#### **CONDITIONS**

Operator:	OGRID:
WPX Energy Permian, LLC	246289
Devon Energy - Regulatory	Action Number:
Oklahoma City, OK 73102	200923
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

#### CONDITIONS

Created By		Condition Date
amaxwell	None	3/30/2023