Western Water & Land, Inc.

October 28, 2014

Mr. Michael Gardner
Environmental Manager
WPX Energy Rocky Mountain LLC
1058 County Road 215
Parachute, Colorado 81635

RE: RWF 11-35 Drill Pad Baseline Results Report, June and July 2014 Event

Dear Mr. Gardner,

Western Water & Land, Inc. (WWL) has completed the first subsequent baseline water quality sampling for the WPX Energy Rocky Mountain LLC (WPX) RWF 11-35 Drill Pad in accordance with Colorado Oil and Gas Conservation Commission (COGCC) Rule 609. The RWF 11-35 Drill Pad is located in the NW¼, NW¼, Section 35, Township 6 South, Range 94 West, 6th PM.

Baseline sampling for Drill Pad RWF 11-35 was initially implemented under the Colorado Oil and Gas Association (COGA) Voluntary Baseline Groundwater Quality Sampling Program. COGCC Rule 609 became effective in May, 2013 and effectively replaced the COGA voluntary program. The analytical schedule under the COGA program was similar to the schedule required under Rule 609.

Under the COGA Program, water samples were collected from the two closest groundwater features with reasonable access, located within a 0.5-mile radius of the referenced drill pad (RWF 11-35). Groundwater features include permitted and registered groundwater wells and groundwater seeps and springs. The initial groundwater feature locations were selected by Olsson Associates and initial baseline sampling was performed in April and June 2013.

The COGA Program called for one subsequent groundwater sampling event to be conducted within one year of the oil and gas well completion. To be consistent with Rule 609, two subsequent sampling events are required. The first subsequent sampling event was performed by WWL in June and July 2014. WWL sampled in accordance with the analytic schedule and sampling procedure requirements associated with Rule 609. The analytic schedule for Rule 609 includes all of the analyses required under the COGA Program with the additional analyses of Gasoline Range Organics (TPH volatiles), Diesel Range Organics (TPH extractables), fluoride, barium, and bacteria.

This report summarizes the selection of sampling locations and associated field sampling activities, and the quality control and water chemistry results.

FIELD SAMPLING LOCATIONS AND ACTIVITIES

Two water wells were selected by Olsson for the COGA voluntary groundwater sampling:

- Water Well Permit No. 61750-FR
    - Water Well Permit Held by: Rob and Karin Stokvis

  - Landowner: Rob and Karin Stokvis

- Water Well Permit No. 61751-F
  - Water Well Permit Held by: Daryl and Victoria Cox
  - Landowner: Daryl and Victoria Cox

Access to the sampling sites was granted through existing agreements between WPX and the landowners.

Three samples were collected for the RWF 11-35 Drill Pad as shown in the table below.

Sampling Date	Well Identification or Permit No.	Sample Identification	COGCC Facility ID	Comment
6/25/2014	61750-FR	Stokvis 61751-FR	752940	
7/8/2014	61751-F	Cox 61751-F	708042	
7/8/2014	61751-F	Roberts 27856	708042	Field Duplicate

Landowner Ms. Karin Stokvis was present when sample Stokvis 61751-FR was collected. The sample was collected from a hose bib fitting on the north side of the Stokvis residence. There was no water treatment system or storage tank in use upstream of the sampling point. The well is located about 175 feet southeast of the sampling point.

WPX Land Representative Mr. Gary Reed and resident Mr. Daryl Cox were present when sample Cox 61751-F and Roberts 27856 (field duplicate) were collected. The samples were collected from a hose bib fitting on the south side of the Cox residence. This well is plumbed into two 1,700 gallon cisterns which are plumbed to various locations on the property. The well is located on Mr. Daryl Cox's property and is shared between two residences. Due to the presence of the cisterns, three casing volumes were not purged prior to sampling. Mr. Daryl Cox had been watering his yard and plants prior to our arrival; parameters were stabilized according to COGCC Model Sampling and Analysis Plan criteria. There was no water treatment system in use upstream of the sampling point.

See Figure 1 for the sample location. Photographs of the sampling site are shown in Attachment A. Field monitoring forms are shown in Attachment B.

All sampling procedures followed protocols in the COGCC Model Sampling and Analysis Plan (SAP) as adapted and modified by WPX. Sampling Method 1 for wells with pumps and effervescent samples, described in Version 1 of the COGCC Model SAP, was used to collect the sample.

The sample was relinquished to the analytical laboratory's (Accutest Mountain States [AMS], Wheat Ridge, Colorado) courier in Rifle, Colorado, who carefully packs them in coolers with ice for preservation and ships them to the analytical laboratory by way of private overnight courier.

QUALITY CONTROL SUMMARY

WWL conducted a Tier 1 data validation quality control evaluation of the received analytical laboratory data report. Attachment C presents detailed information on the quality control evaluation for field sampling and laboratory analysis associated with the collected samples.

AMS reported that all analytes were within control criteria for matrix spikes, matrix spike duplicates, duplicate relative percent difference, and laboratory control samples. AMS did not assign qualifiers to the analytical results based on the quality control summary.

AMS Laboratory assigned analytical results that were undetected with a "U" qualifier and a "J" qualifier to results that were detected above the method detection limit but below the reporting limit to indicate the result value is estimated. WWL assigned an "H" qualifier to results that exceeded analytical holding times to indicate the result value is estimated. See Attachment C and Attachment D for individual parameters that were qualified.

ANALYTICAL RESULTS

Laboratory analysis was performed by Accutest Mountain States Laboratory (AMS), in Wheat Ridge, Colorado in accordance with the analytical schedule described in Rule 609 with some deviations in analytical methods. The analytical methods used are considered valid and provide quality results. The analytical results are summarized in Attachment D; the data are qualified as indicated. The full laboratory analytical report is presented in Attachment E.

No analyzed hydrocarbon constituents (diesel range organics, gasoline range organics, benzene, toluene, ethylbenzene, and xylenes) were detected in the sampled water sources for the June and July 2014 sampling event. Samples Cox 61751-F and Roberts 27856 had a detection of methane at 0.0017 mg/L and 0.00087 mg/L, respectively. No significant differences in common ion and metal ion concentrations were observed between the initial and first subsequent sampling event results.

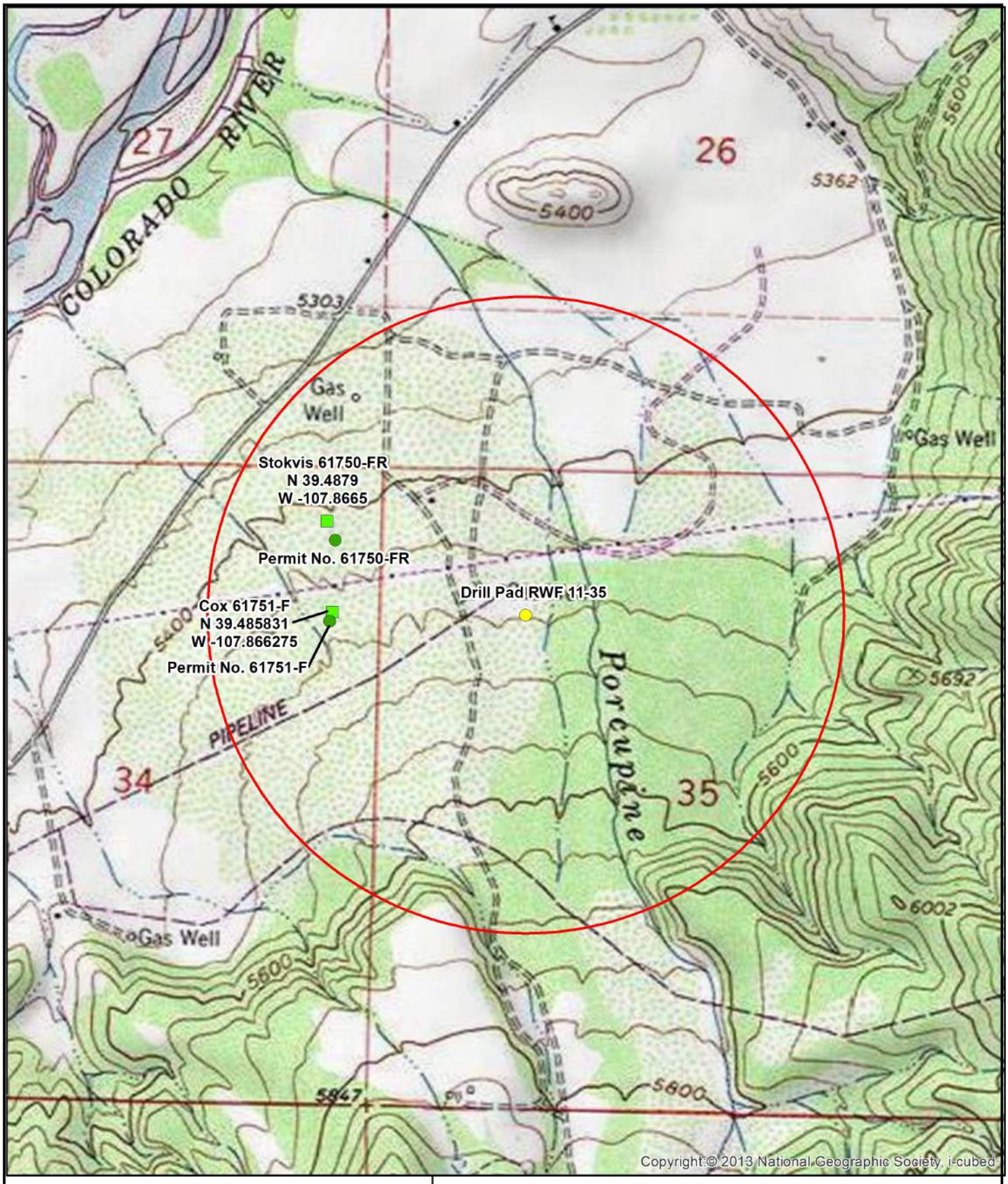
If you have any questions or concerns, please contact me at (970) 242-0170.

Sincerely,

Bruce D. Smith
Principal Hydrogeologist
WESTERN WATER & LAND, INC.

Attachments

Figure 1- Sampling Location Map
Attachment A - Photographs
Attachment B - Field Monitoring Forms
Attachment C - Quality Control Evaluation
Attachment D - Summary of Analytical Results
Attachment E - Laboratory Analytical Summary Report



Legend

- Sample Location(s)
- Decree
- Constructed well
- Drill Pad RWF 11-35
- 0.5-Mile Radius Evaluation Area

N

Feet

1,000 500 0 1,000

1:13,000

Figure 1: RWF 11-35 Sample Location Map
COGA Voluntary First Subsequent Sampling
NW1/4, NW1/4, S35, T6S, R94W, 6 PM

Garfield County, Colorado

WPX Energy Rocky Mountain LLC

Basemap Source: Bing Maps and Esri ArcGIS Online

Western Water & Land, Inc.
Applications in Earth Science

ATTACHMENT A

Photographs

Photo 1. Stokvis Well Sampling Location (Stokvis 61750-FR)

Photo 2. Stokvis Well Location (Stokvis 61750-FR)

Photo 3. Cox Well Sampling Location (Cox 61751-F)

Photo 4. Cox Well Location (Cox 61751-F)

ATTACHMENT B

Field Monitoring Forms

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX BWQ	Sample Purpose:	COGA 5061
Site Name (Well Pad):	RWF 11-35	Site API:	05-045-21843
Station Name:	Daryl & Victoria Cox Well	Sample Date:	7/8/14
COGCC Facility ID:	708042	Start Time:	0900
Field Sample ID:	Cox 61751-F	End Time:	1100
Landowner Name:	Daryl + Victoria Cox	Sample Time:	1020
Landowner Address:	4890 CR 329, Rifle, CO	Sample Team:	SLK, NWS, RMK
Water Right/Well Owner:	Daryl + Victoria Cox	Observer:	SLK, NWS
Water Right/Well Permit:	61751-F	Lead Signature/Date:	J. Kipp 7/9/14
Receipt Number:	9509493		

Station Information					
Station Description:	Hose bib by dryer vent, front of house				
Approximate Distance to Well Pad:	0.30 miles				
Station Type:	(Well) / Spring / Seep / Other:		Water Use:	(Domestic) / Irrigation /	
Sampling Location:	Kitchen Tap / Pipe / Well House / (Hose bib) / Other:				
GPS Location:	Zone	x 107.86627	y 39.48583	z 5479	
Total Depth (ft):	204	Static Depth to Water (ft):	Q	Well diameter (in):	Q
Purge Volume (gal)	Q	Total Volume Purged (gal)	69.3		

Weather Conditions			
Sky:	(Clear) / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F):	90
Precipitation:	(None) / Light / Moderate / Heavy	Precip Type:	(None) / Rain / Sleet / Hail / Snow
Wind:	(Calm) / Light / Mod / Strong	Wind Speed/Direction:	Q

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	17.47	1100		YSI 556	Container	
pH	s.u.	7.33					
Sp. Conductivity	uS/cm	960					
Conductivity	uS/cm	822					
DO Saturation	%	47.8					
DO	mg/L	4.56					
Baro Press	mmHg	627.2					
ORP	RmV	77.5					
Turbidity	NTU	1.21		AV	MICROTPW		1.31, 1.19, 1.13
Discharge	gpm	3		VAR			
H2S	mg/L	NA					

Color:	(Clear) / White / Yellow / Brown / Green / Blue / Other	(Light) / Med / Dark	
Odor:	(None) / Mild / Mod / Strong		
Effervescence:	(None) / Mild / Mod / Strong	Bubbles:	(None) / Low / Mod / High
Sediment:	(None) / Light / Mod / Heavy	VOA Headspace:	(None) / ≤ Pea Size / ≥ Pea Size
Lab Analysis:	(Rule 609) / COA 9 / COA 22 / Other		
Field Filtered:	Yes / (No)	Filter Size: NA	No. Filters used: NA

Flag Codes: NM (not measured), E (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized), VAR (variable)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

Well is shared between 2 residences. 2 cisterns in place, both 1700 gallons. ~~Unable~~ Did not choose to bypass cisterns; same sampling location as previous samples. Sample is upstream of the treatment system. Reports good quality. Does develop bacteria. Uses bleach ~1 time/year. Doesn't use this water for drinking.

Additional information:

There is no construction report available on DWR for Water Well Permit No. 61751-F. Pump installation report available.

Duplicate sample taken: Roberts 27856

Gary Reed and Daryl Cox present for sample.

Calibration Information			Date: 7/8/14			Location: WWL office/field		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
YSI 556	pH	s.u.	930	7.00	23.45	7.06	7.00	
	pH	s.u.	933	10.01	23.71	9.99	10.01	
	pH	s.u.	936	4.01	24.55	3.98	4.01	
	SpC	uS/cm	926	1413	23.26	1391	1413	
	SpC	uS/cm						
	DO	%	942	631.4 mm Hg	28.10	82.5	83.0	631.4 mm Hg
	DO	%						
	ORP	RmV						
MICROTPW	Turbidity	NTU	0820	1000, 10, 0.02			1000, 10, 0.02	

WPX BWQ Groundwater Monitoring Field Form

	Well Purging Information		
	Date: 7-8-14	Purge Method: Parameter Stabilization	
	Total Depth, ft (d_t): 204	Static Depth to Water, ft (d_w): Q	Sample/Set Depth (ft):
	Casing Radius (in): Q		
	Total Volume (gal or ft^3): Q	Total Volume x 3 (gal or ft^3): Q	
	1 ft^3 = 7.48 gal Casing Volume = $\pi r^2(d_t-d_w)$		

Purge #	Time	Temp (deg C)	pH (s.u.)	SpC (uS/cm)	Cond (uS/cm)	DO (%)	DO (mg/L)	ORP (RmV)	Water Clarity (Poor/Mod/ Good) or NTUs	Efferves-cence (None /Slight/ Mod/Heavy)	Volume Purged (gal)	Cum Vol Purged (gal)
0	0924	4		960							3250.2	
1	~~1000~~ 0950	16.51	7.08	~~8004~~	804	53.3	5.16	108.0	2.01	none	3259.4	9.2
2	0955	16.18	7.05	959	798	48.4	4.79	82.0	1.43	none	3278.1	27.9
3	1005	16.35	7.23	959	800	48.4	4.73	57.5	1.20	none	3297.8	46.8
4	1010	16.31	7.23	959	800	47.9	4.69	54.1	1.28	none	3308.5	58.3
5	1015	16.24	7.27	959	798	47.9	4.69	50.3	1.23	none	3319.7	69.3

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX BWQ	Sample Purpose:	COGA SUB 1 - DUPLICATE
Site Name (Well Pad):	RWF 11-35	Site API:	05-045-21843
Station Name:	Daryl & Victoria Cox Well	Sample Date:	7-8-14
COGCC Facility ID:	~~Roberts 27856~~ 708042	Start Time:	1100
Field Sample ID:	Roberts 27856	End Time:	1145
Landowner Name:	Daryl + Victoria Cox	Sample Time:	1100
Landowner Address:	4830 CR 320 Rifle, CO	Sample Team:	SLK, NWS, RMK
Water Right/Well Owner:	Daryl + Victoria Cox	Observer:	SLK NWS
Water Right/Well Permit:	61751-F	Lead Signature/Date:	S. Kupp 7/9/14
Receipt Number:	9501949-B		

Station Information					
Station Description:	Hose bib by dryer vent, front of house				
Approximate Distance to Well Pad:	0.30 miles				
Station Type:	(Well) / Spring / Seep / Other:		Water Use:	~~Domestic~~ / Irrigation /	
Sampling Location:	Kitchen Tap / Pipe / Well House / (Hose bib) / Other:				
GPS Location:	Zone	x 107.866027	y 39.48583	z 5479	
Total Depth (ft):	204	Static Depth to Water (ft):	Q	Well diameter (in):	Q
Purge Volume (gal)	Q	Total Volume Purged (gal)	69.3		

Weather Conditions			
Sky:	(Clear) / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F):	90
Precipitation:	(None) / Light / Moderate / Heavy	Precip Type:	(None) / Rain / Sleet / Hail / Snow
Wind:	(Calm) / Light / Mod / Strong	Wind Speed/Direction:	Q

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	18.51	1130		YSI 556	Container	
pH	s.u.	7.35					
Sp. Conductivity	uS/cm	962					
Conductivity	uS/cm	842					
DO Saturation	%	51.2					
DO	mg/L	4.78					
Baro Press	mmHg	629.4					
ORP	RmV	93.7					
Turbidity	NTU	2.26		AV	MICROTPW		2.94, 2.17, 1.68
Discharge	gpm	3		VAR			
H2S	mg/L	NA					

Color:	(Clear) / White / Yellow / Brown / Green / Blue / Other	(Light) / Med / Dark	
Odor:	(None) / Mild / Mod / Strong		
Effervescence:	(None) / Mild / Mod / Strong	Bubbles:	(None) / Low / Mod / High
Sediment:	(None) / Light / Mod / Heavy	VOA Headspace:	(None) / ≤ Pea Size / ≥ Pea Size
Lab Analysis:	(Rule 609) / COA 9 / COA 22 / Other		
Field Filtered:	Yes / (No)	Filter Size: NA	No. Filters used: NA

Flag Codes: NM (not measured), E (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized), VAR (variable)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

See Cox 41751-F Field form.

Additional information:

Duplicate sample of Cox 41751-7-F.
Actual sample time: 1100
Time on labels & COC: 1200

Gary Reed and Daryl Cox present for sample.

Calibration info on Cox 41751-F

Calibration Information			Date: 7/8/14			Location:		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
	pH	s.u.						
	pH	s.u.						
	pH	s.u.						
	SpC	uS/cm						
	SpC	uS/cm						
	DO	%						
	DO	%						
	ORP	RmV						
	Turbidity	NTU						

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	WPX BWQ	Sample Purpose:	COGA Sub 1
Site Name (Well Pad):	RWF 11-35	Site API:	05-045-21843
Station Name:	Stokvis-Le750-FR	Sample Date:	6-25-14
COGCC Facility ID:	752940	Start Time:	0950
Field Sample ID:	Stokvis Le750-FR	End Time:	1230
Landowner Name:	Rob+Karin Stokvis	Sample Time:	1145
Landowner Address:	4850 CR 320, Rifle, CO	Sample Team:	SLK, NWS, RMK
Water Right/Well Owner:	Rob+Karin Stokvis	Observer:	Shelal, Ryan
Water Right/Well Permit:	Le750-FR	Lead Signature/Date:	S. Kupp 6-26-14
Receipt Number:	9502062		

Station Information					
Station Description:	Hose bib on ~~east~~ north side of Stokvis residence				
Approximate Distance to Well Pad:	0.35 miles				
Station Type:	Well / Spring / Seep / Other:		Water Use:	Domestic / Irrigation /	
Sampling Location:	Kitchen Tap / Pipe / Well House / ~~Hose bib~~ / Other:				
GPS Location:	Zone	x 107.86668	y 39.48763	z 5269	
Total Depth (ft):	210	Static Depth to Water (ft):	152.99	Well diameter (in):	5.5
Purge Volume (gal)	40.0	Total Volume Purged (gal)	133.9		

Weather Conditions			
Sky:	Clear / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F):	90°
Precipitation:	None / Light / Moderate / Heavy	Precip Type:	None / Rain / Sleet / Hail / Snow
Wind:	Calm / Light / Mod / Strong	Wind Speed/Direction:	Q

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	16.19	1230		YSI 556	Container	
pH	s.u.	7.15	↓		↓	↓	
Sp. Conductivity	uS/cm	588					
Conductivity	uS/cm	488					
DO Saturation	%	~~495.7~~					
DO	mg/L	19.18					
Baro Press	mmHg	NM					
ORP	RmV	134.0					
Turbidity	NTU	0.73	↓	AV	MICROTPW		0.89, 0.88, 0.44
Discharge	gpm	1.75		VAR			
H2S	mg/L	NA					

Color:	Clear / White / Yellow / Brown / Green / Blue / Other	Light / Med / Dark	
Odor:	None / Mild / Mod / Strong		
Effervescence:	None / Mild / Mod / Strong	Bubbles:	None / Low / Mod / High
Sediment:	None / Light / Mod / Heavy	VOA Headspace:	None / ≤ Pea Size / ≥ Pea Size
Lab Analysis:	Rule 609 / COA 9 / COA 22 / Other		
Field Filtered:	Yes / No	Filter Size: NA	No. Filters used: NA

Flag Codes: NM (not measured), E (estimated), N/A (not applicable), I (insufficient sample), Q (uncertain value), Y (calculated value), AV (averaged value), EC (exceeds calibration range), OT (other flag to be defined later), NS (not stabilized), VAR (variable)

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

None. No treatment system or storage tanks in Place.

Additional information:

0955: WL BTOC 152.99 Ft
1023: discharge 3 gpm
1026: WL BTOC 152.98
1037: discharge 1.5 gpm
1100: discharge 1.25 gpm
1106: WL BTOC 152.97
1115: discharge 2.25 gpm
1135: WL BTOC 152.96'
1228: WL BTOC 152.95'

Karin Stokvis present for sample.

Calibration Information			Date: 6/25/14			Location: WWL office		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
YSI 556	pH	s.u.	0721	7.0	24.16	7.02	7.00	
	pH	s.u.	0723	10.01	24.21	9.98	10.01	
	pH	s.u.	0726	4.01	24.23	3.96	4.00	
	SpC	uS/cm	0718	2070	23.76	2079	2070	
	SpC	uS/cm						
	DO	%	0736		24.04	88.4		639.9 mm Hg
	DO	%						
	ORP	RmV						
MicroTPW	Turbidity	NTU	0730	1000, 10, 0.02			1000, 10, 0.02	

WPX BWQ Groundwater Monitoring Field Form

Well Purging Information

Date: 4-25-14	Purge Method: 3 casing volumes & parameter stabilizat	
Total Depth, ft (d_t): 210	Static Depth to Water, ft (d_w): 152.99	Sample/Set Depth (ft):
Casing Radius (in): 2.75		
Total Volume (gal or ft^3): 40.6 gal	Total Volume x 3 (gal or ft^3): 121.8 gal	

1 ft^3 = 7.48 gal

Casing Volume = $\pi r^2(d_t - d_w)$ $\pi\left(\frac{2.75''}{12''}\right)^2(210' - 152.99') = 5.43\ ft^3 \cdot 7.48 \frac{gal}{ft^3} = 40.6$

Purge #	Time	Temp (deg C)	pH (s.u.)	SpC (uS/cm)	Cond (uS/cm)	DO (%)	DO (mg/L)	ORP (RmV)	Water Clarity (Poor/Mod/ Good) or NTUs	Efferves-cence (None /Slight/ Mod/Heavy)	Volume Purged (gal)	Cum Vol Purged (gal)
0	1015										3089.4	
1	1025	15.6	6.87	873	1067	61.7	6.13	183.2	1.03	None	3114.3	24.9
2	1035	16.0	6.96	884	1067	63.4	6.33	162.1	0.35	None	3132.6	43.2
3	1045	16.2	7.01	888	1069	64.7	6.35	152.8	0.46	None	3143.1	53.7
4	1055	16.3	7.03	894	1071	65.4	6.38	150.7	0.31	None	3154.3	64.9
5	1105	16.4	7.06	896	1072	65.4	6.43	142.0	0.45	None	3165.4	76
6	1115	15.7	7.04	880	1070	63.1	6.24	139.0	1.10	None	3182.7	93.3
7	1127	15.5	7.06	875	1069	63.2	6.28	133.8	0.28	None	3207.6	118.2
8	1135	15.6	7.05	876	1068	62.9	6.24	133.6	0.94	None	3223.3	133.9

ATTACHMENT C

Data Quality Evaluation

QUALITY CONTROL EVALUATION
WPX DRILL PAD RWF 11-35
SAMPLES: STOKVIS 61751-FR, COX 61750-F, ROBERTS 27856

Quality control measures consisted of a review of field sampling procedures and the analytical laboratory quality control data. Laboratory quality control information was reviewed and checked for consistency in meeting acceptance criteria and the assignment of data qualifiers. In addition, WWL conducted quality control evaluations of cation-anion balance (CAB) and total dissolved solids (TDS) calculated versus measured ratio. WWL assigned additional qualifiers to analytical results as necessary.

Field Procedures
WWL conducted field sampling procedures in accordance with the COGCC Model SAP as modified by WPX. All samples were collected by direct filling methods; dissolved gas sampling was done using Method 1 for wells with pumps and effervescent samples. Three casing volumes were not purged for sample Cox 61751-F and its field duplicate, sample Roberts 27856; parameters were stabilized according to the COGCC Model SAP criteria. No field procedure deviations occurred that were cause for data qualification.

COC
The chain-of-custody forms were reviewed for correct and complete sample IDs, requested analyses, and other pertinent information. The analytes requested on the COCs matched the requirements of Rule 609. DRO (diesel range organics) and GRO (gasoline range organics) were designated on the COCs in place of TPH, a required analysis for Rule 609. No other errors or quality control issues were observed, and no corrections were needed.

Sample Receipt
Samples were received by AMS in two coolers within the temperature range criteria (4°C ± 2°C). Custody seals were intact. No quality control issues were reported on the sample receipt form. No qualifiers were assigned to results based on sample receipt conditions.

Holding Times
Laboratory pH was analyzed out of holding time for all samples; WWL assigned an "H" qualifier to indicate the results are estimated. All other analyses were conducted within recommended holding times.

Analytical Methods
The analytical methods used by AMS were checked for consistency with the analytical schedule in the SAP. Analytical methods were found to be consistent with the following modifications: Gasoline Range Organics (TPH volatiles) were analyzed using Method SW8260B. Diesel Range Organics (TPH extractables) were analyzed according to Method SW846-8015B.

Detection Limits
Detection limits provided with the analytical results were compared to the original quoted detection limits from the analytical laboratory. Detection limits were as quoted with no deviations observed except as applied to increased dilution factors.

All samples: A dilution factor of 10 was applied to sulfate and nitrate as N; a dilution factor of 2 for bromide, chloride, fluoride, nitrite as N, barium, and selenium; and a dilution factor of 1 for all other analytes. Detection limits for nitrite and bromide were elevated due to matrix interference.

AMS reports sample results at the MDL as "undetected" or "U" rather than reporting results as less than the reporting or detection limit, e.g. < 0.05µg/L.

Completeness
Data completeness is a measure of requested analysis and received results. The analytical constituents required under Rule 609 were compared to those requested and analyzed in the laboratory reports. Qualified data are included as analyzed data. No data were rejected for field or analytical reasons. WWL separately designated DRO (Diesel Range Organics) and GRO (Gasoline Range Organics) for the TPH analysis required in Rule 609. All requested analytical data matched the laboratory reported data results; data completeness is considered 100 percent.

Cation-Anion Balance
The cation-anion balance (CAB) calculates the total charge of positively charged ions and the total charge of the negatively charged ions. It is a measure of the quality of the analysis; if the charge is not balanced, an error may exist in the analysis. CAB percent difference calculations were performed for each sample; if the CAB exceeded ± 5%, i.e. less than 95% or greater than 105%, the analytical results data may be qualified as estimated.

In general, WWL will assign a qualifier (estimated result) for a CAB equal to or greater than plus or minus 10%, and may assign a qualifier for CAB percentages between plus or minus 5% and less than 10%. The final CAB calculations for the samples are as follows:

- Stokvis 61751-FR: 2.817%
- Cox 61750-F: 3.726%
- Roberts 27856: 2.963%

The analytical results for cations and anions for the samples were not qualified on the basis of the CAB. See Attachment C, Data Quality Review Sheets.

TDS
The ratio of laboratory-measured TDS versus calculated TDS were computed; sample ratios less than 0.80 and greater than 1.20 are cause for a review of major ion reporting errors. In general, WWL will assign a qualifier (an estimated result) when TDS ratios are less than or equal to 0.5 and equal to or greater than 1.5, and may assign a qualifier for TDS ratios greater than 0.5 and less than 0.8 and greater than 1.2 and less than 1.5. The TDS calculations for samples are as follows:

- Stokvis 61751-FR: 1.16
- Cox 61750-F: 1.17
- Roberts 27856: 1.14

No sample results were rejected or qualified on the basis of the TDS acceptance criteria.

Field Duplicates
Field duplicates evaluate the precision of analytical results for field samples collected for a specific sampling event. Precision is measured by the calculation of the relative percent difference (RPD) using the analytical results from the original investigative sample and the duplicate sample. An RPD limit of 35% is used for the data qualification criterion. When the original sample has a detected concentration above the reporting limit (RL) and the concentration of the field duplicate is less than the RL, the calculation of a field duplicate RPD is not applied. For sample results less than 5 times the RL, the acceptance criteria is ± RL.

Sample Roberts 27856 was collected as a field duplicate sample for Water Well Permit No. 61750-F. Iron and methane exceeded the RPD limit of 35 percent; iron showed an RPD of 46.5 percent; methane showed an RPD

of 64.6 percent. Based on the analytical methods used and expected sample heterogeneity that would affect these constituents, field duplicate RPDs may be high. All laboratory quality control samples were within criteria, therefore, data was not qualified as a result of field duplicate RPDs.

Trip Blanks

Trip blanks are analyte-free matrix (water in this case) samples supplied by the analytical laboratory that are shipped inside the sample shipping containers to and from the field investigation site. Trip blanks test for potential contamination during shipping and sampling field procedures. For this project, trip blanks are analyzed for volatiles only. There were no trip blanks for either sample.

Laboratory Quality Control

The analytical laboratory conducts an extensive quality control program and as part of the overall quality control process. The analytical laboratory quality control program includes the use of various laboratory quality control samples including but not limited to: method blanks (MB), laboratory control samples (LCS) and duplicates (LCSD), matrix spikes (MS) and duplicates (MSD), surrogates, initial calibration verification standards (ICVs), and continuing calibration verification standard (CCVs).

WWL verified that the lab performed and reported quality control data correctly. This included checking laboratory control samples data for meeting laboratory QC limits, acceptance criteria, and recovery limits. QC limits associated with the relative percent difference (RPD) between duplicate samples typically range from a limit of 20% for metals and general or wet chemistry to 30% for organic analytes. Typical percent recovery acceptance limits are 80 to 120% for metals and wet chemistry and 70 to 130% for organics; some organic compounds may have much broader recovery limits.

All sampling event data packages showed that no laboratory control samples exceeded the QC limits or acceptance criteria without data qualification, and no recovery limits were exceeded without qualification. No qualifiers were assigned to the results.

Accuracy

Accuracy was evaluated as a percent recovery of an analyte in a reference standard or a spiked sample, e.g. matrix spike and matrix spike duplicate. In cases where percent recoveries exceeded the laboratory acceptance criteria, data would be qualified depending on whether the analyte was detected above the method detection limit (MDL) or not, if the recovery of the associated control sample was acceptable, or if the analyte concentration in the sample was disproportionate to the spike level and that the recovery of the associated control sample was acceptable. Note that the analytical laboratory may not have selected a sample from this field investigation for testing matrix quality control samples. In these cases, true matrix affects cannot be assessed and the resulting data should be considered as estimated. This will be noted in the DQR sheets (Attachment C), but the data will not be broadly qualified by WWL.

AMS selected the following field investigation samples for testing matrix quality control: Stokvis 61751-FR for metals by EPA Method 200.7; and Cox 61750-F for barium and selenium by EPA Method 200.8. AMS selected a number of other samples for all other MS and MSD based on the analytical methods being used. The MS and MSD recoveries met guidance criteria for precision and accuracy for all analytes.

No qualifiers were assigned to the results by the lab. WWL did not assign additional qualifiers to the analytical results.

Precision

Precision is the measurement of how closely replicate sample constituents agree and is not related to the true value (concentration). Precision is measured using RPD calculations for laboratory duplicate samples such as LCSD and MSD samples and any other duplicate samples generated by the laboratory. The RPDs were

compared to the laboratory acceptance limit of 20% for metals and general or wet chemistry and 30% for organic analytes. RPDs were not used when the sample concentration was too low (< 10X MDL) for accurate evaluation.

All RPDs met acceptance criteria. No qualifiers were assigned by the laboratory because of RPD values exceeding the laboratory acceptance criteria.

Data Quality Review Sheets are presented within this attachment.

DATA QUALITY REVIEW SHEET

Facility ID:	708042	Project:	WPX BWQ: RWF 11-35
Station Name:	Daryl & Victoria Cox Well	Lab Work Order:	D59550
Sample Date:	7/8/2014	QA/QC Review Date:	8/6/2014
Field Sample ID:	Cox 61751-F	Reviewer:	S. Kipp

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☐	☒	☐
2. Flow rate reduced prior to sampling?	☒	☐	☐
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☐	☒	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Receipt form is without discrepancies? *If no, list in comments.*	☒	☐	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met (other than lab pH)?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☒	☐	☐
13. Was the field investigation sample matrix used by the lab for matrix QC for all analyses?	☐	☒	☐
14. Laboratory qualifiers for data (other than non-detect)? *List in comments*.	☒	☐	☐
15. Additional qualifiers assigned (other than pH)?	☐	☒	☐
16. Are corrective actions required? *If yes, list actions and dates to be completed by:*	☐	☒	☐

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	3.726	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	705	602	1.17	0.8 – 1.2	☒
Specific Conductance, µS/cm (SpC)	899	802	1.12	0.8 – 1.2	☒

Comments: Three casing volumes not purged prior to sampling due to cisterns located upstream of sampling location; settling and degassing may occur during cistern residence time and water chemistry may not accurately reflect groundwater conditions. pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for iron, boron, and bromide to indicate a result greater than the method detection limit but less than the reporting limit.

DATA QUALITY REVIEW SHEET

Facility ID:	708042	Project:	WPX BWQ: RWF 11-35
Station Name:	Daryl & Victoria Cox Well	Lab Work Order:	D59550
Sample Date:	7/8/2014	QA/QC Review Date:	8/6/2014
Field Sample ID:	Roberts 27856	Reviewer:	S. Kipp

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☐	☒	☐
2. Flow rate reduced prior to sampling?	☒	☐	☐
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☐	☒	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Receipt form is without discrepancies? *If no, list in comments.*	☒	☐	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met (other than lab pH)?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☒	☐	☐
13. Was the field investigation sample matrix used by the lab for matrix QC for all analyses?	☐	☒	☐
14. Laboratory qualifiers for data (other than non-detect)? *List in comments*.	☒	☐	☐
15. Additional qualifiers assigned (other than pH)?	☐	☒	☐
16. Are corrective actions required? *If yes, list actions and dates to be completed by:*	☐	☒	☐

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	2.963	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	693	610	1.14	0.8 – 1.2	☒
Specific Conductance, µS/cm (SpC)	910	799	1.14	0.8 – 1.2	☒

Comments: Three casing volumes not purged prior to sampling due to cisterns located upstream of sampling location; settling and degassing may occur during cistern residence time and water chemistry may not accurately reflect groundwater conditions. pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for iron, boron, and bromide to indicate a result greater than the method detection limit but less than the reporting limit.

DATA QUALITY REVIEW SHEET

Facility ID:	752940	Project:	WPX BWQ: RWF 11-35
Station Name:	Stokvis-61750-FR	Lab Work Order:	D59153
Sample Date:	6/25/2014	QA/QC Review Date:	8/6/2014
Field Sample ID:	Stokvis 61750-FR	Reviewer:	S. Kipp

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☒	☐	☐
2. Flow rate reduced prior to sampling?	☒	☐	☐
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☒	☐	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Receipt form is without discrepancies? *If no, list in comments.*	☒	☐	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met (other than lab pH)?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☒	☐	☐
13. Was the field investigation sample matrix used by the lab for matrix QC for all analyses?	☐	☒	☐
14. Laboratory qualifiers for data (other than non-detect)? *List in comments*.	☒	☐	☐
15. Additional qualifiers assigned (other than pH)?	☐	☒	☐
16. Are corrective actions required? *If yes, list actions and dates to be completed by:*	☐	☒	☐

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	2.817	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	792	682	1.16	0.8 – 1.2	☒
Specific Conductance, µS/cm (SpC)	1018	948	1.07	0.8 – 1.2	☒

Comments: pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for manganese to indicate a result greater than the method detection limit but less than the reporting limit.

ATTACHMENT D

Summary of Analytical Results

WPX BWQ: RWF 11-35 Baseline and First Subsequent Analytical Summary																				
Station Name			Daryl & Viktoria Cox Well																	
Facility ID			708042																	
Sample Date			4/24/2013 11:00						7/8/2014 10:20						7/8/2014 12:00					
Field Sample ID			COX1						Cox 61751-F						Roberts 27856					
Lab Sample ID			D45579-1						D59550-1						D59550-2					
Sampling Agency			Olsson Associates						Western Water & Land, Inc.						Western Water & Land, Inc.					
Sample Purpose			Baseline						Subsequent 1						Subsequent 1 - Field Duplicate					
	Reporting Units	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Inorganics																				
Alkalinity AS CaCO3, Total	mg/l	SM 2320B-2011	370			5		1	354			5	2	1	347			5	2	1
Alkalinity, Bicarbonate as CaCO3	mg/l	SM 2320B-2011	370			5		1	354			5	2	1	347			5	2	1
Alkalinity, Carbonate as CaCO3	mg/l	SM 2320B-2011	5	U		5		1	5	U		5	2	1	5	U		5	2	1
Bromide	mg/l	EPA 300.0/SW846 9056	0.05	U		0.05		1	0.06	J		0.1	0.05	2	0.054	J		0.1	0.05	2
Chloride	mg/l	EPA 300.0/SW846 9056	6			0.5		1	6.2			1	0.8	2	6.3			1	0.8	2
Fluoride	mg/l	EPA 300.0/SW846 9056	NM						0.37			0.2	0.1	2	0.38			0.2	0.1	2
Hardness (as CaCO3)	mg/l	SM 2340B-2011	426			1.8		1	NM						NM					
Nitrate as N	mg/l	EPA 300.0/SW846 9056	2.2			0.1		10	1.5			0.1	0.06	10	1.5			0.1	0.06	10
Nitrite as N	mg/l	EPA 300.0/SW846 9056	0.0041			0.004		1	0.008	U		0.008	0.006	2	0.008	U		0.008	0.006	2
pH	s.u.	SM4500HB+-2011/9040C	NM						7.55		H			1	7.6		H			1
Specific Conductivity	umhos/cm	SM 2510B-2011	839			1		1	802			1		1	799			1		1
Sulfate	mg/l	EPA 300.0/SW846 9056	159			5		10	146			5	2	10	146			5	2	10
Total Dissolved Solids	mg/l	SM 2540C-2011	608			10		1	602			10	5	1	610			10	5	1
Total Phosphorous	mg/l	HACH8190/SM4500P-B/E	0.01	U		0.01		1	0.013			0.01	0.008	1	0.01	U		0.01	0.008	1
Dissolved Metals																				
Barium	ug/l	EPA 200.8	NM						91.5			4	0.16	2	95.7			4	0.16	2
Boron	ug/l	EPA 200.7	50	U		50		1	37.3	J		50	6.6	1	35.7	J		50	6.6	1
Calcium	ug/l	EPA 200.7	80900			400		1	80400			400	66	1	78200			400	66	1
Iron	ug/l	EPA 200.7	10			10		1	3.3	J		10	3.2	1	5.3	J		10	3.2	1
Magnesium	ug/l	EPA 200.7	54300			200		1	56400			200	29	1	54700			200	29	1
Manganese	ug/l	EPA 200.7	10.2			5		1	16.2			5	0.29	1	15			5	0.29	1
Potassium	ug/l	EPA 200.7	5770			1000		1	6060			1000	230	1	5940			1000	230	1
Selenium	ug/l	EPA 200.8	4.8			0.8		2	3.3			0.8	0.42	2	3.1			0.8	0.42	2
Sodium	ug/l	EPA 200.7	50000			400		1	53000			400	36	1	51600			400	36	1
Strontium	ug/l	EPA 200.7	927			5		1	947			5	0.12	1	931			5	0.12	1
Organics																				
Diesel Range Organics	mg/l	SW846-8015B	NM						0.19	U		0.19	0.17	1	0.19	U		0.19	0.17	1
Gasoline Range Organics	ug/l	SW846 8260B	NM						200	U		200		1	200	U		200		1
Dissolved Gases																				
Ethane	mg/l	RSK175 MOD	0.0016	U		0.0016	0.0008	1	0.0016	U		0.0016	0.0008	1	0.0016	U		0.0016	0.0008	1
Methane	mg/l	RSK175 MOD	0.0008			0.0008	0.0004	1	0.0017			0.0008	0.0004	1	0.00087			0.0008	0.0004	1
Propane	mg/l	RSK175 MOD	0.018	U		0.018	0.009	1	0.0022	U		0.0022	0.0011	1	0.0022	U		0.0022	0.0011	1

WPX BWQ: RWF 11-35 Baseline and First Subsequent Analytical Summary																				
Station Name			Daryl & Viktoria Cox Well																	
Facility ID			708042																	
Sample Date			4/24/2013 11:00						7/8/2014 10:20						7/8/2014 12:00					
Field Sample ID			COX1						Cox 61751-F						Roberts 27856					
Lab Sample ID			D45579-1						D59550-1						D59550-2					
Sampling Agency			Olsson Associates						Western Water & Land, Inc.						Western Water & Land, Inc.					
Sample Purpose			Baseline						Subsequent 1						Subsequent 1 - Field Duplicate					
	Reporting Units	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
VOCs																				
Benzene	ug/l	SW846 8260B	1	U		1	0.27	1	1	U		1	0.25	1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW846 8260B	2	U		2	0.33	1	2	U		2	0.31	1	2	U		2	0.31	1
Toluene	ug/l	SW846 8260B	2	U		2	1	1	2	U		2	1	1	2	U		2	1	1
Xylenes (Total)	ug/l	SW846 8260B	3	U		3	2	1	3	U		3	1.5	1	3	U		3	1.5	1
Bacteria																				
Iron Related Bacteria	cfu/ml	HACH IRB-BART	NM						74500			25		1	74500			25		1
Slime forming bacteria	cfu/ml	HACH SLYM-BART	NM						66500			500		1	66500			500		1
Sulfate Reducing Bacteria	cfu/ml	HACH SRB-BART	NM						1200			200		1	1200			200		1
Field_Parameters																				
Bubbles	nu	Field	NM						None					1	None					
Color	nu	Field	NM						Clear					1	Clear					
Conductivity, Field	uS/cm	Field	NM						822					1	842					
Discharge, measured	gpm	Field	4						3		VAR			1	3		VAR			
Dissolved Oxygen, Field [1]	mg/l	Field	2.38						4.56					1	4.78					
Dissolved Oxygen, Field,% [1]	%	Field	26.2						47.8					1	51.2					
Effervescence	nu	Field	NM						None					1	None					
Odor	nu	Field	NM						None					1	None					
ORP, field	mv	Field	NM						77.5					1	93.7					
pH, Field	s.u.	Field	8.54						7.33					1	7.35					
Sediment	nu	Field	NM						None					1	None					
Specific Conductivity, Field	uS/cm	Field	1017						960					1	962					
Temperature, Water	Deg C	Field	11.07						17.47					1	18.51					
Turbidity, field	NTUs	Field	31.1						1.21		AV			1	2.26		AV			
VOA Headspace	nu	Field	NM						None					1	None					

Notes:

[1] Suspect air bubble or probe malfunction

U = not detected at the reporting limit

H = hold time exceeded

J = result between RL and MDL, estimated

AV = result averaged

VAR = varies

NM = not measured

WPX BWQ: RWF 11-35 Baseline and First Subsequent Analytical Sum														
Station Name			**Stokvis 61750-F-R**											
Facility ID			**752940**											
Sample Date			**4/24/2013 10:10**						**6/25/2014 11:45**					
Field Sample ID			**STOK1**						**Stokvis 61750-FR**					
Lab Sample ID			**D35948-1**						**D59153-1**					
Sampling Agency			**Olsson Associates**						**Western Water & Land, Inc.**					
Sample Purpose			**Baseline**						**Subsequent 1**					
	Reporting Units	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Inorganics														
Alkalinity AS CaCO3, Total	mg/l	SM 2320B-2011	364			5		1	367			5	2	1
Alkalinity, Bicarbonate as CaCO3	mg/l	SM 2320B-2011	364			5		1	367			5	2	1
Alkalinity, Carbonate as CaCO3	mg/l	SM 2320B-2011	5	U		5		1	5	U		5	2	1
Bromide	mg/l	EPA 300.0/SW846 9056	0.05	U		0.05		1	0.1	U		0.1	0.05	2
Chloride	mg/l	EPA 300.0/SW846 9056	6			0.5		1	6			1	0.8	2
Fluoride	mg/l	EPA 300.0/SW846 9056	NM						0.34			0.2	0.1	2
Hardness (as CaCO3)	mg/l	SM 2340B-2011	392			1.8		1	NM					
Nitrate as N	mg/l	EPA 300.0/SW846 9056	2.2			0.45		10	3.5			0.1	0.06	10
Nitrite as N	mg/l	EPA 300.0/SW846 9056	0.004	U		0.004		1	0.008	U		0.008	0.006	2
pH	s.u.	SM4500HB+-2011/9040C	NM						7.34		H			1
Specific Conductivity	umhos/cm	SM 2510B-2011	847						948			1		1
Sulfate	mg/l	EPA 300.0/SW846 9056	160			5		10	193			5	2	10
Total Dissolved Solids	mg/l	SM 2540C-2011	612			10		1	682			10	5	1
Total Phosphorous	mg/l	HACH8190/SM4500P-B/E	0.02			0.01		1	0.027			0.01	0.008	1
Dissolved Metals														
Barium	ug/l	EPA 200.8	NM						26			4	0.16	2
Boron	ug/l	EPA 200.7	50	U		50		1	50.1			50	6.6	1
Calcium	ug/l	EPA 200.7	81300			400		1	98700			400	66	1
Iron	ug/l	EPA 200.7	10	U		10		1	14.7			10	3.2	1
Magnesium	ug/l	EPA 200.7	54400			200		1	54400			200	29	1
Manganese	ug/l	EPA 200.7	5	U		5		1	0.8	J		5	0.29	1
Potassium	ug/l	EPA 200.7	5890			1000		1	6930			1000	230	1
Selenium	ug/l	EPA 200.8	4.7			0.8		2	5.6			0.8	0.42	2
Sodium	ug/l	EPA 200.7	50000			400		1	61300			400	36	1
Strontium	ug/l	EPA 200.7	922			5		1	1160			5	0.12	1
Organics														
Diesel Range Organics	mg/l	SW846-8015B	NM						0.19	U		0.19	0.17	1
Gasoline Range Organics	ug/l	SW846 8260B	NM						200	U		200		1
Dissolved Gases														
Ethane	mg/l	RSK175 MOD	0.0016	U		0.0016	0.0008	1	0.0016	U		0.0016	0.0008	1
Methane	mg/l	RSK175 MOD	0.0008	U		0.0008	0.0004	1	0.0008	U		0.0008	0.0004	1
Propane	mg/l	RSK175 MOD	0.013	U		0.013	0.006	1	0.0022	U		0.0022	0.0011	1

WPX BWQ: RWF 11-35 Baseline and First Subsequent Analytical Sum														
Station Name			**Stokvis 61750-F-R**											
Facility ID			**752940**											
Sample Date			**4/24/2013 10:10**						**6/25/2014 11:45**					
Field Sample ID			**STOK1**						**Stokvis 61750-FR**					
Lab Sample ID			**D35948-1**						**D59153-1**					
Sampling Agency			**Olsson Associates**						**Western Water & Land, Inc.**					
Sample Purpose			**Baseline**						**Subsequent 1**					
	Reporting Units	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
VOCs														
Benzene	ug/l	SW846 8260B	1	U		1	0.27	1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW846 8260B	2	U		2	0.33	1	2	U		2	0.31	1
Toluene	ug/l	SW846 8260B	2	U		2	1	1	2	U		2	1	1
Xylenes (Total)	ug/l	SW846 8260B	3	U		3	2	1	3	U		3	1.5	1
Bacteria														
Iron Related Bacteria	cfu/ml	HACH IRB-BART	NM						74500			25		1
Slime forming bacteria	cfu/ml	HACH SLYM-BART	NM						66500			500		1
Sulfate Reducing Bacteria	cfu/ml	HACH SRB-BART	NM						18000			200		1
Field_Parameters														
Bubbles	nu	Field	NM						None					1
Color	nu	Field	NM						Clear					1
Conductivity, Field	uS/cm	Field	NM						488					1
Discharge, measured	gpm	Field	6						1.75		VAR			1
Dissolved Oxygen, Field [1]	mg/l	Field	3.97						19.18					1
Dissolved Oxygen, Field,% [1]	%	Field	51.2						95.7					1
Effervescence	nu	Field	NM						None					1
Odor	nu	Field	NM						None					1
ORP, field	mv	Field	NM						134					1
pH, Field	s.u.	Field	7.8						7.15					1
Sediment	nu	Field	NM						None					1
Specific Conductivity, Field	uS/cm	Field	891						588					1
Temperature, Water	Deg C	Field	17						16.19					1
Turbidity, field	NTUs	Field	17.2						0.73		AV			1
VOA Headspace	nu	Field	NM						None					1

Notes:

[1] Suspect air bubble or probe malfunction

U = not detected at the reporting limit

H = hold time exceeded

J = result between RL and MDL, estimated

AV = result averaged

VAR = varies

NM = not measured

ATTACHMENT E

Laboratory Analytical Summary Report

Mountain States ACCUTEST LABORATORIES

Reissue #1
08/06/14

Technical Report for

WPX Energy Rocky Mountain, LLC

WWLCOGJ: WPX RWF 11-35 BWQ

Accutest Job Number: D59153

Sampling Date: 06/25/14

Report to:

Western Water and Land, Inc.

SGoodwin@westernwaterandland.com

ATTN: Shelby Kipp

Total number of pages in report: **49**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

Accutest Laboratories
4036 Youngfield Street
Wheat Ridge, Co 80033
Phone: 303-425-6021
Fax: 303-425-6854

August 5, 2014

Bruce Smith
Western Water and Land, Inc.
743 Horizon Court Suite 330
Grand Junction, CO 80506

Subject: Report Reissue for Accutest Job: D59153

Dear Mr. Smith:

Per the request from your office, Accutest Laboratories has switched the metals and wet chemistry to report down to MDLs for the above-referenced job. The report has been reissued with these corrections. Please accept our apologies for these errors.

Any questions or concerns should be directed to the undersigned at 303-425-6021.

Sincerely,

Scott Heideman
Laboratory Director

Sections: 1 2 3 4 5 6 7 8 9 10

Table of Contents

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D59153

WWLCOGJ: WPX RWF 11-35 BWQ

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D59153-1	06/25/14	11:45	NWS	06/26/14	AQ	Ground Water	STOKVIS 61750-FR
D59153-1F	06/25/14	11:45	NWS	06/26/14	AQ	Groundwater Filtered	STOKVIS 61750-FR

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	WPX Energy Rocky Mountain, LLC	**Job No**	D59153
Site:	WWLCOGJ: WPX RWF 11-35 BWQ	**Report Date**	7/9/2014 1:48:26 PM

On 06/26/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59153 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** V3V1826

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59159-1DUP, D59165-1MS were used as the QC samples indicated.

Volatiles by GC By Method RSK175 MOD

Matrix AQ **Batch ID:** GFB531

- All samples were analyzed within the recommended method holding time.
- Sample(s) D59097-1MS, D59097-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix AQ **Batch ID:** OP10160

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59066-24MS, D59066-24MSD were used as the QC samples indicated.

Metals By Method EPA 200.7

Matrix AQ **Batch ID:** MP13301

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59153-1FMS, D59153-1FMSD were used as the QC samples for the metals analysis.

Metals By Method EPA 200.8

Matrix AQ **Batch ID:** MP13291

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59147-1FMS, D59147-1FMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300.0

Matrix DW **Batch ID:** GP12922

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ **Batch ID:** GP12922

- D59153-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59153-1 for Bromide: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH IRB-BART

Matrix AQ **Batch ID:** MB389

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SLYM-BART

Matrix AQ **Batch ID:** MB390

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SRB-BART

Matrix AQ **Batch ID:** MB391

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH8190/SM4500P-B/E

Matrix AQ **Batch ID:** GP12964

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59130-1DUP, D59130-1MS, D59130-1MSD were used as the QC samples for the Phosphorus, Total analysis.

Wet Chemistry By Method SM 2320B-2011

Matrix AQ **Batch ID:** GN25324

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59137-1DUP, D59137-1MS, D59137-1MSD were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix AQ **Batch ID:** GN25325

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ **Batch ID:** GN25326

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM 2510B-2011

Matrix	AQ	Batch ID:	GP12957

- Sample(s) D59275-1DUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM 2540C-2011

Matrix	AQ	Batch ID:	GN25338

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59152-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D59153
Account: WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ
Collected: 06/25/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D59153-1	**STOKVIS 61750-FR**					
Alkalinity, Bicarbonate as CaCO3		367	5.0	2.0	mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		367	5.0	2.0	mg/l	SM 2320B-2011
Chloride		6.0	1.0	0.80	mg/l	EPA 300.0/SW846 9056
Fluoride		0.34	0.20	0.10	mg/l	EPA 300.0/SW846 9056
Iron Reducing Bacteria		74500	25		CFU/ml	HACH IRB-BART
Nitrogen, Nitrate		3.5	0.10	0.060	mg/l	EPA 300.0/SW846 9056
Phosphorus, Total		0.027	0.010	0.0080	mg/l	HACH8190/SM4500P-B/E
Slime Forming Bacteria		66500	500		CFU/ml	HACH SLYM-BART
Solids, Total Dissolved		682	10	5.0	mg/l	SM 2540C-2011
Specific Conductivity		948	1.0		umhos/cm	SM 2510B-2011
Sulfate		193	5.0	2.0	mg/l	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria		18000	200		CFU/ml	HACH SRB-BART
pH		7.34			su	SM4500HB+-2011/9040C
D59153-1F	**STOKVIS 61750-FR**					
Barium		26.0	4.0	0.16	ug/l	EPA 200.8
Boron		50.1	50	6.6	ug/l	EPA 200.7
Calcium		98700	400	66	ug/l	EPA 200.7
Iron		14.7	10	3.2	ug/l	EPA 200.7
Magnesium		54400	200	29	ug/l	EPA 200.7
Manganese		0.80 J	5.0	0.29	ug/l	EPA 200.7
Potassium		6930	1000	230	ug/l	EPA 200.7
Selenium		5.6	0.80	0.42	ug/l	EPA 200.8
Sodium		61300	400	36	ug/l	EPA 200.7
Strontium		1160	5.0	0.12	ug/l	EPA 200.7

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	STOKVIS 61750-FR		
Lab Sample ID:	D59153-1	**Date Sampled:**	06/25/14
Matrix:	AQ - Ground Water	**Date Received:**	06/26/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V31289.D	1	06/27/14	BR	n/a	n/a	V3V1826
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics+GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.31	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.5	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	91%		62-130%
2037-26-5	Toluene-D8	92%		70-130%
460-00-4	4-Bromofluorobenzene	94%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STOKVIS 61750-FR		
Lab Sample ID:	D59153-1	**Date Sampled:**	06/25/14
Matrix:	AQ - Ground Water	**Date Received:**	06/26/14
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB11491.D	1	06/27/14	JJ	n/a	n/a	GFB531
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.0 Deg. C
Run #2				

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STOKVIS 61750-FR		
Lab Sample ID:	D59153-1	**Date Sampled:**	06/25/14
Matrix:	AQ - Ground Water	**Date Received:**	06/26/14
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH022592.D	1	07/01/14	JS	07/01/14	OP10160	GFH1035
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	57%		10-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STOKVIS 61750-FR
Lab Sample ID: D59153-1
Matrix: AQ - Ground Water
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Date Sampled: 06/25/14
Date Received: 06/26/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	367	5.0	2.0	mg/l	1	06/27/14	BF	SM 2320B-2011
Alkalinity, Carbonate	2.0 U	5.0	2.0	mg/l	1	06/27/14	BF	SM 2320B-2011
Alkalinity, Total as CaCO3	367	5.0	2.0	mg/l	1	06/27/14	BF	SM 2320B-2011
Bromide [a]	0.050 U	0.10	0.050	mg/l	2	06/26/14 12:36	JB	EPA 300.0/SW846 9056
Chloride	6.0	1.0	0.80	mg/l	2	06/26/14 12:36	JB	EPA 300.0/SW846 9056
Fluoride	0.34	0.20	0.10	mg/l	2	06/26/14 12:36	JB	EPA 300.0/SW846 9056
Iron Reducing Bacteria	74500	25		CFU/ml	1	06/30/14	MM	HACH IRB-BART
Nitrogen, Nitrate	3.5	0.10	0.060	mg/l	10	06/26/14 17:39	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite [a]	0.0060 U	0.0080	0.0060	mg/l	2	06/26/14 12:36	JB	EPA 300.0/SW846 9056
Phosphorus, Total	0.027	0.010	0.0080	mg/l	1	07/02/14	BF	HACH8190/SM4500P-B/E
Slime Forming Bacteria	66500	500		CFU/ml	1	06/30/14	MM	HACH SLYM-BART
Solids, Total Dissolved	682	10	5.0	mg/l	1	06/30/14	AK	SM 2540C-2011
Specific Conductivity	948	1.0		umhos/cm	1	07/02/14	JD	SM 2510B-2011
Sulfate	193	5.0	2.0	mg/l	10	06/26/14 17:39	JB	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria	18000	200		CFU/ml	1	06/30/14	MM	HACH SRB-BART
pH	7.34			su	1	06/26/14 15:30	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Report of Analysis

Client Sample ID:	STOKVIS 61750-FR		
Lab Sample ID:	D59153-1F	**Date Sampled:**	06/25/14
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/26/14
		Percent Solids:	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	26.0	4.0	0.16	ug/l	2	07/01/14	07/02/14	NT	EPA 200.8 [4]	EPA 200.8 [5]
Boron	50.1	50	6.6	ug/l	1	06/30/14	07/01/14	KV	EPA 200.7 [3]	EPA 200.7 [6]
Calcium	98700	400	66	ug/l	1	06/30/14	07/01/14	KV	EPA 200.7 [3]	EPA 200.7 [6]
Iron	14.7	10	3.2	ug/l	1	06/30/14	07/01/14	KV	EPA 200.7 [3]	EPA 200.7 [6]
Magnesium	54400	200	29	ug/l	1	06/30/14	06/30/14	KV	EPA 200.7 [2]	EPA 200.7 [6]
Manganese	0.80 J	5.0	0.29	ug/l	1	06/30/14	06/30/14	KV	EPA 200.7 [2]	EPA 200.7 [6]
Potassium	6930	1000	230	ug/l	1	06/30/14	06/30/14	KV	EPA 200.7 [2]	EPA 200.7 [6]
Selenium	5.6	0.80	0.42	ug/l	2	06/27/14	06/30/14	NT	EPA 200.8 [1]	EPA 200.8 [5]
Sodium	61300	400	36	ug/l	1	06/30/14	07/01/14	KV	EPA 200.7 [3]	EPA 200.7 [6]
Strontium	1160	5.0	0.12	ug/l	1	06/30/14	06/30/14	KV	EPA 200.7 [2]	EPA 200.7 [6]

(1) Instrument QC Batch: MA4936
(2) Instrument QC Batch: MA4937
(3) Instrument QC Batch: MA4942
(4) Instrument QC Batch: MA4948
(5) Prep QC Batch: MP13291
(6) Prep QC Batch: MP13301

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE 1 OF 1

ACCUTEST LABORATORIES

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #: JMS-2013-245
Accutest Job #: D59153

Client / Reporting Information

Company Name: Western Water and Land, Inc.
Street Address: 743 Horizon Ct., Suite 330
City: Grand Junction, CO 81506
Project Contact: Bruce Smith bsmith@westernwaterandland.com
Phone #: (970) 242-0170
Sampler(s) Name(s): Nick Sokowetz

Project Information

Project Name: RWF 11-35 BWS
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: WPX Energy
Street Address: 1058 CR 215
City: Parachute, CO
Attention: Brandon Danforth

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	PH, SCON, TDS	XCARBICALK	BRO, CHL, F, NO2, NO30, SO4	TPO4	*Dissolved Metals - Lab Filtered	VRSK175DGMEP	V8260BTXGRO	B8015DRO	BART	**Isotopic Methane		LAB USE ONLY
	Stokvis Lw750-FR		6-25-14	1145	NWS	GW	15	3				12				1	1	1	1	1	3	3	2	1	1		CL
	STOKVIS Lw750-FR		Field Parameters: pH(s.u.): 7.15	Temp(°C): 16.19	Sp.Cond(uS/cm): 588	DO(%): 95.7	DO(mg/L): 7.18	ORP(mv): 134.0	TURB(NTU): 0.73 (averaged)																		
			Field Parameters: pH(s.u.):	Temp(°C):	Sp.Cond(uS/cm):	DO(%):	DO(mg/L):	ORP(mv):	TURB(NTU):																		

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [x] Std. 15 Business Days
- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [ ] Report by PDF
- [x] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

*Dissolved Metals (200.7/200.8): Ba, B, Ca, Fe,Mg, Mn, K, SeMS, Na, Sr

**Hold pending RSK175 results

Relinquished by Sampler:	Received By:	Relinquished By:	Date Time:	Received By:
1 6-25-14 @ 1345	1 Service Center	2		2 6-26-14 11:00
Relinquished by Sampler:	Received By:	Relinquished By:	Date Time:	Received By:
3	3	4		4
Relinquished by:	Received By:	Custody Seal # NONE	Intact / Not Intact	Preserved where applicable	On Ice	Cooler Temp. 4.2
5	5					

D59153: Chain of Custody
Page 1 of 1

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1826-MB	3V31274.D	1	06/27/14	BR	n/a	n/a	V3V1826

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59153-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.31	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.5	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	96%	62-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	100%	69-130%

Blank Spike Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1826-BS	3V31275.D	1	06/27/14	BR	n/a	n/a	V3V1826

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59153-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	49.7	99	70-130
100-41-4	Ethylbenzene	50	51.1	102	70-130
108-88-3	Toluene	50	47.1	94	70-130
1330-20-7	Xylene (total)	150	142	95	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	62-130%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	106%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1826-BS	3V31276.D	1	06/27/14	BR	n/a	n/a	V3V1826

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59153-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	2200	1600	73	39-144

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	94%	62-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	104%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59165-1MS	3V31291.D	500	06/27/14	BR	n/a	n/a	V3V1826
D59165-1	3V31290.D	500	06/27/14	BR	n/a	n/a	V3V1826

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59153-1

CAS No.	Compound	D59165-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
71-43-2	Benzene	15200		25000	38300	92	62-130
100-41-4	Ethylbenzene	812	J	25000	26900	104	63-130
108-88-3	Toluene	29200		25000	57300	112	60-130
1330-20-7	Xylene (total)	12700		75000	85200	97	67-130

CAS No.	Surrogate Recoveries	MS	D59165-1	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	94%	62-130%
2037-26-5	Toluene-D8	105%	99%	70-130%
460-00-4	4-Bromofluorobenzene	104%	100%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59165-1MS	3V31292.D	500	06/27/14	BR	n/a	n/a	V3V1826
D59165-1	3V31290.D	500	06/27/14	BR	n/a	n/a	V3V1826

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59153-1

CAS No.	Compound	D59165-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
	TPH-GRO (C6-C10)	ND		1100000	879000	80	19-168

CAS No.	Surrogate Recoveries	MS	D59165-1	Limits
17060-07-0	1,2-Dichloroethane-D4	96%	94%	62-130%
2037-26-5	Toluene-D8	96%	99%	70-130%
460-00-4	4-Bromofluorobenzene	98%	100%	69-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59159-1DUP	3V31284.D	1	06/27/14	BR	n/a	n/a	V3V1826
D59159-1	3V31283.D	1	06/27/14	BR	n/a	n/a	V3V1826

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59153-1

CAS No.	Compound	D59159-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
71-43-2	Benzene	8.2		8.5		4	30
100-41-4	Ethylbenzene	2.6		2.7		4	30
108-88-3	Toluene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	30
	TPH-GRO (C6-C10)	ND		ND		nc	30

CAS No.	Surrogate Recoveries	DUP	D59159-1	Limits
17060-07-0	1,2-Dichloroethane-D4	92%	92%	62-130%
2037-26-5	Toluene-D8	96%	96%	70-130%
460-00-4	4-Bromofluorobenzene	101%	100%	69-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB531-MB	FB11480.D	1	06/27/14	JJ	n/a	n/a	GFB531

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D59153-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

Blank Spike Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB531-BS	FB11481.D	10	06/27/14	JJ	n/a	n/a	GFB531

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D59153-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.51	0.574	113	70-130
74-84-0	Ethane	0.956	0.995	104	70-130
74-98-6	Propane	1.4	1.46	104	67-130

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59097-1MS	FB11483.D	10	06/27/14	JJ	n/a	n/a	GFB531
D59097-1MSD	FB11484.D	10	06/27/14	JJ	n/a	n/a	GFB531
D59097-1	FB11482.D	1	06/27/14	JJ	n/a	n/a	GFB531

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D59153-1

CAS No.	Compound	D59097-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND		0.51	0.484	95	0.51	0.490	96	1	51-155/30
74-84-0	Ethane	ND		0.956	0.838	88	0.956	0.855	89	2	58-130/30
74-98-6	Propane	ND		1.4	1.19	85	1.4	1.23	88	3	46-130/30

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10160-MB	FH022566.D	1	07/01/14	JS	07/01/14	OP10160	GFH1035

The QC reported here applies to the following samples: **Method:** SW846-8015B

D59153-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	44%	10-130%

Blank Spike Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10160-BS	FH022568.D	1	07/01/14	JS	07/01/14	OP10160	GFH1035

The QC reported here applies to the following samples: **Method:** SW846-8015B

D59153-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	2.91	58	33-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	78%	10-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D59153
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10160-MS	FH022570.D	1	07/01/14	JS	07/01/14	OP10160	GFH1035
OP10160-MSD	FH022572.D	1	07/01/14	JS	07/01/14	OP10160	GFH1035
D59066-24	FH022574.D	1	07/01/14	JS	07/01/14	OP10160	GFH1035

The QC reported here applies to the following samples: **Method:** SW846-8015B

D59153-1

CAS No.	Compound	D59066-24 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		5	2.70	54	5	2.17	43	22	33-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D59066-24	Limits
84-15-1	o-Terphenyl	83%	75%	87%	10-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13291
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 06/27/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.1	2		
Antimony	0.40	.0022	.011		
Arsenic	0.20	.017	.044		
Barium	2.0	.016	.079	0.012	<2.0
Beryllium	0.20	.016	.069		
Boron	40	.49	2.1		
Cadmium	0.10	.036	.042		
Calcium	400	5.6	12		
Chromium	2.0	.053	.053		
Cobalt	0.20	.0049	.015		
Copper	2.0	.06	.13		
Iron	10	3.5	4.6		
Lead	0.50	.0079	.008		
Magnesium	100	1.3	1.3		
Manganese	1.0	.12	.13		
Molybdenum	1.0	.049	.029		
Nickel	2.0	.0088	.027		
Phosphorus	60	2.6	4.3		
Potassium	200	2.9	2.9		
Selenium	0.40	.06	.21	-0.028	<0.40
Silver	0.10	.0019	.008		
Sodium	500	4.9	4.9		
Strontium	20	.01	.015		
Thallium	0.20	.0024	.005		
Tin	10	.063	1.3		
Titanium	2.0	.059	.092		
Uranium	0.20	.0017	.002		
Vanadium	1.0	.037	.2		
Zinc	10	.21	.96		

Associated samples MP13291: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13291
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 06/27/14

Metal	D59147-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	22.7	433	400	102.6	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium					
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium					
Selenium	1.4	229	200	113.8	70-130
Silver	anr				
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP13291: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13291 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/27/14

Metal	D59147-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	22.7	431	400	102.1	0.5	20
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	1.4	224	200	111.3	2.2	20
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13291: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13291
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 06/27/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	401	400	100.3	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium				
Selenium	201	200	100.5	85-115
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13291: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 06/30/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	8.6	11		
Antimony	30	3.2	21		
Arsenic	25	5.2	9		
Barium	10	1.4	1.4		
Beryllium	10	.8	1.7		
Boron	50	6.7	6.6	2.3	<50
Cadmium	10	.4	.36		
Calcium	400	2.2	66	5.8	<400
Chromium	10	.4	1.4		
Cobalt	5.0	.4	.51		
Copper	10	1.2	1.5		
Iron	10	2.2	3.2	-0.30	<10
Lead	50	3.6	4.1		
Lithium	5.0	1.9	1.9		
Magnesium	200	14	29	1.6	<200
Manganese	5.0	.01	.29	0.20	<5.0
Molybdenum	10	.8	1.1		
Nickel	30	.9	.87		
Phosphorus	100	15	24		
Potassium	1000	130	230	-3.6	<1000
Selenium	50	8.8	9.3		
Silicon	50	5.2	5.6		
Silver	30	.4	.4		
Sodium	400	4.9	36	-22	<400
Strontium	5.0	.01	.12	0.10	<5.0
Thallium	10	2.9	4.9		
Tin	50	13	13		
Titanium	10	.15	.43		
Uranium	50	3.7	3.9		
Vanadium	10	.4	.39		
Zinc	30	.6	1.9		

Associated samples MP13301: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 06/30/14

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 06/30/14

Metal	D59153-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron	50.1	1130	1000	108.0	70-130
Cadmium	anr				
Calcium	98700	123000	25000	97.2	70-130
Chromium	anr				
Cobalt					
Copper	anr				
Iron	14.7	5100	5000	101.7	70-130
Lead	anr				
Lithium	anr				
Magnesium	54400	77500	25000	92.4	70-130
Manganese	0.80	511	500	102.0	70-130
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	6930	33400	25000	105.9	70-130
Selenium	anr				
Silicon	anr				
Silver	anr				
Sodium	61300	86700	25000	101.6	70-130
Strontium	1160	1650	500	98.0	70-130
Thallium	anr				
Tin					
Titanium					
Uranium	anr				
Vanadium					
Zinc	anr				

Associated samples MP13301: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/30/14

	D59153-1F	Spikelot		QC
Metal	Original MS	ICPALL2	% Rec	Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/30/14

Metal	D59153-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	50.1	1140	1000	109.0	0.9	20
Cadmium	anr					
Calcium	98700	123000	25000	97.2	0.0	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	14.7	5200	5000	103.7	1.9	20
Lead	anr					
Lithium	anr					
Magnesium	54400	78700	25000	97.2	1.5	20
Manganese	0.80	515	500	102.8	0.8	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	6930	33900	25000	107.9	1.5	20
Selenium	anr					
Silicon	anr					
Silver	anr					
Sodium	61300	88800	25000	110.0	2.4	20
Strontium	1160	1670	500	102.0	1.2	20
Thallium	anr					
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP13301: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/30/14

Metal	D59153-1F Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 06/30/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	1070	1000	107.0	85-115
Cadmium	anr			
Calcium	26600	25000	106.4	85-115
Chromium	anr			
Cobalt				
Copper	anr			
Iron	5200	5000	104.0	85-115
Lead	anr			
Lithium	anr			
Magnesium	26400	25000	105.6	85-115
Manganese	532	500	106.4	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	26800	25000	107.2	85-115
Selenium	anr			
Silicon	anr			
Silver	anr			
Sodium	26800	25000	107.2	85-115
Strontium	542	500	108.4	85-115
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP13301: D59153-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13301
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 06/30/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN25325	5.0	0.0	mg/l	100	97.8	97.8	90-110%
Alkalinity, Carbonate	GN25326	5.0	0.0	mg/l	100	97.8	97.8	80-120%
Alkalinity, Total as CaCO3	GN25324	5.0	0.0	mg/l	100	97.8	97.8	90-110%
Bromide	GP12922/GN25310			mg/l	0.5	0.530	106.0	90-110%
Chloride	GP12922/GN25310	0.50	0.0	mg/l	5	4.89	97.8	90-110%
Fluoride	GP12922/GN25310	0.10	0.0	mg/l	1	0.999	99.9	90-110%
Iron Reducing Bacteria	MB389	25	<25	CFU/ml				
Nitrogen, Nitrate	GP12922/GN25310	0.010	0.0	mg/l	0.1	0.102	102.0	90-110%
Nitrogen, Nitrite	GP12922/GN25310			mg/l	0.05	0.0508	101.6	90-110%
Phosphorus, Total	GP12964/GN25397	0.010	0.0	mg/l	0.38	0.40	105.7	80-120%
Slime Forming Bacteria	MB390	500	<500	CFU/ml				
Solids, Total Dissolved	GN25338	10	0.0	mg/l	400	394	98.5	90-110%
Specific Conductivity	GP12957/GN25386			umhos/cm	99.6	101	101.3	90-110%
Sulfate	GP12922/GN25310	0.50	0.0	mg/l	5	5.02	100.4	90-110%
Sulfate Reducing Bacteria	MB391	200	<200	CFU/ml				
pH	GN25312			su	8.00	7.97	99.6	99.1-100.9%

Associated Samples:
Batch MB389: D59153-1
Batch MB390: D59153-1
Batch MB391: D59153-1
Batch GN25312: D59153-1
Batch GN25324: D59153-1
Batch GN25325: D59153-1
Batch GN25326: D59153-1
Batch GN25338: D59153-1
Batch GP12922: D59153-1
Batch GP12957: D59153-1
Batch GP12964: D59153-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN25324	D59137-1	mg/l	189	188	0.8	0-20%
Phosphorus, Total	GP12964/GN25397	D59130-1	mg/l	0.020	0.023	13.9	0-20%
Solids, Total Dissolved	GN25338	D59152-1	mg/l	51500	51700	0.4	0-20%
Specific Conductivity	GP12957/GN25386	D59275-1	umhos/cm	1330	1330	0.5	0-20%

Associated Samples:
Batch GN25324: D59153-1
Batch GN25338: D59153-1
Batch GP12957: D59153-1
Batch GP12964: D59153-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN25324	D59137-1	mg/l	189	100	301	111.8	80-120%
Chloride	GP12922/GN25310	D59140-1	mg/l	3.2	5	8.1	98.0	80-120%
Fluoride	GP12922/GN25310	D59140-1	mg/l	0.32	1	1.4	108.0	80-120%
Nitrogen, Nitrate	GP12922/GN25310	D59140-1	mg/l	0.16	0.1	0.27	110.0	80-120%
Phosphorus, Total	GP12964/GN25397	D59130-1	mg/l	0.020	0.40	0.45	107.5	80-120%
Sulfate	GP12922/GN25310	D59140-1	mg/l	18.2	5	23.1	98.0	80-120%

Associated Samples:
Batch GN25324: D59153-1
Batch GP12922: D59153-1
Batch GP12964: D59153-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59153
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN25324	D59137-1	mg/l	189	100	284	5.8	20%
Chloride	GP12922/GN25310	D59140-1	mg/l	3.2	5	8.1	0.0	20%
Fluoride	GP12922/GN25310	D59140-1	mg/l	0.32	1	1.4	0.0	20%
Nitrogen, Nitrate	GP12922/GN25310	D59140-1	mg/l	0.16	0.1	0.27	0.0	20%
Phosphorus, Total	GP12964/GN25397	D59130-1	mg/l	0.020	0.40	0.44	2.2	20%
Sulfate	GP12922/GN25310	D59140-1	mg/l	18.2	5	23.0	0.4	20%

Associated Samples:
Batch GN25324: D59153-1
Batch GP12922: D59153-1
Batch GP12964: D59153-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Mountain States ACCUTEST LABORATORIES

07/22/14

Technical Report for

WPX Energy Rocky Mountain, LLC

WWLCOGJ: WPX RWF 11-35 BWQ

Accutest Job Number: D59550

Sampling Date: 07/08/14

Report to:

Western Water and Land, Inc.

jpahler@westernwaterandland.com

ATTN: Jessie Pahler

Total number of pages in report: **54**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D59550

WWLCOGJ: WPX RWF 11-35 BWQ

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D59550-1	07/08/14	10:20	RMK	07/09/14	AQ	Ground Water	COX 61751-F
D59550-1F	07/08/14	10:20	RMK	07/09/14	AQ	Groundwater Filtered	COX 61751-F
D59550-2	07/08/14	12:00	RMK	07/09/14	AQ	Ground Water	ROBERTS 27856
D59550-2F	07/08/14	12:00	RMK	07/09/14	AQ	Groundwater Filtered	ROBERTS 27856

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	WPX Energy Rocky Mountain, LLC	**Job No**	D59550
Site:	WWLCOGJ: WPX RWF 11-35 BWQ	**Report Date**	7/22/2014 12:28:58 PM

On 07/09/2014, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.9 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59550 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** V7V1494

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59613-1MS, D59613-2DUP were used as the QC samples indicated.

Volatiles by GC By Method RSK175 MOD

Matrix AQ **Batch ID:** GFB533

- All samples were analyzed within the recommended method holding time.
- Sample(s) D59544-1AMS, D59544-1AMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D59550-1,-2: The pH of the sample was >2 at time of analysis.

Extractables by GC By Method SW846-8015B

Matrix AQ **Batch ID:** OP10216

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D59273-15MS, D59273-15MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method EPA 200.7

Matrix AQ **Batch ID:** MP13383

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59297-1FMS, D59297-1FMSD were used as the QC samples for the metals analysis.

Metals By Method EPA 200.8

Matrix AQ **Batch ID:** MP13394

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59550-1FMS, D59550-1FMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ **Batch ID:** GP13004

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59517-1MS, D59517-1MSD were used as the QC samples for the Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- D59550-2 for Bromide: Elevated detection limit due to matrix interference.
- D59550-2 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59550-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59550-1 for Bromide: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH IRB-BART

Matrix AQ **Batch ID:** MB395

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SLYM-BART

Matrix AQ **Batch ID:** MB396

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SRB-BART

Matrix AQ **Batch ID:** MB397

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH8190/SM4500P-B/E

Matrix AQ **Batch ID:** GP13082

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59578-1DUP, D59578-1MS, D59578-1MSD were used as the QC samples for the Phosphorus, Total analysis.

Wet Chemistry By Method SM 2320B-2011

Matrix AQ **Batch ID:** GN25555

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59560-3MS, D59560-3MSD, D59601-1DUP were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix AQ **Batch ID:** GN25558

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ **Batch ID:** GN25559

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM 2510B-2011

Matrix	AQ	Batch ID:	GP13003

- Sample(s) D59564-4DUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM 2540C-2011

Matrix	AQ	Batch ID:	GN25531

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59478-2DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix	AQ	Batch ID:	GN25501

- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: D59550-1, D59550-2

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D59550
Account: WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ
Collected: 07/08/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D59550-1	**COX 61751-F**					
Methane [a]		0.0017	0.00080	0.00040	mg/l	RSK175 MOD
Alkalinity, Bicarbonate as CaCO3		354	5.0	2.0	mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		354	5.0	2.0	mg/l	SM 2320B-2011
Bromide [b]		0.060 J	0.10	0.050	mg/l	EPA 300.0/SW846 9056
Chloride		6.2	1.0	0.80	mg/l	EPA 300.0/SW846 9056
Fluoride		0.37	0.20	0.10	mg/l	EPA 300.0/SW846 9056
Iron Reducing Bacteria		74500	25		CFU/ml	HACH IRB-BART
Nitrogen, Nitrate		1.5	0.10	0.060	mg/l	EPA 300.0/SW846 9056
Phosphorus, Total		0.013	0.010	0.0080	mg/l	HACH8190/SM4500P-B/E
Slime Forming Bacteria		66500	500		CFU/ml	HACH SLYM-BART
Solids, Total Dissolved		602	10	5.0	mg/l	SM 2540C-2011
Specific Conductivity		802	1.0		umhos/cm	SM 2510B-2011
Sulfate		146	5.0	2.0	mg/l	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria		1200	200		CFU/ml	HACH SRB-BART
pH		7.55			su	SM4500HB+-2011/9040C
D59550-1F	**COX 61751-F**					
Barium		91.5	4.0	0.16	ug/l	EPA 200.8
Boron		37.3 J	50	6.6	ug/l	EPA 200.7
Calcium		80400	400	66	ug/l	EPA 200.7
Iron		3.3 J	10	3.2	ug/l	EPA 200.7
Magnesium		56400	200	29	ug/l	EPA 200.7
Manganese		16.2	5.0	0.29	ug/l	EPA 200.7
Potassium		6060	1000	230	ug/l	EPA 200.7
Selenium		3.3	0.80	0.42	ug/l	EPA 200.8
Sodium		53000	400	36	ug/l	EPA 200.7
Strontium		947	5.0	0.12	ug/l	EPA 200.7
D59550-2	**ROBERTS 27856**					
Methane [a]		0.00087	0.00080	0.00040	mg/l	RSK175 MOD
Alkalinity, Bicarbonate as CaCO3		347	5.0	2.0	mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		347	5.0	2.0	mg/l	SM 2320B-2011
Bromide [b]		0.054 J	0.10	0.050	mg/l	EPA 300.0/SW846 9056
Chloride		6.3	1.0	0.80	mg/l	EPA 300.0/SW846 9056
Fluoride		0.38	0.20	0.10	mg/l	EPA 300.0/SW846 9056
Iron Reducing Bacteria		74500	25		CFU/ml	HACH IRB-BART
Nitrogen, Nitrate		1.5	0.10	0.060	mg/l	EPA 300.0/SW846 9056
Slime Forming Bacteria		66500	500		CFU/ml	HACH SLYM-BART
Solids, Total Dissolved		610	10	5.0	mg/l	SM 2540C-2011
Specific Conductivity		799	1.0		umhos/cm	SM 2510B-2011
Sulfate		146	5.0	2.0	mg/l	EPA 300.0/SW846 9056

Summary of Hits

Job Number: D59550
Account: WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ
Collected: 07/08/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Sulfate Reducing Bacteria		1200	200		CFU/ml	HACH SRB-BART
pH		7.60			su	SM4500HB+-2011/9040C
D59550-2F	**ROBERTS 27856**					
Barium		95.7	4.0	0.16	ug/l	EPA 200.8
Boron		35.7 J	50	6.6	ug/l	EPA 200.7
Calcium		78200	400	66	ug/l	EPA 200.7
Iron		5.3 J	10	3.2	ug/l	EPA 200.7
Magnesium		54700	200	29	ug/l	EPA 200.7
Manganese		15.0	5.0	0.29	ug/l	EPA 200.7
Potassium		5940	1000	230	ug/l	EPA 200.7
Selenium		3.1	0.80	0.42	ug/l	EPA 200.8
Sodium		51600	400	36	ug/l	EPA 200.7
Strontium		931	5.0	0.12	ug/l	EPA 200.7

(a) The pH of the sample was >2 at time of analysis.
(b) Elevated detection limit due to matrix interference.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	COX 61751-F		
Lab Sample ID:	D59550-1	**Date Sampled:**	07/08/14
Matrix:	AQ - Ground Water	**Date Received:**	07/09/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V27329.D	1	07/11/14	JL	n/a	n/a	V7V1494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics+GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.31	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.5	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	95%		62-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	97%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	COX 61751-F		
Lab Sample ID:	D59550-1	**Date Sampled:**	07/08/14
Matrix:	AQ - Ground Water	**Date Received:**	07/09/14
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB11542.D	1	07/10/14	JJ	n/a	n/a	GFB533
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	22.0 Deg. C
Run #2				

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.0017	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

(a) The pH of the sample was >2 at time of analysis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	COX 61751-F		
Lab Sample ID:	D59550-1	**Date Sampled:**	07/08/14
Matrix:	AQ - Ground Water	**Date Received:**	07/09/14
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI13997.D	1	07/10/14	JJ	07/09/14	OP10216	GFI852
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		10-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: COX 61751-F
Lab Sample ID: D59550-1
Matrix: AQ - Ground Water
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Date Sampled: 07/08/14
Date Received: 07/09/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	354	5.0	2.0	mg/l	1	07/15/14	JD	SM 2320B-2011
Alkalinity, Carbonate	2.0 U	5.0	2.0	mg/l	1	07/15/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	354	5.0	2.0	mg/l	1	07/15/14	JD	SM 2320B-2011
Bromide [a]	0.060 J	0.10	0.050	mg/l	2	07/09/14 15:18	JB	EPA 300.0/SW846 9056
Chloride	6.2	1.0	0.80	mg/l	2	07/09/14 15:18	JB	EPA 300.0/SW846 9056
Fluoride	0.37	0.20	0.10	mg/l	2	07/09/14 15:18	JB	EPA 300.0/SW846 9056
Iron Reducing Bacteria	74500	25		CFU/ml	1	07/14/14	MM	HACH IRB-BART
Nitrogen, Nitrate	1.5	0.10	0.060	mg/l	10	07/09/14 18:14	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite [a]	0.0060 U	0.0080	0.0060	mg/l	2	07/09/14 15:18	JB	EPA 300.0/SW846 9056
Phosphorus, Total	0.013	0.010	0.0080	mg/l	1	07/18/14 08:30	JB	HACH8190/SM4500P-B/E
Slime Forming Bacteria	66500	500		CFU/ml	1	07/14/14	MM	HACH SLYM-BART
Solids, Total Dissolved	602	10	5.0	mg/l	1	07/14/14	AK	SM 2540C-2011
Specific Conductivity	802	1.0		umhos/cm	1	07/09/14	JD	SM 2510B-2011
Sulfate	146	5.0	2.0	mg/l	10	07/09/14 18:14	JB	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria	1200	200		CFU/ml	1	07/14/14	MM	HACH SRB-BART
pH	7.55			su	1	07/10/14 13:50	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Report of Analysis

Client Sample ID: COX 61751-F
Lab Sample ID: D59550-1F
Matrix: AQ - Groundwater Filtered
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Date Sampled: 07/08/14
Date Received: 07/09/14
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	91.5	4.0	0.16	ug/l	2	07/11/14	07/11/14	NT	EPA 200.8 [1]	EPA 200.8 [5]
Boron	37.3 J	50	6.6	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Calcium	80400	400	66	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Iron	3.3 J	10	3.2	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Magnesium	56400	200	29	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Manganese	16.2	5.0	0.29	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Potassium	6060	1000	230	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Selenium	3.3	0.80	0.42	ug/l	2	07/11/14	07/14/14	NT	EPA 200.8 [3]	EPA 200.8 [5]
Sodium	53000	400	36	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]
Strontium	947	5.0	0.12	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [4]

(1) Instrument QC Batch: MA4981
(2) Instrument QC Batch: MA4982
(3) Instrument QC Batch: MA4987
(4) Prep QC Batch: MP13383
(5) Prep QC Batch: MP13394

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Report of Analysis

Client Sample ID:	ROBERTS 27856		
Lab Sample ID:	D59550-2	**Date Sampled:**	07/08/14
Matrix:	AQ - Ground Water	**Date Received:**	07/09/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V27330.D	1	07/11/14	JL	n/a	n/a	V7V1494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics+GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.31	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.5	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		62-130%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	97%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ROBERTS 27856		
Lab Sample ID:	D59550-2	**Date Sampled:**	07/08/14
Matrix:	AQ - Ground Water	**Date Received:**	07/09/14
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB11543.D	1	07/10/14	JJ	n/a	n/a	GFB533
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	22.0 Deg. C
Run #2				

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.00087	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

(a) The pH of the sample was >2 at time of analysis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ROBERTS 27856		
Lab Sample ID:	D59550-2	**Date Sampled:**	07/08/14
Matrix:	AQ - Ground Water	**Date Received:**	07/09/14
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	WWLCOGJ: WPX RWF 11-35 BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI13999.D	1	07/10/14	JJ	07/09/14	OP10216	GFI852
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	85%		10-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: ROBERTS 27856
Lab Sample ID: D59550-2
Matrix: AQ - Ground Water
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Date Sampled: 07/08/14
Date Received: 07/09/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	347	5.0	2.0	mg/l	1	07/15/14	JD	SM 2320B-2011
Alkalinity, Carbonate	2.0 U	5.0	2.0	mg/l	1	07/15/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	347	5.0	2.0	mg/l	1	07/15/14	JD	SM 2320B-2011
Bromide [a]	0.054 J	0.10	0.050	mg/l	2	07/09/14 15:32	JB	EPA 300.0/SW846 9056
Chloride	6.3	1.0	0.80	mg/l	2	07/09/14 15:32	JB	EPA 300.0/SW846 9056
Fluoride	0.38	0.20	0.10	mg/l	2	07/09/14 15:32	JB	EPA 300.0/SW846 9056
Iron Reducing Bacteria	74500	25		CFU/ml	1	07/14/14	MM	HACH IRB-BART
Nitrogen, Nitrate	1.5	0.10	0.060	mg/l	10	07/09/14 18:29	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite [a]	0.0060 U	0.0080	0.0060	mg/l	2	07/09/14 15:32	JB	EPA 300.0/SW846 9056
Phosphorus, Total	0.0080 U	0.010	0.0080	mg/l	1	07/18/14 08:30	JB	HACH8190/SM4500P-B/E
Slime Forming Bacteria	66500	500		CFU/ml	1	07/14/14	MM	HACH SLYM-BART
Solids, Total Dissolved	610	10	5.0	mg/l	1	07/14/14	AK	SM 2540C-2011
Specific Conductivity	799	1.0		umhos/cm	1	07/09/14	JD	SM 2510B-2011
Sulfate	146	5.0	2.0	mg/l	10	07/09/14 18:29	JB	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria	1200	200		CFU/ml	1	07/14/14	MM	HACH SRB-BART
pH	7.60			su	1	07/10/14 13:50	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Report of Analysis

Client Sample ID: ROBERTS 27856
Lab Sample ID: D59550-2F
Matrix: AQ - Groundwater Filtered
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Date Sampled: 07/08/14
Date Received: 07/09/14
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	95.7	4.0	0.16	ug/l	2	07/11/14	07/11/14	NT	EPA 200.8 [1]	EPA 200.8 [4]
Boron	35.7 J	50	6.6	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Calcium	78200	400	66	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Iron	5.3 J	10	3.2	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Magnesium	54700	200	29	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Manganese	15.0	5.0	0.29	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Potassium	5940	1000	230	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Selenium	3.1	0.80	0.42	ug/l	2	07/11/14	07/11/14	NT	EPA 200.8 [1]	EPA 200.8 [4]
Sodium	51600	400	36	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]
Strontium	931	5.0	0.12	ug/l	1	07/10/14	07/11/14	KV	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA4981
(2) Instrument QC Batch: MA4982
(3) Prep QC Batch: MP13383
(4) Prep QC Batch: MP13394

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: DMS-2013-245 | Accutest Job #: D59550

Client / Reporting Information

Company Name: Western Water and Land, Inc.
Street Address: 743 Horizon Ct., Suite 330
City: Grand Junction, CO 81506
Project Contact: Bruce Smith bsmith@westernwaterandland.com
Phone #: (970) 242-0170
Sampler(s) Name(s): Ryan King

Project Information

Project Name: RWF 11-35 BWQ
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name: WPX Energy
Street Address: 1058 CR 320
City: Parachute, CO
Attention: Brandon Danforth

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	PH, SCON, TDS	XCARBICALK	BRO, CHL, F, NO2, NO30, SO4	TPO4	*Dissolved Metals - Lab Filtered	VRSK175DGMEP	V8260BTXGRO	B8015DRO	BART	**Isotopic Methane		LAB USE ONLY
	Cox 41751-F		7-8-14	1020	RMK	GW	15	3			1	11				1	1	1	1	1	3	3	2	1	1		01
	Roberts 27856		7-8-14	1200	RMK	GW	15	3			1	11				1	1	1	1	1	3	3	2	1	1		02
																											03
																											04
	Cox 41751-F		Field Parameters: pH(s.u.): 7.35	Temp(°C): 17.47	Sp.Cond(uS/cm): 960	DO(%): 47.8	DO(mg/L) 4.56	ORP(mv): 77.5	TURB(NTU): 1.21 (averaged)																		
	Roberts 27856		Field Parameters: pH(s.u.): 7.35	Temp(°C): 18.51	Sp.Cond(uS/cm): 962	DO(%): 51.2	DO(mg/L) 4.78	ORP(mv): 93.7	TURB(NTU): 2.26 (averaged)																		

Turnaround Time (Business days)

- [x] Std. 15 Business Days
- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Labilink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [ ] Report by PDF
- [x] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

*Dissolved Metals (200.7/200.8): Ba, B, Ca, Fe,Mg, Mn, K, SeMS, Na, Sr

**Hold pending RSK175 results

VRSK175DGMEP is unpreserved
JL 7-9-14

1 Relinquished by Sampler: RK 7-8-14 @1500	1 Received By: ~~Rifle Service Center~~	2 Relinquished By:	Date Time:	2 Received By: 7-9-14 1245			
3 Relinquished by Sampler:	3 Received By:	4 Relinquished By:	Date Time:	4 Received By:			
5 Relinquished by:	5 Received By:	Custody Seal # CO	Intact / Not Intact	Preserved where applicable	On Ice	Cooler Temp. 2.9	

5.1.5

D59550: Chain of Custody
Page 1 of 1

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1494-MB	7V27315.D	1	07/11/14	JL	n/a	n/a	V7V1494

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59550-1, D59550-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.31	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.5	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	97%	62-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	97%	69-130%

Blank Spike Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1494-BS	7V27316.D	1	07/11/14	JL	n/a	n/a	V7V1494

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59550-1, D59550-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	50.9	102	70-130
100-41-4	Ethylbenzene	50	50.6	101	70-130
108-88-3	Toluene	50	50.6	101	70-130
1330-20-7	Xylene (total)	150	155	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	62-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	96%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1494-BS	7V27317.D	1	07/11/14	JL	n/a	n/a	V7V1494

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59550-1, D59550-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	2200	1960	89	39-144

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	96%	62-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	96%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59613-1MS	7V27319.D	5	07/11/14	JL	n/a	n/a	V7V1494
D59613-1	7V27318.D	1	07/11/14	JL	n/a	n/a	V7V1494
D59613-1	7V27321.D	5	07/11/14	JL	n/a	n/a	V7V1494

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59550-1, D59550-2

CAS No.	Compound	D59613-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
71-43-2	Benzene	0.64	J	250	255	102	62-130
100-41-4	Ethylbenzene	ND		250	258	103	63-130
108-88-3	Toluene	ND		250	255	102	60-130
1330-20-7	Xylene (total)	ND		750	791	105	67-130

CAS No.	Surrogate Recoveries	MS	D59613-1	D59613-1	Limits
17060-07-0	1,2-Dichloroethane-D4	100%	97%	98%	62-130%
2037-26-5	Toluene-D8	97%	97%	96%	70-130%
460-00-4	4-Bromofluorobenzene	96%	97%	98%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59613-1MS	7V27320.D	5	07/11/14	JL	n/a	n/a	V7V1494
D59613-1	7V27318.D	1	07/11/14	JL	n/a	n/a	V7V1494
D59613-1	7V27321.D	5	07/11/14	JL	n/a	n/a	V7V1494

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59550-1, D59550-2

CAS No.	Compound	D59613-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
	TPH-GRO (C6-C10)	ND		11000	9670	88	19-168

CAS No.	Surrogate Recoveries	MS	D59613-1	D59613-1	Limits
17060-07-0	1,2-Dichloroethane-D4	101%	97%	98%	62-130%
2037-26-5	Toluene-D8	98%	97%	96%	70-130%
460-00-4	4-Bromofluorobenzene	99%	97%	98%	69-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59613-2DUP	7V27323.D	1	07/11/14	JL	n/a	n/a	V7V1494
D59613-2	7V27322.D	1	07/11/14	JL	n/a	n/a	V7V1494

The QC reported here applies to the following samples: **Method:** SW846 8260B

D59550-1, D59550-2

CAS No.	Compound	D59613-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
108-88-3	Toluene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	30
	TPH-GRO (C6-C10)	ND		ND		nc	30

CAS No.	Surrogate Recoveries	DUP	D59613-2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	98%	62-130%
2037-26-5	Toluene-D8	97%	97%	70-130%
460-00-4	4-Bromofluorobenzene	97%	96%	69-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB533-MB	FB11535.D	1	07/10/14	JJ	n/a	n/a	GFB533

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D59550-1, D59550-2

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

Blank Spike Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB533-BS	FB11536.D	10	07/10/14	JJ	n/a	n/a	GFB533

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D59550-1, D59550-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.51	0.568	111	70-130
74-84-0	Ethane	0.956	0.986	103	70-130
74-98-6	Propane	1.4	1.47	105	67-130

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59544-1AMS	FB11538.D	10	07/10/14	JJ	n/a	n/a	GFB533
D59544-1AMSD	FB11539.D	10	07/10/14	JJ	n/a	n/a	GFB533
D59544-1A	FB11537.D	1	07/10/14	JJ	n/a	n/a	GFB533

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D59550-1, D59550-2

CAS No.	Compound	D59544-1A mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	0.0046		0.51	0.634	123	0.51	0.489	95	26	51-155/30
74-84-0	Ethane	ND		0.956	1.09	114	0.956	0.846	88	25	58-130/30
74-98-6	Propane	ND		1.4	1.62	116	1.4	1.25	89	26	46-130/30

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10216-MB	FI13992.D	1	07/10/14	JJ	07/09/14	OP10216	GFI851

The QC reported here applies to the following samples: **Method:** SW846-8015B

D59550-1, D59550-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	89%	10-130%

Blank Spike Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10216-BS	FI13994.D	1	07/10/14	JJ	07/09/14	OP10216	GFI851

The QC reported here applies to the following samples: **Method:** SW846-8015B

D59550-1, D59550-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	2.62	52	33-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	92%	10-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D59550
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10216-MS	FI13996.D	1	07/10/14	JJ	07/09/14	OP10216	GFI851
OP10216-MSD	FI13998.D	1	07/10/14	JJ	07/09/14	OP10216	GFI851
D59273-15	FI14000.D	1	07/10/14	JJ	07/09/14	OP10216	GFI851

The QC reported here applies to the following samples: **Method:** SW846-8015B

D59550-1, D59550-2

CAS No.	Compound	D59273-15 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		5	2.35	47	5	2.10	42	11	33-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D59273-15	Limits
84-15-1	o-Terphenyl	92%	72%	95%	10-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/10/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	8.6	11		
Antimony	30	3.2	21		
Arsenic	25	5.2	9		
Barium	10	1.4	1.4		
Beryllium	10	.8	1.7		
Boron	50	6.7	6.6	0.60	<50
Cadmium	10	.4	.36		
Calcium	400	2.2	66	7.6	<400
Chromium	10	.4	1.4		
Cobalt	5.0	.4	.51		
Copper	10	1.2	1.5		
Iron	10	2.2	3.2	2.0	<10
Lead	50	3.6	4.1		
Lithium	5.0	1.9	1.9		
Magnesium	200	14	29	0.40	<200
Manganese	5.0	.01	.29	2.3	<5.0
Molybdenum	10	.8	1.1		
Nickel	30	.9	.87		
Phosphorus	100	15	24		
Potassium	1000	130	230	10.1	<1000
Selenium	50	8.8	9.3		
Silicon	50	5.2	5.6		
Silver	30	.4	.4		
Sodium	400	4.9	36	31.5	<400
Strontium	5.0	.01	.12	0.0	<5.0
Thallium	10	2.9	4.9		
Tin	50	13	13		
Titanium	10	.15	.43		
Uranium	50	3.7	3.9		
Vanadium	10	.4	.39		
Zinc	30	.6	1.9		

Associated samples MP13383: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/10/14

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/10/14

Metal	D59297-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron	7.4	1050	1000	104.3	70-130
Cadmium	anr				
Calcium	30800	57100	25000	105.2	70-130
Chromium	anr				
Cobalt					
Copper	anr				
Iron	19.0	5130	5000	102.2	70-130
Lead	anr				
Lithium					
Magnesium	6630	32500	25000	103.5	70-130
Manganese	3.8	502	500	99.6	70-130
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	1820	28300	25000	105.9	70-130
Selenium					
Silicon					
Silver					
Sodium	17700	43700	25000	104.0	70-130
Strontium	269	790	500	104.2	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP13383: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/10/14

	D59297-1F	Spikelot		QC
Metal	Original MS	ICPALL2	% Rec	Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/10/14

Metal	D59297-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	7.4	1070	1000	106.3	1.9	20
Cadmium	anr					
Calcium	30800	58400	25000	110.4	2.3	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	19.0	5160	5000	102.8	0.6	20
Lead	anr					
Lithium						
Magnesium	6630	32900	25000	105.1	1.2	20
Manganese	3.8	514	500	102.0	2.4	20
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	1820	28500	25000	106.7	0.7	20
Selenium						
Silicon						
Silver						
Sodium	17700	44000	25000	105.2	0.7	20
Strontium	269	793	500	104.8	0.4	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13383: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/10/14

Metal	D59297-1F Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 07/10/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1050	1000	105.0	85-115
Cadmium	anr			
Calcium	26900	25000	107.6	85-115
Chromium	anr			
Cobalt				
Copper	anr			
Iron	5130	5000	102.6	85-115
Lead	anr			
Lithium				
Magnesium	25700	25000	102.8	85-115
Manganese	512	500	102.4	85-115
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	25900	25000	103.6	85-115
Selenium				
Silicon				
Silver				
Sodium	25400	25000	101.6	85-115
Strontium	521	500	104.2	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13383: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13383 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/10/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13394
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 07/11/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.1	2		
Antimony	0.40	.0022	.011		
Arsenic	0.20	.017	.044		
Barium	2.0	.016	.079	0.031	<2.0
Beryllium	0.20	.016	.069		
Boron	40	.49	2.1		
Cadmium	0.10	.036	.042		
Calcium	400	5.6	12		
Chromium	2.0	.053	.053		
Cobalt	0.20	.0049	.015		
Copper	2.0	.06	.13		
Iron	10	3.5	4.6		
Lead	0.50	.0079	.008		
Magnesium	100	1.3	1.3		
Manganese	1.0	.12	.13		
Molybdenum	1.0	.049	.029		
Nickel	2.0	.0088	.027		
Phosphorus	60	2.6	4.3		
Potassium	200	2.9	2.9		
Selenium	0.40	.06	.21	-0.020	<0.40
Silver	0.10	.0019	.008		
Sodium	500	4.9	4.9		
Strontium	20	.01	.015		
Thallium	0.20	.0024	.005		
Tin	10	.063	1.3		
Titanium	2.0	.059	.092		
Uranium	0.20	.0017	.002		
Vanadium	1.0	.037	.2		
Zinc	10	.21	.96		

Associated samples MP13394: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13394
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 07/11/14

Metal	D59550-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony					
Arsenic					
Barium	91.5	509	400	104.4	70-130
Beryllium					
Boron					
Cadmium					
Calcium	anr				
Chromium					
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium	anr				
Selenium	3.3	182	200	89.4	70-130
Silver					
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP13394: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13394 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 07/11/14

Metal	D59550-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic						
Barium	91.5	513	400	105.4	0.8	20
Beryllium						
Boron						
Cadmium						
Calcium	anr					
Chromium						
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium	anr					
Selenium	3.3	178	200	87.4	2.2	20
Silver						
Sodium	anr					
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13394: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

QC Batch ID: MP13394
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 07/11/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic				
Barium	414	400	103.5	85-115
Beryllium				
Boron				
Cadmium				
Calcium	anr			
Chromium				
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	anr			
Selenium	206	200	103.0	85-115
Silver				
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13394: D59550-1F, D59550-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN25558	5.0	0.0	mg/l	100	97.3	97.3	90-110%
Alkalinity, Carbonate	GN25559	5.0	0.0	mg/l	100	97.3	97.3	80-120%
Alkalinity, Total as CaCO3	GN25555	5.0	0.0	mg/l	100	97.3	97.3	90-110%
Bromide	GP13004/GN25484	0.050	0.0	mg/l	0.5	0.547	109.4	90-110%
Chloride	GP13004/GN25484	0.50	0.0	mg/l	5	4.98	99.6	90-110%
Fluoride	GP13004/GN25484	0.10	0.0	mg/l	1	1.03	103.0	90-110%
Iron Reducing Bacteria	MB395	25	<25	CFU/ml				
Nitrogen, Nitrate	GP13004/GN25484	0.010	0.0	mg/l	0.1	0.104	104.0	90-110%
Nitrogen, Nitrite	GP13004/GN25484	0.0040	0.0	mg/l	0.05	0.0543	108.6	90-110%
Phosphorus, Total	GP13082/GN25644	0.010	0.0	mg/l	0.38	0.39	103.9	80-120%
Slime Forming Bacteria	MB396	500	<500	CFU/ml				
Solids, Total Dissolved	GN25531	10	0.0	mg/l	400	418	104.5	90-110%
Specific Conductivity	GP13003/GN25482			umhos/cm	99.6	97	97.8	90-110%
Sulfate	GP13004/GN25484	0.50	0.0	mg/l	5	5.05	101.0	90-110%
Sulfate Reducing Bacteria	MB397	200	<200	CFU/ml				
pH	GN25501			su	8.00	8.00	100.0	99.1-100.9%

Associated Samples:
Batch MB395: D59550-1, D59550-2
Batch MB396: D59550-1, D59550-2
Batch MB397: D59550-1, D59550-2
Batch GN25501: D59550-1, D59550-2
Batch GN25531: D59550-1, D59550-2
Batch GN25555: D59550-1, D59550-2
Batch GN25558: D59550-1, D59550-2
Batch GN25559: D59550-1, D59550-2
Batch GP13003: D59550-1, D59550-2
Batch GP13004: D59550-1, D59550-2
Batch GP13082: D59550-1, D59550-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN25555	D59601-1	mg/l	378	373	1.3	0-20%
Phosphorus, Total	GP13082/GN25644	D59578-1	mg/l	0.39	0.38	2.6	0-20%
Solids, Total Dissolved	GN25531	D59478-2	mg/l	696	720	3.4	0-20%
Specific Conductivity	GP13003/GN25482	D59564-4	umhos/cm	18700	18800	0.2	0-20%

Associated Samples:
Batch GN25531: D59550-1, D59550-2
Batch GN25555: D59550-1, D59550-2
Batch GP13003: D59550-1, D59550-2
Batch GP13082: D59550-1, D59550-2
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN25555	D59560-3	mg/l	119	100	226	107.1	80-120%
Bromide	GP13004/GN25484	D59517-1	mg/l	0.0	0.5	0.55	110.0	80-120%
Chloride	GP13004/GN25484	D59517-1	mg/l	0.64	5	5.4	95.2	80-120%
Fluoride	GP13004/GN25484	D59517-1	mg/l	0.066	1	1.1	103.4	80-120%
Nitrogen, Nitrate	GP13004/GN25484	D59517-1	mg/l	0.045	0.1	0.15	105.0	80-120%
Nitrogen, Nitrite	GP13004/GN25484	D59517-1	mg/l	0.0	0.05	0.053	106.0	80-120%
Phosphorus, Total	GP13082/GN25644	D59578-1	mg/l	0.39	0.40	0.78	97.5	80-120%
Sulfate	GP13004/GN25484	D59517-1	mg/l	8.8	5	14.1	106.0	80-120%

Associated Samples:
Batch GN25555: D59550-1, D59550-2
Batch GP13004: D59550-1, D59550-2
Batch GP13082: D59550-1, D59550-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59550
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: WPX RWF 11-35 BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN25555	D59560-3	mg/l	119	100	215	4.8	20%
Bromide	GP13004/GN25484	D59517-1	mg/l	0.0	0.5	0.55	0.0	20%
Chloride	GP13004/GN25484	D59517-1	mg/l	0.64	5	5.5	1.8	20%
Fluoride	GP13004/GN25484	D59517-1	mg/l	0.066	1	1.1	0.0	20%
Nitrogen, Nitrate	GP13004/GN25484	D59517-1	mg/l	0.045	0.1	0.15	0.0	20%
Nitrogen, Nitrite	GP13004/GN25484	D59517-1	mg/l	0.0	0.05	0.054	1.9	20%
Phosphorus, Total	GP13082/GN25644	D59578-1	mg/l	0.39	0.40	0.77	1.3	20%
Sulfate	GP13004/GN25484	D59517-1	mg/l	8.8	5	14.1	0.0	20%

Associated Samples:
Batch GN25555: D59550-1, D59550-2
Batch GP13004: D59550-1, D59550-2
Batch GP13082: D59550-1, D59550-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits