

DISCLAIMER: This Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and for modeling. GIS is not intended, nor does it replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Records office or the courts. In addition, the representations of locations in this GIS cannot be substituted for actual legal surveys.

3rd Qtr 2014 Potentiometric Map
Location: Clough 14-22
 39.507060 -107.878716
 WPX Energy

- | | |
|----------------------|--------------------------------|
| Upgradient Well | Transportation Features |
| Downgradient Well | Public Roads |
| Potentiometric Lines | Access Roads |
| Excavated Area | Hydrographic Features |
| PLSS | Perennial Stream |
| Township | Ditch |
| Section | |



Table 1

Clough 14-22 MV Groundwater Analytical Results

Sample ID:		COGCC Table 910-1 Standards	MW 1 (Background)	MW 1 (Background)	MW2	MW2	MW 3	MW 3	MW 4	MW 4	MW 5	MW 5
Date Sampled:	Unit		6/26/2014	9/18/2014	6/26/2014	9/18/2014	6/26/2014	9/18/2014	6/26/2014	6/26/2014	6/26/2014	9/18/2014
Depth to Water (ft.)			18.09	18.71	18.03	18.69	18.35	18.99	18.55	19.2	18.65	19.31
GC/MS Volatiles (SW846 8260B)												
Benzene	ug/l	5 ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	ug/l	700 ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/l	560 ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	ug/l	1400 ug/l	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Metals Analysis												
Calcium	mg/l		490	410	460	420	500	500	540	470	450	450
Iron	mg/l		<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Magnesium	mg/l		710	580	670	540	850	850	950	780	860	830
Manganese	mg/l		0.53	0.93	0.13	0.57	1.4	2.2	3	3.5	1.5	0.85
Potassium	mg/l		13	11	15	13	15	15	14	12	20	16
Selenium	mg/l		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium	mg/l		4100	3600	3800	3200	4600	3700	4900	4100	5100	4600
General Chemistry												
Alkalinity, Bicarbonate as CaCO3	mg/l		750	810	700	790	780	860	840	850	620	750
Alkalinity, Carbonate	mg/l		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Alkalinity, Total as CaCO3	mg/l		750	810	700	790	780	860	840	850	620	750
Nitrogen, Nitrate	mg/l		<0.02	<0.02	0.03	0.07	<0.02	<0.02	<0.02	0.12	<0.02	<0.02
Nitrogen, Nitrite	mg/l		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloride	mg/l	1.25 x bkgd	3000	3100	3000	2800	3900	3700	4600	3800	4100	3800
Sulfate	mg/l	1.25 x bkgd	8100	8500	7500	7700	9300	9100	9500	8600	11000	10000
TDS	mg/l	1.25 x bkgd	17000	18000	16000	17000	21000	20000	22000	20000	20000	22000
pH			7.06	7.06	7.15	7.02	7.04	7.18	6.91	7.06	7.44	7.19

Table 2

Field Data

YSI 556 Field Parameters →→			Temperature	Conductivity	Conductivity	Resistivity	TDS	Salinity	Dissolved Oxygen (DO)	Dissolved Oxygen (DO)	pH	pH	ORP	Water Levels
Sample Location	Media	Sampling Date	°C	mS/cm ²	mS/cm	Ω/cm	g/L		%	mg/L		m/V		TOC (ft)
MW-1	Groundwater	6/26/2014	15.97	21.87	18.1	55.26	14.22	13.20	39.00	3.53	7.05	-13.60	188.5	18.06
MW-1	Groundwater	9/18/2014	15.10	19.93	16.44	61.99	12.95	11.93	6.40	0.59	8.91	-17.5	224.10	18.71
MW-2	Groundwater	6/26/2014	16.68	20.34	17.18	58.18	13.18	12.15	89.50	7.95	7.26	-22.9	154.60	18.03
MW-2	Groundwater	9/18/2014	15.45	18.99	15.51	64.51	12.32	11.30	5.20	0.49	6.89	-17.0	189.70	18.69
MW-3	Groundwater	6/26/2014	17.10	24.61	20.9	47.82	15.98	14.99	46.00	4.00	7.04	-13.0	159.50	18.35
MW-3	Groundwater	9/18/2014	15.45	22.45	18.33	54.62	14.58	13.56	4.00	0.36	6.96	-20.5	174.40	18.99
MW-4	Groundwater	6/26/2014	15.80	26.25	21.72	46.02	16.94	15.98	22.80	2.02	6.85	-4.3	168.10	18.55
MW-4	Groundwater	9/18/2014	15.73	22.77	18.74	53.37	14.79	13.78	2.30	0.21	6.79	-11.4	176.20	19.20
MW-5	Groundwater	6/26/2014	17.28	26.67	22.76	43.93	17.32	16.87	22.70	1.95	7.62	-39.1	128.00	18.65
MW-5	Groundwater	9/18/2014	15.20	23.97	19.49	51.30	15.68	14.58	2.90	0.26	7.17	-32.5	-9.00	19.31



26-Sep-2014

Mark Mumby
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **WPX Clough 14-22 MW 9.18.14**

Work Order: **1409994**

Dear Mark,

ALS Environmental received 6 samples on 19-Sep-2014 09:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 26.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

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Environmental ALS Environmental logo icon consisting of a stylized green and blue shape.

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Work Order: 1409994

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1409994-01	MW1	Water		9/18/2014 10:30	9/19/2014 09:00	<input type="checkbox"/>
1409994-02	MW2	Water		9/18/2014 10:50	9/19/2014 09:00	<input type="checkbox"/>
1409994-03	MW3	Water		9/18/2014 11:10	9/19/2014 09:00	<input type="checkbox"/>
1409994-04	MW4	Water		9/18/2014 11:25	9/19/2014 09:00	<input type="checkbox"/>
1409994-05	MW5	Water		9/18/2014 11:40	9/19/2014 09:00	<input type="checkbox"/>
1409994-06	Trip Blank	Water		9/18/2014	9/19/2014 09:00	<input type="checkbox"/>

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Work Order: 1409994

Case Narrative

Batch 63057 samples 1409994-01 through 1409994-05 reporting limits for Metals were elevated due to dilution for high concentrations of non-target analytes.

Batch 63057B MS/MSD data for Sodium is not related to this project's samples. No data requires qualification.

Batch R148568 duplicate data for pH is not related to this project's samples. No data requires qualification.

Batch R148771 MS/MSD data for Nitrate is not related to this project's samples. No data requires qualification.

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
WorkOrder: 1409994

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
s.u.	Standard Units

ALS Group USA, Corp

Date: 26-Sep-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Sample ID: MW1
Collection Date: 9/18/2014 10:30 AM

Work Order: 1409994
Lab ID: 1409994-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS (DISSOLVED)			SW6020A		Prep: FILTER / 9/22/14	Analyst: RH
Calcium	410		5.0	mg/L	10	9/24/2014 02:32 AM
Iron	ND		0.80	mg/L	10	9/24/2014 02:32 AM
Magnesium	580		20	mg/L	100	9/24/2014 03:25 PM
Manganese	0.93		0.050	mg/L	10	9/24/2014 02:32 AM
Potassium	11		2.0	mg/L	10	9/24/2014 02:32 AM
Selenium	ND		0.050	mg/L	10	9/24/2014 02:32 AM
Sodium	3,600		20	mg/L	100	9/24/2014 03:25 PM
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS
Benzene	ND		1.0	µg/L	1	9/26/2014 04:33 AM
Ethylbenzene	ND		1.0	µg/L	1	9/26/2014 04:33 AM
m,p-Xylene	ND		2.0	µg/L	1	9/26/2014 04:33 AM
o-Xylene	ND		1.0	µg/L	1	9/26/2014 04:33 AM
Toluene	ND		1.0	µg/L	1	9/26/2014 04:33 AM
Xylenes, Total	ND		3.0	µg/L	1	9/26/2014 04:33 AM
Surr: 1,2-Dichloroethane-d4	110		75-120	%REC	1	9/26/2014 04:33 AM
Surr: 4-Bromofluorobenzene	90.2		80-110	%REC	1	9/26/2014 04:33 AM
Surr: Dibromofluoromethane	106		85-115	%REC	1	9/26/2014 04:33 AM
Surr: Toluene-d8	95.8		85-110	%REC	1	9/26/2014 04:33 AM
ALKALINITY			A2320 B-97			Analyst: EE
Alkalinity, Bicarbonate (as CaCO3)	810		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Total (as CaCO3)	810		12	mg/L	1	9/24/2014 12:02 PM
ANIONS BY ION CHROMATOGRAPHY			SW9056			Analyst: ED
Chloride	3,100		400	mg/L	400	9/22/2014 03:57 PM
Sulfate	8,500		1,000	mg/L	1000	9/22/2014 06:19 PM
NITROGEN, NITRITE			A4500-NO2 B			Analyst: JB
Nitrogen, Nitrite	ND		0.020	mg/L	1	9/19/2014 10:00 AM
NITROGEN, NITRATE			E353.2 R2.0			Analyst: JJG
Nitrogen, Nitrate	ND		0.020	mg/L	1	9/23/2014 01:52 PM
PH			SW9040			Analyst: JB
pH (laboratory)	7.06			s.u.	1	9/19/2014 04:00 PM
TOTAL DISSOLVED SOLIDS			A2540 C-97		Prep: Water Ext. / 9/24/14	Analyst: STP
Total Dissolved Solids	18,000		20	mg/L	1	9/24/2014 08:30 AM

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

ALS Group USA, Corp

Date: 26-Sep-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Sample ID: MW2
Collection Date: 9/18/2014 10:50 AM

Work Order: 1409994
Lab ID: 1409994-02
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS (DISSOLVED)			SW6020A		Prep: FILTER / 9/22/14	Analyst: RH
Calcium	420		5.0	mg/L	10	9/24/2014 02:38 AM
Iron	ND		0.80	mg/L	10	9/24/2014 02:38 AM
Magnesium	540		20	mg/L	100	9/24/2014 03:31 PM
Manganese	0.57		0.050	mg/L	10	9/24/2014 02:38 AM
Potassium	13		2.0	mg/L	10	9/24/2014 02:38 AM
Selenium	ND		0.050	mg/L	10	9/24/2014 02:38 AM
Sodium	3,200		20	mg/L	100	9/24/2014 03:31 PM
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS
Benzene	ND		1.0	µg/L	1	9/26/2014 04:58 AM
Ethylbenzene	ND		1.0	µg/L	1	9/26/2014 04:58 AM
m,p-Xylene	ND		2.0	µg/L	1	9/26/2014 04:58 AM
o-Xylene	ND		1.0	µg/L	1	9/26/2014 04:58 AM
Toluene	ND		1.0	µg/L	1	9/26/2014 04:58 AM
Xylenes, Total	ND		3.0	µg/L	1	9/26/2014 04:58 AM
Surr: 1,2-Dichloroethane-d4	109		75-120	%REC	1	9/26/2014 04:58 AM
Surr: 4-Bromofluorobenzene	88.3		80-110	%REC	1	9/26/2014 04:58 AM
Surr: Dibromofluoromethane	107		85-115	%REC	1	9/26/2014 04:58 AM
Surr: Toluene-d8	97.6		85-110	%REC	1	9/26/2014 04:58 AM
ALKALINITY			A2320 B-97			Analyst: EE
Alkalinity, Bicarbonate (as CaCO3)	790		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Total (as CaCO3)	790		12	mg/L	1	9/24/2014 12:02 PM
ANIONS BY ION CHROMATOGRAPHY			SW9056			Analyst: ED
Chloride	2,800		400	mg/L	400	9/22/2014 04:58 PM
Sulfate	7,700		400	mg/L	400	9/22/2014 04:58 PM
NITROGEN, NITRITE			A4500-NO2 B			Analyst: JB
Nitrogen, Nitrite	ND		0.020	mg/L	1	9/19/2014 10:00 AM
NITROGEN, NITRATE			E353.2 R2.0			Analyst: JJG
Nitrogen, Nitrate	0.077		0.020	mg/L	1	9/23/2014 01:52 PM
PH			SW9040			Analyst: JB
pH (laboratory)	7.02			s.u.	1	9/19/2014 04:00 PM
TOTAL DISSOLVED SOLIDS			A2540 C-97		Prep: Water Ext. / 9/24/14	Analyst: STP
Total Dissolved Solids	17,000		20	mg/L	1	9/24/2014 08:30 AM

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

ALS Group USA, Corp

Date: 26-Sep-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Sample ID: MW3
Collection Date: 9/18/2014 11:10 AM

Work Order: 1409994
Lab ID: 1409994-03
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS (DISSOLVED)			SW6020A		Prep: FILTER / 9/22/14	Analyst: RH
Calcium	500		5.0	mg/L	10	9/24/2014 04:22 AM
Iron	ND		0.80	mg/L	10	9/24/2014 04:22 AM
Magnesium	850		2.0	mg/L	10	9/24/2014 04:22 AM
Manganese	2.2		0.050	mg/L	10	9/24/2014 04:22 AM
Potassium	15		2.0	mg/L	10	9/24/2014 04:22 AM
Selenium	ND		0.050	mg/L	10	9/24/2014 04:22 AM
Sodium	3,700		20	mg/L	100	9/24/2014 03:37 PM
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS
Benzene	ND		1.0	µg/L	1	9/26/2014 05:23 AM
Ethylbenzene	ND		1.0	µg/L	1	9/26/2014 05:23 AM
m,p-Xylene	ND		2.0	µg/L	1	9/26/2014 05:23 AM
o-Xylene	ND		1.0	µg/L	1	9/26/2014 05:23 AM
Toluene	ND		1.0	µg/L	1	9/26/2014 05:23 AM
Xylenes, Total	ND		3.0	µg/L	1	9/26/2014 05:23 AM
Surr: 1,2-Dichloroethane-d4	108		75-120	%REC	1	9/26/2014 05:23 AM
Surr: 4-Bromofluorobenzene	90.0		80-110	%REC	1	9/26/2014 05:23 AM
Surr: Dibromofluoromethane	106		85-115	%REC	1	9/26/2014 05:23 AM
Surr: Toluene-d8	96.7		85-110	%REC	1	9/26/2014 05:23 AM
ALKALINITY			A2320 B-97			Analyst: EE
Alkalinity, Bicarbonate (as CaCO3)	860		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Total (as CaCO3)	860		12	mg/L	1	9/24/2014 12:02 PM
ANIONS BY ION CHROMATOGRAPHY			SW9056			Analyst: ED
Chloride	3,700		400	mg/L	400	9/22/2014 05:18 PM
Sulfate	9,100		1,000	mg/L	1000	9/22/2014 07:19 PM
NITROGEN, NITRITE			A4500-NO2 B			Analyst: JB
Nitrogen, Nitrite	ND		0.020	mg/L	1	9/19/2014 10:00 AM
NITROGEN, NITRATE			E353.2 R2.0			Analyst: JJG
Nitrogen, Nitrate	ND		0.020	mg/L	1	9/23/2014 01:52 PM
PH			SW9040			Analyst: JB
pH (laboratory)	7.18			s.u.	1	9/19/2014 04:00 PM
TOTAL DISSOLVED SOLIDS			A2540 C-97		Prep: Water Ext. / 9/24/14	Analyst: STP
Total Dissolved Solids	20,000		20	mg/L	1	9/24/2014 08:30 AM

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

ALS Group USA, Corp

Date: 26-Sep-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Sample ID: MW4
Collection Date: 9/18/2014 11:25 AM

Work Order: 1409994
Lab ID: 1409994-04
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS (DISSOLVED)			SW6020A		Prep: FILTER / 9/22/14	Analyst: RH
Calcium	470		5.0	mg/L	10	9/24/2014 04:28 AM
Iron	ND		0.80	mg/L	10	9/24/2014 04:28 AM
Magnesium	780		2.0	mg/L	10	9/24/2014 04:28 AM
Manganese	3.5		0.050	mg/L	10	9/24/2014 04:28 AM
Potassium	12		2.0	mg/L	10	9/24/2014 04:28 AM
Selenium	ND		0.050	mg/L	10	9/24/2014 04:28 AM
Sodium	4,100		20	mg/L	100	9/24/2014 03:44 PM
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS
Benzene	ND		1.0	µg/L	1	9/26/2014 05:48 AM
Ethylbenzene	ND		1.0	µg/L	1	9/26/2014 05:48 AM
m,p-Xylene	ND		2.0	µg/L	1	9/26/2014 05:48 AM
o-Xylene	ND		1.0	µg/L	1	9/26/2014 05:48 AM
Toluene	ND		1.0	µg/L	1	9/26/2014 05:48 AM
Xylenes, Total	ND		3.0	µg/L	1	9/26/2014 05:48 AM
Surr: 1,2-Dichloroethane-d4	108		75-120	%REC	1	9/26/2014 05:48 AM
Surr: 4-Bromofluorobenzene	91.2		80-110	%REC	1	9/26/2014 05:48 AM
Surr: Dibromofluoromethane	106		85-115	%REC	1	9/26/2014 05:48 AM
Surr: Toluene-d8	97.7		85-110	%REC	1	9/26/2014 05:48 AM
ALKALINITY			A2320 B-97			Analyst: EE
Alkalinity, Bicarbonate (as CaCO3)	850		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Total (as CaCO3)	850		12	mg/L	1	9/24/2014 12:02 PM
ANIONS BY ION CHROMATOGRAPHY			SW9056			Analyst: ED
Chloride	3,800		400	mg/L	400	9/22/2014 05:38 PM
Sulfate	8,600		1,000	mg/L	1000	9/22/2014 07:39 PM
NITROGEN, NITRITE			A4500-NO2 B			Analyst: JB
Nitrogen, Nitrite	ND		0.020	mg/L	1	9/19/2014 10:00 AM
NITROGEN, NITRATE			E353.2 R2.0			Analyst: JJG
Nitrogen, Nitrate	0.12		0.020	mg/L	1	9/23/2014 01:52 PM
PH			SW9040			Analyst: JB
pH (laboratory)	7.06			s.u.	1	9/19/2014 04:00 PM
TOTAL DISSOLVED SOLIDS			A2540 C-97		Prep: Water Ext. / 9/24/14	Analyst: STP
Total Dissolved Solids	20,000		20	mg/L	1	9/24/2014 08:30 AM

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

ALS Group USA, Corp

Date: 26-Sep-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Sample ID: MW5
Collection Date: 9/18/2014 11:40 AM

Work Order: 1409994
Lab ID: 1409994-05
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS (DISSOLVED)			SW6020A		Prep: FILTER / 9/22/14	Analyst: RH
Calcium	450		5.0	mg/L	10	9/24/2014 04:34 AM
Iron	ND		0.80	mg/L	10	9/24/2014 04:34 AM
Magnesium	830		2.0	mg/L	10	9/24/2014 04:34 AM
Manganese	0.85		0.050	mg/L	10	9/24/2014 04:34 AM
Potassium	16		2.0	mg/L	10	9/24/2014 04:34 AM
Selenium	ND		0.050	mg/L	10	9/24/2014 04:34 AM
Sodium	4,600		20	mg/L	100	9/24/2014 03:50 PM
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS
Benzene	ND		1.0	µg/L	1	9/26/2014 06:12 AM
Ethylbenzene	ND		1.0	µg/L	1	9/26/2014 06:12 AM
m,p-Xylene	ND		2.0	µg/L	1	9/26/2014 06:12 AM
o-Xylene	ND		1.0	µg/L	1	9/26/2014 06:12 AM
Toluene	ND		1.0	µg/L	1	9/26/2014 06:12 AM
Xylenes, Total	ND		3.0	µg/L	1	9/26/2014 06:12 AM
Surr: 1,2-Dichloroethane-d4	107		75-120	%REC	1	9/26/2014 06:12 AM
Surr: 4-Bromofluorobenzene	91.0		80-110	%REC	1	9/26/2014 06:12 AM
Surr: Dibromofluoromethane	105		85-115	%REC	1	9/26/2014 06:12 AM
Surr: Toluene-d8	97.2		85-110	%REC	1	9/26/2014 06:12 AM
ALKALINITY			A2320 B-97			Analyst: EE
Alkalinity, Bicarbonate (as CaCO3)	750		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	9/24/2014 12:02 PM
Alkalinity, Total (as CaCO3)	750		12	mg/L	1	9/24/2014 12:02 PM
ANIONS BY ION CHROMATOGRAPHY			SW9056			Analyst: ED
Chloride	3,800		400	mg/L	400	9/22/2014 05:58 PM
Sulfate	10,000		1,000	mg/L	1000	9/22/2014 08:00 PM
NITROGEN, NITRITE			A4500-NO2 B			Analyst: JB
Nitrogen, Nitrite	ND		0.020	mg/L	1	9/19/2014 10:00 AM
NITROGEN, NITRATE			E353.2 R2.0			Analyst: JJG
Nitrogen, Nitrate	ND		0.020	mg/L	1	9/23/2014 01:52 PM
PH			SW9040			Analyst: JB
pH (laboratory)	7.19			s.u.	1	9/19/2014 04:00 PM
TOTAL DISSOLVED SOLIDS			A2540 C-97		Prep: Water Ext. / 9/24/14	Analyst: STP
Total Dissolved Solids	22,000		20	mg/L	1	9/24/2014 08:30 AM

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

ALS Group USA, Corp

Date: 26-Sep-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 14-22 MW 9.18.14
Sample ID: Trip Blank
Collection Date: 9/18/2014

Work Order: 1409994
Lab ID: 1409994-06
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260		Analyst: RS	
Benzene	ND		1.0	µg/L	1	9/25/2014 08:09 PM
Ethylbenzene	ND		1.0	µg/L	1	9/25/2014 08:09 PM
m,p-Xylene	ND		2.0	µg/L	1	9/25/2014 08:09 PM
o-Xylene	ND		1.0	µg/L	1	9/25/2014 08:09 PM
Toluene	ND		1.0	µg/L	1	9/25/2014 08:09 PM
Xylenes, Total	ND		3.0	µg/L	1	9/25/2014 08:09 PM
Surr: 1,2-Dichloroethane-d4	99.1		75-120	%REC	1	9/25/2014 08:09 PM
Surr: 4-Bromofluorobenzene	98.8		80-110	%REC	1	9/25/2014 08:09 PM
Surr: Dibromofluoromethane	98.4		85-115	%REC	1	9/25/2014 08:09 PM
Surr: Toluene-d8	97.2		85-110	%REC	1	9/25/2014 08:09 PM

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

Client: HRL Compliance Solutions, Inc
Work Order: 1409994
Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **63057B** Instrument ID **ICPMS2** Method: **SW6020A (Dissolve)**

MBLK		Sample ID: MBLK-63057-63057B				Units: mg/L		Analysis Date: 9/22/2014 05:23 PM			
Client ID:		Run ID: ICPMS2_140922A				SeqNo: 2947422		Prep Date: 9/22/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	ND	0.50									
Iron	ND	0.080									
Magnesium	ND	0.20									
Manganese	ND	0.0050									
Potassium	ND	0.20									
Selenium	ND	0.0050									
Sodium	ND	0.20									

LCS		Sample ID: LCS-63057-63057B				Units: mg/L		Analysis Date: 9/22/2014 05:30 PM			
Client ID:		Run ID: ICPMS2_140922A				SeqNo: 2947423		Prep Date: 9/22/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	9.088	0.50	10	0	90.9	80-120	0				
Iron	9.002	0.080	10	0	90	80-120	0				
Magnesium	9.172	0.20	10	0	91.7	80-120	0				
Manganese	0.08427	0.0050	0.1	0	84.3	80-120	0				
Potassium	9.099	0.20	10	0	91	80-120	0				
Selenium	0.08799	0.0050	0.1	0	88	80-120	0				
Sodium	9.089	0.20	10	0	90.9	80-120	0				

MS		Sample ID: 1409974-01AMS				Units: mg/L		Analysis Date: 9/22/2014 05:54 PM			
Client ID:		Run ID: ICPMS2_140922A				SeqNo: 2947427		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	16.31	0.50	10	7.409	89	75-125	0				
Iron	9.167	0.080	10	0.00223	91.6	75-125	0				
Magnesium	9.946	0.20	10	0.7109	92.4	75-125	0				
Manganese	0.1242	0.0050	0.1	0.0302	94	75-125	0				
Potassium	16.77	0.20	10	7.612	91.6	75-125	0				
Selenium	0.1366	0.0050	0.1	0.03419	102	75-125	0				
Sodium	322.5	0.20	10	323.7	-12	75-125	0			SEO	

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

Client: HRL Compliance Solutions, Inc
Work Order: 1409994
Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **63057B** Instrument ID **ICPMS2** Method: **SW6020A** **(Dissolve)**

MSD		Sample ID: 1409974-01AMSD				Units: mg/L		Analysis Date: 9/22/2014 06:00 PM			
Client ID:		Run ID: ICPMS2_140922A			SeqNo: 2947428		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	16.26	0.50	10	7.409	88.5	75-125	16.31	0.307	20		
Iron	9.259	0.080	10	0.00223	92.6	75-125	9.167	0.999	20		
Magnesium	9.94	0.20	10	0.7109	92.3	75-125	9.946	0.0603	20		
Manganese	0.1247	0.0050	0.1	0.0302	94.5	75-125	0.1242	0.402	20		
Potassium	16.69	0.20	10	7.612	90.8	75-125	16.77	0.478	20		
Selenium	0.1355	0.0050	0.1	0.03419	101	75-125	0.1366	0.809	20		
Sodium	320.8	0.20	10	323.7	-29	75-125	322.5	0.529	20	SEO	

The following samples were analyzed in this batch:

1409994-01B	1409994-02B	1409994-03B
1409994-04B	1409994-05B	

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148902** Instrument ID **VMS8** Method: **SW8260**

MBLK		Sample ID: VBLKW1-140925-R148902				Units: µg/L		Analysis Date: 9/25/2014 02:47 PM		
Client ID:		Run ID: VMS8_140925A			SeqNo: 2953722		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	1.69	2.0								J
o-Xylene	ND	1.0								
Toluene	0.38	1.0								J
Xylenes, Total	1.69	3.0								J
<i>Surr: 1,2-Dichloroethane-d4</i>	19.71	0	20	0	98.6	75-120	0			
<i>Surr: 4-Bromofluorobenzene</i>	19.96	0	20	0	99.8	80-110	0			
<i>Surr: Dibromofluoromethane</i>	20.17	0	20	0	101	85-115	0			
<i>Surr: Toluene-d8</i>	19.83	0	20	0	99.2	85-110	0			

LCS		Sample ID: VLCSW1-140925-R148902				Units: µg/L		Analysis Date: 9/25/2014 01:09 PM		
Client ID:		Run ID: VMS8_140925A			SeqNo: 2953721		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.38	1.0	20	0	96.9	85-125	0			
Ethylbenzene	19.9	1.0	20	0	99.5	85-125	0			
m,p-Xylene	41.03	2.0	40	0	103	75-130	0			
o-Xylene	19.89	1.0	20	0	99.4	80-125	0			
Toluene	20.97	1.0	20	0	105	85-125	0			
Xylenes, Total	60.92	3.0	60	0	102	80-126	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	19.79	0	20	0	99	75-120	0			
<i>Surr: 4-Bromofluorobenzene</i>	19.21	0	20	0	96	80-110	0			
<i>Surr: Dibromofluoromethane</i>	19.64	0	20	0	98.2	85-115	0			
<i>Surr: Toluene-d8</i>	19.66	0	20	0	98.3	85-110	0			

MS		Sample ID: 1409857-12A MS				Units: µg/L		Analysis Date: 9/25/2014 11:26 PM		
Client ID:		Run ID: VMS8_140925A			SeqNo: 2953734		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.78	1.0	20	0	98.9	85-125	0			
Ethylbenzene	19.1	1.0	20	0	95.5	85-125	0			
m,p-Xylene	38.04	2.0	40	0	95.1	75-130	0			
o-Xylene	18.94	1.0	20	0	94.7	80-125	0			
Toluene	20.41	1.0	20	0	102	85-125	0			
Xylenes, Total	56.98	3.0	60	0	95	80-126	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	20.08	0	20	0	100	75-120	0			
<i>Surr: 4-Bromofluorobenzene</i>	20.74	0	20	0	104	80-110	0			
<i>Surr: Dibromofluoromethane</i>	20.52	0	20	0	103	85-115	0			
<i>Surr: Toluene-d8</i>	19.64	0	20	0	98.2	85-110	0			

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

Client: HRL Compliance Solutions, Inc
Work Order: 1409994
Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148902** Instrument ID **VMS8** Method: **SW8260**

MSD		Sample ID: 1409857-12A MSD				Units: µg/L		Analysis Date: 9/25/2014 11:50 PM		
Client ID:		Run ID: VMS8_140925A			SeqNo: 2953735		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.15	1.0	20	0	95.8	85-125	19.78	3.24	30	
Ethylbenzene	18.27	1.0	20	0	91.4	85-125	19.1	4.44	30	
m,p-Xylene	36.45	2.0	40	0	91.1	75-130	38.04	4.27	30	
o-Xylene	18.08	1.0	20	0	90.4	80-125	18.94	4.65	30	
Toluene	19.29	1.0	20	0	96.4	85-125	20.41	5.64	30	
Xylenes, Total	54.53	3.0	60	0	90.9	80-126	56.98	4.39	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	20.04	0	20	0	100	75-120	20.08	0.199	30	
<i>Surr: 4-Bromofluorobenzene</i>	20.49	0	20	0	102	80-110	20.74	1.21	30	
<i>Surr: Dibromofluoromethane</i>	20.77	0	20	0	104	85-115	20.52	1.21	30	
<i>Surr: Toluene-d8</i>	19.59	0	20	0	98	85-110	19.64	0.255	30	

The following samples were analyzed in this batch: | 1409994-06A |

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148981** Instrument ID **VMS9** Method: **SW8260**

MBLK		Sample ID: VBLKW3-140925-R148981				Units: µg/L		Analysis Date: 9/26/2014 03:44 AM		
Client ID:		Run ID: VMS9_140925B				SeqNo: 2954328		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	21.58	0	20	0	108	75-120	0			
Surr: 4-Bromofluorobenzene	18.02	0	20	0	90.1	80-110	0			
Surr: Dibromofluoromethane	20.96	0	20	0	105	85-115	0			
Surr: Toluene-d8	19.48	0	20	0	97.4	85-110	0			

LCS		Sample ID: VLCSW2-140925-R148981				Units: µg/L		Analysis Date: 9/26/2014 02:29 AM		
Client ID:		Run ID: VMS9_140925B				SeqNo: 2954327		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.5	1.0	20	0	112	85-125	0			
Ethylbenzene	19.12	1.0	20	0	95.6	85-125	0			
m,p-Xylene	39.2	2.0	40	0	98	75-130	0			
o-Xylene	19.17	1.0	20	0	95.8	80-125	0			
Toluene	19.82	1.0	20	0	99.1	85-125	0			
Xylenes, Total	58.37	3.0	60	0	97.3	80-126	0			
Surr: 1,2-Dichloroethane-d4	20.43	0	20	0	102	75-120	0			
Surr: 4-Bromofluorobenzene	20.66	0	20	0	103	80-110	0			
Surr: Dibromofluoromethane	20.42	0	20	0	102	85-115	0			
Surr: Toluene-d8	19.89	0	20	0	99.4	85-110	0			

MS		Sample ID: 1409994-04A MS				Units: µg/L		Analysis Date: 9/26/2014 12:23 PM		
Client ID: MW4		Run ID: VMS9_140925B				SeqNo: 2954394		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.93	1.0	20	0	110	85-125	0			
Ethylbenzene	19.26	1.0	20	0	96.3	85-125	0			
m,p-Xylene	39.82	2.0	40	0	99.6	75-130	0			
o-Xylene	18.95	1.0	20	0	94.8	80-125	0			
Toluene	19.44	1.0	20	0	97.2	85-125	0			
Xylenes, Total	58.77	3.0	60	0	98	80-126	0			
Surr: 1,2-Dichloroethane-d4	20.73	0	20	0	104	75-120	0			
Surr: 4-Bromofluorobenzene	20.13	0	20	0	101	80-110	0			
Surr: Dibromofluoromethane	19.06	0	20	0	95.3	85-115	0			
Surr: Toluene-d8	20.88	0	20	0	104	85-110	0			

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

Client: HRL Compliance Solutions, Inc
Work Order: 1409994
Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148981** Instrument ID **VMS9** Method: **SW8260**

MSD		Sample ID: 1409994-04A MSD				Units: µg/L		Analysis Date: 9/26/2014 12:48 PM		
Client ID: MW4		Run ID: VMS9_140925B			SeqNo: 2954395		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.37	1.0	20	0	107	85-125	21.93	2.59	30	
Ethylbenzene	18.16	1.0	20	0	90.8	85-125	19.26	5.88	30	
m,p-Xylene	38.07	2.0	40	0	95.2	75-130	39.82	4.49	30	
o-Xylene	18.61	1.0	20	0	93	80-125	18.95	1.81	30	
Toluene	19.09	1.0	20	0	95.4	85-125	19.44	1.82	30	
Xylenes, Total	56.68	3.0	60	0	94.5	80-126	58.77	3.62	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	19.94	0	20	0	99.7	75-120	20.73	3.88	30	
<i>Surr: 4-Bromofluorobenzene</i>	20.74	0	20	0	104	80-110	20.13	2.99	30	
<i>Surr: Dibromofluoromethane</i>	17.9	0	20	0	89.5	85-115	19.06	6.28	30	
<i>Surr: Toluene-d8</i>	20.5	0	20	0	102	85-110	20.88	1.84	30	

The following samples were analyzed in this batch:

1409994-01A	1409994-02A	1409994-03A
1409994-04A	1409994-05A	

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

Client: HRL Compliance Solutions, Inc
Work Order: 1409994
Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **63116** Instrument ID **TDS** Method: **A2540 C-97**

MBLK	Sample ID: MBLK-63116-63116				Units: mg/L			Analysis Date: 9/24/2014 08:30 AM		
Client ID:	Run ID: TDS_140924C				SeqNo: 2950013		Prep Date: 9/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids ND 10

LCS	Sample ID: LCS-63116-63116				Units: mg/L			Analysis Date: 9/24/2014 08:30 AM		
Client ID:	Run ID: TDS_140924C				SeqNo: 2950012		Prep Date: 9/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 498 10 495 0 101 80-120 0

DUP	Sample ID: 1409985-03I DUP				Units: mg/L			Analysis Date: 9/24/2014 08:30 AM		
Client ID:	Run ID: TDS_140924C				SeqNo: 2950004		Prep Date: 9/24/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 8348 40 0 0 0 0-0 8492 1.71 20

The following samples were analyzed in this batch:

1409994-01B	1409994-02B	1409994-03B
1409994-04B	1409994-05B	

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148507** Instrument ID **WETCHEM** Method: **A4500-NO2 B**

MBLK	Sample ID: WBLKW1-140919-R148507				Units: mg/L			Analysis Date: 9/19/2014 10:00 AM		
Client ID:	Run ID: WETCHEM_140919D				SeqNo: 2943366		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite ND 0.020

LCS	Sample ID: WLCSW1-140919-R148507				Units: mg/L			Analysis Date: 9/19/2014 10:00 AM		
Client ID:	Run ID: WETCHEM_140919D				SeqNo: 2943367		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.2041 0.020 0.2 0 102 80-120 0

MS	Sample ID: 1409015-19A MS				Units: mg/L			Analysis Date: 9/19/2014 10:00 AM		
Client ID:	Run ID: WETCHEM_140919D				SeqNo: 2943369		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.2041 0.020 0.2 0.0185 92.8 75-125 0

MSD	Sample ID: 1409015-19A MSD				Units: mg/L			Analysis Date: 9/19/2014 10:00 AM		
Client ID:	Run ID: WETCHEM_140919D				SeqNo: 2943370		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.2072 0.020 0.2 0.0185 94.4 75-125 0.2041 1.51 20

The following samples were analyzed in this batch:

1409994-01B	1409994-02B	1409994-03B
1409994-04B	1409994-05B	

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148568** Instrument ID **WETCHEM** Method: **A4500-H B-96**

LCS	Sample ID: WLCSW1-140919-R148568		Units: s.u.		Analysis Date: 9/19/2014 04:00 PM					
Client ID:	Run ID: WETCHEM_140919S		SeqNo: 2944378		Prep Date:					
					DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH (laboratory) 3.98 0 4 0 99.5 90-110 0

LCS	Sample ID: WLCSW-140919-R148568		Units: s.u.		Analysis Date: 9/19/2014 04:00 PM					
Client ID:	Run ID: WETCHEM_140919S		SeqNo: 2944388		Prep Date:					
					DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH (laboratory) 3.98 0 4 0 99.5 90-110 0

DUP	Sample ID: 1409985-04I DUP		Units: s.u.		Analysis Date: 9/19/2014 04:00 PM					
Client ID:	Run ID: WETCHEM_140919S		SeqNo: 2944387		Prep Date:					
					DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH (laboratory) 7.4 0 0 0 0 0-0 7.39 0.135 20 H

DUP	Sample ID: 1409994-01B DUP		Units: s.u.		Analysis Date: 9/19/2014 04:00 PM					
Client ID: MW1	Run ID: WETCHEM_140919S		SeqNo: 2944392		Prep Date:					
					DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH (laboratory) 7.03 0 0 0 0 0-0 7.06 0.426 20

DUP	Sample ID: 14091008-01A DUP		Units: s.u.		Analysis Date: 9/19/2014 04:00 PM					
Client ID:	Run ID: WETCHEM_140919S		SeqNo: 2944486		Prep Date:					
					DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH (laboratory) 5.86 0 0 0 0 0-0 5.85 0.171 20 H

The following samples were analyzed in this batch:

1409994-01B	1409994-02B	1409994-03B
1409994-04B	1409994-05B	

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148741** Instrument ID **IC4** Method: **SW9056**

MBLK		Sample ID: CCB/MBLK-R148741				Units: mg/L		Analysis Date: 9/22/2014 09:10 AM			
Client ID:		Run ID: IC4_140922A				SeqNo: 2948560		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Chloride	ND	1.0									
Sulfate	ND	1.0									

LCS		Sample ID: LCS-R148741				Units: mg/L		Analysis Date: 9/22/2014 12:14 PM			
Client ID:		Run ID: IC4_140922A				SeqNo: 2948562		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Chloride	10.01	1.0	10	0	100	88-107	0				
Sulfate	9.444	1.0	10	0	94.4	85-110	0				

MS		Sample ID: 1409994-01B MS				Units: mg/L		Analysis Date: 9/22/2014 06:39 PM			
Client ID: MW1		Run ID: IC4_140922A				SeqNo: 2948585		Prep Date:		DF: 1000	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Chloride	6958	1,000	4000	3142	95.4	75-125	0				
Sulfate	12180	1,000	4000	8451	93.1	75-125	0				

MSD		Sample ID: 1409994-01B MSD				Units: mg/L		Analysis Date: 9/22/2014 06:59 PM			
Client ID: MW1		Run ID: IC4_140922A				SeqNo: 2948586		Prep Date:		DF: 1000	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Chloride	6845	1,000	4000	3142	92.6	75-125	6958	1.64	20		
Sulfate	11990	1,000	4000	8451	88.5	75-125	12180	1.55	20		

The following samples were analyzed in this batch:

1409994-01B	1409994-02B	1409994-03B
1409994-04B	1409994-05B	

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: R148771 Instrument ID LACHAT2 Method: E353.2 R2.0

MBLK	Sample ID: MBLK-R148771		Units: mg/L		Analysis Date: 9/23/2014 01:52 PM					
Client ID:	Run ID: LACHAT2_140923F		SeqNo: 2949040		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrate ND 0.020

LCS	Sample ID: LCS-R148771		Units: mg/L		Analysis Date: 9/23/2014 01:52 PM					
Client ID:	Run ID: LACHAT2_140923F		SeqNo: 2949041		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrate 5.175 0.020 5 0 104 90-110 0

MS	Sample ID: 14091092-01B MS		Units: mg/L		Analysis Date: 9/23/2014 01:52 PM					
Client ID:	Run ID: LACHAT2_140923F		SeqNo: 2949066		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrate 4.636 0.020 5 0.02204 92.3 90-110 0

MS	Sample ID: 1409015-23B MS		Units: mg/L		Analysis Date: 9/23/2014 01:52 PM					
Client ID:	Run ID: LACHAT2_140923F		SeqNo: 2949072		Prep Date: DF: 5					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrate 29.64 0.10 5 25.4 84.6 90-110 0 SO

MSD	Sample ID: 14091092-01B MSD		Units: mg/L		Analysis Date: 9/23/2014 01:52 PM					
Client ID:	Run ID: LACHAT2_140923F		SeqNo: 2949067		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrate 4.647 0.020 5 0.02204 92.5 90-110 4.636 0.237 20

MSD	Sample ID: 1409015-23B MSD		Units: mg/L		Analysis Date: 9/23/2014 01:52 PM					
Client ID:	Run ID: LACHAT2_140923F		SeqNo: 2949073		Prep Date: DF: 5					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrate 29.52 0.10 5 25.4 82.4 90-110 29.64 0.372 20 SO

The following samples were analyzed in this batch:

1409994-01C	1409994-02C	1409994-03C
1409994-04C	1409994-05C	

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

Client: HRL Compliance Solutions, Inc
 Work Order: 1409994
 Project: WPX Clough 14-22 MW 9.18.14

QC BATCH REPORT

Batch ID: **R148919** Instrument ID **Titration 1** Method: **A2320 B-97**

MBLK		Sample ID: WBLKW1-092514-R148919				Units: mg/L		Analysis Date: 9/24/2014 12:02 PM			
Client ID:		Run ID: TITRATOR 1_140924B				SeqNo: 2952668		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Bicarbonate (as CaCO3)	3.73	10								J	
Alkalinity, Carbonate (as CaCO3)	ND	10									
Alkalinity, Total (as CaCO3)	3.73	12								J	

LCS		Sample ID: WLCSW1-092514-R148919				Units: mg/L		Analysis Date: 9/24/2014 12:02 PM			
Client ID:		Run ID: TITRATOR 1_140924B				SeqNo: 2952669		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Carbonate (as CaCO3)	923.8	10	925	0	99.9	70-130	0				
Alkalinity, Total (as CaCO3)	970.2	12	1000	0	97	90-106	0				

DUP		Sample ID: 1409838-01B DUP				Units: mg/L		Analysis Date: 9/24/2014 12:02 PM			
Client ID:		Run ID: TITRATOR 1_140924B				SeqNo: 2952690		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Total (as CaCO3)	235	12	0	0	0		233.9	0.465	20		

DUP		Sample ID: 1409994-01B DUP				Units: mg/L		Analysis Date: 9/24/2014 12:02 PM			
Client ID: MW1		Run ID: TITRATOR 1_140924B				SeqNo: 2952691		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Bicarbonate (as CaCO3)	803.4	10	0	0	0		805.9	0.314	20		
Alkalinity, Carbonate (as CaCO3)	ND	10	0	0	0		0	0	20		
Alkalinity, Total (as CaCO3)	803.4	12	0	0	0		805.9	0.314	20		

The following samples were analyzed in this batch:

1409994-01B	1409994-02B	1409994-03B
1409994-04B	1409994-05B	

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

BTEX
Benzene
Toluene
Ethylbenzene
Xylene (total)
Metals
Calcium
Iron
Magnesium
Manganese
Potassium
Selenium
Sodium
General Chemistry
Alkalinity, Bicarbonate as CaCO ₃
Alkalinity, Carbonate
Alkalinity, Total as CaCO ₃
Chloride
Nitrogen, Nitrate
Nitrogen Nitrite
Solids, Total Dissolved
Sulfate
pH

Diss

H₂SO₄

Clough 14-22

Monitoring Wells

Bottles

250 H₂SO₄

250 HNO₃

LL Polly

3 HCL VOA's

5 vohcl

4 vohcl

1 LP next

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **19-Sep-14 09:00**

Work Order: **1409994**

Received by: **DS**

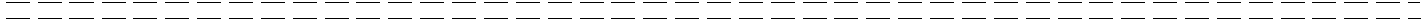
Checklist completed by Diane Shaw 19-Sep-14
eSignature Date

Reviewed by: Ann Preston 19-Sep-14
eSignature Date

Matrices: Water
 Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.6 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>9/19/2014 3:35:11 PM</u>		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:			

Login Notes:



Client Contacted: _____ Date Contacted: _____ Person Contacted: _____

Contacted By: _____ Regarding: _____

Comments:

CorrectiveAction:

ALS Parachute Custody Seal

DATE 9-15

Time 7:00

Name [Signature]