



Crystal Weaver
Environmental Specialist
NMOCD District II

March 20, 2017

Re: RDU 33 characterization of impacts – Case # 4108

Dear Ms. Weaver,

Attached with this letter is the laboratory report and the sample location map for soil samples collected from the impacted area in order to characterize and close a produced water spill which occurred on January 12, 2017 at the RDU 33 well pad.

The vast majority of this spill was contained inside lined SPCC containment ring. Only a small volume, less than 1 bbl, leaked out of the containment and migrated along the access road. Three samples were collected from the impacted area at 6", 12" and 24" below the surface. The hydrocarbon concentrations are below the NMOCD's cleanup thresholds and the chloride concentrations are minimal at a depth of 12"; see summary table below.

Location	DRO (mg/kg)	ORO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Xylenes (mg/kg)	Chlorides (mg/kg)
RDU 33-1-6"	38	58	ND	ND	ND	ND	ND	4000
RDU 33-1-12"								59
RDU 33-1-24"								84

Based on these results, WPX respectfully requests closure of this incident.
Please do not hesitate to call me if you have any questions.

Sincerely,

Karolina Blaney
WPX Energy
Environmental Specialist
(970) 589-0743
karolina.blaney@wpxenergy.com



RDU 33
Permian Basin



Date: 3/20/2017
Map Scale (at 8.5" x 11"): 1:800
Projection: NAD 1927 UTM Zone 13N
Modified By: Bob Winkler

Map Symbolology

- WPX Well - Producing
- ★ Point of Interest
- Area of Interest

0 50 100
Feet





15-Mar-2017

Karolina Blaney
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **RDU 33**

Work Order: **1703433**

Dear Karolina,

ALS Environmental received 4 samples on 08-Mar-2017 09:30 AM for the analyses presented in the following report.

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

Sample results are compliant with 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.

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

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RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy
Project: RDU 33
Work Order: 1703433

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1703433-01	RDU 33-1 6"	Soil		3/2/2017 13:00	3/8/2017 09:30	☐
1703433-02	RDU 33-1 12"	Soil		3/2/2017 13:05	3/8/2017 09:30	☐
1703433-03	RDU 33-1 24"	Soil		3/2/2017 13:10	3/8/2017 09:30	☐
1703433-04	RDU 33-1 36"	Soil		3/2/2017 13:15	3/8/2017 09:30	☐

Client: WPX Energy

Project: RDU 33

WorkOrder: 1703433

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

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

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

ALS Group, USA

Date: 15-Mar-17

Client: WPX Energy

Project: RDU 33

Sample ID: RDU 33-1 6"

Collection Date: 3/2/2017 01:00 PM

Work Order: 1703433

Lab ID: 1703433-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3546 / 3/9/17	Analyst: IT
DRO (C10-C28)	38		5.3	mg/Kg-dry	1	3/9/2017 08:43 PM
ORO (C28-C40)	58		5.3	mg/Kg-dry	1	3/9/2017 08:43 PM
Surr: 4-Terphenyl-d14	44.7		39-133	%REC	1	3/9/2017 08:43 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 3/8/17	Analyst: IT
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	3/9/2017 07:42 PM
Surr: Toluene-d8	96.1		50-150	%REC	1	3/9/2017 07:42 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 3/8/17	Analyst: EMR
Benzene	ND		0.035	mg/Kg-dry	1	3/9/2017 08:31 AM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	3/9/2017 08:31 AM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	3/9/2017 08:31 AM
o-Xylene	ND		0.035	mg/Kg-dry	1	3/9/2017 08:31 AM
Toluene	ND		0.035	mg/Kg-dry	1	3/9/2017 08:31 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	3/9/2017 08:31 AM
Surr: 1,2-Dichloroethane-d4	97.2		70-130	%REC	1	3/9/2017 08:31 AM
Surr: 4-Bromofluorobenzene	95.0		70-130	%REC	1	3/9/2017 08:31 AM
Surr: Dibromofluoromethane	87.2		70-130	%REC	1	3/9/2017 08:31 AM
Surr: Toluene-d8	98.3		70-130	%REC	1	3/9/2017 08:31 AM
CHLORIDE						
			A4500-CL E-97		Prep: EXTRACT / 3/14/17	Analyst: EVB
Chloride	4,000		43	mg/Kg-dry	4	3/14/2017 02:21 PM
MOISTURE						
			SW3550C			Analyst: EDL
Moisture	7.7		0.050	% of sample	1	3/8/2017 04:24 PM

