



Legend

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

RWF 43-25
Arsenic Background Sample Location Map
T6S R94W, Section 25

May 4, 2015





16-Apr-2015

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

Re: **RWF 43-25 Cuttings**

Work Order: **1504674**

Dear Karolina,

ALS Environmental received 1 sample on 11-Apr-2015 09:30 AM for the analyses presented in the following report.

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

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 21.

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

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy Rocky Mountain, LLC
Project: RWF 43-25 Cuttings
Work Order: 1504674

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>
1504674-01	RWF 43-25 Cuttings	Soil		4/10/2015 09:00	4/11/2015 09:30	<input type="checkbox"/>

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

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

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

ALS Group USA, Corp

Date: 16-Apr-15

Client: WPX Energy Rocky Mountain, LLC
Project: RWF 43-25 Cuttings
Sample ID: RWF 43-25 Cuttings
Collection Date: 4/10/2015 09:00 AM

Work Order: 1504674
Lab ID: 1504674-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	270		SW8015M		Prep: SW3541 / 4/13/15	Analyst: IT
Surr: 4-Terphenyl-d14	330	S	5.1	mg/Kg-dry	1	4/14/2015 06:49 AM
			39-133	%REC	1	4/14/2015 06:49 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015D		Prep: SW5035 / 4/13/15	Analyst: IT
Surr: Toluene-d8	127		3.1	mg/Kg-dry	1	4/13/2015 08:30 PM
			50-150	%REC	1	4/13/2015 08:30 PM
MERCURY BY CVAA						
Mercury	0.054		SW7471B		Prep: SW7471 / 4/14/15	Analyst: LR
			0.016	mg/Kg-dry	1	4/14/2015 09:05 PM
METALS ANALYSIS BY ICP						
Arsenic	5.0		SW846 6010C		Prep: SW3050B / 4/14/15	Analyst: JEC
Barium	6,100		0.42	mg/Kg-dry	1	4/15/2015 01:32 PM
Cadmium	ND		4.2	mg/Kg-dry	10	4/15/2015 02:26 PM
Chromium	15		0.83	mg/Kg-dry	1	4/15/2015 01:32 PM
Copper	30		0.42	mg/Kg-dry	1	4/15/2015 01:32 PM
Lead	11		0.83	mg/Kg-dry	1	4/15/2015 01:32 PM
Nickel	21		0.42	mg/Kg-dry	1	4/15/2015 01:32 PM
Selenium	ND		0.83	mg/Kg-dry	1	4/15/2015 01:32 PM
Silver	ND		0.42	mg/Kg-dry	1	4/15/2015 01:32 PM
Zinc	55		0.83	mg/Kg-dry	1	4/15/2015 01:32 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 4/15/15	Analyst: JEC
Calcium	150		5.0	mg/Kg	10	4/15/2015 02:38 PM
Magnesium	2.8		2.0	mg/Kg	10	4/15/2015 02:38 PM
Sodium	1,800		2.0	mg/Kg	10	4/15/2015 02:38 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHO		Prep: USDA Method 20B / 4/15/15	Analyst: JEC
Sodium Adsorption Ratio	41		0.010	none	1	4/15/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 4/14/15	Analyst: RS
Acenaphthene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Anthracene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Benzo(a)anthracene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Benzo(a)pyrene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Benzo(b)fluoranthene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Benzo(g,h,i)perylene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Benzo(k)fluoranthene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Chrysene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Dibenzo(a,h)anthracene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM

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

ALS Group USA, Corp

Date: 16-Apr-15

Client: WPX Energy Rocky Mountain, LLC
Project: RWF 43-25 Cuttings
Sample ID: RWF 43-25 Cuttings
Collection Date: 4/10/2015 09:00 AM

Work Order: 1504674
Lab ID: 1504674-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Fluorene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Indeno(1,2,3-cd)pyrene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Naphthalene	17		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Pyrene	ND		8.1	µg/Kg-dry	1	4/14/2015 11:18 PM
Surr: 2-Fluorobiphenyl	64.1		12-100	%REC	1	4/14/2015 11:18 PM
Surr: 4-Terphenyl-d14	86.0		25-137	%REC	1	4/14/2015 11:18 PM
Surr: Nitrobenzene-d5	57.2		37-107	%REC	1	4/14/2015 11:18 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 4/13/15	Analyst: AK	
Benzene	160		37	µg/Kg-dry	1	4/14/2015 05:08 PM
Ethylbenzene	ND		37	µg/Kg-dry	1	4/14/2015 05:08 PM
m,p-Xylene	390		74	µg/Kg-dry	1	4/14/2015 05:08 PM
o-Xylene	ND		37	µg/Kg-dry	1	4/14/2015 05:08 PM
Toluene	430		37	µg/Kg-dry	1	4/14/2015 05:08 PM
Xylenes, Total	390		110	µg/Kg-dry	1	4/14/2015 05:08 PM
Surr: 1,2-Dichloroethane-d4	108		70-130	%REC	1	4/14/2015 05:08 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	4/14/2015 05:08 PM
Surr: Dibromofluoromethane	96.1		70-130	%REC	1	4/14/2015 05:08 PM
Surr: Toluene-d8	94.0		70-130	%REC	1	4/14/2015 05:08 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 4/15/15	Analyst: JB	
Electrical Conductivity @ Saturation	10		0.050	mmhos/cm @2	10	4/15/2015 04:30 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JB		
Chromium, Trivalent	15		0.61	mg/Kg-dry	1	4/15/2015 05:15 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 4/14/15	Analyst: MB	
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	4/15/2015 04:00 PM
MOISTURE			E160.3M	Analyst: EVB		
Moisture	19		0.050	% of sample	1	4/13/2015 06:30 PM
PH			SW9045D	Prep: EXTRACT / 4/15/15	Analyst: JRF	
pH	9.1			s.u.	1	4/15/2015 03:30 PM

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

ALS Group USA, Corp

Date: 16-Apr-15

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69757** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-69757-69757				Units: mg/Kg		Analysis Date: 4/13/2015 11:49 PM		
Client ID:		Run ID: GC8_150413A				SeqNo: 3224178		Prep Date: 4/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.672	0	2	0	83.6	39-133		0		

LCS		Sample ID: DLCSS1-69757-69757				Units: mg/Kg		Analysis Date: 4/14/2015 12:19 PM		
Client ID:		Run ID: GC8_150413A				SeqNo: 3224186		Prep Date: 4/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	190.9	5.0	200	0	95.5	61-109		0		
Surr: 4-Terphenyl-d14	1.368	0	2	0	68.4	39-133		0		

MS		Sample ID: 1504277-08B MS				Units: mg/Kg		Analysis Date: 4/14/2015 12:49 PM		
Client ID:		Run ID: GC8_150413A				SeqNo: 3224187		Prep Date: 4/13/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	790	81	322.1	424	114	48-110		0		S
Surr: 4-Terphenyl-d14	2.744	0	3.221	0	85.2	39-133		0		

MSD		Sample ID: 1504277-08B MSD				Units: mg/Kg		Analysis Date: 4/14/2015 01:19 AM		
Client ID:		Run ID: GC8_150413A				SeqNo: 3224179		Prep Date: 4/13/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	722.6	81	323	424	92.4	48-110	790	8.91	30	
Surr: 4-Terphenyl-d14	2.733	0	3.23	0	84.6	39-133	2.744	0.416	30	

The following samples were analyzed in this batch: 1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
 Work Order: 1504674
 Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69759** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-69759-69759				Units: µg/Kg		Analysis Date: 4/13/2015 12:12 PM		
Client ID:		Run ID: GC9_150413A				SeqNo: 3223360		Prep Date: 4/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	5400	0	5000	0	108	50-150	0			

LCS		Sample ID: LCS-69759-69759				Units: µg/Kg		Analysis Date: 4/13/2015 11:47 AM		
Client ID:		Run ID: GC9_150413A				SeqNo: 3223359		Prep Date: 4/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	488900	2,500	500000	0	97.8	70-130	0			
Surr: Toluene-d8	5031	0	5000	0	101	50-150	0			

MS		Sample ID: 1504568-01B MS				Units: µg/Kg		Analysis Date: 4/13/2015 03:33 PM		
Client ID:		Run ID: GC9_150413A				SeqNo: 3223367		Prep Date: 4/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	447200	2,500	500000	0	89.4	70-130	0			
Surr: Toluene-d8	3900	0	5000	0	78	50-150	0			

MSD		Sample ID: 1504568-01B MSD				Units: µg/Kg		Analysis Date: 4/13/2015 03:58 PM		
Client ID:		Run ID: GC9_150413A				SeqNo: 3223368		Prep Date: 4/13/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	450900	2,500	500000	0	90.2	70-130	447200	0.812	30	
Surr: Toluene-d8	4034	0	5000	0	80.7	50-150	3900	3.37	30	

The following samples were analyzed in this batch: 1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69820** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-69820-69820					Units: mg/Kg		Analysis Date: 4/14/2015 08:28 PM		
Client ID:			Run ID: HG1_150414A				SeqNo: 3226261		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury ND 0.020

LCS		Sample ID: LCS-69820-69820					Units: mg/Kg		Analysis Date: 4/14/2015 08:30 PM		
Client ID:			Run ID: HG1_150414A			SeqNo: 3226262		Prep Date: 4/14/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1882 0.020 0.1665 0 113 80-120 0

MS		Sample ID: 1504650-02AMS					Units: mg/Kg		Analysis Date: 4/14/2015 08:56 PM		
Client ID:			Run ID: HG1_150414A			SeqNo: 3226273		Prep Date: 4/14/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1229 0.012 0.1027 0.005053 115 75-125 0

MSD		Sample ID: 1504650-02AMSD				Units: mg/Kg		Analysis Date: 4/14/2015 08:58 PM		
Client ID:		Run ID: HG1_150414A			SeqNo: 3226274		Prep Date: 4/14/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1244 0.013 0.1044 0.005053 114 75-125 0.1229 1.24 35

The following samples were analyzed in this batch:

1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69798** Instrument ID **ICP2** Method: **SW846 6010C**

DUP				Sample ID: 1504674-01ADUP			Units: mg/Kg		Analysis Date: 4/15/2015 02:43 PM		
Client ID: RWF 43-25 Cuttings			Run ID: ICP2_150415A		SeqNo: 3226954		Prep Date: 4/15/2015		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	124.1	5.0	0	0	0	0-0	151	19.6			
Magnesium	2.199	2.0	0	0	0	0-0	2.762	22.7			
Sodium	1637	2.0	0	0	0	0-0	1842	11.8			

DUP				Sample ID: 1504674-01ADUP				Units: none			Analysis Date: 4/15/2015			
Client ID: RWF 43-25 Cuttings				Run ID: SAR_150415A				SeqNo: 3227021			Prep Date: 4/15/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Sodium Adsorption Ratio	39.89	0.010	0	0	0		40.68	1.97	50					

The following samples were analyzed in this batch: | 1504674-01A |

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69821** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-69821-69821				Units: mg/L		Analysis Date: 4/15/2015 12:52 PM		
Client ID:		Run ID: ICP2_150415A				SeqNo: 3226778		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.009148	0.25								J
Copper	ND	0.50								
Lead	0.03665	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS		Sample ID: LCS-69821-69821				Units: mg/L		Analysis Date: 4/15/2015 12:58 PM		
Client ID:		Run ID: ICP2_150415A				SeqNo: 3226779		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.973	0.25	5	0	99.5	80-120	0			
Barium	4.909	0.25	5	0	98.2	80-120	0			
Cadmium	4.845	0.50	5	0	96.9	80-120	0			
Chromium	5.078	0.25	5	0	102	80-120	0			
Copper	5.078	0.50	5	0	102	80-120	0			
Lead	5.218	0.25	5	0	104	80-120	0			
Nickel	5.116	0.25	5	0	102	80-120	0			
Selenium	5.049	0.50	5	0	101	80-120	0			
Silver	5.5	0.25	5	0	110	80-120	0			
Zinc	5.011	0.50	5	0	100	80-120	0			

MS		Sample ID: 1504646-01BMS				Units: mg/Kg		Analysis Date: 4/15/2015 01:09 PM		
Client ID:		Run ID: ICP2_150415A				SeqNo: 3226781		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	18.43	0.39	7.862	9.581	112	75-125	0			
Barium	171.6	0.39	7.862	159.6	152	75-125	0			SO
Cadmium	7.898	0.79	7.862	0.2266	97.6	75-125	0			
Chromium	21.4	0.39	7.862	11.35	128	75-125	0			S
Copper	33.48	0.79	7.862	26.37	90.4	75-125	0			
Lead	18.38	0.39	7.862	11.04	93.5	75-125	0			
Nickel	27.06	0.39	7.862	19.84	91.8	75-125	0			
Selenium	7.764	0.79	7.862	-0.9131	110	75-125	0			
Silver	9.789	0.39	7.862	-0.1719	127	75-125	0			S
Zinc	75.34	0.79	7.862	67.04	106	75-125	0			O

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69821** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1504646-01BMSD				Units: mg/Kg		Analysis Date: 4/15/2015 01:15 PM		
Client ID:		Run ID: ICP2_150415A				SeqNo: 3226782		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	18.81	0.40	7.937	9.581	116	75-125	18.43	2.05	20	
Barium	172.9	0.40	7.937	159.6	168	75-125	171.6	0.804	20	SO
Cadmium	8.191	0.79	7.937	0.2266	100	75-125	7.898	3.64	20	
Chromium	22.31	0.40	7.937	11.35	138	75-125	21.4	4.15	20	S
Copper	35.34	0.79	7.937	26.37	113	75-125	33.48	5.41	20	
Lead	18.91	0.40	7.937	11.04	99.2	75-125	18.38	2.83	20	
Nickel	28.39	0.40	7.937	19.84	108	75-125	27.06	4.79	20	
Selenium	7.823	0.79	7.937	-0.9131	110	75-125	7.764	0.761	20	
Silver	10.03	0.40	7.937	-0.1719	128	75-125	9.789	2.4	20	S
Zinc	78.76	0.79	7.937	67.04	148	75-125	75.34	4.44	20	SO

The following samples were analyzed in this batch: 1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69802** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-69802-69802				Units: µg/Kg		Analysis Date: 4/14/2015 05:02 PM		
Client ID:		Run ID: SVMS4_150414A				SeqNo: 3225404		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
<i>Surr: 2-Fluorobiphenyl</i>	1362	0	1667	0	81.7	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1976	0	1667	0	119	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1339	0	1667	0	80.3	37-107	0			

LCS		Sample ID: SLCSS1-69802-69802				Units: µg/Kg		Analysis Date: 4/14/2015 05:27 PM		
Client ID:		Run ID: SVMS4_150414A				SeqNo: 3225408		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	509.3	6.7	666.7	0	76.4	45-110	0			
Anthracene	581	6.7	666.7	0	87.1	55-105	0			
Benzo(a)anthracene	580	6.7	666.7	0	87	50-110	0			
Benzo(a)pyrene	624.3	6.7	666.7	0	93.6	50-110	0			
Benzo(b)fluoranthene	613	6.7	666.7	0	91.9	45-115	0			
Benzo(g,h,i)perylene	684.7	6.7	666.7	0	103	40-125	0			
Benzo(k)fluoranthene	582.7	6.7	666.7	0	87.4	45-115	0			
Chrysene	586.3	6.7	666.7	0	87.9	55-110	0			
Dibenzo(a,h)anthracene	655.3	6.7	666.7	0	98.3	40-125	0			
Fluoranthene	631.3	6.7	666.7	0	94.7	55-115	0			
Fluorene	527	6.7	666.7	0	79	50-110	0			
Indeno(1,2,3-cd)pyrene	695.7	6.7	666.7	0	104	40-120	0			
Naphthalene	475.3	6.7	666.7	0	71.3	40-105	0			
Pyrene	669.7	6.7	666.7	0	100	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1326	0	1667	0	79.6	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1759	0	1667	0	106	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1383	0	1667	0	83	37-107	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69802** Instrument ID **SVMS4** Method: **SW846 8270D**

MS				Sample ID: 1504507-01B MS			Units: µg/Kg		Analysis Date: 4/14/2015 07:56 PM	
Client ID:				Run ID: SVMS4_150414A			SeqNo: 3226509		Prep Date: 4/14/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1497	18	1835	0	81.6	45-110	0			
Anthracene	1672	18	1835	0	91.1	55-105	0			
Benzo(a)anthracene	1617	18	1835	0	88.1	50-110	0			
Benzo(a)pyrene	1729	18	1835	0	94.2	50-110	0			
Benzo(b)fluoranthene	1721	18	1835	0	93.8	45-115	0			
Benzo(g,h,i)perylene	1928	18	1835	0	105	40-125	0			
Benzo(k)fluoranthene	1662	18	1835	0	90.6	45-115	0			
Chrysene	1624	18	1835	0	88.5	55-110	0			
Dibenzo(a,h)anthracene	1827	18	1835	0	99.5	40-125	0			
Fluoranthene	1800	18	1835	0	98.1	55-115	0			
Fluorene	1559	18	1835	0	84.9	50-110	0			
Indeno(1,2,3-cd)pyrene	1952	18	1835	0	106	40-120	0			
Naphthalene	1290	18	1835	0	70.3	40-105	0			
Pyrene	1817	18	1835	0	99	45-125	0			
Surr: 2-Fluorobiphenyl	3843	0	4587	0	83.8	12-100	0			
Surr: 4-Terphenyl-d14	4725	0	4587	0	103	25-137	0			
Surr: Nitrobenzene-d5	3512	0	4587	0	76.6	37-107	0			

MSD				Sample ID: 1504507-01B MSD			Units: µg/Kg		Analysis Date: 4/14/2015 08:22 PM	
Client ID:				Run ID: SVMS4_150414A			SeqNo: 3226510		Prep Date: 4/14/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1431	19	1892	0	75.6	45-110	1497	4.53	30	
Anthracene	1665	19	1892	0	88	55-105	1672	0.369	30	
Benzo(a)anthracene	1559	19	1892	0	82.4	50-110	1617	3.71	30	
Benzo(a)pyrene	1667	19	1892	0	88.1	50-110	1729	3.65	30	
Benzo(b)fluoranthene	1675	19	1892	0	88.5	45-115	1721	2.72	30	
Benzo(g,h,i)perylene	1851	19	1892	0	97.8	40-125	1928	4.11	30	
Benzo(k)fluoranthene	1576	19	1892	0	83.3	45-115	1662	5.36	30	
Chrysene	1530	19	1892	0	80.9	55-110	1624	5.94	30	
Dibenzo(a,h)anthracene	1776	19	1892	0	93.9	40-125	1827	2.81	30	
Fluoranthene	1728	19	1892	0	91.3	55-115	1800	4.09	30	
Fluorene	1527	19	1892	0	80.7	50-110	1559	2.03	30	
Indeno(1,2,3-cd)pyrene	1895	19	1892	0	100	40-120	1952	2.97	30	
Naphthalene	1263	19	1892	0	66.7	40-105	1290	2.15	30	
Pyrene	1732	19	1892	0	91.5	45-125	1817	4.84	30	
Surr: 2-Fluorobiphenyl	3725	0	4729	0	78.8	12-100	3843	3.12	40	
Surr: 4-Terphenyl-d14	4626	0	4729	0	97.8	25-137	4725	2.1	40	
Surr: Nitrobenzene-d5	3643	0	4729	0	77	37-107	3512	3.66	40	

The following samples were analyzed in this batch: 1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69762** Instrument ID **VMS7** Method: **SW8260B**

Sample ID: MBLK-69762-69762				Units: µg/Kg			Analysis Date: 4/13/2015 01:22 PM			
Client ID:		Run ID: VMS7_150413A			SeqNo: 3224221		Prep Date: 4/13/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>886.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>88.6</i>	<i>70-130</i>		<i>0</i>		
<i>Surr: 4-Bromofluorobenzene</i>	<i>1011</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>101</i>	<i>70-130</i>		<i>0</i>		
<i>Surr: Dibromofluoromethane</i>	<i>921.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>92.2</i>	<i>70-130</i>		<i>0</i>		
<i>Surr: Toluene-d8</i>	<i>990</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>99</i>	<i>70-130</i>		<i>0</i>		

LCS				Sample ID: LCS-69762-69762				Units: µg/Kg		Analysis Date: 4/13/2015 09:51 AM	
Client ID:			Run ID: VMS7_150413A			SeqNo: 3224220		Prep Date: 4/13/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1174	30	1000	0	117	75-125	0				
Ethylbenzene	1120	30	1000	0	112	75-125	0				
m,p-Xylene	2220	60	2000	0	111	80-125	0				
o-Xylene	1108	30	1000	0	111	75-125	0				
Toluene	1140	30	1000	0	114	70-125	0				
Xylenes, Total	3328	90	3000	0	111	75-125	0				
Surr: 1,2-Dichloroethane-d4	873	0	1000	0	87.3	70-130	0				
Surr: 4-Bromofluorobenzene	1008	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	939.5	0	1000	0	94	70-130	0				
Surr: Toluene-d8	977	0	1000	0	97.7	70-130	0				

The following samples were analyzed in this batch:

1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69798** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

Dup		Sample ID: 1504674-01A Dup				Units: mmhos/cm @25°		Analysis Date: 4/15/2015 04:30 PM		
Client ID: RWF 43-25 Cuttings			Run ID: WETCHEM_150415M			SeqNo: 3227144		Prep Date: 4/15/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	9.38	0.050	0	0	0		10.24	8.77	50	

The following samples were analyzed in this batch:

1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69857** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-69857-69857				Units: s.u.			Analysis Date: 4/15/2015 03:30 PM			
Client ID:				Run ID: WETCHEM_150415P				SeqNo: 3227211			Prep Date: 4/15/2015		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		4.01	0	4	0	100	90-110	0						

DUP				Sample ID: 1504673-01A DUP				Units: s.u.			Analysis Date: 4/15/2015 03:30 PM			
Client ID:				Run ID: WETCHEM_150415P				SeqNo: 3227213			Prep Date: 4/15/2015		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH				8.97	0	0	0	0	0-0	9	0.334	20		

The following samples were analyzed in this batch:

1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **69892** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-69892-69892				Units: mg/Kg		Analysis Date: 4/15/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1504150				SeqNo: 3227202		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS		Sample ID: LCS-69892-69892				Units: mg/Kg		Analysis Date: 4/15/2015 04:00 PM		
Client ID:		Run ID: WETCHEM_1504150				SeqNo: 3227203		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

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

MS		Sample ID: 1504674-01A MS				Units: mg/Kg		Analysis Date: 4/15/2015 04:00 PM		
Client ID: RWF 43-25 Cuttings		Run ID: WETCHEM_1504150				SeqNo: 3227206		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2.333 0.95 4.762 0.2336 44.1 75-125 0 S

MS		Sample ID: 1504674-01A MSI				Units: mg/Kg		Analysis Date: 4/15/2015 04:00 PM		
Client ID: RWF 43-25 Cuttings		Run ID: WETCHEM_1504150				SeqNo: 3227208		Prep Date: 4/14/2015		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1793 99 1928 0.2336 93 75-125 0

MSD		Sample ID: 1504674-01A MSD				Units: mg/Kg		Analysis Date: 4/15/2015 04:00 PM		
Client ID: RWF 43-25 Cuttings		Run ID: WETCHEM_1504150				SeqNo: 3227207		Prep Date: 4/14/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.6275 0.98 4.902 0.2336 8.03 75-125 2.333 0 20 JS

The following samples were analyzed in this batch:

1504674-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1504674
Project: RWF 43-25 Cuttings

QC BATCH REPORT

Batch ID: **R161268** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R161268				Units: % of sample			Analysis Date: 4/13/2015 06:30 PM		
Client ID:		Run ID: MOIST_150413D				SeqNo: 3224738			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-R161268				Units: % of sample			Analysis Date: 4/13/2015 06:30 PM		
Client ID:		Run ID: MOIST_150413D				SeqNo: 3224736			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: 1504276-01B DUP				Units: % of sample			Analysis Date: 4/13/2015 06:30 PM		
Client ID:		Run ID: MOIST_150413D				SeqNo: 3224701			Prep Date:		
									DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 10.84 0.050 0 0 0 10.71 1.21 20

DUP		Sample ID: 1504513-01B DUP				Units: % of sample			Analysis Date: 4/13/2015 06:30 PM		
Client ID:		Run ID: MOIST_150413D				SeqNo: 3224717			Prep Date:		
									DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 16.79 0.050 0 0 0 17.07 1.65 20

The following samples were analyzed in this batch:

1504674-01A

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



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202/6

WORKORDER
#

1504674

PROJECT NAME		SAMPLER		DATE		PAGE	
PROJECT No.		SITE ID		TURNAROUND		DISPOSAL	
RWF 43-25 cuttings		RWF 43-25 cuttings		3 day		1 of 1	
COMPANY NAME		BILL TO COMPANY		By Lab or		Return to Client	
WPX Energy		WPX Energy					
SEND REPORT TO		INVOICE ATTN TO					
Blaney		Karolina Blaney; Leo Braun					
ADDRESS		ADDRESS					
		1058 Co Rd 215					
CITY / STATE / ZIP		CITY / STATE / ZIP					
		Parachure CO 81635					
PHONE		PHONE					
		970-683-2295					
FAX		FAX					
E-MAIL		E-MAIL					
Karolina.blaney@wpxenergy.com;		Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com					
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	RWF 43-25 cuttings	S	4/10/2015	9:00	1		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)
3.0°C @	<input checked="" type="checkbox"/> LEVEL II (Standard QC)
	<input type="checkbox"/> LEVEL III (Std QC + forms)
	<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035	

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	4/10/2015	2:48
RECEIVED BY			4-10-15	2:50
RELINQUISHED BY			4-10-15	3:00
RECEIVED BY	Diane F. Shaw	Diane F. Shaw	4/11/15	0930
RELINQUISHED BY				
RECEIVED BY				

From: (816) 288-1033
 Nick Martinez
 ALS Environmental
 127 E. 1st Street

Origin ID: RILA

FedEx
 Express



J151215022303uv

PARACHUTE, CO 81635

Ship Date: 10APR15
 Act/Wgt: 45.0 LB
 CAD: 2264840/INET3810

Dims: 24 X 15 X 15 IN

SHIP TO: (816) 399-6870
 sample receiving
 ALS Laboratory Group
 3352 128TH AVE

BILL SENDER

HOLLAND, MI 49424

Delivery Address Bar Code



Ref # 041015-1
 Invoice #
 PO # Parachute
 Dept #

5 of 5

SATURDAY 12:00P
 PRIORITY OVERNIGHT

MP8# 7733 4644 8662

0263

Metr# 7733 4644 8320

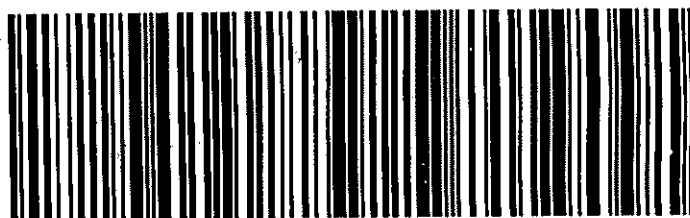
0201

49424

MI-US

GRR

XO HLMA



537J28FC5EE4B

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and file a timely claim. Limitations including intrinsic value of the package, loss incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals. Written

LS Parachute Custody Seal

Date 4-10-15
 me [Signature]

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **11-Apr-15 09:30**

Work Order: **1504674**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

13-Apr-15
Date

Reviewed by: Chad Whelton
eSignature

13-Apr-15
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): 3.0 C SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 4/13/2015 9:43:12 AM

Water - VOA vials have zero headspace? Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt? Yes ☐ No ☐ N/A ☒

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



08-May-2015

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

Re: **RWF 43-25 Backgrounds**

Work Order: **1505048**

Dear Karolina,

ALS Environmental received 5 samples on 01-May-2015 10:00 AM for the analyses presented in the following report.

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

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 16.

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

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy Rocky Mountain, LLC
Project: RWF 43-25 Backgrounds
Work Order: 1505048

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>
1505048-01	RWF 43-25-B-1	Soil		4/28/2015 11:30	5/1/2015 10:00	<input type="checkbox"/>
1505048-02	RWF 43-25-B-2	Soil		4/28/2015 11:35	5/1/2015 10:00	<input type="checkbox"/>
1505048-03	RWF 43-25-B-3	Soil		4/28/2015 11:40	5/1/2015 10:00	<input type="checkbox"/>
1505048-04	RWF 43-25-B-4	Soil		4/28/2015 11:45	5/1/2015 10:00	<input type="checkbox"/>
1505048-05	RWF 43-25-B-5	Soil		4/28/2015 11:50	5/1/2015 10:00	<input type="checkbox"/>

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

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

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

ALS Group USA, Corp**Date:** 08-May-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** RWF 43-25 Backgrounds**Work Order:** 1505048**Sample ID:** RWF 43-25-B-1**Lab ID:** 1505048-01**Collection Date:** 4/28/2015 11:30 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	4.6		SW846 6010C 0.42	mg/Kg-dry	Prep: SW3050B / 5/4/15 1	Analyst: JEC 5/5/2015 02:46 PM
MOISTURE						
Moisture	1.9		E160.3M 0.050	% of sample	1	Analyst: EVB 5/6/2015 05:45 PM

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

ALS Group USA, Corp**Date:** 08-May-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** RWF 43-25 Backgrounds**Work Order:** 1505048**Sample ID:** RWF 43-25-B-2**Lab ID:** 1505048-02**Collection Date:** 4/28/2015 11:35 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	5.0		SW846 6010C 0.41	mg/Kg-dry	Prep: SW3050B / 5/4/15 1	Analyst: JEC 5/5/2015 02:51 PM
MOISTURE						
Moisture	8.7		E160.3M 0.050	% of sample	1	Analyst: EVB 5/6/2015 05:45 PM

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

ALS Group USA, Corp**Date:** 08-May-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** RWF 43-25 Backgrounds**Work Order:** 1505048**Sample ID:** RWF 43-25-B-3**Lab ID:** 1505048-03**Collection Date:** 4/28/2015 11:40 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	5.0		SW846 6010C 0.39	mg/Kg-dry	Prep: SW3050B / 5/4/15 1	Analyst: JEC 5/5/2015 02:57 PM
MOISTURE						
Moisture	7.8		E160.3M 0.050	% of sample	1	Analyst: EVB 5/6/2015 05:45 PM

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

ALS Group USA, Corp**Date:** 08-May-15**Client:** WPX Energy Rocky Mountain, LLC**Project:** RWF 43-25 Backgrounds**Work Order:** 1505048**Sample ID:** RWF 43-25-B-4**Lab ID:** 1505048-04**Collection Date:** 4/28/2015 11:45 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	5.0		SW846 6010C 0.40	mg/Kg-dry	Prep: SW3050B / 5/4/15 1	Analyst: JEC 5/5/2015 03:02 PM
MOISTURE						
Moisture	13		E160.3M 0.050	% of sample	1	Analyst: EVB 5/6/2015 05:45 PM

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

ALS Group USA, Corp

Date: 08-May-15

Client: WPX Energy Rocky Mountain, LLC
Project: RWF 43-25 Backgrounds
Sample ID: RWF 43-25-B-5
Collection Date: 4/28/2015 11:50 AM

Work Order: 1505048
Lab ID: 1505048-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP						
Arsenic	5.4		SW846 6010C 0.38	mg/Kg-dry	Prep: SW3050B / 5/4/15 1	Analyst: JEC 5/5/2015 03:08 PM
SOLUBLE CATIONS FOR SAR						
Calcium	190		SW846 6010C 5.0	mg/L	Prep: USDA Method 20B / 5/5/15 10	Analyst: JEC 5/5/2015 12:20 PM
Magnesium	17		2.0	mg/L	10	5/5/2015 12:20 PM
Sodium	3.8		2.0	mg/L	10	5/5/2015 12:20 PM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.072		USDA H60 METHO 0.010	none	Prep: USDA Method 20B / 5/5/15 1	Analyst: JEC 5/5/2015
ELECTRICAL CONDUCTIVITY (SAR)						
Electrical Conductivity @ Saturation	1.2		USDA H60 METHO 0.050	mmhos/cm @2	Prep: USDA Method 20B / 5/5/15 10	Analyst: JB 5/5/2015 06:50 PM
MOISTURE						
Moisture	13		E160.3M 0.050	% of sample	1	Analyst: EVB 5/6/2015 05:45 PM
PH						
pH	7.2		SW9045D	s.u.	Prep: EXTRACT / 5/5/15 1	Analyst: JB 5/5/2015 06:00 PM

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

ALS Group USA, Corp

Date: 08-May-15

Client: WPX Energy Rocky Mountain, LLC

Work Order: 1505048

Project: RWF 43-25 Backgrounds

QC BATCH REPORT

Batch ID: **70580**

Instrument ID **ICP2**

Method: **SW846 6010C**

DUP	Sample ID: 1505048-05ADUP					Units: mg/L	Analysis Date: 5/5/2015 12:26 PM			
Client ID: RWF 43-25-B-5	Run ID: ICP2_150505A			SeqNo: 3258724		Prep Date: 5/5/2015		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Calcium	213	5.0	0	0	0	0-0	185.2	14		
Magnesium	20.05	2.0	0	0	0	0-0	17.5	13.6		
Sodium	4.319	2.0	0	0	0	0-0	3.801	12.8		

DUP	Sample ID: 1505048-05ADUP					Units: none	Analysis Date: 5/5/2015			
Client ID: RWF 43-25-B-5	Run ID: SAR_150505B			SeqNo: 3258890		Prep Date: 5/5/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sodium Adsorption Ratio	0.07581	0.010	0	0	0		0.07153	5.81	50	
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The following samples were analyzed in this batch:

1505048-05A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1505048
Project: RWF 43-25 Backgrounds

QC BATCH REPORT

Batch ID: **70634** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-70634-70634				Units: mg/L		Analysis Date: 5/5/2015 09:42 AM		
Client ID:		Run ID: ICP2_150505A				SeqNo: 3258373		Prep Date: 5/4/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic ND 0.25

LCS		Sample ID: LCS-70634-70634				Units: mg/L		Analysis Date: 5/5/2015 09:48 AM		
Client ID:		Run ID: ICP2_150505A				SeqNo: 3258375		Prep Date: 5/4/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 5.037 0.25 5 0 101 80-120 0

MS		Sample ID: 1505054-01BMS				Units: mg/Kg		Analysis Date: 5/5/2015 10:04 AM		
Client ID:		Run ID: ICP2_150505A				SeqNo: 3258387		Prep Date: 5/4/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 13.34 0.38 7.657 5.263 105 75-125 0

MSD		Sample ID: 1505054-01BMSD				Units: mg/Kg		Analysis Date: 5/5/2015 10:10 AM		
Client ID:		Run ID: ICP2_150505A				SeqNo: 3258389		Prep Date: 5/4/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic 13.71 0.39 7.825 5.263 108 75-125 13.34 2.74 20

The following samples were analyzed in this batch:

1505048-01A	1505048-02A	1505048-03A
1505048-04A	1505048-05A	

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1505048
Project: RWF 43-25 Backgrounds

QC BATCH REPORT

Batch ID: **70580** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1505048-05A DUP				Units: mmhos/cm @25°		Analysis Date: 5/5/2015 06:50 PM		
Client ID: RWF 43-25-B-5			Run ID: WETCHEM_150505K			SeqNo: 3259681		Prep Date: 5/5/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.316	0.050	0	0	0		1.208	8.56	50	

The following samples were analyzed in this batch:

1505048-05A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1505048
Project: RWF 43-25 Backgrounds

QC BATCH REPORT

Batch ID: **70690** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-70690-70690					Units: s.u.		Analysis Date: 5/5/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150505L			SeqNo: 3259688		Prep Date: 5/5/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	3.99	0	4	0	99.8	90-110	0			
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DUP		Sample ID: 15041768-03A DUP				Units: s.u.		Analysis Date: 5/5/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150505L				SeqNo: 3259692		Prep Date: 5/5/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	8.03	0	0	0	0	0-0	8.17	1.73	20	
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DUP		Sample ID: 15041768-11A DUP					Units: s.u.		Analysis Date: 5/5/2015 06:00 PM		
Client ID:		Run ID: WETCHEM_150505L			SeqNo: 3259701		Prep Date: 5/5/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	8.01	0	0	0	0	0-0	8.01	0	20	
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The following samples were analyzed in this batch:

1505048-05A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1505048
Project: RWF 43-25 Backgrounds

QC BATCH REPORT

Batch ID: **R162890** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R162890					Units: % of sample		Analysis Date: 5/6/2015 05:45 PM		
Client ID:			Run ID: MOIST_150506B			SeqNo: 3263709		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-R162890				Units: % of sample		Analysis Date: 5/6/2015 05:45 PM		
Client ID:		Run ID: MOIST_150506B				SeqNo: 3263708		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: 1505007-21C DUP				Units: % of sample			Analysis Date: 5/6/2015 05:45 PM			
Client ID:				Run ID: MOIST_150506B				SeqNo: 3263681			Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture 17.39 0.050 0 0 0 15.47 11.7 20

DUP				Sample ID: 1505046-02A DUP				Units: % of sample			Analysis Date: 5/6/2015 05:45 PM			
Client ID:				Run ID: MOIST_150506B				SeqNo: 3263695			Prep Date:		DF: 1	
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 22.35 0.050 0 0 0 23.48 4.93 20

The following samples were analyzed in this batch:

1505048-01A	1505048-02A	1505048-03A
1505048-04A	1505048-05A	

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



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER #	1505048
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PROJECT NAME	RWF 43-25 backgrounds	SAMPLER								DATE								PAGE	1	of	1		
PROJECT No.		SITE ID	RWF 43-25 backgrounds							TURNAROUND	5 day							DISPOSAL	By Lab	or	Return to Client		
		EDD FORMAT								Arsenic SAR, EC, pH													
		PURCHASE ORDER																					
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy																				
SEND REPORT TO	Blaney	INVOICE ATTN TO	Karolina Blaney; Leo Braun																				
ADDRESS		ADDRESS	1058 Co Rd 215																				
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachure CO 81635																				
PHONE		PHONE	970-683-2295																				
FAX		FAX																					
E-MAIL	<u>Karolina.blaney@wpxenergy.com;</u>		E-MAIL	<u>Karolina.blaney@wpxenergy.com;</u> <u>leo.braun@wpxenergy.com</u>																			
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC																
1	RWF 43-25-B-1	S	4/28/2015	11:30	1		x	x															
2	RWF 43-25-B-2	S	4/28/2015	11:35	1		x	x															
3	RWF 43-25-B-3	S	4/28/2015	11:40	1		x	x															
4	RWF 43-25-B-4	S	4/28/2015	11:45	1		x	x															
5	RWF 43-25-B-5	S	4/28/2015	11:50	1		x	x	x														

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

For metals or anions, please detail analytes below.

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

SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	4/30/2015	12:00
RECEIVED BY		4-30	1640
RELINQUISHED BY		05/01/15	1000
RECEIVED BY			
RELINQUISHED BY			
RECEIVED BY			

From: (616) 298-1033
 Nick Martinez
 ALS Environmental
 127 E. 1st Street

Origin ID: RILA



PARACHUTE, CO 81635

Ship Date: 30APR15
 ActWgt: 64.0 LB
 CAD: 2264840/INET3610

Dims: 24 X 15 X 15 IN

Delivery Address Bar Code



Ref # 043015-4
 Invoice #
 PO # Parachute
 Dept #

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

BILL SENDER

HOLLAND, MI 49424

3 of 3

FRI - 01 MAY 10:30A
 PRIORITY OVERNIGHT

MPS# 7735 0198 1150

0263

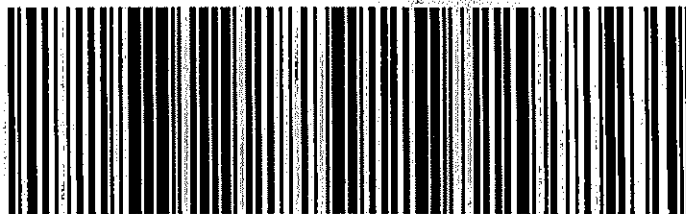
Mstr# 7735 0198 1242

0281

49424

MI-US

GRR

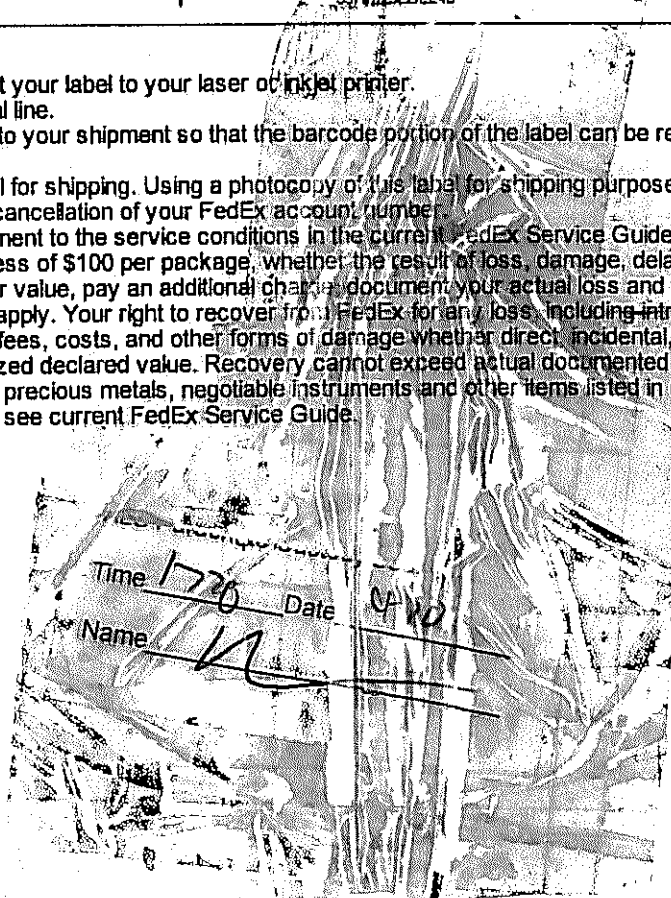
XX HLMA

5711752/EE4B

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **01-May-15 10:00**

Work Order: **1505048**

Received by: **TBB**

Checklist completed by Diane Shaw
eSignature

01-May-15
Date

Reviewed by: Chad Whelton
eSignature

01-May-15
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>5/1/2015 2:28:13 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: