Mountain States ACCUTEST LABORATORIES

01/12/15

Technical Report for

WPX Energy Rocky Mountain, LLC

WWLCOGJ: Juhan 14-26H BWQ

Accutest Job Number: D65993

Sampling Date: 12/18/14

Report to:

Western Water and Land, Inc.

SGoodwin@westernwaterandland.com

ATTN: Shelby Kipp

Total number of pages in report: **52**

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: D65993

WWLCOGJ: Juhan 14-26H BWQ

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D65993-1	12/18/14	10:10	NWS	12/19/14	AQ	Ground Water	PORCUPINE WELL NO. 1
D65993-1F	12/18/14	10:10	NWS	12/19/14	AQ	Groundwater Filtered	PORCUPINE WELL NO. 1
D65993-2	12/18/14	00:00	NWS	12/19/14	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	WPX Energy Rocky Mountain, LLC	**Job No**	D65993
Site:	WWLCOGJ: Johan 14-26H BWQ	**Report Date**	1/7/2015 12:42:51 PM

On 12/19/2014, 1 sample(s), 1 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.9 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D65993 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:** C:VQ1125

- The data for SW846 8260B meets quality control requirements.
- D65993-1,-2: Analysis performed at Accutest Laboratories, San Jose, CA.

Volatiles by GC By Method RSK175 MOD

Matrix: AQ **Batch ID:** GFB598

- All samples were analyzed within the recommended method holding time.
- Sample(s) D65789-1MS, D65789-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D65993-1: The pH of the sample was >2 at time of analysis.
- D65789-1MS and D65789-1MSD: The pH of the sample was >2 at time of analysis.

Extractables by GC By Method SW846-8015B

Matrix: AQ **Batch ID:** OP11112

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D60583-12MS, D60583-12MSD were used as the QC samples indicated.

Metals By Method EPA 200.7

Matrix: AQ **Batch ID:** MP14840

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D66010-1FMS, D66010-1FMSD were used as the QC samples for the metals analysis.

Metals By Method EPA 200.8

Matrix: AQ **Batch ID:** MP14835

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65993-1FMS, D65993-1FMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix: AQ **Batch ID:** GP14292

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65992-1MS, D65992-1MSD were used as the QC samples for the Bromide, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide, Chloride analysis.
- The matrix spike (MS) recovery(s) of Chloride are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- D65993-1 for Bromide: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH IRB-BART

Matrix: AQ **Batch ID:** MB481

- 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:** MB482

- 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:** MB483

- 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:** GP14339

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65993-1MS, D65993-1MSD, D65993-1DUP were used as the QC samples for the Phosphorus, Total analysis.
- The duplicate RPD(s) for Phosphorus, Total are outside control limits for sample GP14339-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SM 2320B-2011

Matrix: AQ **Batch ID:** GN28045

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65992-1DUP, D65992-1MS, D65992-1MSD were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix: AQ **Batch ID:** GN28047

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

Matrix: AQ **Batch ID:** GN28050

- 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:** GP14309

- Sample(s) D65571-1DUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN27989

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65857-3DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix: AQ **Batch ID:** GN28033

- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: D65993-1

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.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Accutest Mountain States	**Job No**	D65993
Site:	WILLCOP: WWLCOGJ: Johan 14-26H BWQ	**Report Date**	1/7/2015 12:04:37 AM

1 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 12/18/2014 and were received at Accutest on 12/19/2014 properly preserved, at 5.9 Deg. C and intact. These Samples received an Accutest job number of D65993. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** VQ1125

- Sample(s) C37811-1MS, C37811-1MSD were used as the QC samples indicated.

Accutest Laboratories Northern California (ALNCA) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALNCA and as stated on the COC. ALNCA certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALNCA Quality Manual except as noted above. This report is to be used in its entirety. ALNCA is not responsible for any assumptions of data quality if partial data packages are used

Summary of Hits

Job Number: D65993
Account: WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ
Collected: 12/18/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D65993-1	**PORCUPINE WELL NO. 1**					
Alkalinity, Bicarbonate as CaCO3		452	5.0	2.0	mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		452	5.0	2.0	mg/l	SM 2320B-2011
Bromide [a]		0.087 J	0.10	0.050	mg/l	EPA 300.0/SW846 9056
Chloride		9.7	1.0	0.80	mg/l	EPA 300.0/SW846 9056
Fluoride		0.32	0.20	0.10	mg/l	EPA 300.0/SW846 9056
Iron Reducing Bacteria		9000	25		CFU/ml	HACH IRB-BART
Nitrogen, Nitrate		3.2	0.20	0.12	mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrite		0.099	0.0080	0.0060	mg/l	EPA 300.0/SW846 9056
Phosphorus, Total		0.018	0.010	0.0080	mg/l	HACH8190/SM4500P-B/E
Slime Forming Bacteria		< 500	500		CFU/ml	HACH SLYM-BART
Solids, Total Dissolved		842	10	5.0	mg/l	SM 2540C-2011
Specific Conductivity		1060	1.0		umhos/cm	SM 2510B-2011
Sulfate		209	10	4.0	mg/l	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria		18000	200		CFU/ml	HACH SRB-BART
pH		7.47			su	SM4500HB + -2011/9040C
D65993-1F	**PORCUPINE WELL NO. 1**					
Barium		41.7	10	1.4	ug/l	EPA 200.7
Boron		67.2	50	6.6	ug/l	EPA 200.7
Calcium		112000	400	66	ug/l	EPA 200.7
Iron		16.2	10	3.2	ug/l	EPA 200.7
Magnesium		66700	200	29	ug/l	EPA 200.7
Manganese		179	5.0	0.29	ug/l	EPA 200.7
Potassium		6200	1000	230	ug/l	EPA 200.7
Selenium		5.7	0.80	0.42	ug/l	EPA 200.8
Sodium		65300	400	36	ug/l	EPA 200.7
Strontium		1190	5.0	0.12	ug/l	EPA 200.7
D65993-2	**TRIP BLANK**					

No hits reported in this sample.

(a) Elevated detection limit due to matrix interference.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: PORCUPINE WELL NO. 1
Lab Sample ID: D65993-1
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: WWLCOGJ: Juhan 14-26H BWQ

Date Sampled: 12/18/14
Date Received: 12/19/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	Q26228.D	1	01/01/15	ANC	n/a	n/a	C:VQ1125
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

(a) Analysis performed at Accutest Laboratories, San Jose, CA.

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:	PORCUPINE WELL NO. 1		
Lab Sample ID:	D65993-1	**Date Sampled:**	12/18/14
Matrix:	AQ - Ground Water	**Date Received:**	12/19/14
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	WWLCOGJ: Juhan 14-26H BWQ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB12909.D	1	12/22/14	JJ	n/a	n/a	GFB598
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	

(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: PORCUPINE WELL NO. 1
Lab Sample ID: D65993-1
Matrix: AQ - Ground Water
Method: SW846-8015B SW846 3510C
Project: WWLCOGJ: Juhan 14-26H BWQ

Date Sampled: 12/18/14
Date Received: 12/19/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD38723.D	1	12/26/14	JJ	12/22/14	OP11112	GFD1730
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	54%		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: PORCUPINE WELL NO. 1
Lab Sample ID: D65993-1
Matrix: AQ - Ground Water
Project: WWLCOGJ: Juhan 14-26H BWQ

Date Sampled: 12/18/14
Date Received: 12/19/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	452	5.0	2.0	mg/l	1	12/26/14	TJ	SM 2320B-2011
Alkalinity, Carbonate	2.0 U	5.0	2.0	mg/l	1	12/26/14	TJ	SM 2320B-2011
Alkalinity, Total as CaCO3	452	5.0	2.0	mg/l	1	12/26/14	TJ	SM 2320B-2011
Bromide [a]	0.087 J	0.10	0.050	mg/l	2	12/19/14 15:49	JB	EPA 300.0/SW846 9056
Chloride	9.7	1.0	0.80	mg/l	2	12/19/14 15:49	JB	EPA 300.0/SW846 9056
Fluoride	0.32	0.20	0.10	mg/l	2	12/19/14 15:49	JB	EPA 300.0/SW846 9056
Iron Reducing Bacteria	9000	25		CFU/ml	1	12/12/14	MM	HACH IRB-BART
Nitrogen, Nitrate	3.2	0.20	0.12	mg/l	20	12/19/14 21:12	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite	0.099	0.0080	0.0060	mg/l	2	12/19/14 15:49	JB	EPA 300.0/SW846 9056
Phosphorus, Total	0.018	0.010	0.0080	mg/l	1	12/30/14 08:00	JD	HACH8190/SM4500P-B/E
Slime Forming Bacteria	< 500	500		CFU/ml	1	12/29/14	MM	HACH SLYM-BART
Solids, Total Dissolved	842	10	5.0	mg/l	1	12/23/14	JD	SM 2540C-2011
Specific Conductivity	1060	1.0		umhos/cm	1	12/24/14	TJ	SM 2510B-2011
Sulfate	209	10	4.0	mg/l	20	12/19/14 21:12	JB	EPA 300.0/SW846 9056
Sulfate Reducing Bacteria	18000	200		CFU/ml	1	12/29/14	MM	HACH SRB-BART
pH	7.47			su	1	12/24/14 14:00	AK	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: PORCUPINE WELL NO. 1
Lab Sample ID: D65993-1F
Matrix: AQ - Groundwater Filtered
Project: WWLCOGJ: Juhan 14-26H BWQ

Date Sampled: 12/18/14
Date Received: 12/19/14
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	41.7	10	1.4	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Boron	67.2	50	6.6	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Calcium	112000	400	66	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Iron	16.2	10	3.2	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Magnesium	66700	200	29	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Manganese	179	5.0	0.29	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Potassium	6200	1000	230	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Selenium	5.7	0.80	0.42	ug/l	2	12/22/14	12/24/14	KV	EPA 200.8 [2]	EPA 200.8 [3]
Sodium	65300	400	36	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]
Strontium	1190	5.0	0.12	ug/l	1	12/23/14	12/23/14	KV	EPA 200.7 [1]	EPA 200.7 [4]

(1) Instrument QC Batch: MA5616
(2) Instrument QC Batch: MA5620
(3) Prep QC Batch: MP14835
(4) Prep QC Batch: MP14840

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: TRIP BLANK
Lab Sample ID: D65993-2
Matrix: AQ - Trip Blank Water
Method: SW846 8260B
Project: WWLCOGJ: Juhan 14-26H BWQ

Date Sampled: 12/18/14
Date Received: 12/19/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	Q26224.D	1	01/01/15	ANC	n/a	n/a	C:VQ1125
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

(a) Analysis performed at Accutest Laboratories, San Jose, CA.

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

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

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

FED-EX Tracking #: 3775-2013-345
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: D65993

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 Solanetz

Project Information

Project Name: Juhan 14-26H 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 215
City: Parachute, CO
Attention: Mike Gardner

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Preserved: 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
	Porcupine Well No. 1		12-18-14	1010	NS&GW	GW	15	3			1	11				1	1	1	1	1	3	3	2	1	1	Cl
	Trip blank																					Y				G2
																										B
	Porcupine Well No.1		Field Parameters: pH(s.u.): 7.22	Temp(°C): 12.96	Sp.Cond(uS/cm): 1205	DO(%): 32.1	DO(mg/L): 3.02	ORP(mv): 131.8	TURB(NTU): 0.2 (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 Labilink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMEN
- [ ] COMMEN+
- [ ]
- [ ] 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 EN = 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	12-18-14 @ 1445	Service Center			12/19/14 1140
2					
3					
4					
5					

Custody Seal # HD/CC [X] Intact [ ] Not Intact | Preserved where applicable [X] | On Ice [X] | Cooler Temp. 4.9

D65993: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D65993 **Client:** WWL **Project:**

Date / Time Received: 12/19/2014 11:40:00 AM **Delivery Method:** **Airbill #'s:** CO

Cooler Temps (Initial/Adjusted): #1: (4.9/4.9);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Bar Therm;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Comments

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Accutest Laboratories
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Wheat Ridge, CO
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D65993: Chain of Custody
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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: D65993
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB598-MB	FB12873.D	1	12/22/14	JJ	n/a	n/a	GFB598

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

D65993-1

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: D65993
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB598-BS	FB12874.D	10	12/22/14	JJ	n/a	n/a	GFB598

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

D65993-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.527	103	70-130
74-84-0	Ethane	0.923	0.953	103	70-130
74-98-6	Propane	1.38	1.43	104	67-130

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D65993
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D65789-1MS [a]	FB12878.D	10	12/22/14	JJ	n/a	n/a	GFB598
D65789-1MSD [a]	FB12879.D	10	12/22/14	JJ	n/a	n/a	GFB598
D65789-1 [a]	FB12875.D	1	12/22/14	JJ	n/a	n/a	GFB598
D65789-1 [a]	FB12877.D	10	12/22/14	JJ	n/a	n/a	GFB598

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

D65993-1

CAS No.	Compound	D65789-1 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	2.43 [b]		0.512	2.88	88	0.512	3.00	111	4	51-155/30
74-84-0	Ethane	0.0081		0.923	0.915	99	0.923	0.911	99	0	58-130/30
74-98-6	Propane	ND		1.38	1.37	99	1.38	1.36	99	1	46-130/30

(a) The pH of the sample was > 2 at time of analysis.
(b) Result is from Run #2.

* = 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: D65993
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11112-MB	FD38659.D	1	12/26/14	JJ	12/22/14	OP11112	GFD1730

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

D65993-1

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	67%	10-130%

Blank Spike Summary

Job Number: D65993
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11112-BS	FD38661.D	1	12/26/14	JJ	12/22/14	OP11112	GFD1730

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

D65993-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	2.21	44	33-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	70%	10-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D65993
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11112-MS	FD38663.D	1	12/26/14	JJ	12/22/14	OP11112	GFD1730
OP11112-MSD	FD38665.D	1	12/26/14	JJ	12/22/14	OP11112	GFD1730
D60583-12	FD38667.D	1	12/26/14	JJ	12/22/14	OP11112	GFD1730

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

D65993-1

CAS No.	Compound	D60583-12 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	2.77	55	5	2.71	54	2	33-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D60583-12	Limits
84-15-1	o-Terphenyl	93%	92%	88%	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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14835
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 12/22/14

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		
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	-0.033	<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 MP14835: D65993-1F

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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14835 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/22/14

Metal	D65993-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Magnesium					
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium					
Selenium	5.7	226	200	110.2	70-130
Silver	anr				
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP14835: D65993-1F

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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14835 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/22/14

Metal	D65993-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	5.7	227	200	110.7	0.4	20
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP14835: D65993-1F

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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14835
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 12/22/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium				
Selenium	217	200	108.5	85-115
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP14835: D65993-1F

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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/23/14

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	0.0	<10
Beryllium	10	.8	1.7		
Boron	50	6.7	6.6	0.40	<50
Cadmium	10	.4	.36		
Calcium	400	2.2	66	5.6	<400
Chromium	10	.4	1.4		
Cobalt	5.0	.4	.51		
Copper	10	1.2	1.5		
Iron	10	2.2	3.2	1.5	<10
Lead	50	3.6	4.1		
Lithium	5.0	1.9	1.9		
Magnesium	200	14	29	4.5	<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	2.1	<1000
Selenium	50	8.8	9.3		
Silicon	50	5.2	5.6		
Silver	30	.4	.4		
Sodium	400	4.9	36	13.2	<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 MP14840: D65993-1F

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/23/14

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/23/14

Metal	D66010-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	34.8	2000	2000	98.3	70-130
Beryllium					
Boron	20.0	1070	1000	105.0	70-130
Cadmium					
Calcium	17100	42600	25000	102.0	70-130
Chromium	anr				
Cobalt					
Copper	anr				
Iron	43.7	5210	5000	103.3	70-130
Lead	anr				
Lithium					
Magnesium	3690	28700	25000	100.0	70-130
Manganese	8.5	550	500	108.3	70-130
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	1080	25300	25000	96.9	70-130
Selenium					
Silicon					
Silver					
Sodium	12200	36400	25000	96.8	70-130
Strontium	94.0	593	500	99.8	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP14840: D65993-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/23/14

Metal	D66010-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/23/14

Metal	D66010-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	34.8	2010	2000	98.8	0.5	20
Beryllium						
Boron	20.0	1080	1000	106.0	0.9	20
Cadmium						
Calcium	17100	42600	25000	102.0	0.0	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	43.7	5210	5000	103.3	0.0	20
Lead	anr					
Lithium						
Magnesium	3690	28700	25000	100.0	0.0	20
Manganese	8.5	550	500	108.3	0.0	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	1080	25300	25000	96.9	0.0	20
Selenium						
Silicon						
Silver						
Sodium	12200	36400	25000	96.8	0.0	20
Strontium	94.0	596	500	100.4	0.5	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP14840: D65993-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/23/14

Metal	D66010-1F 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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/23/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	1950	2000	97.5	85-115
Beryllium				
Boron	1050	1000	105.0	85-115
Cadmium				
Calcium	25800	25000	103.2	85-115
Chromium	anr			
Cobalt				
Copper	anr			
Iron	5140	5000	102.8	85-115
Lead	anr			
Lithium				
Magnesium	25100	25000	100.4	85-115
Manganese	540	500	108.0	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	24000	25000	96.0	85-115
Selenium				
Silicon				
Silver				
Sodium	24000	25000	96.0	85-115
Strontium	496	500	99.2	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP14840: D65993-1F

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

QC Batch ID: MP14840 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/23/14

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: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN28047	5.0	2.0	mg/l	100	96.0	96.0	90-110%
Alkalinity, Carbonate	GN28050	5.0	2.0	mg/l	100	96.0	96.0	80-120%
Alkalinity, Total as CaCO3	GN28045	5.0	2.0	mg/l	100	96.0	96.0	90-110%
Bromide	GP14292/GN27968	0.050	0.0	mg/l	0.5	0.500	100.0	90-110%
Chloride	GP14292/GN27968	0.50	0.0	mg/l	5	4.83	96.6	90-110%
Fluoride	GP14292/GN27968	0.10	0.0	mg/l	1	0.982	98.2	90-110%
Iron Reducing Bacteria	MB481	25	<25	CFU/ml				
Nitrogen, Nitrate	GP14292/GN27968	0.010	0.0	mg/l	0.1	0.0989	98.9	90-110%
Nitrogen, Nitrite	GP14292/GN27968	0.0040	0.0	mg/l	0.05	0.0542	108.4	90-110%
Phosphorus, Total	GP14339/GN28077	0.010	0.0	mg/l	0.38	0.40	106.3	80-120%
Slime Forming Bacteria	MB482	500	<500	CFU/ml				
Solids, Total Dissolved	GN27989	10	0.0	mg/l	400	404	101.0	90-110%
Specific Conductivity	GP14309/GN28018			umhos/cm	99.4	103	103.2	90-110%
Specific Conductivity	GP14309/GN28018			umhos/cm	99.4	102	102.6	90-110%
Specific Conductivity	GP14309/GN28018			umhos/cm	99.4	103	103.1	90-110%
Sulfate	GP14292/GN27968	0.50	0.0	mg/l	5	4.94	98.8	90-110%
Sulfate Reducing Bacteria	MB483	200	<200	CFU/ml				
pH	GN28033			su	8.00	7.99	99.8	99.1-100.9%

Associated Samples:
Batch MB481: D65993-1
Batch MB482: D65993-1
Batch MB483: D65993-1
Batch GN27989: D65993-1
Batch GN28033: D65993-1
Batch GN28045: D65993-1
Batch GN28047: D65993-1
Batch GN28050: D65993-1
Batch GP14292: D65993-1
Batch GP14309: D65993-1
Batch GP14339: D65993-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN28045	D65992-1	mg/l	161	162	0.5	0-20%
Phosphorus, Total	GP14339/GN28077	D65993-1	mg/l	0.018	0.014	25.0(a)	0-20%
Solids, Total Dissolved	GN27989	D65857-3	mg/l	924	948	2.6	0-20%
Specific Conductivity	GP14309/GN28018	D65571-1	umhos/cm	210	218	3.7	0-20%

Associated Samples:
Batch GN27989: D65993-1
Batch GN28045: D65993-1
Batch GP14309: D65993-1
Batch GP14339: D65993-1
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN28045	D65992-1	mg/l	161	100	255	94.1	80-120%
Bromide	GP14292/GN27968	D65992-1	mg/l	0.025 U	0.5	0.50	100.0	80-120%
Chloride	GP14292/GN27968	D65992-1	mg/l	1.8	5	8.0	124.0N(a)	80-120%
Fluoride	GP14292/GN27968	D65992-1	mg/l	0.11	1	1.3	119.0	80-120%
Nitrogen, Nitrate	GP14292/GN27968	D65992-1	mg/l	0.22	0.1	0.33	110.0	80-120%
Nitrogen, Nitrite	GP14292/GN27968	D65992-1	mg/l	0.0	0.05	0.055	110.0	80-120%
Phosphorus, Total	GP14339/GN28077	D65993-1	mg/l	0.018	0.40	0.42	100.8	80-120%
Sulfate	GP14292/GN27968	D65992-1	mg/l	19.0	5	23.8	96.0	80-120%

Associated Samples:
Batch GN28045: D65993-1
Batch GP14292: D65993-1
Batch GP14339: D65993-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65993
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: Juhan 14-26H BWQ

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN28045	D65992-1	mg/l	161	100	255	0.1	20%
Bromide	GP14292/GN27968	D65992-1	mg/l	0.025 U	0.5	0.48	4.1	20%
Chloride	GP14292/GN27968	D65992-1	mg/l	1.8	5	7.1	11.9	20%
Fluoride	GP14292/GN27968	D65992-1	mg/l	0.11	1	1.1	16.7	20%
Nitrogen, Nitrate	GP14292/GN27968	D65992-1	mg/l	0.22	0.1	0.31	6.3	20%
Nitrogen, Nitrite	GP14292/GN27968	D65992-1	mg/l	0.0	0.05	0.060	10.3	20%
Phosphorus, Total	GP14339/GN28077	D65993-1	mg/l	0.018	0.40	0.43	2.6	20%
Sulfate	GP14292/GN27968	D65992-1	mg/l	19.0	5	23.7	0.4	20%

Associated Samples:
Batch GN28045: D65993-1
Batch GP14292: D65993-1
Batch GP14339: D65993-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest Northern California,Inc.)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST.

4036 Youngfield St. Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #: D65993
Accutest Quote #:
AMS P.O. #:
Project No.:

Client Information	Subcontract Laboratory Information	Analytical Information
Name: Accutest Mountain States (AMS)	Name: Accutest - Northern California	
Address: 4036 Youngfield St.	Address: 2105 Lundy Ave.	
City: Wheat Ridge, State: CO Zip: 80033	City: San Jose State: CA Zip: 95131	
Send Report to: Tiffany Pham	Contact:	
Any questions contact: Jeremy DeChant	Sample Management	
Phone/Fax #: (303) 425-6021; (303)425-6854	Phone: (408) 588-0200	

Field ID / Point of Collection	Collection Date	Collection Time		Matrix	# of bottles	Preservation HCL	NaOH	HNO3	H2SO4	None	V8260BTXGRO	Comments
D65993 -1	12/18/14	10:10 AM		AQ	3	X					X	
-2				AQ	2	X					X	

Turnaround Information

X 10 Business Day Standard — Approved By:
Other _____ (Days)

10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.

Data Deliverable Information

Commercial "A" — PDF
Commercial "B" — Compact Disk Deliverable
Commercial "BN" — Electronic Delivery:
Reduced Tier 1 — State Forms
Full Tier 1 — Other (Specify)

Comments / Remarks

Please use Colorado regulations and RLs.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date & Time:	Received by:	Date & Time:	For Subcontract Laboratory Use Only
1 12/19/14	15:49	1 Fedex	1 Yes No	Seal #: Headspace: Yes No NA
2 FEDEX 581045762720	12/20/14 1055	2	2	Preserved where applicable: 2
3	3	3	3	Temperature °C 5.9/5.9 On Ice 3

10.1 10

D65993: Chain of Custody
Page 1 of 2
Accutest Northern California,Inc.

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D65993 **Client:** AMS **Project:** D65993

Date / Time Received: 12/20/2014 10:55:00 AM **Delivery Method:** FedEx **Airbill #'s:** 581027621720

Cooler Temps (Initial/Adjusted): #1: (5.9/5.9);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☐		☑	3. COC Present:	☑		☐
2. Custody Seals Intact:	☐		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR2;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

D65993: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

(Accutest Northern California,Inc.)

Includes the following where applicable:

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

Method Blank Summary

Job Number: D65993
Account: ALMS Accutest Mountain States
Project: WILLCOP: WWLCOGJ: Johan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ1125-MB	Q26222.D	1	01/01/15	EA	n/a	n/a	VQ1125

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

D65993-1, D65993-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	93%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: D65993
Account: ALMS Accutest Mountain States
Project: WILLCOP: WWLCOGJ: Johan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ1125-BS	Q26219.D	1	01/01/15	EA	n/a	n/a	VQ1125
VQ1125-BSD	Q26220.D	1	01/01/15	EA	n/a	n/a	VQ1125

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

D65993-1, D65993-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	18.3	92	18.9	95	3	77-122/25
100-41-4	Ethylbenzene	20	18.6	93	19.0	95	2	76-126/17
108-88-3	Toluene	20	18.4	92	19.0	95	3	75-122/17
1330-20-7	Xylene (total)	60	56.7	95	58.4	97	3	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	95%	96%	70-130%
2037-26-5	Toluene-D8	98%	98%	70-130%
460-00-4	4-Bromofluorobenzene	97%	97%	70-130%

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* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: D65993
Account: ALMS Accutest Mountain States
Project: WILLCOP: WWLCOGJ: Johan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ1125-LCS	Q26221.D	1	01/01/15	EA	n/a	n/a	VQ1125

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

D65993-1, D65993-2

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
	TPH-GRO (C6-C10)	125	106	85	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	92%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D65993
Account: ALMS Accutest Mountain States
Project: WILLCOP: WWLCOGJ: Johan 14-26H BWQ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C37811-1MS	Q26235.D	50	01/01/15	EA	n/a	n/a	VQ1125
C37811-1MSD	Q26236.D	50	01/01/15	EA	n/a	n/a	VQ1125
C37811-1	Q26234.D	50	01/01/15	EA	n/a	n/a	VQ1125

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

D65993-1, D65993-2

CAS No.	Compound	C37811-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		1000	913	91	1000	951	95	4	77-122/16
100-41-4	Ethylbenzene	1070		1000	1980	91	1000	1990	92	1	76-126/17
108-88-3	Toluene	ND		1000	916	92	1000	949	95	4	75-122/17
1330-20-7	Xylene (total)	509		3000	3280	92	3000	3380	96	3	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C37811-1	Limits
1868-53-7	Dibromofluoromethane	96%	95%	93%	70-130%
2037-26-5	Toluene-D8	97%	96%	100%	70-130%
460-00-4	4-Bromofluorobenzene	97%	96%	97%	70-130%

* = Outside of Control Limits.