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

ALS Group, USA**Date:** 15-Mar-17**Client:** WPX Energy**Project:** RDU 33**Sample ID:** RDU 33-1 12"**Collection Date:** 3/2/2017 01:05 PM**Work Order:** 1703433**Lab ID:** 1703433-02**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/14/17	Analyst: EVB
Chloride	59		11	mg/Kg-dry	1	3/14/2017 02:21 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	9.2		0.050	% of sample	1	3/8/2017 04:24 PM

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

ALS Group, USA**Date:** 15-Mar-17**Client:** WPX Energy**Project:** RDU 33**Sample ID:** RDU 33-1 24"**Collection Date:** 3/2/2017 01:10 PM**Work Order:** 1703433**Lab ID:** 1703433-03**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/14/17	Analyst: EVB
Chloride	84		11	mg/Kg-dry	1	3/14/2017 02:21 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	11		0.050	% of sample	1	3/8/2017 04:24 PM

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

ALS Group, USA**Date:** 15-Mar-17**Client:** WPX Energy**Project:** RDU 33**Sample ID:** RDU 33-1 36"**Collection Date:** 3/2/2017 01:15 PM**Work Order:** 1703433**Lab ID:** 1703433-04**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/14/17	Analyst: EVB
Chloride	26		11	mg/Kg-dry	1	3/14/2017 02:21 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	8.6		0.050	% of sample	1	3/8/2017 04:24 PM

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

Client: WPX Energy
Work Order: 1703433
Project: RDU 33

QC BATCH REPORT

Batch ID: **99020** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-99020-99020				Units: mg/Kg		Analysis Date: 3/9/2017 04:46 PM		
Client ID:		Run ID: GC8_170309A				SeqNo: 4318502		Prep Date: 3/9/2017		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)	3.98	5.0								J
Surr: 4-Terphenyl-d14	1.883	0	3.33	0	56.5	39-133	0			

LCS		Sample ID: DLCSS1-99020-99020				Units: mg/Kg		Analysis Date: 3/9/2017 05:15 PM		
Client ID:		Run ID: GC8_170309A				SeqNo: 4318504		Prep Date: 3/9/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

ORO (C28-C40)	219.6	5.0	333	0	66	61-119	0			
Surr: 4-Terphenyl-d14	1.467	0	3.33	0	44.1	39-133	0			

LCS		Sample ID: DLCSS1-99020-99020				Units: mg/Kg		Analysis Date: 3/10/2017 12:46 PM		
Client ID:		Run ID: GC8_170310A				SeqNo: 4318977		Prep Date: 3/9/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	207.1	5.0	333	0	62.2	61-109	0			
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MS		Sample ID: 1703442-02A MS				Units: mg/Kg		Analysis Date: 3/9/2017 05:45 PM		
Client ID:		Run ID: GC8_170309A				SeqNo: 4318506		Prep Date: 3/9/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	203.7	4.9	328.8	1.771	61.4	48-110	0			
ORO (C28-C40)	222.5	4.9	328.8	10.67	64.4	39-140	0			
Surr: 4-Terphenyl-d14	1.51	0	3.288	0	45.9	39-133	0			

MSD		Sample ID: 1703442-02A MSD				Units: mg/Kg		Analysis Date: 3/9/2017 06:15 PM		
Client ID:		Run ID: GC8_170309A				SeqNo: 4318508		Prep Date: 3/9/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	242.9	4.9	326.8	1.771	73.8	48-110	203.7	17.5	30	
ORO (C28-C40)	262.6	4.9	326.8	10.67	77.1	39-140	222.5	16.5	30	
Surr: 4-Terphenyl-d14	1.802	0	3.268	0	55.1	39-133	1.51	17.6	30	

