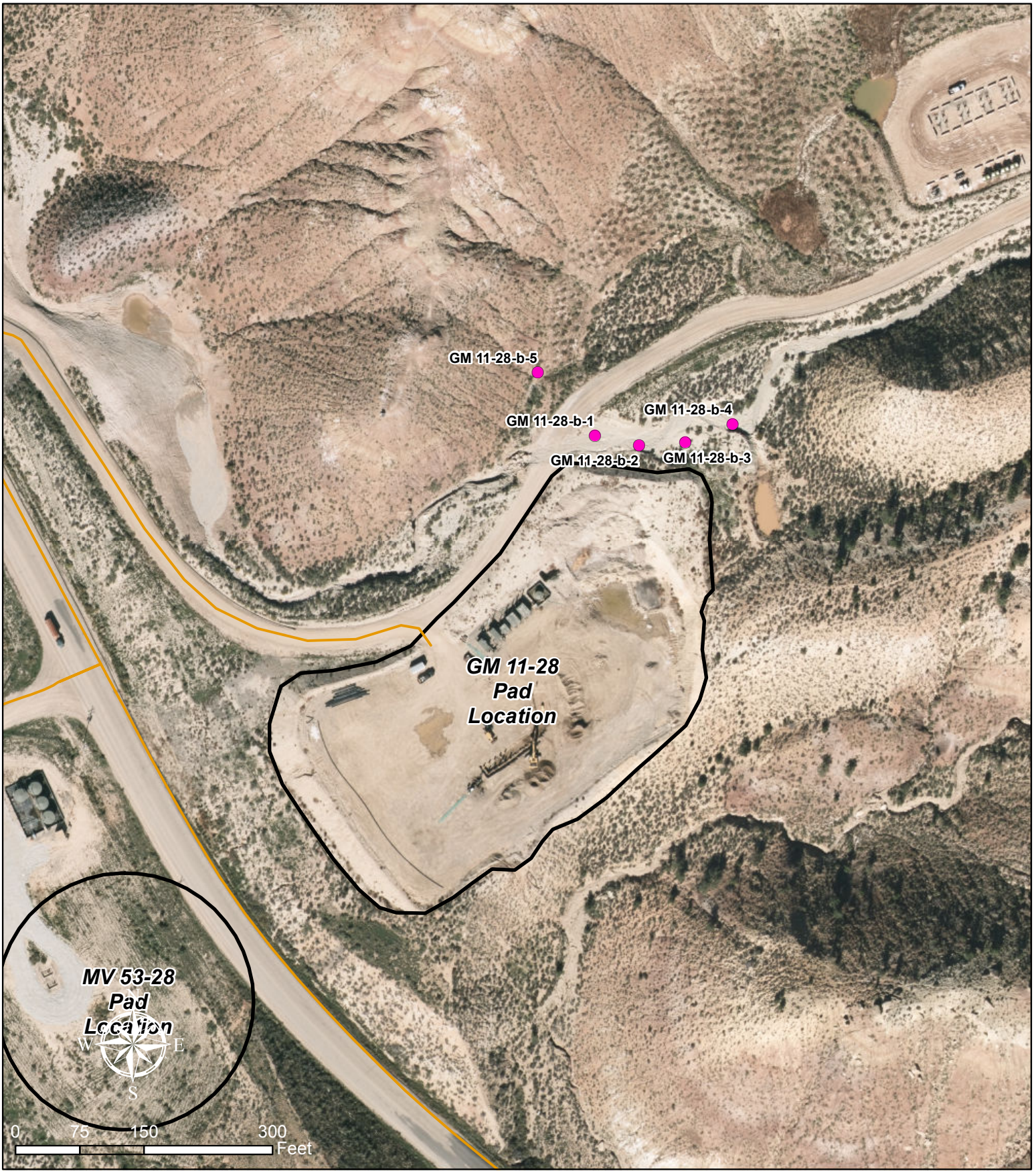

Legend

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

GM 11-28
Arsenic Background Sample Location Map
T6S R96W, Section 28

August 10, 2015

WPXENERGY

T:\Projects\PIC_MultiProspect\Ongoing\ArsenicSampling\PA 22-21.mxd atankers 10/5/2011 3:11:46 PM

28-Jul-2015

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

Re: **GM 11-28 Cuttings** Work Order: **15071152**

Dear Karolina,

ALS Environmental received 1 sample on 22-Jul-2015 08:15 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 22.

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

ALS Group USA, Corp

Date: 28-Jul-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: **15071152**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
15071152-01	GM 11-28 Cuttings	Soil		7/20/2015 15:00	7/22/2015 08:15	☐

ALS Group USA, Corp

Date: 28-Jul-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: 15071152

Case Narrative

Batch 73871, Method CR6_7196_S, Sample 15071152-01A MS/MSD: The MS and MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

Batch 73921, Method ICP_6010_SOL, Sample 15071152-01A: The metals reporting limits are elevated due to dilution needed to eliminate matrix-related interference.

ALS Group USA, Corp

Date: 28-Jul-15

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
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: *28-Jul-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: 15071152
Sample ID: GM 11-28 Cuttings
Lab ID: 15071152-01
Collection Date: 7/20/2015 03:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3541 / 7/22/15	Analyst: **IT**
DRO (C10-C28)	**45**		**5.0**	**mg/Kg-dry**	1	7/23/2015 05:10 AM
Surr: 4-Terphenyl-d14	*80.2*		*39-133*	*%REC*	1	7/23/2015 05:10 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 7/22/15	Analyst: **IT**
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	7/22/2015 09:17 PM
Surr: Toluene-d8	*97.7*		*50-150*	*%REC*	1	7/22/2015 09:17 PM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 7/22/15	Analyst: **LR**
Mercury	**0.044**		**0.020**	**mg/Kg-dry**	1	7/22/2015 04:45 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 7/22/15	Analyst: **RH**
Arsenic	**6.4**		**0.48**	**mg/Kg-dry**	1	7/22/2015 02:21 PM
Barium	**4,500**		**2.4**	**mg/Kg-dry**	5	7/22/2015 02:15 PM
Cadmium	ND		0.96	mg/Kg-dry	1	7/22/2015 02:21 PM
Chromium	**14**		**0.48**	**mg/Kg-dry**	1	7/22/2015 02:21 PM
Copper	**23**		**0.96**	**mg/Kg-dry**	1	7/22/2015 02:21 PM
Lead	**11**		**0.48**	**mg/Kg-dry**	1	7/22/2015 02:21 PM
Nickel	**23**		**0.48**	**mg/Kg-dry**	1	7/22/2015 02:21 PM
Selenium	ND		0.96	mg/Kg-dry	1	7/22/2015 02:21 PM
Silver	ND		0.48	mg/Kg-dry	1	7/22/2015 02:21 PM
Zinc	**53**		**0.96**	**mg/Kg-dry**	1	7/22/2015 02:21 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 7/24/15	Analyst: **JEC**
Calcium	**780**		**5.0**	**mg/L**	10	7/28/2015 11:00 AM
Magnesium	ND		2.0	mg/L	10	7/28/2015 11:00 AM
Sodium	**2,400**		**2.0**	**mg/L**	10	7/28/2015 11:00 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 7/24/15	Analyst: **JEC**
Sodium Adsorption Ratio	**24**		**0.010**	**none**	1	7/28/2015
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3541 / 7/22/15	Analyst: **RM**
Acenaphthene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Anthracene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Benzo(a)anthracene	**9.3**		**8.1**	**µg/Kg-dry**	1	7/22/2015 07:45 PM
Benzo(a)pyrene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Benzo(b)fluoranthene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Benzo(g,h,i)perylene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Benzo(k)fluoranthene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Chrysene	**8.5**		**8.1**	**µg/Kg-dry**	1	7/22/2015 07:45 PM
Dibenzo(a,h)anthracene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM

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

ALS Group USA, Corp

Date: *28-Jul-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: 15071152
Sample ID: GM 11-28 Cuttings
Lab ID: 15071152-01
Collection Date: 7/20/2015 03:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Fluorene	**18**		**8.1**	**µg/Kg-dry**	1	7/22/2015 07:45 PM
Indeno(1,2,3-cd)pyrene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Naphthalene	**120**		**8.1**	**µg/Kg-dry**	1	7/22/2015 07:45 PM
Pyrene	ND		8.1	µg/Kg-dry	1	7/22/2015 07:45 PM
Surr: 2-Fluorobiphenyl	*62.7*		*12-100*	*%REC*	1	7/22/2015 07:45 PM
Surr: 4-Terphenyl-d14	*63.2*		*25-137*	*%REC*	1	7/22/2015 07:45 PM
Surr: Nitrobenzene-d5	*54.5*		*37-107*	*%REC*	1	7/22/2015 07:45 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 7/22/15	Analyst: **LSY**
Benzene	**240**		**36**	**µg/Kg-dry**	1	7/22/2015 11:27 AM
Ethylbenzene	**92**		**36**	**µg/Kg-dry**	1	7/22/2015 11:27 AM
m,p-Xylene	**460**		**73**	**µg/Kg-dry**	1	7/22/2015 11:27 AM
o-Xylene	**86**		**36**	**µg/Kg-dry**	1	7/22/2015 11:27 AM
Toluene	**740**		**36**	**µg/Kg-dry**	1	7/22/2015 11:27 AM
Xylenes, Total	**550**		**110**	**µg/Kg-dry**	1	7/22/2015 11:27 AM
Surr: 1,2-Dichloroethane-d4	*105*		*70-130*	*%REC*	1	7/22/2015 11:27 AM
Surr: 4-Bromofluorobenzene	*94.2*		*70-130*	*%REC*	1	7/22/2015 11:27 AM
Surr: Dibromofluoromethane	*98.0*		*70-130*	*%REC*	1	7/22/2015 11:27 AM
Surr: Toluene-d8	*102*		*70-130*	*%REC*	1	7/22/2015 11:27 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 7/24/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**15**		**0.050**	**mmhos/cm @2**	10	7/24/2015 07:30 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **JB**
Chromium, Trivalent	**14**		**0.61**	**mg/Kg-dry**	1	7/23/2015 04:45 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 7/22/15	Analyst: **MB**
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	7/23/2015 09:30 AM
MOISTURE			**E160.3M**			Analyst: **PT**
Moisture	**18**		**0.050**	**% of sample**	1	7/22/2015 09:45 AM
PH			**SW9045D**		Prep: EXTRACT / 7/22/15	Analyst: **BRH**
pH	**11**			**s.u.**	1	7/22/2015 02:00 PM

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

QC BATCH REPORT

Batch ID: **73846** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-73846-73846** Units: **mg/Kg** Analysis Date: **7/23/2015 03:10 AM**

Client ID: Run ID: **GC8_150722B** SeqNo: **3383160** Prep Date: **7/22/2015** 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	*1.58*	0	*2*	0	*79*	*39-133*	0			

LCS Sample ID: **DLCSS1-73846-73846** Units: **mg/Kg** Analysis Date: **7/23/2015 03:40 AM**

Client ID: Run ID: **GC8_150722B** SeqNo: **3383154** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	162.4	5.0	200	0	81.2	61-109	0			
Surr: 4-Terphenyl-d14	*1.445*	0	*2*	0	*72.3*	*39-133*	0			

MS Sample ID: **15071152-01A MS** Units: **mg/Kg** Analysis Date: **7/23/2015 04:10 AM**

Client ID: **GM 11-28 Cuttings** Run ID: **GC8_150722B** SeqNo: **3383155** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	331	8.2	326.8	36.99	90	48-110	0			
Surr: 4-Terphenyl-d14	*3.854*	0	*3.268*	0	*118*	*39-133*	0			

MSD Sample ID: **15071152-01A MSD** Units: **mg/Kg** Analysis Date: **7/23/2015 04:40 AM**

Client ID: **GM 11-28 Cuttings** Run ID: **GC8_150722B** SeqNo: **3383156** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	283.1	7.9	315.1	36.99	78.1	48-110	331	15.6	30	
Surr: 4-Terphenyl-d14	*2.982*	0	*3.151*	0	*94.6*	*39-133*	3.854	*25.5*	*30*	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73852** Instrument ID **GC10** Method: **SW8015D**

MBLK Sample ID: **MBLK-73852-73852** Units: **µg/Kg** Analysis Date: **7/22/2015 08:53 PM**
Client ID: Run ID: **GC10_150723A** SeqNo: **3383277** Prep Date: **7/22/2015** 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	*4959*	0	*5000*	0	*99.2*	*50-150*	0			

LCS Sample ID: **LCS-73852-73852** Units: **µg/Kg** Analysis Date: **7/22/2015 08:28 PM**
Client ID: Run ID: **GC10_150723A** SeqNo: **3383276** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	586700	2,500	500000	0	117	70-130	0			
Surr: Toluene-d8	*4944*	0	*5000*	0	*98.9*	*50-150*	0			

MS Sample ID: **15071152-01A MS** Units: **µg/Kg** Analysis Date: **7/24/2015 12:11 PM**
Client ID: **GM 11-28 Cuttings** Run ID: **GC10_150723A** SeqNo: **3385162** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	602700	2,500	500000	0	121	70-130	0			
Surr: Toluene-d8	*4788*	0	*5000*	0	*95.8*	*50-150*	0			

MSD Sample ID: **15071152-01A MSD** Units: **µg/Kg** Analysis Date: **7/24/2015 12:35 PM**
Client ID: **GM 11-28 Cuttings** Run ID: **GC10_150723A** SeqNo: **3385163** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	625700	2,500	500000	0	125	70-130	602700	3.75	30	
Surr: Toluene-d8	*4918*	0	*5000*	0	*98.4*	*50-150*	4788	*2.67*	*30*	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73820** Instrument ID **HG1** Method: **SW7471B**

MBLK Sample ID: **MBLK-73820-73820** Units: **mg/Kg** Analysis Date: **7/22/2015 04:41 PM**
Client ID: Run ID: **HG1_150722A** SeqNo: **3382475** Prep Date: **7/22/2015** 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-73820-73820** Units: **mg/Kg** Analysis Date: **7/22/2015 04:43 PM**
Client ID: Run ID: **HG1_150722A** SeqNo: **3382476** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1741	0.020	0.1665	0	105	80-120	0			

MS Sample ID: **1507960-07CMS** Units: **mg/Kg** Analysis Date: **7/22/2015 04:50 PM**
Client ID: Run ID: **HG1_150722A** SeqNo: **3382479** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1365	0.015	0.1208	0.01701	98.9	75-125	0			

MSD Sample ID: **1507960-07CMSD** Units: **mg/Kg** Analysis Date: **7/22/2015 04:52 PM**
Client ID: Run ID: **HG1_150722A** SeqNo: **3382480** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1367	0.014	0.1205	0.01701	99.3	75-125	0.1365	0.201	35	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73851** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-73851-73851** Units: **mg/Kg** Analysis Date: **7/22/2015 02:04 PM**
Client ID: Run ID: **ICP2_150722A** SeqNo: **3382120** Prep Date: **7/22/2015** 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	0.0145	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS Sample ID: **LCS-73851-73851** Units: **mg/Kg** Analysis Date: **7/22/2015 02:09 PM**
Client ID: Run ID: **ICP2_150722A** SeqNo: **3382121** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.983	0.25	5	0	99.7	80-120	0			
Barium	5.767	0.25	5	0	115	80-120	0			
Cadmium	4.841	0.50	5	0	96.8	80-120	0			
Copper	5.25	0.50	5	0	105	80-120	0			
Lead	5.121	0.25	5	0	102	80-120	0			
Nickel	5.351	0.25	5	0	107	80-120	0			
Selenium	5.083	0.50	5	0	102	80-120	0			
Silver	5.053	0.25	5	0	101	80-120	0			
Zinc	4.683	0.50	5	0	93.7	80-120	0			

LCS Sample ID: **LCS-73851-73851** Units: **mg/Kg** Analysis Date: **7/22/2015 03:39 PM**
Client ID: Run ID: **ICP2_150722A** SeqNo: **3382638** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	5.828	0.25	5	0	117	80-120	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73851** Instrument ID **ICP2** Method: **SW846 6010C**

MS Sample ID: **1507960-16CMS** Units: **mg/Kg** Analysis Date: **7/22/2015 03:00 PM**
Client ID: Run ID: **ICP2_150722A** SeqNo: **3382631** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.43	0.39	7.788	5.529	101	75-125	0			
Barium	148.7	0.39	7.788	151	-29.2	75-125	0			SO
Cadmium	7.668	0.78	7.788	0.2074	95.8	75-125	0			
Chromium	23	0.39	7.788	13.11	127	75-125	0			S
Copper	27.21	0.78	7.788	20.06	91.8	75-125	0			
Lead	18.14	0.39	7.788	11.9	80.1	75-125	0			
Nickel	30.28	0.39	7.788	23.76	83.7	75-125	0			
Selenium	9.758	0.78	7.788	1.456	107	75-125	0			
Silver	8.092	0.39	7.788	-0.008343	104	75-125	0			
Zinc	52.38	0.78	7.788	42.04	133	75-125	0			SO

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73921** Instrument ID **ICP2** Method: **SW846 6010C**

DUP	Sample ID: **15071152-01ADUP**			Units: **mg/L**			Analysis Date: **7/28/2015 11:06 AM**			
Client ID: **GM 11-28 Cuttings**	Run ID: **ICP2_150728A**			SeqNo: **3390041**			Prep Date: **7/24/2015**		DF: **10**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	716.9	5.0	0	0	0	0-0	777.4	8.1		
Magnesium	0.7741	2.0	0	0	0	0-0	1.579	0		J
Sodium	2312	2.0	0	0	0	0-0	2432	5.04		

DUP	Sample ID: **15071152-01ADUP**			Units: **none**			Analysis Date: **7/28/2015**			
Client ID: **GM 11-28 Cuttings**	Run ID: **SAR_150728A**			SeqNo: **3390153**			Prep Date: **7/24/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	23.76	0.010	0	0	0		23.98	0.912	50	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73823** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-73823-73823** Units: **µg/Kg** Analysis Date: **7/22/2015 04:24 PM**
Client ID: Run ID: **SVMS8_150722A** SeqNo: **3383059** Prep Date: **7/22/2015** 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								
Surr: 2-Fluorobiphenyl	*1108*	0	*1667*	0	*66.5*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1263*	0	*1667*	0	*75.8*	*25-137*	0			
Surr: Nitrobenzene-d5	*983.3*	0	*1667*	0	*59*	*37-107*	0			

LCS Sample ID: **SLCSS1-73823-73823** Units: **µg/Kg** Analysis Date: **7/22/2015 04:44 PM**
Client ID: Run ID: **SVMS8_150722A** SeqNo: **3383060** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	589	6.7	666.7	0	88.3	45-110	0			
Anthracene	660	6.7	666.7	0	99	55-105	0			
Benzo(a)anthracene	633.3	6.7	666.7	0	95	50-110	0			
Benzo(a)pyrene	621	6.7	666.7	0	93.1	50-110	0			
Benzo(b)fluoranthene	601	6.7	666.7	0	90.1	45-115	0			
Benzo(g,h,i)perylene	777.3	6.7	666.7	0	117	40-125	0			
Benzo(k)fluoranthene	601.3	6.7	666.7	0	90.2	45-115	0			
Chrysene	620.7	6.7	666.7	0	93.1	55-110	0			
Dibenzo(a,h)anthracene	757.7	6.7	666.7	0	114	40-125	0			
Fluoranthene	722.3	6.7	666.7	0	108	55-115	0			
Fluorene	636.3	6.7	666.7	0	95.4	50-110	0			
Indeno(1,2,3-cd)pyrene	763	6.7	666.7	0	114	40-120	0			
Naphthalene	413.7	6.7	666.7	0	62	40-105	0			
Pyrene	569.3	6.7	666.7	0	85.4	45-125	0			
Surr: 2-Fluorobiphenyl	*1224*	0	*1667*	0	*73.5*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1239*	0	*1667*	0	*74.3*	*25-137*	0			
Surr: Nitrobenzene-d5	*1095*	0	*1667*	0	*65.7*	*37-107*	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73823** Instrument ID **SVMS8** Method: **SW846 8270D**

MS Sample ID: **15071063-02A MS** Units: **µg/Kg** Analysis Date: **7/22/2015 05:24 PM**
Client ID: Run ID: **SVMS8_150722A** SeqNo: **3383062** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1058	13	1290	0	82	45-110	0			
Anthracene	1326	13	1290	3.984	103	55-105	0			
Benzo(a)anthracene	1365	13	1290	8.965	105	50-110	0			
Benzo(a)pyrene	1319	13	1290	10.62	101	50-110	0			
Benzo(b)fluoranthene	1335	13	1290	12.62	103	45-115	0			
Benzo(g,h,i)perylene	1222	13	1290	8.965	94.1	40-125	0			
Benzo(k)fluoranthene	1230	13	1290	5.644	95	45-115	0			
Chrysene	1284	13	1290	7.305	99	55-110	0			
Dibenzo(a,h)anthracene	1108	13	1290	4.316	85.6	40-125	0			
Fluoranthene	1786	13	1290	19.92	137	55-115	0			S
Fluorene	1195	13	1290	0	92.6	50-110	0			
Indeno(1,2,3-cd)pyrene	1297	13	1290	12.29	99.6	40-120	0			
Naphthalene	532.6	13	1290	8.965	40.6	40-105	0			
Pyrene	1412	13	1290	8.965	109	45-125	0			
Surr: 2-Fluorobiphenyl	*2032*	0	*3224*	0	*63*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2350*	0	*3224*	0	*72.9*	*25-137*	0			
Surr: Nitrobenzene-d5	*1357*	0	*3224*	0	*42.1*	*37-107*	0			

MSD Sample ID: **15071063-02A MSD** Units: **µg/Kg** Analysis Date: **7/22/2015 05:44 PM**
Client ID: Run ID: **SVMS8_150722A** SeqNo: **3383063** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	978.3	13	1250	0	78.2	45-110	1058	7.84	30	
Anthracene	1266	13	1250	3.984	101	55-105	1326	4.67	30	
Benzo(a)anthracene	1298	13	1250	8.965	103	50-110	1365	5.05	30	
Benzo(a)pyrene	1253	13	1250	10.62	99.3	50-110	1319	5.12	30	
Benzo(b)fluoranthene	1200	13	1250	12.62	95	45-115	1335	10.7	30	
Benzo(g,h,i)perylene	1349	13	1250	8.965	107	40-125	1222	9.89	30	
Benzo(k)fluoranthene	1098	13	1250	5.644	87.3	45-115	1230	11.4	30	
Chrysene	1228	13	1250	7.305	97.7	55-110	1284	4.46	30	
Dibenzo(a,h)anthracene	1326	13	1250	4.316	106	40-125	1108	18	30	
Fluoranthene	1903	13	1250	19.92	151	55-115	1786	6.37	30	S
Fluorene	1193	13	1250	0	95.4	50-110	1195	0.173	30	
Indeno(1,2,3-cd)pyrene	1357	13	1250	12.29	108	40-120	1297	4.51	30	
Naphthalene	507.6	13	1250	8.965	39.9	40-105	532.6	4.81	30	S
Pyrene	1205	13	1250	8.965	95.7	45-125	1412	15.8	30	
Surr: 2-Fluorobiphenyl	*1738*	0	*3126*	0	*55.6*	*12-100*	2032	*15.6*	*40*	
Surr: 4-Terphenyl-d14	*2025*	0	*3126*	0	*64.8*	*25-137*	2350	*14.9*	*40*	
Surr: Nitrobenzene-d5	*1280*	0	*3126*	0	*40.9*	*37-107*	1357	*5.84*	*40*	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73840** Instrument ID **VMS5** Method: **SW8260B**

MBLK Sample ID: **MBLK-73840-73840** Units: **µg/Kg** Analysis Date: **7/22/2015 05:09 PM**
Client ID: Run ID: **VMS5_150722A** SeqNo: **3383733** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*1036*	0	*1000*	0	*104*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*927.5*	0	*1000*	0	*92.8*	*70-130*	0			
Surr: Dibromofluoromethane	*1022*	0	*1000*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*1038*	0	*1000*	0	*104*	*70-130*	0			

LCS Sample ID: **LCS-73840-73840** Units: **µg/Kg** Analysis Date: **7/22/2015 03:26 PM**
Client ID: Run ID: **VMS5_150722A** SeqNo: **3383730** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1105	30	1000	0	110	75-125	0			
Ethylbenzene	1106	30	1000	0	111	75-125	0			
m,p-Xylene	2239	60	2000	0	112	80-125	0			
o-Xylene	1073	30	1000	0	107	75-125	0			
Toluene	1070	30	1000	0	107	70-125	0			
Xylenes, Total	3312	90	3000	0	110	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1053*	0	*1000*	0	*105*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*989.5*	0	*1000*	0	*99*	*70-130*	0			
Surr: Dibromofluoromethane	*1032*	0	*1000*	0	*103*	*70-130*	0			
Surr: Toluene-d8	*1006*	0	*1000*	0	*101*	*70-130*	0			

MS Sample ID: **15071017-01A MS** Units: **µg/Kg** Analysis Date: **7/25/2015 04:03 PM**
Client ID: Run ID: **VMS6_150724B** SeqNo: **3387365** Prep Date: **7/22/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	10720	300	10000	0	107	75-125	0			
Ethylbenzene	10350	300	10000	0	104	75-125	0			
m,p-Xylene	20750	600	20000	0	104	80-125	0			
o-Xylene	9995	300	10000	0	100	75-125	0			
Toluene	10240	300	10000	0	102	70-125	0			
Xylenes, Total	30740	900	30000	0	102	75-125	0			
Surr: 1,2-Dichloroethane-d4	*9850*	0	*10000*	0	*98.5*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*10040*	0	*10000*	0	*100*	*70-130*	0			
Surr: Dibromofluoromethane	*9950*	0	*10000*	0	*99.5*	*70-130*	0			
Surr: Toluene-d8	*9775*	0	*10000*	0	*97.8*	*70-130*	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73840** Instrument ID **VMS5** Method: **SW8260B**

MSD Sample ID: **15071017-01A MSD** Units: **µg/Kg** Analysis Date: **7/25/2015 04:29 PM**
Client ID: Run ID: **VMS6_150724B** SeqNo: **3387366** Prep Date: **7/22/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	11030	300	10000	0	110	75-125	10720	2.85	30	
Ethylbenzene	10920	300	10000	0	109	75-125	10350	5.31	30	
m,p-Xylene	21840	600	20000	0	109	80-125	20750	5.12	30	
o-Xylene	10760	300	10000	0	108	75-125	9995	7.37	30	
Toluene	10780	300	10000	0	108	70-125	10240	5.14	30	
Xylenes, Total	32600	900	30000	0	109	75-125	30740	5.86	30	
Surr: 1,2-Dichloroethane-d4	*9545*	0	*10000*	0	*95.4*	*70-130*	9850	*3.15*	*30*	
Surr: 4-Bromofluorobenzene	*9880*	0	*10000*	0	*98.8*	*70-130*	10040	*1.61*	*30*	
Surr: Dibromofluoromethane	*9670*	0	*10000*	0	*96.7*	*70-130*	9950	*2.85*	*30*	
Surr: Toluene-d8	*9755*	0	*10000*	0	*97.6*	*70-130*	9775	*0.205*	*30*	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73871** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-73871-73871** Units: **mg/Kg** Analysis Date: **7/23/2015 09:30 AM**
Client ID: Run ID: **WETCHEM_150723A** SeqNo: **3383385** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.32	1.0								J

LCS Sample ID: **LCS-73871-73871** Units: **mg/Kg** Analysis Date: **7/23/2015 09:30 AM**
Client ID: Run ID: **WETCHEM_150723A** SeqNo: **3383384** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.43	1.0	5	0	88.6	80-120	0			

MS Sample ID: **15071152-01A MS** Units: **mg/Kg** Analysis Date: **7/23/2015 09:30 AM**
Client ID: **GM 11-28 Cuttings** Run ID: **WETCHEM_150723A** SeqNo: **3383380** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2.058	0.97	4.854	0.4369	33.4	75-125	0			S

MS Sample ID: **15071152-01A MSI** Units: **mg/Kg** Analysis Date: **7/23/2015 09:30 AM**
Client ID: **GM 11-28 Cuttings** Run ID: **WETCHEM_150723A** SeqNo: **3383382** Prep Date: **7/22/2015** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2293	99	2629	0.4369	87.2	75-125	0			

MSD Sample ID: **15071152-01A MSD** Units: **mg/Kg** Analysis Date: **7/23/2015 09:30 AM**
Client ID: **GM 11-28 Cuttings** Run ID: **WETCHEM_150723A** SeqNo: **3383381** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2.078	0.98	4.902	0.4369	33.5	75-125	2.058	0.976	20	S

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73877** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-73877-73877** Units: **s.u.** Analysis Date: **7/22/2015 02:00 PM**
Client ID: Run ID: **WETCHEM_150722L** SeqNo: **3382081** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.9	0	4	0	97.5	90-110	0			

DUP Sample ID: **15071152-01A DUP** Units: **s.u.** Analysis Date: **7/22/2015 02:00 PM**
Client ID: **GM 11-28 Cuttings** Run ID: **WETCHEM_150722L** SeqNo: **3382083** Prep Date: **7/22/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	11.23	0	0	0	0	0-0	11.17	0.536	20	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **73921** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **15071152-01A DUP** Units: **mmhos/cm @25°** Analysis Date: **7/24/2015 07:30 PM**

Client ID: **GM 11-28 Cuttings** Run ID: **WETCHEM_150724L** SeqNo: **3385994** Prep Date: **7/24/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	14.9	0.050	0	0	0		15.25	2.32	50	

The following samples were analyzed in this batch: 15071152-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15071152
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **R168166** Instrument ID **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R168166** Units: **% of sample** Analysis Date: **7/22/2015 09:45 AM**
Client ID: Run ID: **MOIST_150722A** SeqNo: **3382396** 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-R168166** Units: **% of sample** Analysis Date: **7/22/2015 09:45 AM**
Client ID: Run ID: **MOIST_150722A** SeqNo: **3382394** 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: **15071152-01A DUP** Units: **% of sample** Analysis Date: **7/22/2015 09:45 AM**
Client ID: **GM 11-28 Cuttings** Run ID: **MOIST_150722A** SeqNo: **3382391** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.07	0.050	0	0	0		17.62	17.8	20	

The following samples were analyzed in this batch: 15071152-01A

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

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER # 1507152

		SAMPLER		DATE	7/20/2015
PROJECT NAME	GM 11-28 cuttings	SITE ID	GM 11-28 cuttings	TURNAROUND	24 hrs
PROJECT No.		EDD FORMAT			
		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	Karolina.blaney@wpxenergy.com	E-MAIL	Karolina.blaney@wpxenergy.com, leo.braun@wpxenergy.com		

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

910-1

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	910-1
1	GM 11-28 cuttings	S	7/20/2015	15:00	1		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:

3.2°C

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-Na2S2O3 6-Other 7-4 degrees C 8-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Karolina Blaney	7/20/2015	16:00:00 PM
RECEIVED BY			7/21	1030
RELINQUISHED BY			7/20/15	1650
RECEIVED BY		Diane E Shea	7/22/15	0815
RELINQUISHED BY				
RECEIVED BY				

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WPX** Date/Time Received: **22-Jul-15 08:15**

Work Order: **15071152** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 22-Jul-15 (Date) Reviewed by: Chad Whelton (eSignature) 23-Jul-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):	3.2 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/22/2015 8:21:23 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:

26-Aug-2015

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

Re: **GM 11-28 Cuttings** Work Order: **15081261**

Dear Karolina,

ALS Environmental received 1 sample on 25-Aug-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 10.

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

Sincerely,

Electronically approved by: Les Arnold

Les Arnold
Senior Project Manager

Certificate No: MN 532786

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

ALS Group USA, Corp

Date: 26-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: **15081261**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
15081261-01	GM 11-28 Cuttings	Soil		8/24/2015 14:30	8/25/2015 10:00	☐

ALS Group USA, Corp

Date: 26-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
WorkOrder: **15081261**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight

ALS Group USA, Corp

Date: 26-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: 15081261

Case Narrative

Samples for the above noted Work Order were received on 08/25/2015. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Sample Receiving:
No deviations or anomalies were noted.

Volatile Organics:
No deviations or anomalies were noted.

Extractable Organics:
No deviations or anomalies were noted.

Metals:
No deviations or anomalies were noted.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group USA, Corp

Date: *26-Aug-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Cuttings
Work Order: 15081261
Sample ID: GM 11-28 Cuttings
Lab ID: 15081261-01
Collection Date: 8/24/2015 02:30 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 8/25/15	Analyst: **BG**
Benzene	**0.091**		**0.030**	**mg/Kg-dry**	1	8/25/2015 02:33 PM
Surr: 1,2-Dichloroethane-d4	*102*		*70-130*	*%REC*	1	8/25/2015 02:33 PM
Surr: 4-Bromofluorobenzene	*100*		*70-130*	*%REC*	1	8/25/2015 02:33 PM
Surr: Dibromofluoromethane	*97.8*		*70-130*	*%REC*	1	8/25/2015 02:33 PM
Surr: Toluene-d8	*99.9*		*70-130*	*%REC*	1	8/25/2015 02:33 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**0.69**		**0.050**	**% of sample**	1	8/25/2015 04:12 PM

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

ALS Group USA, Corp

Date: 26-Aug-15

Client: WPX Energy Rocky Mountain, LLC

Work Order: 15081261

Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **75200** Instrument ID **VMS5** Method: **SW8260B**

MBLK Sample ID: **MBLK-75200-75200** Units: **µg/Kg** Analysis Date: **8/25/2015 12:26 PM**

Client ID: Run ID: **VMS5_150825A** SeqNo: **3430765** Prep Date: **8/25/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Surr: 1,2-Dichloroethane-d4	*1014*	0	*1000*	0	*101*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*989.5*	0	*1000*	0	*99*	*70-130*	0			
Surr: Dibromofluoromethane	*987*	0	*1000*	0	*98.7*	*70-130*	0			
Surr: Toluene-d8	*989*	0	*1000*	0	*98.9*	*70-130*	0			

LCS Sample ID: **LCS-75200-75200** Units: **µg/Kg** Analysis Date: **8/25/2015 11:10 AM**

Client ID: Run ID: **VMS5_150825A** SeqNo: **3430764** Prep Date: **8/25/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1082	30	1000	0	108	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1009*	0	*1000*	0	*101*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1006*	0	*1000*	0	*101*	*70-130*	0			
Surr: Dibromofluoromethane	*984.5*	0	*1000*	0	*98.4*	*70-130*	0			
Surr: Toluene-d8	*997.5*	0	*1000*	0	*99.8*	*70-130*	0			

MS Sample ID: **15081294-05A MS** Units: **µg/Kg** Analysis Date: **8/26/2015 10:57 AM**

Client ID: Run ID: **VMS9_150825B** SeqNo: **3432172** Prep Date: **8/25/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1014	30	1000	0	101	75-125	0			
Surr: 1,2-Dichloroethane-d4	*973*	0	*1000*	0	*97.3*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1082*	0	*1000*	0	*108*	*70-130*	0			
Surr: Dibromofluoromethane	*954*	0	*1000*	0	*95.4*	*70-130*	0			
Surr: Toluene-d8	*986*	0	*1000*	0	*98.6*	*70-130*	0			

MSD Sample ID: **15081294-05A MSD** Units: **µg/Kg** Analysis Date: **8/26/2015 11:23 AM**

Client ID: Run ID: **VMS9_150825B** SeqNo: **3432182** Prep Date: **8/25/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1044	30	1000	0	104	75-125	1014	2.96	30	
Surr: 1,2-Dichloroethane-d4	*967.5*	0	*1000*	0	*96.8*	*70-130*	973	*0.567*	*30*	
Surr: 4-Bromofluorobenzene	*1038*	0	*1000*	0	*104*	*70-130*	1082	*4.25*	*30*	
Surr: Dibromofluoromethane	*964*	0	*1000*	0	*96.4*	*70-130*	954	*1.04*	*30*	
Surr: Toluene-d8	*998*	0	*1000*	0	*99.8*	*70-130*	986	*1.21*	*30*	

The following samples were analyzed in this batch: 15081261-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15081261
Project: GM 11-28 Cuttings

QC BATCH REPORT

Batch ID: **R170336** Instrument ID **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R170336** Units: **% of sample** Analysis Date: **8/25/2015 04:12 PM**
Client ID: Run ID: **MOIST_150825A** SeqNo: **3431887** 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-R170336** Units: **% of sample** Analysis Date: **8/25/2015 04:12 PM**
Client ID: Run ID: **MOIST_150825A** SeqNo: **3431883** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **15081212-08B DUP** Units: **% of sample** Analysis Date: **8/25/2015 04:12 PM**
Client ID: Run ID: **MOIST_150825A** SeqNo: **3431846** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	13.97	0.050	0	0	0		14.71	5.16	20	

DUP Sample ID: **15081276-02A DUP** Units: **% of sample** Analysis Date: **8/25/2015 04:12 PM**
Client ID: Run ID: **MOIST_150825A** SeqNo: **3431879** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.64	0.050	0	0	0		6.22	6.53	20	

The following samples were analyzed in this batch: 15081261-01A

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

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

		SAMPLER		DATE	8/24/2015	WORKORDER #	1508126 1
PROJECT NAME	GM 11-28 cuttings	SITE ID	GM 11-28 cuttings	TURNAROUND	24 hrs	PAGE	1 of 1
PROJECT No.		EDD FORMAT				DISPOSAL	By Lab or Return to Client
		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	Karolina.blaney@wpxenergy.com;	E-MAIL	Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Benzene
1	GM 11-28 cuttings	S	8/24/2015	14:30	1		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:	3.4 C

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	Karolina Blaney	8/24/2015	16:00:00 PM
RECEIVED BY			8-24-15	1000
RELINQUISHED BY			8-24-15	1600
RECEIVED BY		Keith Wheeler	8/25/15	1000
RELINQUISHED BY				
RECEIVED BY				

FedEx Ship Manager - Print Your Label(s)

8/24/2015

ORIGIN ID:RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL PARACHUTE
PARACHUTE SERVICE CENTER
127 EAST 1ST. ST
PARACHUTE, CO 81635
UNITED STATES US

SHIP DATE: 24AUG15
ACTWGT: 42.00 LB
CAD: 2264840/INET3670
DIMS: 16x16x14 IN

BILL SENDER

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

HOLLAND MI 49424
(616) 399-6070 REF: 082415-1
INV:
PO: PARACHUTE DEPT:

539J1/FECA31D0

FedEx Express

REL#
3785346

1 of 2

TRK# 0201 **7743 5423 4974**

MASTER

XX HLMA

TUE - 25 AUG 10:30A
PRIORITY OVERNIGHT

49424
MI-US **GRR**

After printing this label:
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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WPX** Date/Time Received: **25-Aug-15 10:00**

Work Order: **15081261** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 25-Aug-15 (Date) Reviewed by: Lee Arnold (eSignature) 25-Aug-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):	3.4/3.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/25/2015 10:24:12 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:

17-Aug-2015

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

Re: **GM 11-28 Backgrounds** Work Order: **1508443**

Dear Karolina,

ALS Environmental received 5 samples on 08-Aug-2015 10:30 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 14.

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

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

ALS Group USA, Corp

Date: 17-Aug-15

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Backgrounds
Work Order: **1508443**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1508443-01	GM 11-28-B-1	Soil		8/7/2015 12:00	8/8/2015 10:30	☐
1508443-02	GM 11-28-B-2	Soil		8/7/2015 12:05	8/8/2015 10:30	☐
1508443-03	GM 11-28-B-3	Soil		8/7/2015 12:10	8/8/2015 10:30	☐
1508443-04	GM 11-28-B-4	Soil		8/7/2015 12:15	8/8/2015 10:30	☐
1508443-05	GM 11-28-B-5	Soil		8/7/2015 12:20	8/8/2015 10:30	☐

ALS Group USA, Corp

Date: 17-Aug-15

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
% 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: *17-Aug-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Backgrounds
Work Order: 1508443
Sample ID: GM 11-28-B-1
Lab ID: 1508443-01
Collection Date: 8/7/2015 12:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 8/10/15	Analyst: **JEC**
Arsenic	**28**		**0.88**	**mg/Kg-dry**	2	8/13/2015 04:44 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**8.5**		**0.050**	**% of sample**	1	8/13/2015 04:38 PM

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

ALS Group USA, Corp

Date: *17-Aug-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Backgrounds
Work Order: 1508443
Sample ID: GM 11-28-B-2
Lab ID: 1508443-02
Collection Date: 8/7/2015 12:05 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 8/10/15	Analyst: **JEC**
Arsenic	**24**		**0.40**	**mg/Kg-dry**	1	8/12/2015 04:46 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**9.6**		**0.050**	**% of sample**	1	8/13/2015 04:38 PM

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

ALS Group USA, Corp

Date: *17-Aug-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Backgrounds
Work Order: 1508443
Sample ID: GM 11-28-B-3
Lab ID: 1508443-03
Collection Date: 8/7/2015 12:10 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 8/10/15	Analyst: **JEC**
Arsenic	**38**		**0.77**	**mg/Kg-dry**	2	8/13/2015 04:50 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**1.1**		**0.050**	**% of sample**	1	8/13/2015 04:38 PM

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

ALS Group USA, Corp

Date: *17-Aug-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Backgrounds
Work Order: 1508443
Sample ID: GM 11-28-B-4
Lab ID: 1508443-04
Collection Date: 8/7/2015 12:15 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 8/10/15	Analyst: **JEC**
Arsenic	**11**		**0.42**	**mg/Kg-dry**	1	8/10/2015 02:22 PM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**3.2**		**0.050**	**% of sample**	1	8/13/2015 04:38 PM

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

ALS Group USA, Corp

Date: *17-Aug-15*

Client: WPX Energy Rocky Mountain, LLC
Project: GM 11-28 Backgrounds
Work Order: 1508443
Sample ID: GM 11-28-B-5
Lab ID: 1508443-05
Collection Date: 8/7/2015 12:20 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 8/10/15	Analyst: **JEC**
Arsenic	**7.2**		**0.40**	**mg/Kg-dry**	1	8/12/2015 04:58 PM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 8/12/15	Analyst: **JEC**
Calcium	**460**		**5.0**	**mg/L**	10	8/14/2015 11:53 AM
Magnesium	**20**		**2.0**	**mg/L**	10	8/14/2015 11:53 AM
Sodium	**1,300**		**2.0**	**mg/L**	10	8/14/2015 11:53 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 8/12/15	Analyst: **JEC**
Sodium Adsorption Ratio	**17**		**0.010**	**none**	1	8/14/2015
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 8/12/15	Analyst: **JB**
Electrical Conductivity @ Saturation	**9.4**		**0.050**	**mmhos/cm @2**	10	8/12/2015 10:00 AM
MOISTURE			**E160.3M**			Analyst: **EVB**
Moisture	**2.1**		**0.050**	**% of sample**	1	8/13/2015 04:38 PM
PH			**SW9045D**		Prep: EXTRACT / 8/12/15	Analyst: **JB**
pH	**8.2**			**s.u.**	1	8/12/2015 01:00 PM

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

Client: WPX Energy Rocky Mountain, LLC

QC BATCH REPORT

Work Order: 1508443

Project: GM 11-28 Backgrounds

Batch ID: **74606** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-74606-74606** Units: **mg/Kg** Analysis Date: **8/10/2015 02:05 PM**

Client ID: Run ID: **ICP2_150810A** SeqNo: **3410200** Prep Date: **8/10/2015** 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-74606-74606** Units: **mg/Kg** Analysis Date: **8/10/2015 02:11 PM**

Client ID: Run ID: **ICP2_150810A** SeqNo: **3410201** Prep Date: **8/10/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.244	0.25	5	0	105	80-120	0			

MS Sample ID: **1508443-04AMS** Units: **mg/Kg** Analysis Date: **8/10/2015 02:28 PM**

Client ID: **GM 11-28-B-4** Run ID: **ICP2_150810A** SeqNo: **3410204** Prep Date: **8/10/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	20.3	0.41	8.251	10.46	119	75-125	0			

MSD Sample ID: **1508443-04AMSD** Units: **mg/Kg** Analysis Date: **8/10/2015 02:33 PM**

Client ID: **GM 11-28-B-4** Run ID: **ICP2_150810A** SeqNo: **3410205** Prep Date: **8/10/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	20.04	0.41	8.251	10.46	116	75-125	20.3	1.28	20	

The following samples were analyzed in this batch:

1508443-01A	1508443-02A	1508443-03A
1508443-04A	1508443-05A	

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508443
Project: GM 11-28 Backgrounds

QC BATCH REPORT

Batch ID: **74653** Instrument ID **ICP2** Method: **SW846 6010C**

DUP Sample ID: **1508441-01ADUP** Units: **mg/L** Analysis Date: **8/14/2015 11:47 AM**
Client ID: Run ID: **ICP2_150814A** SeqNo: **3417379** Prep Date: **8/12/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	191.5	5.0	0	0	0	0-0	195.6	2.1		
Magnesium	36.96	2.0	0	0	0	0-0	36.09	2.38		
Sodium	734.4	2.0	0	0	0	0-0	759.3	3.33		

DUP Sample ID: **1508441-01ADUP** Units: **none** Analysis Date: **8/14/2015**
Client ID: Run ID: **SAR_150814A** SeqNo: **3417505** Prep Date: **8/12/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	12.73	0.010	0	0	0		13.09	2.82	50	

The following samples were analyzed in this batch: 1508443-05B

Batch ID: **74653** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **1508441-01A DUP** Units: **mmhos/cm @25°** Analysis Date: **8/12/2015 10:00 AM**
Client ID: Run ID: **WETCHEM_150812B** SeqNo: **3413740** Prep Date: **8/12/2015** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	5.73	0.050	0	0	0		5.63	1.76	50	

The following samples were analyzed in this batch: 1508443-05B

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508443
Project: GM 11-28 Backgrounds

QC BATCH REPORT

Batch ID: **74708** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-74708-74708** Units: **s.u.** Analysis Date: **8/12/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150812H** SeqNo: **3414137** Prep Date: **8/12/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.95	0	4	0	98.8	90-110	0			

DUP Sample ID: **1508361-01A DUP** Units: **s.u.** Analysis Date: **8/12/2015 01:00 PM**
Client ID: Run ID: **WETCHEM_150812H** SeqNo: **3414139** Prep Date: **8/12/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.25	0	0	0	0	0-0	8.13	1.47	20	

DUP Sample ID: **1508443-05A DUP** Units: **s.u.** Analysis Date: **8/12/2015 01:00 PM**
Client ID: **GM 11-28-B-5** Run ID: **WETCHEM_150812H** SeqNo: **3414147** Prep Date: **8/12/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.13	0	0	0	0	0-0	8.19	0.735	20	

The following samples were analyzed in this batch: 1508443-05A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 1508443
Project: GM 11-28 Backgrounds

QC BATCH REPORT

Batch ID: **R169644** Instrument ID **MOIST** Method: **E160.3M**

MBLK Sample ID: **WBLKS-R169644** Units: **% of sample** Analysis Date: **8/13/2015 04:38 PM**
Client ID: Run ID: **MOIST_150813A** SeqNo: **3417574** 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-R169644** Units: **% of sample** Analysis Date: **8/13/2015 04:38 PM**
Client ID: Run ID: **MOIST_150813A** SeqNo: **3417573** 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: **1508443-01A DUP** Units: **% of sample** Analysis Date: **8/13/2015 04:38 PM**
Client ID: **GM 11-28-B-1** Run ID: **MOIST_150813A** SeqNo: **3417552** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.43	0.050	0	0	0		8.49	0.709	20	

DUP Sample ID: **1508460-06B DUP** Units: **% of sample** Analysis Date: **8/13/2015 04:38 PM**
Client ID: Run ID: **MOIST_150813A** SeqNo: **3417565** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	14.21	0.050	0	0	0		13.44	5.57	20	

The following samples were analyzed in this batch:

1508443-01A	1508443-02A	1508443-03A
1508443-04A	1508443-05A	

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

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER #	1508443

		SAMPLER		DATE	8/7/2015	PAGE	1 of 1
PROJECT NAME	GM 11-28 backgrounds	SITE ID	GM 11-2 batch 3	TURNAROUND	5 day	DISPOSAL	By Lab or Return to Client
PROJECT No.		EDD FORMAT					
		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	Karolina.blaney@wpxenergy.com;	E-MAIL	Karolina.blaney@wpxenergy.com; leo.braun@wpxenergy.com				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	arsenic	pH, SAR, EC
1	GM 11-28-B-1	S	8/7/2015	12:00	1		x	x	
2	GM 11-28-B-2	S	8/7/2015	12:05	1		x	x	
3	GM 11-28-B-3	S	8/7/2015	12:10	1		x	x	
4	GM 11-28-B-4	S	8/7/2015	12:15	1		x	x	
5	GM 11-28-B-5	S	8/7/2015	12:20	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)	
4, 4°C		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	Karolina Blaney	8/7/2015	16:00:00 PM
RECEIVED BY			8-7-15	1600
RELINQUISHED BY			8-7-15	1600
RECEIVED BY		KEITH WIERENGA	8/8/15	1030
RELINQUISHED BY				
RECEIVED BY				

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **WPX** Date/Time Received: **08-Aug-15 10:30**

Work Order: **1508443** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 08-Aug-15 (Date) Reviewed by: Chad Whelton (eSignature) 10-Aug-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):	4.4/4.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/8/2015 10:52:31 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: