



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Tuesday July 30, 2013

Report Number: L647936

Samples Received: 07/23/13

Client Project:

Description: Mautz Ranch Pit Sampling

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Darren Reeder , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

July 30, 2013

Date Received : July 23, 2013
Description : Mautz Ranch Pit Sampling
Sample ID : MAUTZ PIT
Collected By :
Collection Date : 07/22/13 13:00

ESC Sample # : L647936-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	43.	1.0	mg/l	300.0	07/23/13	1
Chloride	6500	100	mg/l	300.0	07/23/13	100
Fluoride	BDL	0.10	mg/l	300.0	07/23/13	1
Nitrate	BDL	0.10	mg/l	300.0	07/23/13	1
Nitrite	BDL	0.10	mg/l	300.0	07/23/13	1
Sulfate	BDL	5.0	mg/l	300.0	07/23/13	1
Hardness, Total (mg/L as CaCO3)	310	60.	mg/l	130.1	07/26/13	2
pH	7.8		su	4500H+ B-2011	07/29/13	1
Specific Conductance	18000		umhos/cm	120.1	07/25/13	1
Dissolved Solids	12000	10.	mg/l	2540 C-2011	07/26/13	1
Mercury,Dissolved	BDL	0.0020	mg/l	245.1	07/30/13	10
Arsenic,Dissolved	BDL	0.020	mg/l	200.7	07/30/13	1
Barium,Dissolved	23.	0.0050	mg/l	200.7	07/30/13	1
Cadmium,Dissolved	BDL	0.0050	mg/l	200.7	07/30/13	1
Chromium,Dissolved	BDL	0.010	mg/l	200.7	07/30/13	1
Lead,Dissolved	BDL	0.0050	mg/l	200.7	07/30/13	1
Selenium,Dissolved	BDL	0.020	mg/l	200.7	07/30/13	1
Silver,Dissolved	BDL	0.010	mg/l	200.7	07/30/13	1
Volatile Organics						
Benzene	2.0	0.050	mg/l	624	07/29/13	50
Bromodichloromethane	BDL	0.050	mg/l	624	07/29/13	50
Bromoform	BDL	0.050	mg/l	624	07/29/13	50
Bromomethane	BDL	0.25	mg/l	624	07/29/13	50
Carbon tetrachloride	BDL	0.050	mg/l	624	07/29/13	50
Chlorobenzene	BDL	0.050	mg/l	624	07/29/13	50
Chlorodibromomethane	BDL	0.050	mg/l	624	07/29/13	50
Chloroethane	BDL	0.25	mg/l	624	07/29/13	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/l	624	07/29/13	50
Chloroform	BDL	0.25	mg/l	624	07/29/13	50
Chloromethane	BDL	0.12	mg/l	624	07/29/13	50
1,2-Dichlorobenzene	BDL	0.050	mg/l	624	07/29/13	50
1,3-Dichlorobenzene	BDL	0.050	mg/l	624	07/29/13	50
1,4-Dichlorobenzene	BDL	0.050	mg/l	624	07/29/13	50
Dichlorodifluoromethane	BDL	0.25	mg/l	624	07/29/13	50
1,1-Dichloroethane	BDL	0.050	mg/l	624	07/29/13	50
1,2-Dichloroethane	BDL	0.050	mg/l	624	07/29/13	50
1,1-Dichloroethene	BDL	0.050	mg/l	624	07/29/13	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L647936-01 (625BNA) - Dilution due to matrix
L647936-01 (PH) - 7.8@18.7c



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Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Date Received : July 23, 2013
Description : Mautz Ranch Pit Sampling

Sample ID : MAUTZ PIT

Collected By :
Collection Date : 07/22/13 13:00

ESC Sample # : L647936-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,2-Dichloroethene	BDL	0.050	mg/l	624	07/29/13	50
1,2-Dichloropropane	BDL	0.050	mg/l	624	07/29/13	50
cis-1,3-Dichloropropene	BDL	0.050	mg/l	624	07/29/13	50
trans-1,3-Dichloropropene	BDL	0.050	mg/l	624	07/29/13	50
Ethylbenzene	0.060	0.050	mg/l	624	07/29/13	50
Methylene Chloride	BDL	0.25	mg/l	624	07/29/13	50
Methyl tert-butyl ether	BDL	0.25	mg/l	624	07/29/13	50
Naphthalene	BDL	0.25	mg/l	624	07/29/13	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/l	624	07/29/13	50
Tetrachloroethene	BDL	0.050	mg/l	624	07/29/13	50
Toluene	2.8	0.25	mg/l	624	07/29/13	50
1,1,1-Trichloroethane	BDL	0.050	mg/l	624	07/29/13	50
1,1,2-Trichloroethane	BDL	0.050	mg/l	624	07/29/13	50
Trichloroethene	BDL	0.050	mg/l	624	07/29/13	50
Trichlorofluoromethane	BDL	0.25	mg/l	624	07/29/13	50
Vinyl chloride	BDL	0.050	mg/l	624	07/29/13	50
Surrogate Recovery						
Toluene-d8	104.		% Rec.	624	07/29/13	50
Dibromofluoromethane	100.		% Rec.	624	07/29/13	50
a,a,a-Trifluorotoluene	103.		% Rec.	624	07/29/13	50
4-Bromofluorobenzene	101.		% Rec.	624	07/29/13	50
Base/Neutral Extractables						
Acenaphthene	BDL	0.0050	mg/l	625	07/29/13	5
Acenaphthylene	BDL	0.0050	mg/l	625	07/29/13	5
Anthracene	0.0068	0.0050	mg/l	625	07/29/13	5
Benzidine	BDL	0.050	mg/l	625	07/29/13	5
Benzo(a)anthracene	BDL	0.0050	mg/l	625	07/29/13	5
Benzo(b)fluoranthene	BDL	0.0050	mg/l	625	07/29/13	5
Benzo(k)fluoranthene	BDL	0.0050	mg/l	625	07/29/13	5
Benzo(g,h,i)perylene	BDL	0.0050	mg/l	625	07/29/13	5
Benzo(a)pyrene	BDL	0.0050	mg/l	625	07/29/13	5
Bis(2-chlorethoxy)methane	BDL	0.050	mg/l	625	07/29/13	5
Bis(2-chloroethyl)ether	BDL	0.050	mg/l	625	07/29/13	5
Bis(2-chloroisopropyl)ether	BDL	0.050	mg/l	625	07/29/13	5
4-Bromophenyl-phenylether	BDL	0.050	mg/l	625	07/29/13	5
2-Chloronaphthalene	BDL	0.0050	mg/l	625	07/29/13	5
4-Chlorophenyl-phenylether	BDL	0.050	mg/l	625	07/29/13	5
Chrysene	BDL	0.0050	mg/l	625	07/29/13	5
Dibenz(a,h)anthracene	BDL	0.0050	mg/l	625	07/29/13	5
3,3-Dichlorobenzidine	BDL	0.050	mg/l	625	07/29/13	5
2,4-Dinitrotoluene	BDL	0.050	mg/l	625	07/29/13	5
2,6-Dinitrotoluene	BDL	0.050	mg/l	625	07/29/13	5
1,2-Diphenylhydrazine	BDL	0.050	mg/l	625	07/29/13	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L647936-01 (625BNA) - Dilution due to matrix
L647936-01 (PH) - 7.8@18.7c



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July 30, 2013

Date Received : July 23, 2013
Description : Mautz Ranch Pit Sampling
Sample ID : MAUTZ PIT
Collected By :
Collection Date : 07/22/13 13:00

ESC Sample # : L647936-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Fluoranthene	BDL	0.0050	mg/l	625	07/29/13	5
Fluorene	0.026	0.0050	mg/l	625	07/29/13	5
Hexachlorobenzene	BDL	0.0050	mg/l	625	07/29/13	5
Hexachloro-1,3-butadiene	BDL	0.050	mg/l	625	07/29/13	5
Hexachlorocyclopentadiene	BDL	0.050	mg/l	625	07/29/13	5
Hexachloroethane	BDL	0.050	mg/l	625	07/29/13	5
Indeno(1,2,3-cd)pyrene	BDL	0.0050	mg/l	625	07/29/13	5
Isophorone	BDL	0.050	mg/l	625	07/29/13	5
Naphthalene	0.052	0.0050	mg/l	625	07/29/13	5
Nitrobenzene	BDL	0.050	mg/l	625	07/29/13	5
n-Nitrosodimethylamine	BDL	0.050	mg/l	625	07/29/13	5
n-Nitrosodiphenylamine	BDL	0.050	mg/l	625	07/29/13	5
n-Nitrosodi-n-propylamine	BDL	0.050	mg/l	625	07/29/13	5
Phenanthrene	0.024	0.0050	mg/l	625	07/29/13	5
Benzylbutyl phthalate	BDL	0.015	mg/l	625	07/29/13	5
Bis(2-ethylhexyl)phthalate	BDL	0.015	mg/l	625	07/29/13	5
Di-n-butyl phthalate	BDL	0.015	mg/l	625	07/29/13	5
Diethyl phthalate	BDL	0.015	mg/l	625	07/29/13	5
Dimethyl phthalate	BDL	0.015	mg/l	625	07/29/13	5
Di-n-octyl phthalate	BDL	0.015	mg/l	625	07/29/13	5
Pyrene	BDL	0.0050	mg/l	625	07/29/13	5
1,2,4-Trichlorobenzene	BDL	0.050	mg/l	625	07/29/13	5
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.050	mg/l	625	07/29/13	5
2-Chlorophenol	BDL	0.050	mg/l	625	07/29/13	5
2,4-Dichlorophenol	BDL	0.050	mg/l	625	07/29/13	5
2,4-Dimethylphenol	BDL	0.050	mg/l	625	07/29/13	5
4,6-Dinitro-2-methylphenol	BDL	0.050	mg/l	625	07/29/13	5
2,4-Dinitrophenol	BDL	0.050	mg/l	625	07/29/13	5
2-Nitrophenol	BDL	0.050	mg/l	625	07/29/13	5
4-Nitrophenol	BDL	0.050	mg/l	625	07/29/13	5
Pentachlorophenol	BDL	0.050	mg/l	625	07/29/13	5
Phenol	0.18	0.050	mg/l	625	07/29/13	5
2,4,6-Trichlorophenol	BDL	0.050	mg/l	625	07/29/13	5
Surrogate Recovery						
Nitrobenzene-d5	62.2		% Rec.	625	07/29/13	5
2-Fluorobiphenyl	89.3		% Rec.	625	07/29/13	5
p-Terphenyl-d14	89.6		% Rec.	625	07/29/13	5
Phenol-d5	42.4		% Rec.	625	07/29/13	5
2-Fluorophenol	44.0		% Rec.	625	07/29/13	5
2,4,6-Tribromophenol	55.7		% Rec.	625	07/29/13	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 07/30/13 15:14 Printed: 07/30/13 15:14

L647936-01 (625BNA) - Dilution due to matrix

L647936-01 (PH) - 7.8@18.7c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L647936-01	WG674314	SAMP	Barium,Dissolved	R2760581	V
	WG674295	SAMP	Mercury,Dissolved	R2760701	O
	WG674330	SAMP	2-Nitrophenol	R2760005	L1
	WG674212	SAMP	pH	R2759720	T8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
07/30/13 at 15:14:54

TSR Signing Reports: 364
R5 - Desired TAT

for 910-1 List log BTEXGRO, DRO and PAHSIM to separate dash number. \$100 min invoice removed
per Rodney Mann 9/19/11 TAH, no energy surcharge per Rodney Mann 10/26/11 TAH

Sample: L647936-01 Account: WILPCO Received: 07/23/13 09:00 Due Date: 07/30/13 00:00 RPT Date: 07/30/13 15:14



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Quality Assurance Report
Level II

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Bromide	< 1	mg/l			WG673306	07/23/13 08:32
Chloride	< 1	mg/l			WG673306	07/23/13 08:32
Fluoride	< .1	mg/l			WG673306	07/23/13 08:32
Nitrate	< .1	mg/l			WG673306	07/23/13 08:32
Nitrite	< .1	mg/l			WG673306	07/23/13 08:32
Sulfate	< 5	mg/l			WG673306	07/23/13 08:32
Specific Conductance	0.980	umhos/cm			WG673660	07/25/13 13:00
Hardness, Total (mg/L as CaCO3)	< 30	mg/l			WG673655	07/26/13 08:37
Dissolved Solids	< 10	mg/l			WG673594	07/26/13 15:17
1,1,1-Trichloroethane	< .001	mg/l			WG674139	07/29/13 12:20
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG674139	07/29/13 12:20
1,1,2-Trichloroethane	< .001	mg/l			WG674139	07/29/13 12:20
1,1-Dichloroethane	< .001	mg/l			WG674139	07/29/13 12:20
1,1-Dichloroethene	< .001	mg/l			WG674139	07/29/13 12:20
1,2-Dichlorobenzene	< .001	mg/l			WG674139	07/29/13 12:20
1,2-Dichloroethane	< .001	mg/l			WG674139	07/29/13 12:20
1,2-Dichloropropane	< .001	mg/l			WG674139	07/29/13 12:20
1,3-Dichlorobenzene	< .001	mg/l			WG674139	07/29/13 12:20
1,4-Dichlorobenzene	< .001	mg/l			WG674139	07/29/13 12:20
2-Chloroethyl vinyl ether	< .05	mg/l			WG674139	07/29/13 12:20
Benzene	< .001	mg/l			WG674139	07/29/13 12:20
Bromodichloromethane	< .001	mg/l			WG674139	07/29/13 12:20
Bromoform	< .001	mg/l			WG674139	07/29/13 12:20
Bromomethane	< .005	mg/l			WG674139	07/29/13 12:20
Carbon tetrachloride	< .001	mg/l			WG674139	07/29/13 12:20
Chlorobenzene	< .001	mg/l			WG674139	07/29/13 12:20
Chlorodibromomethane	< .001	mg/l			WG674139	07/29/13 12:20
Chloroethane	< .005	mg/l			WG674139	07/29/13 12:20
Chloroform	< .005	mg/l			WG674139	07/29/13 12:20
Chloromethane	< .0025	mg/l			WG674139	07/29/13 12:20
cis-1,3-Dichloropropene	< .001	mg/l			WG674139	07/29/13 12:20
Dichlorodifluoromethane	< .005	mg/l			WG674139	07/29/13 12:20
Ethylbenzene	< .001	mg/l			WG674139	07/29/13 12:20
Methyl tert-butyl ether	< .001	mg/l			WG674139	07/29/13 12:20
Methylene Chloride	< .005	mg/l			WG674139	07/29/13 12:20
Naphthalene	< .005	mg/l			WG674139	07/29/13 12:20
Tetrachloroethene	< .001	mg/l			WG674139	07/29/13 12:20
Toluene	< .005	mg/l			WG674139	07/29/13 12:20
trans-1,2-Dichloroethene	< .001	mg/l			WG674139	07/29/13 12:20
trans-1,3-Dichloropropene	< .001	mg/l			WG674139	07/29/13 12:20
Trichloroethene	< .001	mg/l			WG674139	07/29/13 12:20
Trichlorofluoromethane	< .005	mg/l			WG674139	07/29/13 12:20
Vinyl chloride	< .001	mg/l			WG674139	07/29/13 12:20
4-Bromofluorobenzene		% Rec.	97.12	82-120	WG674139	07/29/13 12:20
Dibromofluoromethane		% Rec.	101.8	82-126	WG674139	07/29/13 12:20
Toluene-d8		% Rec.	101.2	92-112	WG674139	07/29/13 12:20
a,a,a-Trifluorotoluene		% Rec.	102.3	90-116	WG674139	07/29/13 12:20
Arsenic,Dissolved	< .02	mg/l			WG674314	07/30/13 03:30
Barium,Dissolved	< .005	mg/l			WG674314	07/30/13 03:30

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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July 30, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Cadmium,Dissolved	< .005	mg/l			WG674314	07/30/13 03:30
Chromium,Dissolved	< .01	mg/l			WG674314	07/30/13 03:30
Lead,Dissolved	< .005	mg/l			WG674314	07/30/13 03:30
Selenium,Dissolved	< .02	mg/l			WG674314	07/30/13 03:30
Silver,Dissolved	< .01	mg/l			WG674314	07/30/13 03:30
Mercury,Dissolved	< .0002	mg/l			WG674295	07/30/13 10:25

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Fluoride	mg/l	6.20	6.20	0	20	L645871-19	WG673306
Nitrate	mg/l	8.50	8.20	3.59	20	L645871-19	WG673306
Fluoride	mg/l	0.740	0.740	0	20	L646766-01	WG673306
Chloride	mg/l	100.	100.	0	20	L645871-19	WG673306
Sulfate	mg/l	150.	150.	0	20	L645871-19	WG673306
Specific Conductance	umhos/cm	400.	400.	0.250	20	L648003-01	WG673660
Specific Conductance	umhos/cm	260.	260.	1.94	20	L647207-01	WG673660
Hardness, Total (mg/L as CaCO3)	mg/l	92.0	90.9	1.20	20	L647810-02	WG673655
Hardness, Total (mg/L as CaCO3)	mg/l	100.	100.	0	20	L645290-05	WG673655
Dissolved Solids	mg/l	590.	607.	3.13	5	L647973-06	WG673594
pH	su	8.00	8.00	0.125	1	L647856-01	WG674212
pH	su	8.20	8.30	0.969	1	L647973-10	WG674212
Arsenic,Dissolved	mg/l	0	0	0	20	L647936-01	WG674314
Barium,Dissolved	mg/l	24.0	23.0	4.26	20	L647936-01	WG674314
Cadmium,Dissolved	mg/l	0	0	0	20	L647936-01	WG674314
Chromium,Dissolved	mg/l	0	0	0	20	L647936-01	WG674314
Lead,Dissolved	mg/l	0	0	0	20	L647936-01	WG674314
Selenium,Dissolved	mg/l	0	0	0	20	L647936-01	WG674314
Silver,Dissolved	mg/l	0	0	0	20	L647936-01	WG674314
Mercury,Dissolved	mg/l	0	0.000453	5.55	20	L647936-01	WG674295

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Bromide	mg/l	40	39.8	99.5	90-110	WG673306
Chloride	mg/l	40	39.8	99.5	90-110	WG673306
Fluoride	mg/l	8	8.11	101.	90-110	WG673306
Nitrate	mg/l	8	8.15	102.	90-110	WG673306
Nitrite	mg/l	8	7.95	99.4	90-110	WG673306
Sulfate	mg/l	40	40.0	100.	90-110	WG673306
Specific Conductance	umhos/cm	1140	1200	105.	85-115	WG673660

* Performance of this Analyte is outside of established criteria.
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YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L647936

12065 Lebanon Rd.
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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

July 30, 2013

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Hardness, Total (mg/L as CaCO3)	mg/l	200	194.	97.0	85-115	WG673655
Dissolved Solids	mg/l	8800	8600	97.7	85-115	WG673594
pH	su	6.96	6.90	99.1	98.3-101.7	WG674212
1,1,1-Trichloroethane	mg/l	.025	0.0248	99.1	71-126	WG674139
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0272	109.	78-130	WG674139
1,1,2-Trichloroethane	mg/l	.025	0.0269	108.	81-121	WG674139
1,1-Dichloroethane	mg/l	.025	0.0249	99.5	73-123	WG674139
1,1-Dichloroethene	mg/l	.025	0.0230	91.9	54-134	WG674139
1,2-Dichlorobenzene	mg/l	.025	0.0260	104.	82-121	WG674139
1,2-Dichloroethane	mg/l	.025	0.0248	99.4	69-128	WG674139
1,2-Dichloropropane	mg/l	.025	0.0246	98.5	77-121	WG674139
1,3-Dichlorobenzene	mg/l	.025	0.0266	106.	77-127	WG674139
1,4-Dichlorobenzene	mg/l	.025	0.0255	102.	79-117	WG674139
2-Chloroethyl vinyl ether	mg/l	.125	0.130	104.	26-172	WG674139
Benzene	mg/l	.025	0.0250	100.	72-119	WG674139
Bromodichloromethane	mg/l	.025	0.0248	99.3	75-127	WG674139
Bromoform	mg/l	.025	0.0309	124.	61-136	WG674139
Bromomethane	mg/l	.025	0.0359	144.	42-172	WG674139
Carbon tetrachloride	mg/l	.025	0.0252	101.	63-129	WG674139
Chlorobenzene	mg/l	.025	0.0261	105.	78-123	WG674139
Chlorodibromomethane	mg/l	.025	0.0278	111.	73-128	WG674139
Chloroethane	mg/l	.025	0.0257	103.	52-164	WG674139
Chloroform	mg/l	.025	0.0264	106.	76-122	WG674139
Chloromethane	mg/l	.025	0.0238	95.0	50-141	WG674139
cis-1,3-Dichloropropene	mg/l	.025	0.0260	104.	74-124	WG674139
Dichlorodifluoromethane	mg/l	.025	0.0240	96.0	33-173	WG674139
Ethylbenzene	mg/l	.025	0.0257	103.	77-124	WG674139
Methyl tert-butyl ether	mg/l	.025	0.0274	110.	67-127	WG674139
Methylene Chloride	mg/l	.025	0.0257	103.	67-122	WG674139
Naphthalene	mg/l	.025	0.0241	96.4	70-134	WG674139
Tetrachloroethene	mg/l	.025	0.0255	102.	69-131	WG674139
Toluene	mg/l	.025	0.0252	101.	75-114	WG674139
trans-1,2-Dichloroethene	mg/l	.025	0.0240	96.1	63-127	WG674139
trans-1,3-Dichloropropene	mg/l	.025	0.0280	112.	69-124	WG674139
Trichloroethene	mg/l	.025	0.0245	97.9	69-131	WG674139
Trichlorofluoromethane	mg/l	.025	0.0257	103.	53-161	WG674139
Vinyl chloride	mg/l	.025	0.0235	94.0	55-142	WG674139
4-Bromofluorobenzene				97.19	82-120	WG674139
Dibromofluoromethane				103.3	82-126	WG674139
Toluene-d8				102.3	92-112	WG674139
a,a,a-Trifluorotoluene				101.4	90-116	WG674139
Arsenic, Dissolved	mg/l	1	1.01	101.	85-115	WG674314
Barium, Dissolved	mg/l	1	1.04	104.	85-115	WG674314
Cadmium, Dissolved	mg/l	1	1.01	101.	85-115	WG674314
Chromium, Dissolved	mg/l	1	1.03	103.	85-115	WG674314
Lead, Dissolved	mg/l	1	1.03	103.	85-115	WG674314
Selenium, Dissolved	mg/l	1	1.03	103.	85-115	WG674314
Silver, Dissolved	mg/l	1	1.00	100.	85-115	WG674314
Mercury, Dissolved	mg/l	.003	0.00294	98.0	85-115	WG674295

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Bromide	mg/l	39.7	39.8	99.0	90-110	0.252	20	WG673306
Chloride	mg/l	39.8	39.8	100.	90-110	0	20	WG673306
Fluoride	mg/l	8.16	8.11	102.	90-110	0.615	20	WG673306
Nitrate	mg/l	8.15	8.15	102.	90-110	0	20	WG673306
Nitrite	mg/l	7.95	7.95	99.0	90-110	0	20	WG673306
Sulfate	mg/l	40.0	40.0	100.	90-110	0	20	WG673306
Specific Conductance	umhos/	1200	1200	105.	85-115	0	20	WG673660
Hardness, Total (mg/L as CaCO3)	mg/l	193.	194.	96.0	85-115	0.517	20	WG673655
Dissolved Solids	mg/l	8630	8600	98.0	85-115	0.348	5	WG673594
pH	su	6.90	6.90	99.0	98.3-101.7	0	20	WG674212
1,1,1-Trichloroethane	mg/l	0.0264	0.0248	106.	71-126	6.34	20	WG674139
1,1,2,2-Tetrachloroethane	mg/l	0.0278	0.0272	111.	78-130	1.99	20	WG674139
1,1,2-Trichloroethane	mg/l	0.0283	0.0269	113.	81-121	5.18	20	WG674139
1,1-Dichloroethane	mg/l	0.0259	0.0249	103.	73-123	3.89	20	WG674139
1,1-Dichloroethene	mg/l	0.0248	0.0230	99.0	54-134	7.81	20	WG674139
1,2-Dichlorobenzene	mg/l	0.0269	0.0260	108.	82-121	3.56	20	WG674139
1,2-Dichloroethane	mg/l	0.0249	0.0248	100.	69-128	0.200	20	WG674139
1,2-Dichloropropane	mg/l	0.0262	0.0246	105.	77-121	6.42	20	WG674139
1,3-Dichlorobenzene	mg/l	0.0287	0.0266	115.	77-127	7.63	20	WG674139
1,4-Dichlorobenzene	mg/l	0.0271	0.0255	108.	79-117	6.13	20	WG674139
2-Chloroethyl vinyl ether	mg/l	0.139	0.130	111.	26-172	6.46	22	WG674139
Benzene	mg/l	0.0264	0.0250	106.	72-119	5.42	20	WG674139
Bromodichloromethane	mg/l	0.0264	0.0248	105.	75-127	6.00	20	WG674139
Bromoform	mg/l	0.0319	0.0309	128.	61-136	3.15	20	WG674139
Bromomethane	mg/l	0.0363	0.0359	145.	42-172	1.02	20	WG674139
Carbon tetrachloride	mg/l	0.0285	0.0252	114.	63-129	12.3	20	WG674139
Chlorobenzene	mg/l	0.0283	0.0261	113.	78-123	7.98	20	WG674139
Chlorodibromomethane	mg/l	0.0298	0.0278	119.	73-128	7.07	20	WG674139
Chloroethane	mg/l	0.0276	0.0257	110.	52-164	6.95	20	WG674139
Chloroform	mg/l	0.0267	0.0264	107.	76-122	1.10	20	WG674139
Chloromethane	mg/l	0.0248	0.0238	99.0	50-141	4.17	20	WG674139
cis-1,3-Dichloropropene	mg/l	0.0274	0.0260	110.	74-124	5.35	20	WG674139
Dichlorodifluoromethane	mg/l	0.0257	0.0240	103.	33-173	6.90	20	WG674139
Ethylbenzene	mg/l	0.0286	0.0257	114.	77-124	10.6	20	WG674139
Methyl tert-butyl ether	mg/l	0.0274	0.0274	110.	67-127	0.260	20	WG674139
Methylene Chloride	mg/l	0.0265	0.0257	106.	67-122	3.23	20	WG674139
Naphthalene	mg/l	0.0264	0.0241	105.	70-134	9.01	20	WG674139
Tetrachloroethene	mg/l	0.0284	0.0255	113.	69-131	10.4	20	WG674139
Toluene	mg/l	0.0270	0.0252	108.	75-114	7.08	20	WG674139
trans-1,2-Dichloroethene	mg/l	0.0264	0.0240	106.	63-127	9.55	20	WG674139
trans-1,3-Dichloropropene	mg/l	0.0293	0.0280	117.	69-124	4.36	20	WG674139
Trichloroethene	mg/l	0.0272	0.0245	109.	69-131	10.7	20	WG674139
Trichlorofluoromethane	mg/l	0.0280	0.0257	112.	53-161	8.46	20	WG674139
Vinyl chloride	mg/l	0.0262	0.0235	105.	55-142	10.7	20	WG674139
4-Bromofluorobenzene				101.0	82-120			WG674139
Dibromofluoromethane				102.0	82-126			WG674139
Toluene-d8				102.2	92-112			WG674139
a,a,a-Trifluorotoluene				101.7	90-116			WG674139

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Est. 1970

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Sulfate	mg/l	74.3	25.0	50	98.6	80-120	L647673-01	WG673306
Hardness, Total (mg/L as CaCO3)	mg/l	253.	84.0	150	113.	80-120	L645290-06	WG673655
1,1,1-Trichloroethane	mg/l	0.0253	0	.025	101.	58-137	L648723-01	WG674139
1,1,2,2-Tetrachloroethane	mg/l	0.0269	0	.025	108.	64-149	L648723-01	WG674139
1,1,2-Trichloroethane	mg/l	0.0277	0	.025	111.	73-128	L648723-01	WG674139
1,1-Dichloroethane	mg/l	0.0243	0	.025	97.1	58-133	L648723-01	WG674139
1,1-Dichloroethene	mg/l	0.0237	0	.025	94.9	32-152	L648723-01	WG674139
1,2-Dichlorobenzene	mg/l	0.0257	0	.025	103.	75-125	L648723-01	WG674139
1,2-Dichloroethane	mg/l	0.0239	0	.025	95.7	59-135	L648723-01	WG674139
1,2-Dichloropropane	mg/l	0.0253	0	.025	101.	68-126	L648723-01	WG674139
1,3-Dichlorobenzene	mg/l	0.0276	0	.025	110.	69-131	L648723-01	WG674139
1,4-Dichlorobenzene	mg/l	0.0260	0	.025	104.	70-123	L648723-01	WG674139
2-Chloroethyl vinyl ether	mg/l	0.0339	0	.125	27.2	10-161	L648723-01	WG674139
Benzene	mg/l	0.0249	0	.025	99.8	51-134	L648723-01	WG674139
Bromodichloromethane	mg/l	0.0250	0	.025	99.9	67-132	L648723-01	WG674139
Bromoform	mg/l	0.0303	0	.025	121.	59-137	L648723-01	WG674139
Bromomethane	mg/l	0.0326	0	.025	130.	23-177	L648723-01	WG674139
Carbon tetrachloride	mg/l	0.0263	0	.025	105.	49-140	L648723-01	WG674139
Chlorobenzene	mg/l	0.0273	0	.025	109.	69-126	L648723-01	WG674139
Chlorodibromomethane	mg/l	0.0281	0	.025	112.	68-130	L648723-01	WG674139
Chloroethane	mg/l	0.0268	0	.025	107.	32-177	L648723-01	WG674139
Chloroform	mg/l	0.0259	0	.025	104.	64-130	L648723-01	WG674139
Chloromethane	mg/l	0.0240	0	.025	96.0	27-155	L648723-01	WG674139
cis-1,3-Dichloropropene	mg/l	0.0261	0	.025	104.	63-127	L648723-01	WG674139
Dichlorodifluoromethane	mg/l	0.0253	0	.025	101.	16-188	L648723-01	WG674139
Ethylbenzene	mg/l	0.0270	0	.025	108.	64-135	L648723-01	WG674139
Methyl tert-butyl ether	mg/l	0.0256	0	.025	102.	55-136	L648723-01	WG674139
Methylene Chloride	mg/l	0.0248	0	.025	99.3	52-130	L648723-01	WG674139
Naphthalene	mg/l	0.0227	0.00110	.025	86.2	65-140	L648723-01	WG674139
Tetrachloroethene	mg/l	0.0276	0	.025	110.	56-139	L648723-01	WG674139
Toluene	mg/l	0.0262	0	.025	105.	61-126	L648723-01	WG674139
trans-1,2-Dichloroethene	mg/l	0.0251	0	.025	100.	45-137	L648723-01	WG674139
trans-1,3-Dichloropropene	mg/l	0.0283	0	.025	113.	59-130	L648723-01	WG674139
Trichloroethene	mg/l	0.0289	0.00314	.025	103.	40-155	L648723-01	WG674139
Trichlorofluoromethane	mg/l	0.0264	0	.025	106.	35-177	L648723-01	WG674139
Vinyl chloride	mg/l	0.0246	0	.025	98.5	32-159	L648723-01	WG674139
4-Bromofluorobenzene					100.2	82-120		WG674139
Dibromofluoromethane					99.78	82-126		WG674139
Toluene-d8					102.8	92-112		WG674139
a,a,a-Trifluorotoluene					101.8	90-116		WG674139
Arsenic, Dissolved	mg/l	1.08	0	1	108.	75-125	L647936-01	WG674314
Barium, Dissolved	mg/l	25.0	23.0	1	200.*	75-125	L647936-01	WG674314
Cadmium, Dissolved	mg/l	1.01	0	1	101.	75-125	L647936-01	WG674314
Chromium, Dissolved	mg/l	1.02	0	1	102.	75-125	L647936-01	WG674314
Lead, Dissolved	mg/l	1.01	0	1	101.	75-125	L647936-01	WG674314
Selenium, Dissolved	mg/l	1.07	0	1	107.	75-125	L647936-01	WG674314
Silver, Dissolved	mg/l	1.07	0	1	107.	75-125	L647936-01	WG674314
Mercury, Dissolved	mg/l	0.00300	0.000453	.003	84.9	70-130	L647936-01	WG674295

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Sulfate	mg/l	71.7	74.3	93.4	80-120	3.56	20	L647673-01	WG673306
Hardness, Total (mg/L as CaCO3)	mg/l	253.	253.	113.	80-120	0	20	L645290-06	WG673655
1,1,1-Trichloroethane	mg/l	0.0252	0.0253	101.	58-137	0.380	20	L648723-01	WG674139
1,1,2,2-Tetrachloroethane	mg/l	0.0260	0.0269	104.	64-149	3.34	20	L648723-01	WG674139
1,1,2-Trichloroethane	mg/l	0.0269	0.0277	108.	73-128	2.85	20	L648723-01	WG674139
1,1-Dichloroethane	mg/l	0.0246	0.0243	98.2	58-133	1.15	20	L648723-01	WG674139
1,1-Dichloroethene	mg/l	0.0238	0.0237	95.2	32-152	0.290	20	L648723-01	WG674139
1,2-Dichlorobenzene	mg/l	0.0264	0.0257	106.	75-125	2.62	20	L648723-01	WG674139
1,2-Dichloroethane	mg/l	0.0235	0.0239	94.1	59-135	1.74	20	L648723-01	WG674139
1,2-Dichloropropane	mg/l	0.0250	0.0253	100.	68-126	1.01	20	L648723-01	WG674139
1,3-Dichlorobenzene	mg/l	0.0271	0.0276	108.	69-131	1.98	20	L648723-01	WG674139
1,4-Dichlorobenzene	mg/l	0.0262	0.0260	105.	70-123	0.630	20	L648723-01	WG674139
2-Chloroethyl vinyl ether	mg/l	0.00523	0.0339	4.18*	10-161	147.*	40	L648723-01	WG674139
Benzene	mg/l	0.0249	0.0249	99.7	51-134	0.0300	20	L648723-01	WG674139
Bromodichloromethane	mg/l	0.0253	0.0250	101.	67-132	1.45	20	L648723-01	WG674139
Bromoform	mg/l	0.0296	0.0303	118.	59-137	2.41	20	L648723-01	WG674139
Bromomethane	mg/l	0.0343	0.0326	137.	23-177	5.08	21	L648723-01	WG674139
Carbon tetrachloride	mg/l	0.0265	0.0263	106.	49-140	0.860	20	L648723-01	WG674139
Chlorobenzene	mg/l	0.0268	0.0273	107.	69-126	2.07	20	L648723-01	WG674139
Chlorodibromomethane	mg/l	0.0283	0.0281	113.	68-130	0.470	20	L648723-01	WG674139
Chloroethane	mg/l	0.0262	0.0268	105.	32-177	2.39	21	L648723-01	WG674139
Chloroform	mg/l	0.0258	0.0259	103.	64-130	0.130	20	L648723-01	WG674139
Chloromethane	mg/l	0.0239	0.0240	95.7	27-155	0.310	20	L648723-01	WG674139
cis-1,3-Dichloropropene	mg/l	0.0258	0.0261	103.	63-127	1.14	20	L648723-01	WG674139
Dichlorodifluoromethane	mg/l	0.0252	0.0253	101.	16-188	0.440	22	L648723-01	WG674139
Ethylbenzene	mg/l	0.0271	0.0270	108.	64-135	0.410	20	L648723-01	WG674139
Methyl tert-butyl ether	mg/l	0.0257	0.0256	103.	55-136	0.260	20	L648723-01	WG674139
Methylene Chloride	mg/l	0.0242	0.0248	96.7	52-130	2.57	20	L648723-01	WG674139
Naphthalene	mg/l	0.0249	0.0227	95.2	65-140	9.42	20	L648723-01	WG674139
Tetrachloroethene	mg/l	0.0270	0.0276	108.	56-139	2.45	20	L648723-01	WG674139
Toluene	mg/l	0.0260	0.0262	104.	61-126	0.900	20	L648723-01	WG674139
trans-1,2-Dichloroethene	mg/l	0.0252	0.0251	101.	45-137	0.520	20	L648723-01	WG674139
trans-1,3-Dichloropropene	mg/l	0.0270	0.0283	108.	59-130	4.68	20	L648723-01	WG674139
Trichloroethene	mg/l	0.0285	0.0289	102.	40-155	1.19	20	L648723-01	WG674139
Trichlorofluoromethane	mg/l	0.0268	0.0264	107.	35-177	1.35	23	L648723-01	WG674139
Vinyl chloride	mg/l	0.0250	0.0246	99.9	32-159	1.44	21	L648723-01	WG674139
4-Bromofluorobenzene				98.09	82-120				WG674139
Dibromofluoromethane				100.2	82-126				WG674139
Toluene-d8				102.3	92-112				WG674139
a,a,a-Trifluorotoluene				102.4	90-116				WG674139
Arsenic, Dissolved	mg/l	1.03	1.08	103.	75-125	4.74	20	L647936-01	WG674314
Barium, Dissolved	mg/l	24.8	25.0	180.*	75-125	0.803	20	L647936-01	WG674314
Cadmium, Dissolved	mg/l	0.992	1.01	99.2	75-125	1.80	20	L647936-01	WG674314
Chromium, Dissolved	mg/l	0.977	1.02	97.7	75-125	4.31	20	L647936-01	WG674314
Lead, Dissolved	mg/l	0.964	1.01	96.4	75-125	4.66	20	L647936-01	WG674314
Selenium, Dissolved	mg/l	1.04	1.07	104.	75-125	2.84	20	L647936-01	WG674314
Silver, Dissolved	mg/l	1.06	1.07	106.	75-125	0.939	20	L647936-01	WG674314
Mercury, Dissolved	mg/l	0.00302	0.00300	8.56*	70-130	0.627	30	L647936-01	WG674295

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L647936

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

July 30, 2013

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG673306: R2755443: L647936-01
WG673660: R2757129: L647936-01
WG673655: R2758004: L647936-01
WG673594: R2758382: L647936-01
WG674212: R2759720: L647936-01
WG674330: R2760005: L647936-01
WG674139: R2760280: L647936-01
WG674314: R2760581: L647936-01
WG674295: R2760701: L647936-01

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.