The following samples were analyzed in this batch: 1703433-01A

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

Client: WPX Energy
 Work Order: 1703433
 Project: RDU 33

QC BATCH REPORT

Batch ID: 99008 Instrument ID GC9 Method: SW8015D

MBLK		Sample ID: MBLK-99008-99008				Units: µg/Kg-dry		Analysis Date: 3/9/2017 08:37 AM		
Client ID:		Run ID: GC9_170309A				SeqNo: 4317753		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4541	0	5000	0	90.8	50-150	0			

MBLK		Sample ID: MBLK-99008-99008				Units: µg/Kg-dry		Analysis Date: 3/13/2017 03:59 PM		
Client ID:		Run ID: GC9_170313B				SeqNo: 4322532		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								

LCS		Sample ID: LCS-99008-99008				Units: µg/Kg-dry		Analysis Date: 3/9/2017 07:46 AM		
Client ID:		Run ID: GC9_170309A				SeqNo: 4317752		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	425100	2,500	500000	0	85	70-130	0			
Surr: Toluene-d8	4971	0	5000	0	99.4	50-150	0			

LCS		Sample ID: LCS-99008-99008				Units: µg/Kg-dry		Analysis Date: 3/13/2017 03:06 PM		
Client ID:		Run ID: GC9_170313B				SeqNo: 4322530		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	9934	2,500	10000	0	99.3	80-120	0			

LCSD		Sample ID: LCSD-99008-99008				Units: µg/Kg-dry		Analysis Date: 3/13/2017 04:51 PM		
Client ID:		Run ID: GC9_170313B				SeqNo: 4322535		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	10650	2,500	10000	0	106	80-120	9934	6.94	20	

MS		Sample ID: 1703424-01A MS				Units: µg/Kg-dry		Analysis Date: 3/9/2017 11:33 AM		
Client ID:		Run ID: GC9_170309A				SeqNo: 4317760		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	594700	3,000	592900	20070	96.9	70-130	0			
Surr: Toluene-d8	6338	0	5929	0	107	50-150	0			

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

Client: WPX Energy
Work Order: 1703433
Project: RDU 33

QC BATCH REPORT

Batch ID: **99008** Instrument ID **GC9** Method: **SW8015D**

MSD		Sample ID: 1703424-01A MSD				Units: µg/Kg-dry		Analysis Date: 3/9/2017 11:58 AM		
Client ID:		Run ID: GC9_170309A				SeqNo: 4317761		Prep Date: 3/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	597200	3,000	592900	20070	97.3	70-130	594700	0.418	30	
<i>Surr: Toluene-d8</i>	6238	0	5929	0	105	50-150	6338	1.59	30	

The following samples were analyzed in this batch:

1703433-01A

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

Client: WPX Energy
 Work Order: 1703433
 Project: RDU 33

QC BATCH REPORT

Batch ID: 99007 Instrument ID VMS7 Method: SW8260B

MBLK Sample ID: MBLK-99007-99007				Units: µg/Kg-dry			Analysis Date: 3/9/2017 12:35 PM			
Client ID:		Run ID: VMS7_170308B		SeqNo: 4316273		Prep Date: 3/8/2017		DF: 1		
Analyte	Result	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	ND	60	0	0	0	0-0	0			
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-d4	993	0	1000	0	99.3	70-130	0			
Surr: 4-Bromofluorobenzene	978	0	1000	0	97.8	70-130	0			
Surr: Dibromofluoromethane	964.5	0	1000	0	96.4	70-130	0			
Surr: Toluene-d8	992.5	0	1000	0	99.2	70-130	0			

LCS Sample ID: LCS-99007-99007				Units: µg/Kg-dry			Analysis Date: 3/8/2017 11:24 PM			
Client ID:		Run ID: VMS7_170308B		SeqNo: 4316245		Prep Date: 3/8/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1016	30	1000	0	102	75-125	0			
Ethylbenzene	1004	30	1000	0	100	75-125	0			
m,p-Xylene	2047	60	2000	0	102	80-125	0			
o-Xylene	1012	30	1000	0	101	75-125	0			
Toluene	1008	30	1000	0	101	70-125	0			
Xylenes, Total	3060	90	3000	0	102	75-125	0			
Surr: 1,2-Dichloroethane-d4	986.5	0	1000	0	98.6	70-130	0			
Surr: 4-Bromofluorobenzene	990	0	1000	0	99	70-130	0			
Surr: Dibromofluoromethane	1074	0	1000	0	107	70-130	0			
Surr: Toluene-d8	978.5	0	1000	0	97.8	70-130	0			

MS Sample ID: 1703433-01A MS				Units: µg/Kg-dry			Analysis Date: 3/9/2017 08:55 AM			
Client ID: RDU 33-1 6"		Run ID: VMS7_170308B		SeqNo: 4316271		Prep Date: 3/8/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1161	35	1167	0	99.5	75-125	0			
Ethylbenzene	1151	35	1167	0	98.6	75-125	0			
m,p-Xylene	2329	70	2334	0	99.8	80-125	0			
o-Xylene	1161	35	1167	0	99.5	75-125	0			
Toluene	1155	35	1167	0	99	70-125	0			
Xylenes, Total	3490	110	3501	0	99.7	75-125	0			
Surr: 1,2-Dichloroethane-d4	1137	0	1167	0	97.4	70-130	0			
Surr: 4-Bromofluorobenzene	1151	0	1167	0	98.6	70-130	0			
Surr: Dibromofluoromethane	1062	0	1167	0	91	70-130	0			
Surr: Toluene-d8	1156	0	1167	0	99	70-130	0			

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

Client: WPX Energy
Work Order: 1703433
Project: RDU 33

QC BATCH REPORT

Batch ID: **99007** Instrument ID **VMS7** Method: **SW8260B**

MSD				Sample ID: 1703433-01A MSD				Units: µg/Kg-dry		Analysis Date: 3/9/2017 09:19 AM			
Client ID: RDU 33-1 6"				Run ID: VMS7_170308B				SeqNo: 4316272		Prep Date: 3/8/2017		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	1065	35	1167	0	91.3	75-125	1161	8.6	30				
Ethylbenzene	1043	35	1167	0	89.4	75-125	1151	9.84	30				
m,p-Xylene	2113	70	2334	0	90.5	80-125	2329	9.75	30				
o-Xylene	1037	35	1167	0	88.9	75-125	1161	11.3	30				
Toluene	1047	35	1167	0	89.7	70-125	1155	9.86	30				
Xylenes, Total	3150	110	3501	0	90	75-125	3490	10.2	30				
Surr: 1,2-Dichloroethane-d4	1156	0	1167	0	99	70-130	1137	1.68	30				
Surr: 4-Bromofluorobenzene	1152	0	1167	0	98.8	70-130	1151	0.101	30				
Surr: Dibromofluoromethane	1097	0	1167	0	94	70-130	1062	3.19	30				
Surr: Toluene-d8	1139	0	1167	0	97.6	70-130	1156	1.42	30				

The following samples were analyzed in this batch: 1703433-01A

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

Client: WPX Energy
 Work Order: 1703433
 Project: RDU 33

QC BATCH REPORT

Batch ID: 99239 Instrument ID GALLERY Method: A4500-CI E-97

MBLK		Sample ID: MBLK-99239-99239				Units: mg/Kg		Analysis Date: 3/14/2017 02:21 PM		
Client ID:		Run ID: GALLERY_170314A		SeqNo: 4325471		Prep Date: 3/14/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 10

MS		Sample ID: 1703431-02A MS				Units: mg/Kg		Analysis Date: 3/14/2017 02:21 PM		
Client ID:		Run ID: GALLERY_170314A		SeqNo: 4325529		Prep Date: 3/14/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 610.2 10 499 76.74 107 75-125 0

MSD		Sample ID: 1703431-02A MSD				Units: mg/Kg		Analysis Date: 3/14/2017 02:21 PM		
Client ID:		Run ID: GALLERY_170314A		SeqNo: 4325530		Prep Date: 3/14/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 618.1 10 499 76.74 108 75-125 610.2 1.28 25

LCS1		Sample ID: LCS1-99239-99239				Units: mg/Kg		Analysis Date: 3/14/2017 02:21 PM		
Client ID:		Run ID: GALLERY_170314A		SeqNo: 4325472		Prep Date: 3/14/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 96.55 10 100 0 96.6 80-120 0

LCS2		Sample ID: LCS2-99239-99239				Units: mg/Kg		Analysis Date: 3/14/2017 02:21 PM		
Client ID:		Run ID: GALLERY_170314A		SeqNo: 4325517		Prep Date: 3/14/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 483 10 500 0 96.6 80-120 0

The following samples were analyzed in this batch:

1703433-01A	1703433-02A	1703433-03A
1703433-04A		

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

Client: WPX Energy
Work Order: 1703433
Project: RDU 33

QC BATCH REPORT

Batch ID: **R207349** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R207349				Units: % of sample		Analysis Date: 3/8/2017 04:24 PM		
Client ID:		Run ID: MOIST_170308C				SeqNo: 4316737		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: LCS-R207349				Units: % of sample		Analysis Date: 3/8/2017 04:24 PM		
Client ID:		Run ID: MOIST_170308C				SeqNo: 4316736		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1703431-02A DUP				Units: % of sample		Analysis Date: 3/8/2017 04:24 PM		
Client ID:		Run ID: MOIST_170308C				SeqNo: 4316715		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 7.99 0.050 0 0 0 7.95 0.502 5

DUP		Sample ID: 1703438-05A DUP				Units: % of sample		Analysis Date: 3/8/2017 04:24 PM		
Client ID:		Run ID: MOIST_170308C				SeqNo: 4316727		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 14.06 0.050 0 0 0 14.09 0.213 5

The following samples were analyzed in this batch:

1703433-01A	1703433-02A	1703433-03A
1703433-04A		

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



ALS Laboratory Group

HOLLAND, Michigan 48424

Chain-of-Custody

Form 202r8

WORKORDER #

1703433

PAGE

1 of 1

DISPOSAL

By Lab or Return to Client

PROJECT NAME

RDU 33

SAMPLER

SITE ID

RDU 33

DATE

3/7/2017

TURNAROUND

5 day

PROJECT No.

EDD FORMAT

PURCHASE ORDER

COMPANY NAME

WPX Energy

BILL TO COMPANY

WPX Energy

SEND REPORT TO

Blaney

INVOICE ATTN TO

Karolina Blaney

ADDRESS

ADDRESS

5315 Buena Vista Dr

CITY / STATE / ZIP

CITY / STATE / ZIP

Carlsbad, NM 88220

PHONE

PHONE

970 589 0743

FAX

FAX

E-MAIL

Karolina.blaney@wpxenergy.com

E-MAIL

Karolina.blaney@wpxenergy.com

DRO, GRO, ORO

BTX

Chloride

Lab ID

Field ID

Matrix

Sample Date

Sample Time

Bottles

Pres.

QC

1

RDU 33-1 6"

S

3/2/2017

13:00

1

8

x

x

x

x

2

RDU 33 -1 12"

S

3/2/2017

13:05

1

8

x

x

x

3

RDU 33-1 24"

S

3/2/2017

13:10

1

8

x

x

x

4

RDU 33-1 36"

S

3/2/2017

13:15

1

8

x

x

x

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

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)

X

LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms + raw data)

3.0
SP2
①

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

SIGNATURE

PRINTED NAME

DATE

TIME

RELINQUISHED BY

Karolina Blaney

Karolina Blaney

3/7/2017

15:00

RECEIVED BY

MBroedel

MBroedel

3/8/17

930

RELINQUISHED BY

RECEIVED BY

RELINQUISHED BY

RECEIVED BY

Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **08-Mar-17 09:30**

Work Order: **1703433**

Received by: **MBB**

Checklist completed by Meghan Broadbent
eSignature

08-Mar-17
Date

Reviewed by: Chad Whelton
eSignature

08-Mar-17
Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Sample(s) received on ice?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>3.0/3.0</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>3/8/2017 11:29:42 AM</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: