



09-Feb-2017

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

Re: **RDU 12**

Work Order: **1702094**

Dear Karolina,

ALS Environmental received 4 samples on 02-Feb-2017 09:00 AM for the analyses presented in the following report.

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

Sample results are compliant with 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 17.

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

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Client: WPX Energy
Project: RDU 12
Work Order: 1702094

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>
1702094-01	RDU 12-1	Soil		2/1/2017 09:30	2/2/2017 09:00	☐
1702094-02	RDU 12-2	Soil		2/1/2017 09:35	2/2/2017 09:00	☐
1702094-03	RDU 12-3	Soil		2/1/2017 09:40	2/2/2017 09:00	☐
1702094-04	RDU 12-4	Soil		2/1/2017 09:45	2/2/2017 09:00	☐

Client: WPX Energy**Project:** RDU 12**WorkOrder:** 1702094**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: 09-Feb-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-1

Collection Date: 2/1/2017 09:30 AM

Work Order: 1702094

Lab ID: 1702094-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C		Prep: SW3546 / 2/3/17	Analyst: IT
DRO (C10-C28)	ND		6.3	mg/Kg-dry	1	2/7/2017 09:57 AM
ORO (C28-C40)	ND		6.3	mg/Kg-dry	1	2/7/2017 09:57 AM
Surr: 4-Terphenyl-d14	80.1		50-150	%REC	1	2/7/2017 09:57 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D		Prep: SW5035 / 2/2/17	Analyst: IT
GRO (C6-C10)	ND		4.1	mg/Kg-dry	1	2/6/2017 12:29 PM
Surr: Toluene-d8	85.5		50-150	%REC	1	2/6/2017 12:29 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep: SW5035 / 2/2/17	Analyst: LSY
Benzene	ND		0.049	mg/Kg-dry	1	2/3/2017 01:31 PM
Ethylbenzene	ND		0.049	mg/Kg-dry	1	2/3/2017 01:31 PM
m,p-Xylene	ND		0.098	mg/Kg-dry	1	2/3/2017 01:31 PM
o-Xylene	ND		0.049	mg/Kg-dry	1	2/3/2017 01:31 PM
Toluene	ND		0.049	mg/Kg-dry	1	2/3/2017 01:31 PM
Xylenes, Total	ND		0.15	mg/Kg-dry	1	2/3/2017 01:31 PM
Surr: 1,2-Dichloroethane-d4	96.4		70-130	%REC	1	2/3/2017 01:31 PM
Surr: 4-Bromofluorobenzene	98.8		70-130	%REC	1	2/3/2017 01:31 PM
Surr: Dibromofluoromethane	94.3		70-130	%REC	1	2/3/2017 01:31 PM
Surr: Toluene-d8	98.2		70-130	%REC	1	2/3/2017 01:31 PM
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 2/3/17	Analyst: EVB
Chloride	640		13	mg/Kg-dry	1	2/3/2017 01:53 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	24		0.050	% of sample	1	2/2/2017 12:50 PM

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

ALS Group, USA

Date: 09-Feb-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-2

Collection Date: 2/1/2017 09:35 AM

Work Order: 1702094

Lab ID: 1702094-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C		Prep: SW3546 / 2/3/17	Analyst: IT
DRO (C10-C28)	ND		5.9	mg/Kg-dry	1	2/7/2017 10:27 AM
ORO (C28-C40)	ND		5.9	mg/Kg-dry	1	2/7/2017 10:27 AM
Surr: 4-Terphenyl-d14	76.1		50-150	%REC	1	2/7/2017 10:27 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D		Prep: SW5035 / 2/2/17	Analyst: IT
GRO (C6-C10)	ND		3.5	mg/Kg-dry	1	2/6/2017 12:54 PM
Surr: Toluene-d8	83.6		50-150	%REC	1	2/6/2017 12:54 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B		Prep: SW5035 / 2/2/17	Analyst: AK
Benzene	ND		0.042	mg/Kg-dry	1	2/2/2017 05:28 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	2/2/2017 05:28 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	2/2/2017 05:28 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	2/2/2017 05:28 PM
Toluene	ND		0.042	mg/Kg-dry	1	2/2/2017 05:28 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	2/2/2017 05:28 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	2/2/2017 05:28 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	2/2/2017 05:28 PM
Surr: Dibromofluoromethane	92.8		70-130	%REC	1	2/2/2017 05:28 PM
Surr: Toluene-d8	98.4		70-130	%REC	1	2/2/2017 05:28 PM
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 2/3/17	Analyst: EVB
Chloride	260		12	mg/Kg-dry	1	2/3/2017 01:53 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	17		0.050	% of sample	1	2/2/2017 12:50 PM

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

ALS Group, USA

Date: 09-Feb-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-3

Collection Date: 2/1/2017 09:40 AM

Work Order: 1702094

Lab ID: 1702094-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 / 2/3/17	Analyst: IT
DRO (C10-C28)	130		5.5	mg/Kg-dry	1	2/7/2017 10:57 AM
ORO (C28-C40)	71		5.5	mg/Kg-dry	1	2/7/2017 10:57 AM
Surr: 4-Terphenyl-d14	52.6		50-150	%REC	1	2/7/2017 10:57 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 2/2/17	Analyst: IT
GRO (C6-C10)	5.1		3.2	mg/Kg-dry	1	2/6/2017 01:19 PM
Surr: Toluene-d8	90.4		50-150	%REC	1	2/6/2017 01:19 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 2/2/17	Analyst: AK
Benzene	ND		0.039	mg/Kg-dry	1	2/2/2017 05:53 PM
Ethylbenzene	ND		0.039	mg/Kg-dry	1	2/2/2017 05:53 PM
m,p-Xylene	ND		0.078	mg/Kg-dry	1	2/2/2017 05:53 PM
o-Xylene	ND		0.039	mg/Kg-dry	1	2/2/2017 05:53 PM
Toluene	ND		0.039	mg/Kg-dry	1	2/2/2017 05:53 PM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	2/2/2017 05:53 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	2/2/2017 05:53 PM
Surr: 4-Bromofluorobenzene	95.4		70-130	%REC	1	2/2/2017 05:53 PM
Surr: Dibromofluoromethane	95.1		70-130	%REC	1	2/2/2017 05:53 PM
Surr: Toluene-d8	102		70-130	%REC	1	2/2/2017 05:53 PM
CHLORIDE						
			A4500-CL E-97		Prep: EXTRACT / 2/3/17	Analyst: EVB
Chloride	290		11	mg/Kg-dry	1	2/3/2017 01:53 PM
MOISTURE						
			SW3550C			Analyst: EDL
Moisture	13		0.050	% of sample	1	2/2/2017 12:50 PM

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

ALS Group, USA

Date: 09-Feb-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-4

Collection Date: 2/1/2017 09:45 AM

Work Order: 1702094

Lab ID: 1702094-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3550 / 2/8/17	Analyst: IT
DRO (C10-C28)	ND		6.1	mg/Kg-dry	1	2/8/2017 05:40 PM
ORO (C28-C40)	11		6.1	mg/Kg-dry	1	2/8/2017 05:40 PM
Surr: 4-Terphenyl-d14	57.8		39-133	%REC	1	2/8/2017 05:40 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 / 2/2/17	Analyst: IT
GRO (C6-C10)	ND		3.8	mg/Kg-dry	1	2/6/2017 01:44 PM
Surr: Toluene-d8	88.6		50-150	%REC	1	2/6/2017 01:44 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 / 2/2/17	Analyst: AK
Benzene	ND		0.045	mg/Kg-dry	1	2/2/2017 06:18 PM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	2/2/2017 06:18 PM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	2/2/2017 06:18 PM
o-Xylene	ND		0.045	mg/Kg-dry	1	2/2/2017 06:18 PM
Toluene	ND		0.045	mg/Kg-dry	1	2/2/2017 06:18 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	2/2/2017 06:18 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	2/2/2017 06:18 PM
Surr: 4-Bromofluorobenzene	94.4		70-130	%REC	1	2/2/2017 06:18 PM
Surr: Dibromofluoromethane	92.6		70-130	%REC	1	2/2/2017 06:18 PM
Surr: Toluene-d8	100		70-130	%REC	1	2/2/2017 06:18 PM
CHLORIDE						
			A4500-CL E-97		Prep: EXTRACT / 2/3/17	Analyst: EVB
Chloride	9,600		120	mg/Kg-dry	10	2/3/2017 01:53 PM
MOISTURE						
			SW3550C			Analyst: EDL
Moisture	20		0.050	% of sample	1	2/2/2017 12:50 PM

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

Client: WPX Energy
Work Order: 1702094
Project: RDU 12

QC BATCH REPORT

Batch ID: **97817** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-97817-97817				Units: mg/Kg		Analysis Date: 2/7/2017 02:30 AM		
Client ID:		Run ID: GC8_170206B				SeqNo: 4276353		Prep Date: 2/3/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1.95	5.0								J
ORO (C28-C40)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>		2.617	0	3.33	0	78.6	50-150	0		

LCS		Sample ID: DLCSS1-97817-97817				Units: mg/Kg		Analysis Date: 2/7/2017 03:00 AM		
Client ID:		Run ID: GC8_170206B				SeqNo: 4276354		Prep Date: 2/3/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	336.6	5.0	333	0	101	50-150	0			
ORO (C28-C40)	325.8	5.0	333	0	97.8	50-150	0			
<i>Surr: 4-Terphenyl-d14</i>		2.7	0	3.33	0	81.1	50-150	0		

MS		Sample ID: 17011501-07B MS				Units: mg/Kg		Analysis Date: 2/7/2017 03:30 AM		
Client ID:		Run ID: GC8_170206B				SeqNo: 4276355		Prep Date: 2/3/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	341.9	4.9	323.1	17.18	100	50-150	0			
ORO (C28-C40)	352.8	4.9	323.1	15.28	104	50-150	0			
<i>Surr: 4-Terphenyl-d14</i>		2.539	0	3.231	0	78.6	50-150	0		

MSD		Sample ID: 17011501-07B MSD				Units: mg/Kg		Analysis Date: 2/7/2017 03:59 AM		
Client ID:		Run ID: GC8_170206B				SeqNo: 4276356		Prep Date: 2/3/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	314.1	4.7	312.6	17.18	95	50-150	341.9	8.48	30	
ORO (C28-C40)	334.5	4.7	312.6	15.28	102	50-150	352.8	5.33	30	
<i>Surr: 4-Terphenyl-d14</i>		2.519	0	3.126	0	80.6	50-150	2.539	0.805	30

The following samples were analyzed in this batch:

1702094-01A	1702094-02A	1702094-03A
1702094-04A		

Client: WPX Energy
 Work Order: 1702094
 Project: RDU 12

QC BATCH REPORT

Batch ID: 97971 Instrument ID GC8 Method: SW8015M

MBLK		Sample ID: DBLKS1-97971-97971				Units: mg/Kg		Analysis Date: 2/8/2017 02:51 PM		
Client ID:		Run ID: GC8_170208A				SeqNo: 4279601		Prep Date: 2/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1.209	5.0								J
ORO (C28-C40)	3.525	5.0								J
<i>Surr: 4-Terphenyl-d14</i>	1.697	0	3.33	0	51	39-133	0			

LCS		Sample ID: DLCSS1-97971-97971				Units: mg/Kg		Analysis Date: 2/8/2017 04:10 PM		
Client ID:		Run ID: GC8_170208A				SeqNo: 4279602		Prep Date: 2/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	243.7	5.0	333	0	73.2	61-109	0			
ORO (C28-C40)	294.3	5.0	333	0	88.4	61-119	0			
<i>Surr: 4-Terphenyl-d14</i>	1.821	0	3.33	0	54.7	39-133	0			

MS		Sample ID: 1702094-04A MS				Units: mg/Kg		Analysis Date: 2/8/2017 04:41 PM		
Client ID: RDU 12-4		Run ID: GC8_170208A				SeqNo: 4279603		Prep Date: 2/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	241.3	4.9	327.1	3.573	72.7	48-110	0			
ORO (C28-C40)	293.2	4.9	327.1	8.58	87	39-140	0			
<i>Surr: 4-Terphenyl-d14</i>	1.702	0	3.271	0	52	39-133	0			

MSD		Sample ID: 1702094-04A MSD				Units: mg/Kg		Analysis Date: 2/8/2017 05:10 PM		
Client ID: RDU 12-4		Run ID: GC8_170208A				SeqNo: 4279604		Prep Date: 2/8/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	251.7	4.9	323.8	3.573	76.6	48-110	241.3	4.24	30	
ORO (C28-C40)	303.7	4.9	323.8	8.58	91.2	39-140	293.2	3.54	30	
<i>Surr: 4-Terphenyl-d14</i>	1.741	0	3.238	0	53.8	39-133	1.702	2.28	30	

The following samples were analyzed in this batch:

1702094-04A

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

Client: WPX Energy
 Work Order: 1702094
 Project: RDU 12

QC BATCH REPORT

Batch ID: 97781 Instrument ID GC9 Method: SW8015D

MBLK		Sample ID: MBLK-97781-97781				Units: µg/Kg-dry		Analysis Date: 2/6/2017 12:05 PM		
Client ID:		Run ID: GC9_170206A				SeqNo: 4275862		Prep Date: 2/2/2017		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	3836	0	5000	0	76.7	50-150	0			

LCS		Sample ID: LCS-97781-97781				Units: µg/Kg-dry		Analysis Date: 2/6/2017 11:15 AM		
Client ID:		Run ID: GC9_170206A				SeqNo: 4275861		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	541100	2,500	500000	0	108	70-130	0			
Surr: Toluene-d8	4988	0	5000	0	99.8	50-150	0			

MS		Sample ID: 1702094-03A MS				Units: µg/Kg-dry		Analysis Date: 2/6/2017 02:10 PM		
Client ID: RDU 12-3		Run ID: GC9_170206A				SeqNo: 4275867		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	702000	3,200	649400	5083	107	70-130	0			
Surr: Toluene-d8	6631	0	6494	0	102	50-150	0			

MSD		Sample ID: 1702094-03A MSD				Units: µg/Kg-dry		Analysis Date: 2/6/2017 02:35 PM		
Client ID: RDU 12-3		Run ID: GC9_170206A				SeqNo: 4275868		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	752300	3,200	649400	5083	115	70-130	702000	6.91	30	
Surr: Toluene-d8	6655	0	6494	0	102	50-150	6631	0.352	30	

The following samples were analyzed in this batch:

1702094-01A	1702094-02A	1702094-03A
1702094-04A		

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

Client: WPX Energy
 Work Order: 1702094
 Project: RDU 12

QC BATCH REPORT

Batch ID: 97803 Instrument ID VMS9 Method: SW8260B

MBLK		Sample ID: MBLK-97803-97803				Units: µg/Kg-dry		Analysis Date: 2/2/2017 03:00 PM		
Client ID:		Run ID: VMS9_170202A				SeqNo: 4272661		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	941	0	1000	0	94.1	70-130	0			
Surr: 4-Bromofluorobenzene	1018	0	1000	0	102	70-130	0			
Surr: Dibromofluoromethane	951	0	1000	0	95.1	70-130	0			
Surr: Toluene-d8	976	0	1000	0	97.6	70-130	0			

LCS		Sample ID: LCS-97803-97803				Units: µg/Kg-dry		Analysis Date: 2/2/2017 01:46 PM		
Client ID:		Run ID: VMS9_170202A				SeqNo: 4272660		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1078	30	1000	0	108	75-125	0			
Ethylbenzene	1030	30	1000	0	103	75-125	0			
m,p-Xylene	2067	60	2000	0	103	80-125	0			
o-Xylene	1010	30	1000	0	101	75-125	0			
Toluene	1048	30	1000	0	105	70-125	0			
Xylenes, Total	3076	90	3000	0	103	75-125	0			
Surr: 1,2-Dichloroethane-d4	1018	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	1000	0	1000	0	100	70-130	0			
Surr: Dibromofluoromethane	1030	0	1000	0	103	70-130	0			
Surr: Toluene-d8	1000	0	1000	0	100	70-130	0			

MS		Sample ID: 1702094-03A MS				Units: µg/Kg-dry		Analysis Date: 2/3/2017 08:55 PM		
Client ID: RDU 12-3		Run ID: VMS9_170203A				SeqNo: 4274390		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1450	39	1299	0	112	75-125	0			
Ethylbenzene	1344	39	1299	0	104	75-125	0			
m,p-Xylene	2731	78	2598	0	105	80-125	0			
o-Xylene	1316	39	1299	0	101	75-125	0			
Toluene	1416	39	1299	0	109	70-125	0			
Xylenes, Total	4047	120	3897	0	104	75-125	0			
Surr: 1,2-Dichloroethane-d4	1338	0	1299	0	103	70-130	0			
Surr: 4-Bromofluorobenzene	1360	0	1299	0	105	70-130	0			
Surr: Dibromofluoromethane	1298	0	1299	0	99.9	70-130	0			
Surr: Toluene-d8	1280	0	1299	0	98.6	70-130	0			

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

Client: WPX Energy
 Work Order: 1702094
 Project: RDU 12

QC BATCH REPORT

Batch ID: 97803 Instrument ID VMS9 Method: SW8260B

MSD				Sample ID: 1702094-03A MSD			Units: µg/Kg-dry		Analysis Date: 2/3/2017 09:20 PM		
Client ID: RDU 12-3				Run ID: VMS9_170203A			SeqNo: 4274391		Prep Date: 2/2/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1254	39	1299	0	96.6	75-125	1450	14.5	30		
Ethylbenzene	1289	39	1299	0	99.2	75-125	1344	4.19	30		
m,p-Xylene	2614	78	2598	0	101	80-125	2731	4.37	30		
o-Xylene	1253	39	1299	0	96.5	75-125	1316	4.85	30		
Toluene	1334	39	1299	0	103	70-125	1416	5.95	30		
Xylenes, Total	3867	120	3897	0	99.2	75-125	4047	4.53	30		
Surr: 1,2-Dichloroethane-d4	1204	0	1299	0	92.7	70-130	1338	10.6	30		
Surr: 4-Bromofluorobenzene	1344	0	1299	0	103	70-130	1360	1.2	30		
Surr: Dibromofluoromethane	1288	0	1299	0	99.2	70-130	1298	0.754	30		
Surr: Toluene-d8	1284	0	1299	0	98.8	70-130	1280	0.304	30		

The following samples were analyzed in this batch:

1702094-01A	1702094-02A	1702094-03A
1702094-04A		

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

Client: WPX Energy
Work Order: 1702094
Project: RDU 12

QC BATCH REPORT

Batch ID: **97843** Instrument ID **GALLERY** Method: **A4500-CI E-97**

MBLK		Sample ID: MBLK-97843-97843				Units: mg/Kg		Analysis Date: 2/3/2017 01:53 PM		
Client ID:		Run ID: GALLERY_170203A		SeqNo: 4273728		Prep Date: 2/3/2017		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: 1702094-03A MS				Units: mg/Kg		Analysis Date: 2/3/2017 01:53 PM		
Client ID: RDU 12-3		Run ID: GALLERY_170203A		SeqNo: 4273766		Prep Date: 2/3/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 332.2 10 99.8 252.8 79.6 75-125 0

MSD		Sample ID: 1702094-03A MSD				Units: mg/Kg		Analysis Date: 2/3/2017 01:53 PM		
Client ID: RDU 12-3		Run ID: GALLERY_170203A		SeqNo: 4273767		Prep Date: 2/3/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 353 10 99.6 252.8 101 75-125 332.2 6.06 25

LCS1		Sample ID: LCS1-97843-97843				Units: mg/Kg		Analysis Date: 2/3/2017 01:53 PM		
Client ID:		Run ID: GALLERY_170203A		SeqNo: 4273729		Prep Date: 2/3/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 103.6 10 100 0 104 80-120 0

LCS2		Sample ID: LCS2-97843-97843				Units: mg/Kg		Analysis Date: 2/3/2017 01:53 PM		
Client ID:		Run ID: GALLERY_170203A		SeqNo: 4273755		Prep Date: 2/3/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 499.7 10 500 0 99.9 80-120 0

The following samples were analyzed in this batch:

1702094-01A	1702094-02A	1702094-03A
1702094-04A		

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

Client: WPX Energy
Work Order: 1702094
Project: RDU 12

QC BATCH REPORT

Batch ID: **R205435** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R205435					Units: % of sample		Analysis Date: 2/2/2017 12:50 PM		
Client ID:			Run ID: MOIST_170202A			SeqNo: 4272912		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-R205435				Units: % of sample		Analysis Date: 2/2/2017 12:50 PM		
Client ID:		Run ID: MOIST_170202A			SeqNo: 4272911		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: 1702032-14B DUP				Units: % of sample			Analysis Date: 2/2/2017 12:50 PM			
Client ID:				Run ID: MOIST_170202A				SeqNo: 4272892			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 16.83 0.050 0 0 0 16.72 0.656 5

DUP				Sample ID: 1702094-01A DUP				Units: % of sample			Analysis Date: 2/2/2017 12:50 PM			
Client ID: RDU 12-1				Run ID: MOIST_170202A				SeqNo: 4272904			Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture 23.38 0.050 0 0 0 23.51 0.554 5

The following samples were analyzed in this batch:

1702094-01A	1702094-02A	1702094-03A
1702094-04A		

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

fedex.com 1800.GoFedEx 1800.463.3339

FedEx
Express

Package
US Airbill

8106 7090 2985

From
Date

2/1/17

Sender's
Name

KAROLINA BLANEY

Phone

970 589 0743

Company

WPX ENERGY

Address

5315 BUENA VISTA DR

City

CARLSBAD

State

CA

ZIP

92008

2. Your Internet Billing Reference

3. To
Recipient's
Name

SAMPLE RECEIVING 616 336 6070

Company

ALS ENVIRONMENTAL

Address

3352 128th AVE

Address

HOLLAND

City

State

MI

ZIP

49424 9263



8106 7090 2985



FTD 6119884 81FEB17:CA0A 639C1/338B/BCBA

Express Package Service

Next Business Day

- ☐ FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☒ FedEx Priority Overnight
Next business morning delivery. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- ☐ FedEx Standard Overnight
Next business afternoon delivery. Saturday Delivery NOT available.

2 or 3 Business Days

- ☐ FedEx 2Day A.M.
Second business morning delivery. Saturday Delivery NOT available.
- ☐ FedEx 2Day
Second business afternoon delivery. Saturday Delivery NOT available.
- ☐ FedEx Express Saver
Third business day delivery. Saturday Delivery NOT available.

5. Packaging

☐ FedEx Envelope

☐ FedEx Pak

6. Special Handling and Delivery Signature Option

☐ Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express.

☐ No Signature Required
Package may be left without obtaining a signature for delivery.

☐ Direct Signature
Signature at recipient's address required for delivery.

Does this shipment contain dangerous goods?

☒ No ☐ Yes
Yes has must be checked. Yes per shipper's Declaration and required.

Restrictions apply for dangerous goods — See the current FedEx Service Guide.

7. Payment B/E

☐ Sender
Account No. in Section 1 will be billed.

☒ Recipient

☐ Third Party

☐ Credit Card

☐ Cash/Check

Total Packages

Total Weight

The liability is limited to USD\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **02-Feb-17 09:00**

Work Order: **1702094**

Received by: **MBB**

Checklist completed by Meghan Broadbent
eSignature

02-Feb-17
Date

Reviewed by: Chad Whelton
eSignature

02-Feb-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>4.2/4.2</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>2/2/2017 12:44:53 PM</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: