Western Water & Land, Inc.

September 10, 2013

Mr. Brandon Danforth
Environmental Specialist
WPX Energy
1058 County Road 215
Parachute, Colorado 81635

RE: RWF 342-33 Drill Pad Pit Baseline Results Report, June 2013 Event

Dear Mr. Danforth,

Western Water & Land, Inc. (WWL) has completed the initial baseline water sampling for the WPX Energy Rocky Mountain LLC (WPX) RWF 342-33 drill pad in accordance with COGCC Rule 609. The RWF 342-33 drill pad is located in SW ¼, NE ¼, Section 33, Township 7 South, Range 90 West, 6th PM.

In accordance with Rule 609, the evaluation considered all water sources (domestic wells or springs) within a 0.5-mile radius of the referenced drill pad (oil and gas location). A preliminary screening of the groundwater sources was completed to identify the sources that are potentially available for sampling pending the consent of the structure owners. Each potentially available water source was then evaluated to identify the preferred sources for the baseline program. If the number of potentially available sources was four or less, all of the sources were included in the list of preferred sources. If more than four sources were potentially available, the sources were prioritized based on WWL's hydrologic expertise and in accordance with Rule 609. A complete description of the water source evaluation process and results are provided in the water source evaluation report (Baseline Water Quality Sampling Evaluation – RWF 342-33 Drill Pad, April 26, 2013).

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

FIELD SAMPLING ACTIVITIES

As described in the Baseline Water Quality Sampling Evaluation – RWF 342-33 Drill Pad, April 26, 2013, eleven potential sampling locations were identified for field sampling of water quality consistent with requirements of Rule 609. According to state records, landowners, water right holders, and water well permit holders were sent access request letters by way of certified U.S. Postal Service mail. One spring and three wells were identified as preferred sampling locations: 1) Water Well Permit No. 130136; 2) Water Well Permit No. 43579-F; 3) Garrison Well Water Right; and 4) Winch Spring No. 1. Access was not granted for Water Well Permit No. 130136, Water Well Permit No. 43579-F, or Garrison Well Water Right within the 30-day response period required by Rule 609. Alternative sampling locations were then selected: 1) Trahern Spring; 2) Winch Spring No. 1; 3) Haynes Spring; and 4) Water Well Permit No. 163324. WPX was granted permission to sample these water source springs and related structures, as applicable.

743 Horizon Court Suite 330, Grand Junction, CO 81506
Phone: (970) 242-0170 Fax: (970) 242-0270

WWL personnel collected three samples for RWF 342-33 on June 13th, 2013; Haynes Spring (RWF 342-33-Haynes Spg), Trahern Spring (RWF 342-33-Trahern Spg), and Winch Spring No. 1 (RWF 342-33-Winch Spg 1). Mr. Mackley's pump associated with Permit no. 163324 was under repair and was sampled at a later date. All springs were undeveloped and emanated from steep hillsides. See Figure 1 for the sampled locations. Sampled locations were field-staked using a 4-foot long, green, metal stake identified with the sample ID written on orange flagging. Photographs of the sampling sites are shown in Attachment A with the exception of RWF 342-33-163324.

After pump repairs were complete at the Mackley well, WWL personnel collected one sample (RWF 342-33-163324) from the well (well permit no. 163324) on June 19th, 2013. The well was not purged prior to sampling because it was pumped continuously for three days for irrigation use. The sample was collected directly from a hose plumbed to the well pump. See Figure 1 for the sampled locations.

All sampling procedures followed the Colorado Oil & Gas Conservation Commission (COGCC) Model Sampling and Analysis Plan (SAP) protocols. Sampling Method 1 for wells with pumps and effervescent samples, and Sampling Method 1 for springs and seeps, described in Version 1 of the COGCC Model SAP, were used to collect all samples.

Samples were carefully packed in plastic ice chests (coolers) with ice and shipped to the analytical laboratory (ALS Laboratory, Fort Collins, Colorado) by way of overnight courier (FedEx Ground).

QUALITY CONTROL

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

Field Procedures

WWL conducted field sampling procedures in accordance with the COGCC Model SAP. Sampling at RWF 342-33-Trahern Spg (Trahern Spring), RWF 342-33-Haynes Spg (Haynes Spring), and RWF 342-33-Winch Spg 1 (Winch Spring No. 1) were sampled in situ by direct filling methods; dissolved gas sampling was done using Method 1 for spring and seep sampling. RWF 342-33-163324 (Water Well Permit No. 163324) was sampled by direct filling methods; dissolved gas sampling was done using Method 1 for wells with pumps and effervescent samples. No field procedure deviations or incidents occurred that were cause for data qualification.

COC

The chain-of-custody form was reviewed for correct and complete sample IDs, requested analysis, and other information. The analytes requested on the COC matched the requirements of Rule 609. DRO (diesel range organics) and GRO (gasoline range organics) were designated on the COC in place of TPH, a required analysis for Rule 609. The COC did not list the complete sample IDs of accompanying trip blank samples that were provided by the laboratory. No other errors or pertinent information was observed, and no corrections were needed.

Sample Receipt

The samples from June 13th, 2013were received in two coolers within the temperature range criteria (4°C $\pm$ 2°C). Custody seals were intact. The lab reported that the Trip Blanks were not listed on the COCs; Trip Blank 1 arrived in cooler 2 with samples RWF 342-33-Trahern Spg and RWF 342-33-Haynes Spg. Trip Blank 2 arrived in cooler 1 with sample RWF 342-33-Winch Spg 1. The lab reported

a headspace bubble less than green pea size in sample RWF 342-33-Winch Spg 1. The sample from June 19th, 2013 was received in a single cooler within the temperature range criteria (4°C ± 2°C). Custody seals were intact. No discrepancies were reported by the lab upon receipt.No qualifiers were assigned to results from any sample based on sample receipt conditions.

Holding Times
All analyses were conducted within recommended holding times.

Analytical Methods
The analytical methods used by the laboratory were checked for consistency with the analytical schedule in the SAP or other pertinent documents. Analytical methods were found to be consistent with the following modifications: Total phosphorous was analyzed using Method 365.2. Gasoline Range Organics (TPH volatiles) were analyzed using Method SW8260_25 Revision C. Diesel Range Organics (TPH extractables) were analyzed according to SW846 8000C and 8015D.

Detection Limits
Detection limits provided with the analytical results were compared to the original quoted detection limits from the analytical laboratory. Detection limits were as quoted with no deviations observed except as applied to increased dilution factors. All the analyzed metals had a dilution factor of 10. Chloride had a dilution factor of 10 with the exception of a dilution factor of 5 for RWF 342-33-163324. Sulfate had a dilution factor of 5 for RWF 342-33-16334, a factor of 1 for RWF 342-33-Winch Spg 1, and a factor of 10 for the remaining samples. ALS reports samples at the detection limit as "undetected" or "U" rather than reporting results as less than the detection reporting limit, e.g. < 0.05ug/L.

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

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

In general, WWL will assign a qualifier (estimated result) for a CAB equal to or greater than 10 percent, and may assign a qualifier for CAB percentages between 5 and less than 10 percent. The CAB calculations for samples are as follows (see Attachment B, Data Quality Review Sheet):

- RWF 342-33-163324 – 0.21%
- RWF 342-33-Haynes Spg – 0.60%
- RWF 342-33-Trahern Spg – 0.47%
- RWF 342-33-Winch Spg 1 – 2.16%

The analytical results for cations and anions for the samples were not qualified.

TDS
The ratio of laboratory-measured TDS versus calculated TDS were computed and ratios greater than 1.20 for a sample are cause for a review of major ion reporting errors. No sample results were rejected on the basis of the TDS ratio.

In general, WWL will assign a qualifier (an estimated result) when TDS ratios are 1.5 or greater, and may assign a qualifier for TDS ratios between 1.2 and less than 1.5. The TDS calculations for samples are as follows:

- RWF 342-33-163324 – 1.17
- RWF 342-33-Haynes Spg – 1.19
- RWF 342-33-Trahern Spg – 1.14
- RWF 342-33-Winch Spg 1 – 1.14

No qualifiers were assigned on the basis of the TDS acceptance criteria.

Field Duplicates
Field duplicates evaluate the precision of analytical results for field samples collected for a specific sampling event. Precision is measured using the calculation of the relative percent difference (RPD) using the analytical results from the original investigative sample and the duplicate sample. The qualification criteria were considered an RPD limit of 35 percent. No field duplicates were collected for this sampling event, therefore no field duplicate RPDs were calculated.

Laboratory Quality Control
The analytical laboratory conducts an extensive quality control program and as part of the overall quality control process, WWL verified that the lab performed and reported quality control data correctly. This included checking laboratory control samples for a laboratory acceptance criteria of $\pm$ 20 percent and reviewing percent recoveries of analytical spike and analytical spike duplicates and other control samples. Typical percent recovery acceptance limits are 70 to 130 percent. All sampling event data packages from the lab showed that no laboratory control samples exceeded the 20 percent criteria without data qualification.

All laboratory quality control standards were met within the established laboratory acceptance criteria.

Accuracy
Accuracy was evaluated as a percent recovery of an analyte in a reference standard or a spiked sample, e.g. matrix spike and matrix spike duplicate. In cases where percent recoveries exceeded the laboratory acceptance criteria, data would be qualified depending on whether the analyte was detected above the method detection limit or not, if the recovery of the associated control sample was acceptable, or if the analyte concentration in the sample was disproportionate to the spike level and that the recovery of the associated control sample was acceptable. No qualifiers were assigned by the laboratory because of percent recoveries exceeding the laboratory acceptance criteria.

Precision
Precision is the measurement of how closely replicate sample constituents agree and is not related to the true value (concentration). Precision is measured using RPD calculations for laboratory duplicate samples. The RPDs were compared to the laboratory acceptance limit of 20 percent. RPDs were not used when the sample concentration was too low (< 10X MDL) for accurate evaluation. No qualifiers were assigned by the laboratory because of RPD values exceeding the laboratory acceptance criteria.
Data Quality Review Sheets are presented in Attachment B.

Summary
ALS Laboratories assigned analytical results that were undetected with a "U" qualifier. No other quality control qualifiers were assigned to the analytical results by ALS Laboratories and WWL. See Attachment C for individual parameters that were qualified.

ANALYTICAL RESULTS

Laboratory analysis was performed by ALS Environmental (ALS), in Fort Collins, Colorado, in accordance with the analytical schedule described in Rule 609. The analytical results are summarized in Attachment C; the data are qualified as indicated.

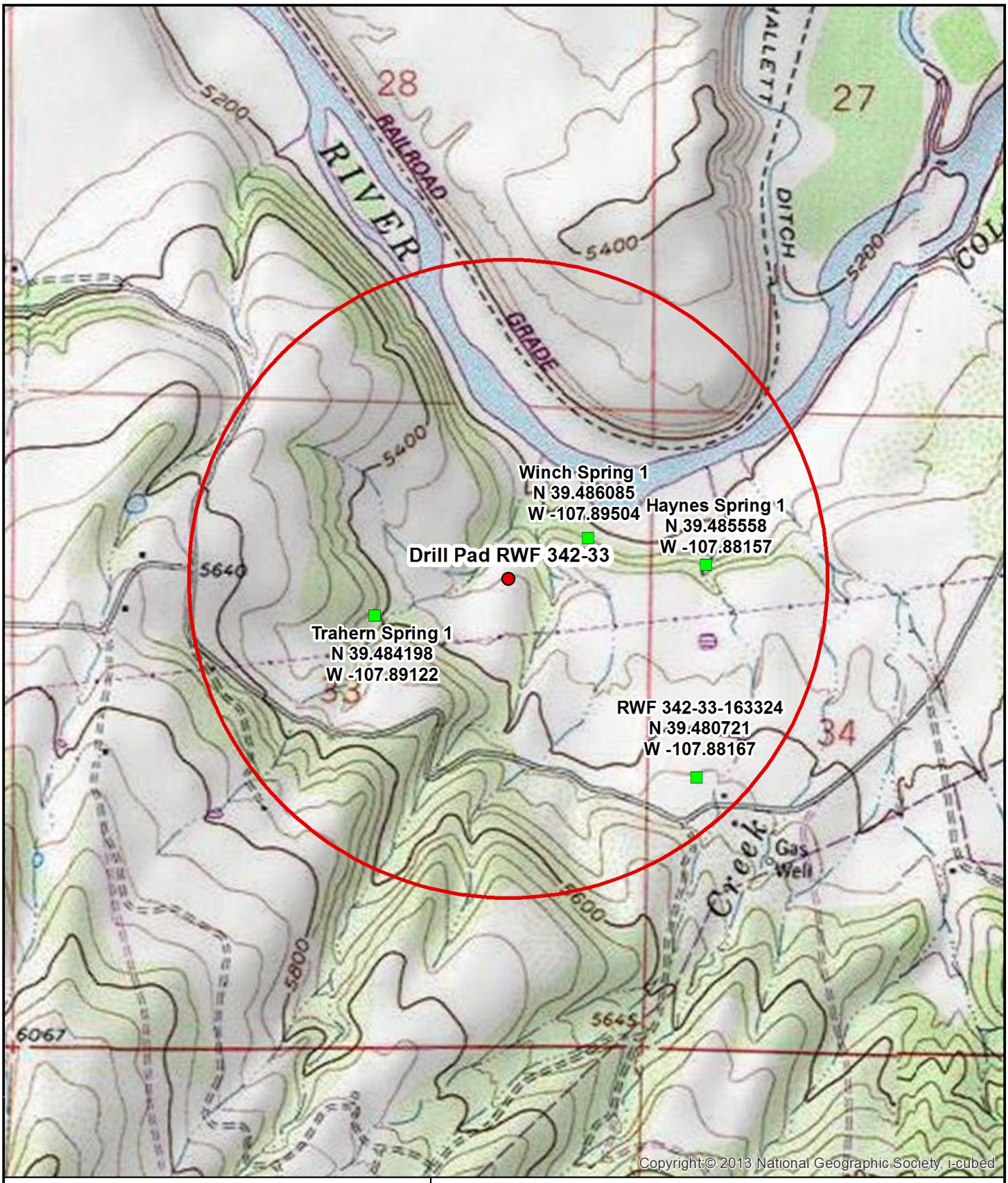
If you have any questions or concerns, please contact me at (970) 242-0170.

Sincerely,

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

Attachments

Figure 1- Sampling Location Map
Attachment A - Photographs
Attachment B - Data Quality Review Sheets
Attachment C – Summary of Analytical Results



Legend

Sample Location(s)

Well GM 32-4

0.5-Mile Radius Evaluation Area

N

Feet

1,000 500 0 1,000

1:13,000

Figure 1: Drill Pad Location RWF 342-33
0.5 Mile Radius Water Source Evaluation
SE1/4, NE1/4, S33, TS, R94W, 6 PM

Garfield County, Colorado

WPX Energy Rocky Mountain LLC

Basemap Source: Esri ArcGIS Online

Western Water & Land, Inc.
Applications in Earth Science

ATTACHMENT A

Photographs

Photo 1. Winch Spring No. 1 Sampling Location (RWF 342-33-Winch Spg 1)

Photo 2. Winch Spring No. 1 Sampling Location (RWF 342-33-Winch Spg 1); Pond 6 Feet Below Sample Location

Photo 3. Trahern Spring Sampling Location (RWF 342-33-Trahern Spg)

Photo 4. Trahern Spring Sampling Location (RWF 342-33-Trahern Spg)

Photo 5. Haynes Spring Sampling Location (RWF 342-33-Haynes Spg)

Photo 6. Haynes Spring Sampling Location (RWF 342-33-Haynes Spg)

ATTACHMENT B

Data Quality Review Sheets

DATA QUALITY REVIEW SHEET

Facility ID:	752705	Project:	RWF 342-33 BWQ
Station Name:	Savage 1058	Lab Work Order:	1306213
Sample Date:	6/13/2013	QA/QC Review Date:	8/23/13
Field Sample ID:	RWF 342-33-Haynes Spg	Reviewer:	J. Pahler

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☐	☐	☒
2. Flow rate reduced prior to sampling?	☐	☐	☒
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☒	☐	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Any discrepancies noted on the lab receipt form? *If yes, list in the comments section.*	☐	☒	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☐	☐	☐
13. Lab qualifiers for data (other than non-detect)? *List in comments*.	☐	☒	☐
14. Are corrective actions required? *If yes, please list actions and dates to be completed by:*	☐	☒	☐
Corrective Action	*Date to be completed*		

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	0.603	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	784	660	1.19	0.9 – 1.1	☐
Specific Conductance, µS/cm (SpC)	985	1030	0.96	0.9 – 1.1	☒

Comments:

Trip Blanks were not listed on the COC; Trip Blank 1 arrived in cooler 2 with samples RWF 342-33-Trahern Spg & Haynes Spg; Trip Blank 2 arrived in cooler 1 with RWF 342-33-Winch Spg 1.
RWF 342-33-Winch Spg 1 ≤ pea-size headspace

DATA QUALITY REVIEW SHEET

Facility ID:	752706	Project:	RWF 342-33 BWQ
Station Name:	Savage 955	Lab Work Order:	1306213
Sample Date:	6/13/13	QA/QC Review Date:	8/23/13
Field Sample ID:	RWF 342-33-Trahern Spg	Reviewer:	J. Pahler

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☐	☐	☒
2. Flow rate reduced prior to sampling?	☐	☐	☒
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☒	☐	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Any discrepancies noted on the lab receipt form? *If yes, list in the comments section.*	☐	☒	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☒	☐	☐
13. Lab qualifiers for data (other than non-detect)? *List in comments*.	☐	☒	☐
14. Are corrective actions required? *If yes, please list actions and dates to be completed by:*	☐	☒	☐
Corrective Action	*Date to be completed*		

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	0.472	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	732	640	1.14	0.9 – 1.1	☐
Specific Conductance, µS/cm (SpC)	955	971	1.6	0.9 – 1.1	☐

Comments:

Trip Blanks were not listed on the COC; Trip Blank 1 arrived in cooler 2 with samples RWF 342-33-Trahern Spg & Haynes Spg; Trip Blank 2 arrived in cooler 1 with RWF 342-33-Winch Spg 1.

RWF 342-33-Winch Spg 1 ≤ pea-size headspace

DATA QUALITY REVIEW SHEET

Facility ID:	752707	Project:	RWF 342-33 BWQ
Station Name:	Savage 971*	Lab Work Order:	1306213
Sample Date:	6/13/13	QA/QC Review Date:	8/23/13
Field Sample ID:	RWF 342-33-Winch Spg 1	Reviewer:	J. Pahler

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☐	☐	☒
2. Flow rate reduced prior to sampling?	☐	☐	☒
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☒	☐	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Any discrepancies noted on the lab receipt form? *If yes, list in the comments section.*	☐	☒	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☒	☐	☐
13. Lab qualifiers for data (other than non-detect)? *List in comments*.	☐	☒	☐
14. Are corrective actions required? *If yes, please list actions and dates to be completed by:*	☐	☒	☐
Corrective Action	*Date to be completed*		

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	2.159	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	647	570	1.14	0.9 – 1.1	☐
Specific Conductance, µS/cm (SpC)	851	902	0.94	0.9 – 1.1	☒

Comments:

*Station was misidentified as belonging to Joan L. Savage; actually belongs to Arnold Mackley. Updates in COGCC database needed.

Trip Blanks were not listed on the COC; Trip Blank 1 arrived in cooler 2 with samples RWF 342-33-Trahern Spg & Haynes Spg; Trip Blank 2 arrived in cooler 1 with RWF 342-33-Winch Spg 1.

RWF 342-33-Winch Spg 1 ≤ pea-size headspace

DATA QUALITY REVIEW SHEET

Facility ID:	703119	Project:	RWF 342-33-163324
Station Name:	Mackley, Arnold	Lab Work Order:	1306302
Sample Date:	6/19/13	QA/QC Review Date:	8/23/13
Field Sample ID:	RWF 342-33-163324	Reviewer:	J. Pahler

Field Sampling Data Review	**Yes**	**No**	**N/A**
1. Well properly purged?	☒	☐	☒
2. Flow rate reduced prior to sampling?	☒	☐	☐
3. Water quality parameters stable prior to sampling?	☒	☐	☐
4. Field instruments calibrated properly?	☒	☐	☐
5. Sampling methods performed according to SAP procedures?	☒	☐	☐
6. Procedures consistent with obtaining a representative sample?	☒	☐	☐
Lab Data Report Review			
7. Proper sample custody maintained until laboratory receipt?	☒	☐	☐
8. Any discrepancies noted on the lab receipt form? *If yes, list in the comments section.*	☐	☒	☐
9. All samples analyzed for the requested analyses?	☒	☐	☐
10. Proper laboratory methods used?	☒	☐	☐
11. All sample holding times met?	☒	☐	☐
12. Lab QA samples (e.g., matrix spikes and matrix spike duplicates) collected and analyzed according to lab method and results within method acceptance limits?	☒	☐	☐
13. Lab qualifiers for data (other than non-detect)? *List in comments*.	☐	☒	☐
14. Are corrective actions required? *If yes, please list actions and dates to be completed by:*	☐	☒	☐
Corrective Action	*Date to be completed*		

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	0.206	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	725	620	1.17	0.9 – 1.1	☒
Specific Conductance, µS/cm (SpC)	925	987	0.94	0.9 – 1.1	☒

Comments:

Well was pumped continuously for 24 hours – no purging required

ATTACHMENT C

Laboratory Analytical Results

RWF 342-33 BWQ Analytical Results Summary																										
Sample Date			6/19/2013						6/13/2013						6/13/2013						6/13/2013					
FieldSampleID			RWF 342-33-163324						RWF-342-33-Trahern SPG						RWF-342-33-Haynes SPG						RWF 342-33-Winch SPG 1					
Facility ID			703119						752706						752705						752707					
LabSampleID			1306302-1						1306213-1						1306213-2						1306213-3					
	Units	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Bacteria (TOT)[1]																										
Iron Related Bacteria	nu	BART	1					1	1					1	1					1	1					1
Sulfate Reducing Bacteria	nu	BART	1					1	1					1	1					1	1					1
Slime Forming Bacteria	nu	BART	0	U				1	0	U				1	0	U				1	0	U				1
Dissolved gases (TOT)																										
Ethane	ug/l	RSK175	2	U		2	2	1	2	U		2	2	1	2	U		2	2	1	2	U		2	2	1
Methane	ug/l	RSK175	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1	1.1			1	1	1
Propane	ug/l	RSK175	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1	1	U		1	1	1
Field Param (TOT)																										
Color	nu	Field	None					1	Brown					1	None					1	None					1
Conductivity, Field	uS/cm	Field	745					1	777					1	759					1	700					1
Discharge, measured	gpm	Field	NM					1	3					1	NM					1	10.3					1
Dissolved Oxygen, Field	mg/l	Field	7.56					1	6.67					1	6.96					1	8.05					1
Dissolved Oxygen, Field,%	%	Field	71.4					1	66.6					1	64.9					1	78.4					1
Effervescence	nu	Field	None					1	None					1	None					1	None					1
H2S, Field	mg/l	Field	NM					1	NM					1	NM					1	NM					1
Odor	nu	Field	None					1	Low					1	None					1	None					1
ORP, field	mv	Field	138.1					1	149.5					1	144.7					1	138.5					1
pH, Field	s.u.	Field	7.18					1	8.29					1	7.32					1	7.97					1
Specific Conductivity, Field	uS/cm	Field	970					1	948					1	1006					1	883					1
Temperature, Water	Deg C	Field	12.9					1	15.6					1	12.2					1	14.2					1
Turbidity, field	NTUs	Field	0.74					1	9.52					1	0.72					1	1.67					1
Inorganics (TOT)																										
Bicarbonate as CaCO3	mg/l	SM2320B	360			20		1	400			20		1	440			20		1	350			20		1
Bromide	mg/l	EPA300.0	0.28			0.2	0.06	1	0.33			0.2	0.06	1	0.22			0.2	0.06	1	0.2	U		0.2	0.06	1
Carbonate as CaCO3	mg/l	SM2320B	20	U		20		1	20	U		20		1	20	U		20		1	20	U		20		1
Chloride	mg/l	EPA300.0	32			1	0.3	5	25			2	0.6	10	28			2	0.6	10	23			2	0.6	10
Fluoride	mg/l	EPA300.0	0.4			0.1	0.03	1	0.56			0.1	0.03	1	0.4			0.1	0.03	1	0.44			0.1	0.03	1
Nitrate as N	mg/l	EPA300.0	1.5			0.2	0.06	1	0.62			0.2	0.06	1	1.1			0.2	0.06	1	1.1			0.2	0.06	1
Nitrite as N	mg/l	EPA300.0	0.1	U		0.1	0.03	1	0.1	U		0.1	0.03	1	0.1	U		0.1	0.03	1	0.1	U		0.1	0.03	1
pH	s.u.	SM4500-H	7.64			0.1		1	8.39			0.1		1	7.64			0.1		1	8.25			0.1		1
Specific Conductivity	umhos/cm	SM2510B	987			1		1	971			1		1	1030			1		1	902			1		1
Sulfate	mg/l	EPA300.0	130			5	1.5	5	100			10	3	10	100			10	3	10	90			1	0.3	1
Total Alkalinity AS CaCO3	mg/l	SM2320B	360			20		1	400			20		1	440			20		1	350			20		1
Total Dissolved Solids	mg/l	SM2540C	620			20		1	640			20		1	660			20		1	570			20		1
Total Phosphorous	mg/l	EPA365.2	0.05	U		0.05	0.015	1	0.055			0.05	0.02	1	0.05	U		0.05	0.02	1	0.05	U		0.05	0.02	1

RWF 342-33 BWQ Analytical Results Summary																									
Sample Date			**6/19/2013**						**6/13/2013**						**6/13/2013**						**6/13/2013**					
FieldSampleID			**RWF 342-33-163324**						**RWF-342-33-Trahern SPG**						**RWF-342-33-Haynes SPG**						**RWF 342-33-Winch SPG 1**					
Facility ID			**703119**						**752706**						**752705**						**752707**					
LabSampleID			**1306302-1**						**1306213-1**						**1306213-2**						**1306213-3**					
	Units	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Dissolved Metals (F1)																									
Barium	ug/l	EPA200.8	110			1	0.3	10	52			1	0.3	10	85			1	0.3	10	91			1	0.3	10
Boron	ug/l	EPA200.8	79			50	15	10	180			50	15	10	97			50	15	10	89			50	15	10
Calcium	ug/l	EPA200.8	84000			1000	65	10	57000			1000	65	10	83000			1000	65	10	68000			1000	65	10
Iron (Ferric)	ug/l	EPA200.8	100	U		100	30	10	100	U		100	30	10	100	U		100	30	10	100	U		100	30	10
Magnesium	ug/l	EPA200.8	41000			100	30	10	44000			100	30	10	54000			100	30	10	43000			100	30	10
Manganese	ug/l	EPA200.8	2	U		2	0.6	10	4.2			2	0.6	10	2	U		2	0.6	10	2			2	0.6	10
Potassium	ug/l	EPA200.8	3600			1000	300	10	3800			1000	300	10	4500			1000	300	10	3000			1000	300	10
Selenium	ug/l	EPA200.8	4.3			1	0.5	10	3.1			1	0.5	10	2.7			1	0.5	10	3.1			1	0.5	10
Sodium	ug/l	EPA200.8	72000			1000	300	10	100000			1000	300	10	72000			1000	300	10	68000			1000	300	10
Strontium	ug/l	EPA200.8	760			1	0.3	10	700			1	0.3	10	780			1	0.3	10	740			1	0.3	10
Organics (TOT)																									
Diesel Range Organics	mg/l	SW8015M	0.5	U		0.5	0.15	1	0.5	U		0.5	0.15	1	0.5	U		0.5	0.15	1	0.5	U		0.5	0.15	1
Gasoline Range Organics	ug/l	SW8260_25	100	U		100		1	100	U		100		1	100	U		100		1	100	U		100		1
VOAs (TOT)																									
Benzene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
Ethylbenzene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
M+P-Xylene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
o-Xylene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1
Toluene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1	1	U		1	0.3	1

Notes:

U = not detected at the reporting limit

NM = not measured

[1] A result of 1 indicates the presence of bacteria

RWF 342-33 BWQ Analytical Results Summary - Trip Blanks																				
Facility ID			**703119**						**752706**						**752705**					
FieldSampleID			**Trip Blank**						**Trip Blank 1**						**Trip Blank 2**					
LabSampleID			**1306302-2**						**1306213-4**						**1306213-5**					
Sample Date			**6/19/2013**						**6/6/2013**						**5/29/2013**					
	ReportingUnits	**AnalyticMethod**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Organics																				
Gasoline Range Organics	ug/l	SW8260_25	100	U		100		1	100	U		100		1	100	U		100		1
VOAs																				
Benzene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1
Ethylbenzene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1
M+P-Xylene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1
o-Xylene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1
Toluene	ug/l	SW8260_25	1	U		1		1	1	U		1	0.3	1	1	U		1	0.3	1

Notes:

U = not detected at the reporting limit

1306213

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:
The samples were prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

BART:
The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with “ND” in the result field and a “U” flag. If the target analyte is detected (present), then the sample will be reported with a “1” for a result without a flag.

Metals:
The samples were analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The samples were to be analyzed for dissolved metals. The samples were filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.

Inorganics:
The samples were analyzed following MCAWW, EMSL, Standard Method procedures for the current revisions of the following SOPs and methods:

Analyte	Method	SOP #
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H^+ B	1126
Total phosphorus	365.2	1119
Specific conductance	SM2510B	1128
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1306213
Client Name: Western Water and Land, Inc.
Client Project Name: WPX Baseline Water Quality
Client Project Number: 30000.01.01
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
RWF-342-33-TRAHERN SPG	1306213-1		WATER	13-Jun-13	13:10
RWF-342-33-HAYNES SPG	1306213-2		WATER	13-Jun-13	15:00
RWF 342-33-Winch SPG 1	1306213-3		WATER	13-Jun-13	11:50
Trip Blank 1	1306213-4		WATER	06-Jun-13	
Trip Blank 2	1306213-5		WATER	29-May-13	

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1306213

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	WPX BWQ	SAMPLER	BAS
PROJECT No.	30000.01.01	SITE ID	RWF-342-33
		EDD FORMAT	FULL QA/QC AND COGCC
		PURCHASE ORDER	
COMPANY NAME	WESTERN WATER & LAND, INC.	BILL TO COMPANY	WPX ENERGY
SEND REPORT TO	743 HORIZON CT. STE 330	INVOICE ATTN TO	BRANDON MANFORTH
ADDRESS	ATTN BRUCE SMITH	ADDRESS	1058 CR 215
CITY / STATE / ZIP	GRAND JCT. CO. 81506	CITY / STATE / ZIP	PARACHUTE, CO 81635
PHONE	970-242-0170	PHONE	970-263-2792
FAX		FAX	
E-MAIL	bsmith@westernwaterandland.com	E-MAIL	BRANDON.MANFORTH@WPXENERGY.COM

TURNAROUND: STANDARD

DATE: 06-13-2013

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	NH3 Isotopic Isotope	BART	BTEX	6-20	DISS. GASES - MEP	DRO	DISS. MET.	ANIONS, ALK, TDS, pH, COND	TOT. PHOS.
1	RWF-342-33-TRAHERNSP6	W	06-13-13	1310	15	1,3	N	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	RWF-342-33-HAYNESSP6	W	06-13-13	1500	15	1,3	N	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Time Zone (Circle): EST CST (MST) PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
SAMPLES ARE TO BE LAB FILTERED.	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	✓ LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Shelby Goodwin	6/13/13	1700
RECEIVED BY		Lauren Schmitz	6/14/13	1050
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1306213

PAGE 1 of 1

DISPOSAL: By Lab or Return to Client

PROJECT NAME	WPX Baseline Water Quality	SAMPLER	BDS
PROJECT No.	~~WPX342X33X~~ 30000.01.01	SITE ID	RWF 342-33-winch spg 1
		EDD FORMAT	Contact Bruce Smith
		PURCHASE ORDER	
COMPANY NAME	Western Water and Land	BILL TO COMPANY	WPX Energy
SEND REPORT TO	Bruce Smith	INVOICE ATTN TO	Brandon Danforth
ADDRESS	743 Horizon Ct. Suite 330	ADDRESS	1058 County Rd. 215
CITY / STATE / ZIP	Grand Jct., CO 81506	CITY / STATE / ZIP	Parachute, CO 81635
PHONE	970-242-0170	PHONE	970-263-2792
FAX		FAX	
E-MAIL	bsmith@westernwaterandland.com	E-MAIL	

DATE: 6-13-13

TURNAROUND: Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	NH4	BART	BTEX	420	Dissolved Gases	MEP	D20	Dissolved Metals (lab filtered)	Anions, alk., tds.	pH, cond.,	Total Phosphorus
(3)	RWF 342-33-Winch Spg. 1	W	6-13-13	1150	15	1,3	IV	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
(4) (5) TB1 TB2																		

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
dissolved metals need to be laboratory filtered		LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
	X	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Shelby Goodwin	6-13-13	1700
RECEIVED BY		Lauren Schmitz	6/14/13	1050
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water Workorder No: 1306213

Project Manager: ARW Initials: CAS Date: 6/14/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		YES	(NO) *
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	(YES)	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	(YES)	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ✓ < green pea ____ > green pea	N/A	YES	(NO) *
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1	2							
Temperature (°C):	3.6	5.6							
No. of custody seals on cooler:	2	2							
DOT Survey/ Acceptance Information — External µR/hr reading:	15	14							
Background µR/hr reading:	13								

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

(*5) COC did not list trip blanks, see below:
1306213-4 (TB 1) arrived in cooler 2 with samples
1306213-1 and -2 (Trahern SPG) and (Haynes SPG)
1306213-5 (TB 2) arrived in cooler 1 with sample
1306213-3 (Winch SPG.1) - dates on bottles.

(*14) 1306213-3-6 (Winch SPG) arrived w/ ≤ pea-size headspace

If applicable, was the client contacted? YES / NO / (NA) Contact: _____ Date/Time: _____

Project Manager Signature / Date: [signature] 6/15/13

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1306213

FROM: (970) 242-0170
WESTERN WATER & LAND INC
743 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 13JUN13
ACTWGT: 24.5 LB
CAD: 9622/OFFC1400
DIMMED: 16 X 14 X 10 IN
BILL 3rd PARTY

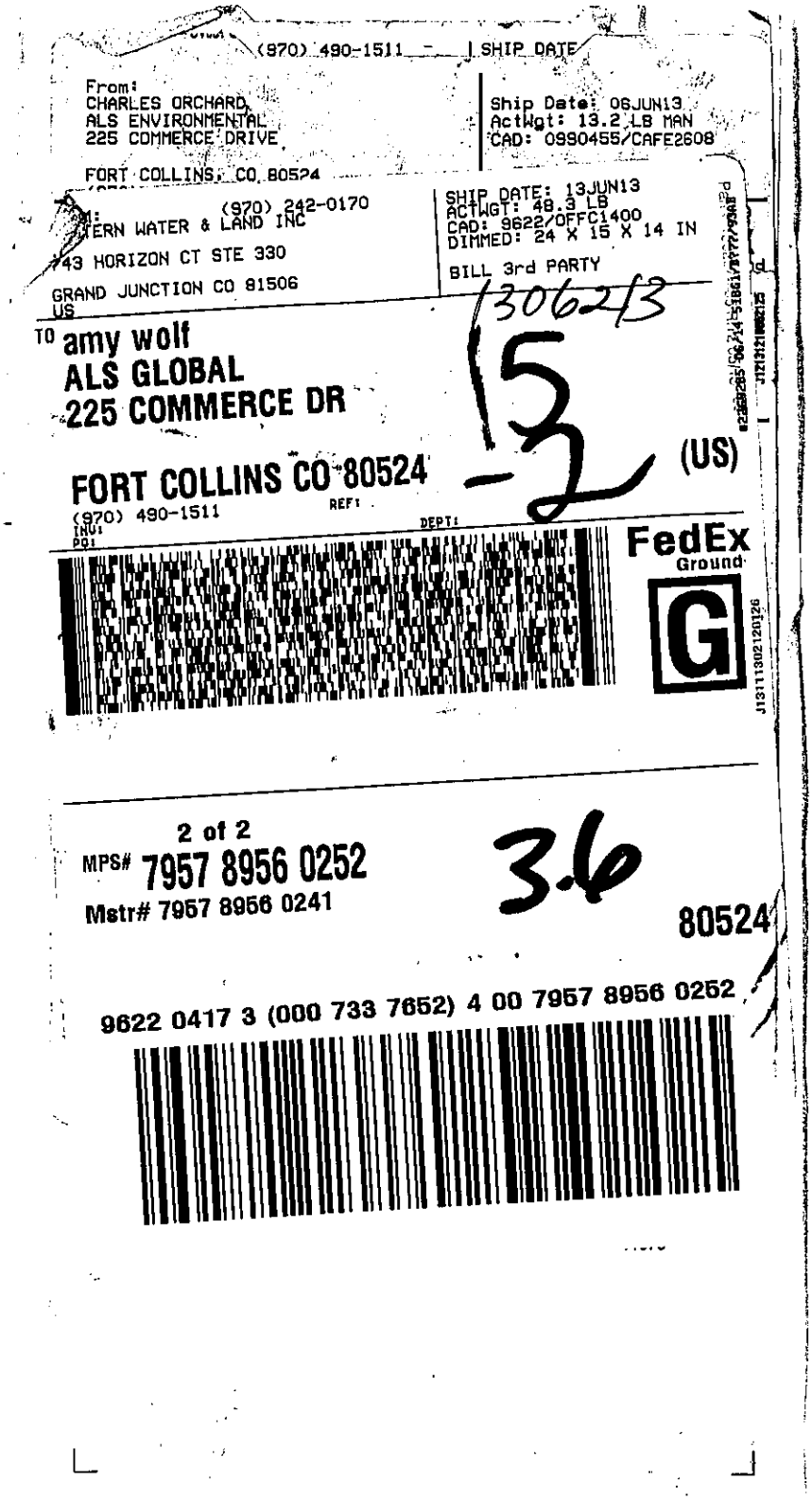
TO amy wolf
ALS GLOBAL
225 COMMERCE DR
FORT COLLINS CO 80524 (US)
(970) 490-1511 REF:
INV:
PO: DEPT:

FedEx Ground

1 of 2
TRK# 7957 8956 0241
MASTER

80524

9622 0417 3 (000 733 7652) 4 00 7957 8956 0241



(970) 490-1511 SHIP DATE

From:
CHARLES ORCHARD
ALS ENVIRONMENTAL
225 COMMERCE DRIVE
FORT COLLINS, CO 80524

Ship Date: 06JUN13
ActWgt: 13.2 LB MAN
CAD: 0990455/CAFE2608

(970) 242-0170
TERN WATER & LAND INC
743 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 13JUN13
ACTWGT: 48.3 LB
CAD: 9622/OFFC1400
DIMMED: 24 X 15 X 14 IN

BILL 3rd PARTY

306213

15
-2

TO amy wolf
ALS GLOBAL
225 COMMERCE DR

FORT COLLINS CO 80524 (US)
(970) 490-1511

REF:
INV:
PO:
DEPT:

FedEx Ground

J13111302120126

2 of 2
MPS# 7957 8956 0252
Mstr# 7957 8956 0241

3.6

80524

9622 0417 3 (000 733 7652) 4 00 7957 8956 0252

Client: Western Water and Land, Inc. **Date:** *02-Aug-13*
Project: 30000.01.01 WPX Baseline Water Quality **Work Order:** 1306213
Sample ID: RWF-342-33-TRAHERN SPG **Lab ID:** 1306213-1
Legal Location: **Matrix:** WATER
Collection Date: 6/13/2013 13:10 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **6/18/2013**	PrepBy: **AJD**
BICARBONATE AS CaCO3	**400**		**20**	**MG/L**	1	6/18/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	6/18/2013
TOTAL ALKALINITY AS CaCO3	**400**		**20**	**MG/L**	1	6/18/2013
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **6/17/2013**	PrepBy: **BAS**
IRON RELATED BACTERIA	**1**			**NU**	1	6/26/2013
SLIME FORMING BACTERIA	ND			NU	1	6/26/2013
SULFATE REDUCING BACTERIA	**1**			**NU**	1	6/26/2013
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **6/18/2013**	PrepBy: **JAC**
Diesel Range Organics	ND		0.5	MG/L	1	6/20/2013 22:31
Surr: O-TERPHENYL	*81*		*51-97*	*%REC*	1	6/20/2013 22:31
DISSOLVED GASSES			**RSK175**		Prep Date: **6/24/2013**	PrepBy: **JFN**
METHANE	ND		1	UG/L	1	6/24/2013 12:21
ETHANE	ND		2	UG/L	1	6/24/2013 12:21
PROPANE	ND		1	UG/L	1	6/24/2013 12:21
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/14/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/14/2013 19:08
TOLUENE	ND		1	UG/L	1	6/14/2013 19:08
ETHYLBENZENE	ND		1	UG/L	1	6/14/2013 19:08
M+P-XYLENE	ND		1	UG/L	1	6/14/2013 19:08
O-XYLENE	ND		1	UG/L	1	6/14/2013 19:08
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/14/2013 19:08
Surr: DIBROMOFLUOROMETHANE	*101*		*84-118*	*%REC*	1	6/14/2013 19:08
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	1	6/14/2013 19:08
Surr: 4-BROMOFLUOROBENZENE	*98*		*85-115*	*%REC*	1	6/14/2013 19:08
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **6/14/2013**	PrepBy: **AJD**
BROMIDE	**0.33**		**0.2**	**MG/L**	1	6/14/2013 17:12
CHLORIDE	**25**		**2**	**MG/L**	10	6/14/2013 17:26
FLUORIDE	**0.56**		**0.1**	**MG/L**	1	6/14/2013 17:12
NITRATE AS N	**0.62**		**0.2**	**MG/L**	1	6/14/2013 17:12
NITRITE AS N	ND		0.1	MG/L	1	6/14/2013 17:12
SULFATE	**100**		**10**	**MG/L**	10	6/14/2013 17:26
METALS BY 200.8			**EPA200.8**		Prep Date: **6/20/2013**	PrepBy: **BAS**
BORON	**180**		**50**	**UG/L**	10	6/24/2013 13:08
BARIUM	**52**		**1**	**UG/L**	10	6/24/2013 13:08
CALCIUM	**57000**		**1000**	**UG/L**	10	6/24/2013 13:08
IRON	ND		100	UG/L	10	6/24/2013 13:08
POTASSIUM	**3800**		**1000**	**UG/L**	10	6/24/2013 13:08
MAGNESIUM	**44000**		**100**	**UG/L**	10	6/24/2013 13:08
MANGANESE	**4.2**		**2**	**UG/L**	10	6/24/2013 13:08
SODIUM	**100000**		**1000**	**UG/L**	10	6/24/2013 13:08

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	RWF-342-33-TRAHERN SPG	**Lab ID:**	1306213-1
Legal Location:		**Matrix:**	WATER
Collection Date:	6/13/2013 13:10	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SELENIUM	**3.1**		**1**	**UG/L**	10	6/24/2013 13:08
STRONTIUM	**700**		**1**	**UG/L**	10	6/24/2013 13:08
PH			**SM4500-H**		Prep Date: **6/14/2013**	PrepBy: **AJD**
PH	**8.39**		**0.1**	**mg/l**	1	6/14/2013
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **6/14/2013**	PrepBy: **AJD**
SPECIFIC CONDUCTIVITY	**971**		**1**	**umhos/cm**	1	6/14/2013
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **6/17/2013**	PrepBy: **AJD**
TOTAL DISSOLVED SOLIDS	**640**		**20**	**MG/L**	1	6/18/2013
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **6/18/2013**	PrepBy: **TWK**
TOTAL PHOSPHORUS	**0.055**		**0.05**	**MG/L**	1	6/18/2013

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	RWF-342-33-HAYNES SPG	**Lab ID:**	1306213-2
Legal Location:		**Matrix:**	WATER
Collection Date:	6/13/2013 15:00	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **6/18/2013**	PrepBy: **AJD**
BICARBONATE AS CaCO3	**440**		**20**	**MG/L**	1	6/18/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	6/18/2013
TOTAL ALKALINITY AS CaCO3	**440**		**20**	**MG/L**	1	6/18/2013
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **6/17/2013**	PrepBy: **BAS**
IRON RELATED BACTERIA	**1**			**NU**	1	6/26/2013
SLIME FORMING BACTERIA	ND			NU	1	6/26/2013
SULFATE REDUCING BACTERIA	**1**			**NU**	1	6/26/2013
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **6/18/2013**	PrepBy: **JAC**
Diesel Range Organics	ND		0.5	MG/L	1	6/20/2013 23:02
Surr: O-TERPHENYL	*82*		*51-97*	*%REC*	1	6/20/2013 23:02
DISSOLVED GASSES			**RSK175**		Prep Date: **6/24/2013**	PrepBy: **JFN**
METHANE	ND		1	UG/L	1	6/24/2013 12:23
ETHANE	ND		2	UG/L	1	6/24/2013 12:23
PROPANE	ND		1	UG/L	1	6/24/2013 12:23
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/14/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/14/2013 19:30
TOLUENE	ND		1	UG/L	1	6/14/2013 19:30
ETHYLBENZENE	ND		1	UG/L	1	6/14/2013 19:30
M+P-XYLENE	ND		1	UG/L	1	6/14/2013 19:30
O-XYLENE	ND		1	UG/L	1	6/14/2013 19:30
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/14/2013 19:30
Surr: DIBROMOFLUOROMETHANE	*101*		*84-118*	*%REC*	1	6/14/2013 19:30
Surr: TOLUENE-D8	*96*		*85-115*	*%REC*	1	6/14/2013 19:30
Surr: 4-BROMOFLUOROBENZENE	*100*		*85-115*	*%REC*	1	6/14/2013 19:30
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **6/14/2013**	PrepBy: **AJD**
BROMIDE	**0.22**		**0.2**	**MG/L**	1	6/14/2013 17:40
CHLORIDE	**28**		**2**	**MG/L**	10	6/14/2013 17:54
FLUORIDE	**0.4**		**0.1**	**MG/L**	1	6/14/2013 17:40
NITRATE AS N	**1.1**		**0.2**	**MG/L**	1	6/14/2013 17:40
NITRITE AS N	ND		0.1	MG/L	1	6/14/2013 17:40
SULFATE	**100**		**10**	**MG/L**	10	6/14/2013 17:54
METALS BY 200.8			**EPA200.8**		Prep Date: **6/20/2013**	PrepBy: **BAS**
BORON	**97**		**50**	**UG/L**	10	6/24/2013 13:11
BARIUM	**85**		**1**	**UG/L**	10	6/24/2013 13:11
CALCIUM	**83000**		**1000**	**UG/L**	10	6/24/2013 13:11
IRON	ND		100	UG/L	10	6/24/2013 13:11
POTASSIUM	**4500**		**1000**	**UG/L**	10	6/24/2013 13:11
MAGNESIUM	**54000**		**100**	**UG/L**	10	6/24/2013 13:11
MANGANESE	ND		2	UG/L	10	6/24/2013 13:11
SODIUM	**72000**		**1000**	**UG/L**	10	6/24/2013 13:11

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	RWF-342-33-HAYNES SPG	**Lab ID:**	1306213-2
Legal Location:		**Matrix:**	WATER
Collection Date:	6/13/2013 15:00	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SELENIUM	**2.7**		**1**	**UG/L**	10	6/24/2013 13:11
STRONTIUM	**780**		**1**	**UG/L**	10	6/24/2013 13:11
PH			**SM4500-H**		Prep Date: **6/14/2013**	PrepBy: **AJD**
PH	**7.64**		**0.1**	**mg/l**	1	6/14/2013
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **6/14/2013**	PrepBy: **AJD**
SPECIFIC CONDUCTIVITY	**1030**		**1**	**umhos/cm**	1	6/14/2013
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **6/17/2013**	PrepBy: **AJD**
TOTAL DISSOLVED SOLIDS	**660**		**20**	**MG/L**	1	6/18/2013
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **6/18/2013**	PrepBy: **TWK**
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	6/18/2013

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	RWF 342-33-Winch SPG 1	**Lab ID:**	1306213-3
Legal Location:		**Matrix:**	WATER
Collection Date:	6/13/2013 11:50	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **6/18/2013**	PrepBy: **AJD**
BICARBONATE AS CaCO3	**350**		**20**	**MG/L**	1	6/18/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	6/18/2013
TOTAL ALKALINITY AS CaCO3	**350**		**20**	**MG/L**	1	6/18/2013
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **6/17/2013**	PrepBy: **BAS**
IRON RELATED BACTERIA	**1**			**NU**	1	6/26/2013
SLIME FORMING BACTERIA	ND			NU	1	6/26/2013
SULFATE REDUCING BACTERIA	**1**			**NU**	1	6/26/2013
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **6/18/2013**	PrepBy: **JAC**
Diesel Range Organics	ND		0.5	MG/L	1	6/20/2013 23:33
Surr: O-TERPHENYL	*82*		*51-97*	*%REC*	1	6/20/2013 23:33
DISSOLVED GASSES			**RSK175**		Prep Date: **6/24/2013**	PrepBy: **JFN**
METHANE	**1.1**		**1**	**UG/L**	1	6/24/2013 12:26
ETHANE	ND		2	UG/L	1	6/24/2013 12:26
PROPANE	ND		1	UG/L	1	6/24/2013 12:26
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/14/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/14/2013 19:52
TOLUENE	ND		1	UG/L	1	6/14/2013 19:52
ETHYLBENZENE	ND		1	UG/L	1	6/14/2013 19:52
M+P-XYLENE	ND		1	UG/L	1	6/14/2013 19:52
O-XYLENE	ND		1	UG/L	1	6/14/2013 19:52
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/14/2013 19:52
Surr: DIBROMOFLUOROMETHANE	*101*		*84-118*	*%REC*	1	6/14/2013 19:52
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	1	6/14/2013 19:52
Surr: 4-BROMOFLUOROBENZENE	*100*		*85-115*	*%REC*	1	6/14/2013 19:52
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **6/14/2013**	PrepBy: **AJD**
BROMIDE	ND		0.2	MG/L	1	6/14/2013 18:08
CHLORIDE	**23**		**2**	**MG/L**	10	6/14/2013 18:22
FLUORIDE	**0.44**		**0.1**	**MG/L**	1	6/14/2013 18:08
NITRATE AS N	**1.1**		**0.2**	**MG/L**	1	6/14/2013 18:08
NITRITE AS N	ND		0.1	MG/L	1	6/14/2013 18:08
SULFATE	**90**		**1**	**MG/L**	1	6/14/2013 18:08
METALS BY 200.8			**EPA200.8**		Prep Date: **6/20/2013**	PrepBy: **BAS**
BORON	**89**		**50**	**UG/L**	10	6/24/2013 13:14
BARIUM	**91**		**1**	**UG/L**	10	6/24/2013 13:14
CALCIUM	**68000**		**1000**	**UG/L**	10	6/24/2013 13:14
IRON	ND		100	UG/L	10	6/24/2013 13:14
POTASSIUM	**3000**		**1000**	**UG/L**	10	6/24/2013 13:14
MAGNESIUM	**43000**		**100**	**UG/L**	10	6/24/2013 13:14
MANGANESE	**2**		**2**	**UG/L**	10	6/24/2013 13:14
SODIUM	**68000**		**1000**	**UG/L**	10	6/24/2013 13:14

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	RWF 342-33-Winch SPG 1	**Lab ID:**	1306213-3
Legal Location:		**Matrix:**	WATER
Collection Date:	6/13/2013 11:50	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SELENIUM	**3.1**		**1**	**UG/L**	10	6/24/2013 13:14
STRONTIUM	**740**		**1**	**UG/L**	10	6/24/2013 13:14
PH			**SM4500-H**		Prep Date: **6/14/2013**	PrepBy: **AJD**
PH	**8.25**		**0.1**	**mg/l**	1	6/14/2013
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **6/14/2013**	PrepBy: **AJD**
SPECIFIC CONDUCTIVITY	**902**		**1**	**umhos/cm**	1	6/14/2013
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **6/17/2013**	PrepBy: **AJD**
TOTAL DISSOLVED SOLIDS	**570**		**20**	**MG/L**	1	6/18/2013
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **6/18/2013**	PrepBy: **TWK**
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	6/18/2013

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	Trip Blank 1	**Lab ID:**	1306213-4
Legal Location:		**Matrix:**	WATER
Collection Date:	6/6/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/14/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/14/2013 20:14
TOLUENE	ND		1	UG/L	1	6/14/2013 20:14
ETHYLBENZENE	ND		1	UG/L	1	6/14/2013 20:14
M+P-XYLENE	ND		1	UG/L	1	6/14/2013 20:14
O-XYLENE	ND		1	UG/L	1	6/14/2013 20:14
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/14/2013 20:14
Surr: DIBROMOFLUOROMETHANE	*100*		*84-118*	*%REC*	1	6/14/2013 20:14
Surr: TOLUENE-D8	*98*		*85-115*	*%REC*	1	6/14/2013 20:14
Surr: 4-BROMOFLUOROBENZENE	*100*		*85-115*	*%REC*	1	6/14/2013 20:14

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	Trip Blank 2	**Lab ID:**	1306213-5
Legal Location:		**Matrix:**	WATER
Collection Date:	5/29/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/14/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/14/2013 20:36
TOLUENE	ND		1	UG/L	1	6/14/2013 20:36
ETHYLBENZENE	ND		1	UG/L	1	6/14/2013 20:36
M+P-XYLENE	ND		1	UG/L	1	6/14/2013 20:36
O-XYLENE	ND		1	UG/L	1	6/14/2013 20:36
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/14/2013 20:36
Surr: DIBROMOFLUOROMETHANE	*100*		*84-118*	*%REC*	1	6/14/2013 20:36
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	1	6/14/2013 20:36
Surr: 4-BROMOFLUOROBENZENE	*95*		*85-115*	*%REC*	1	6/14/2013 20:36

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	Trip Blank 2	**Lab ID:**	1306213-5
Legal Location:		**Matrix:**	WATER
Collection Date:	5/29/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306213
Sample ID:	Trip Blank 2	**Lab ID:**	1306213-5
Legal Location:		**Matrix:**	WATER
Collection Date:	5/29/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **EX130618-5-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **EX130618-5** Units: **MG/L** Analysis Date: **6/20/2013 18:54**

Client ID: Run ID: **FUELS130620-3B** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	9.93	0.5	10		99	36-150			20	
Surr: O-TERPHENYL	1.09		1.25		87	51-97				

LCSD Sample ID: **EX130618-5** Units: **MG/L** Analysis Date: **6/20/2013 19:25**

Client ID: Run ID: **FUELS130620-3B** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	9.41	0.5	10		94	36-150	9.93	5	20	
Surr: O-TERPHENYL	1.04		1.25		83	51-97		5		

MB Sample ID: **EX130618-5** Units: **MG/L** Analysis Date: **6/20/2013 18:23**

Client ID: Run ID: **FUELS130620-3B** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	0.959		1.25		77	51-97				

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

QC BATCH REPORT

Batch ID: **HC130624-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC130624-9** Units: **UG/L** Analysis Date: **6/24/2013 11:48**
Client ID: Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	131	1	142		92	80-120			25	
ETHANE	246	2	267		92	80-120			25	
PROPANE	351	1	391		90	80-120			25	

LCSD Sample ID: **HC130624-9** Units: **UG/L** Analysis Date: **6/24/2013 12:35**
Client ID: Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	124	1	142		87	80-120	131	5	25	
ETHANE	231	2	267		87	80-120	246	6	25	
PROPANE	326	1	391		83	80-120	351	7	25	

MB Sample ID: **HC130624-9** Units: **UG/L** Analysis Date: **6/24/2013 11:51**
Client ID: Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

QC BATCH REPORT

Batch ID: **IP130620-1-4** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **FM130617-1** Units: **UG/L** Analysis Date: **6/24/2013 12:31**

Client ID: Run ID: **IM130624-10A3** Prep Date: **6/20/2013** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	102	1	100		102	85-115			20	
BORON	952	50	1000		95	85-115			20	
CALCIUM	9910	1000	10000		99	85-115			20	
IRON	5100	100	5000		102	85-115			20	
MAGNESIUM	9360	100	10000		94	85-115			20	
MANGANESE	193	2	200		96	85-115			20	
POTASSIUM	5360	1000	5000		107	85-115			20	
SELENIUM	98.2	1	100		98	85-115			20	
SODIUM	10100	1000	10000		101	85-115			20	
STRONTIUM	98.4	1	100		98	85-115			20	

MB Sample ID: **F130617-1** Units: **UG/L** Analysis Date: **6/24/2013 12:08**

Client ID: Run ID: **IM130624-10A3** Prep Date: **6/20/2013** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	ND	1								
BORON	ND	50								
CALCIUM	ND	1000								
IRON	ND	100								
MAGNESIUM	ND	100								
MANGANESE	ND	2								
POTASSIUM	ND	1000								
SELENIUM	ND	1								
SODIUM	ND	1000								
STRONTIUM	ND	1								

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

Batch ID: **VL130614-3-1** Instrument ID **HPV1** Method: **SW8260_25**

LCS Sample ID: **VL130614-3** Units: **UG/L** Analysis Date: **6/14/2013 13:40**

Client ID: Run ID: **VL130614-3A** Prep Date: **6/14/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	10.9	1	10		109	83-117			20	
TOLUENE	10.5	1	10		105	82-113			20	
ETHYLBENZENE	10.5	1	10		105	81-113			20	
M+P-XYLENE	21.3	1	20		107	82-115			20	
O-XYLENE	10.6	1	10		106	81-115			20	
GASOLINE RANGE ORGANICS	496	100	500		99.244	80-120			20	
Surr: DIBROMOFLUOROMETHA	25.9		25		104	84-118				
Surr: TOLUENE-D8	25.1		25		100	85-115				
Surr: 4-BROMOFLUOROBENZE	24.7		25		99	85-115				

LCSD Sample ID: **VL130614-3** Units: **UG/L** Analysis Date: **6/14/2013 14:02**

Client ID: Run ID: **VL130614-3A** Prep Date: **6/14/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	10.3	1	10		103	83-117	10.9	5	20	
TOLUENE	9.9	1	10		99	82-113	10.5	6	20	
ETHYLBENZENE	10	1	10		100	81-113	10.5	5	20	
M+P-XYLENE	19.9	1	20		100	82-115	21.3	7	20	
O-XYLENE	10	1	10		100	81-115	10.6	6	20	
GASOLINE RANGE ORGANICS	481	100	500		96.134	80-120	496		20	
Surr: DIBROMOFLUOROMETHA	25.3		25		101	84-118		2		
Surr: TOLUENE-D8	25.1		25		100	85-115		0		
Surr: 4-BROMOFLUOROBENZE	24.7		25		99	85-115		0		

MB Sample ID: **VL130614-3** Units: **UG/L** Analysis Date: **6/14/2013 14:23**

Client ID: Run ID: **VL130614-3A** Prep Date: **6/14/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
Surr: DIBROMOFLUOROMETHA	25.3		25		101	84-118				
Surr: TOLUENE-D8	24.7		25		99	85-115				
Surr: 4-BROMOFLUOROBENZE	24.4		25		98	85-115				

The following samples were analyzed in this batch: 1306213-1, 1306213-2, 1306213-3, 1306213-4, 1306213-5

QC BATCH REPORT

Batch ID: **AK130618-2-1** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK130618-2** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: Run ID: **ak130618-2a** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	99.4	5	100		99	85-115			15	

MB Sample ID: **AK130618-2** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: Run ID: **ak130618-2a** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

QC BATCH REPORT

Batch ID: **IC130614-1-1** Instrument ID **IC** Method: **EPA300.0**

LCS Sample ID: **IC130614-1** Units: **MG/L** Analysis Date: **6/14/2013 10:37**

Client ID: Run ID: **IC130614-1A1** Prep Date: **6/14/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	1.98	0.1	2		99	90-110			15	
CHLORIDE	5.1	0.2	5		102	90-110			15	
NITRITE AS N	2.01	0.1	2		100	90-110			15	
BROMIDE	5.37	0.2	5		107	90-110			15	
NITRATE AS N	5.17	0.2	5		103	90-110			15	
SULFATE	19.5	1	20		97	90-110			15	

MB Sample ID: **IC130614-1** Units: **MG/L** Analysis Date: **6/14/2013 10:51**

Client ID: Run ID: **IC130614-1A1** Prep Date: **6/14/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

QC BATCH REPORT

Batch ID: **TD130617-1-2** Instrument ID **Balance** Method: **SM2540C**

DUP Sample ID: **1306213-1** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: **RWF-342-33-TRAHERN SPG** Run ID: **TD130618-1a** Prep Date: **6/17/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	633	20					640	1	5	

LCS Sample ID: **TD130617-1** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: Run ID: **TD130618-1a** Prep Date: **6/17/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	416	20	400		104	85-115			5	

MB Sample ID: **TD130617-1** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: Run ID: **TD130618-1a** Prep Date: **6/17/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

QC BATCH REPORT

Batch ID: **TP130618-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS Sample ID: **TP130618-1** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: Run ID: **TP130618-1** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.492	0.05	0.5		98	80-120			20	

MB Sample ID: **TP130618-1** Units: **MG/L** Analysis Date: **6/18/2013**
Client ID: Run ID: **TP130618-1** Prep Date: **6/18/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

The following samples were analyzed in this batch: 1306213-1 1306213-2 1306213-3

1306302

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:
The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:
The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

BART:
The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with “ND” in the result field and a “U” flag. If the target analyte is detected (present), then the sample will be reported with a “1” for a result without a flag.

Metals:
The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.

Inorganics:
The sample was analyzed following MCAWW, EMSL, Standard Method procedures for the current revisions of the following SOPs and methods:

Analyte	Method	SOP #
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H^+ B	1126
Total phosphorus	365.2	1119
Specific conductance	SM2510B	1128
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1306302
Client Name: Western Water and Land, Inc.
Client Project Name: WPX Baseline Water Quality
Client Project Number: 30000.01.01
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
RWF 342-33-163324	1306302-1		WATER	19-Jun-13	11:30
Trip Blank	1306302-2		WATER	19-Jun-13	

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1306302

PAGE 1 of 1

DISPOSAL: By Lab or Return to Client

PROJECT NAME	WPX BWG	SAMPLER	NWS
PROJECT No.	20000.01.01	SITE ID	RWF-342-33
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Western Water + Land	BILL TO COMPANY	WPX Energy
SEND REPORT TO	Bruce Smith	INVOICE ATTN TO	Brandon Danforth
ADDRESS	743 Horizon Ct. Suite 330	ADDRESS	1058 CR 215
CITY / STATE / ZIP	Grand Jct, CO 81506	CITY / STATE / ZIP	Parachute, CO 81635
PHONE	970-242-0170	PHONE	970-263-2792
FAX		FAX	
E-MAIL	bsmith@westernwaterandland.com	E-MAIL	

DATE: 6-19-13

TURNAROUND: Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	NGL	BART	BTEX	GRO	DISS. GASES ME?	DRO	Dissolved Metals (lab filter)	Anions, Alk, tds, ntl, conduc.	Total Phosphorus
(1)	RWF 342-33-163324	W	6-19-13	1130	15	1,3	IV	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: Samples are to be lab filtered

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
✓	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Shelby Goodwin	6-19-13	1335
RECEIVED BY		Tanner Schmitz	6/20/13	0930
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water Workorder No: 1306302

Project Manager: ARW Initials: LAS Date: 6/20/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	(YES)	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	(YES)	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	(YES)	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	2.0							
No. of custody seals on cooler:	2							
DOT Survey/ Acceptance Information — External µR/hr reading:	11							
Background µR/hr reading:	10							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **(YES) / NO / NA** (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO / (NA)** Contact: _____ Date/Time: _____

Project Manager Signature / Date: 6/21/13

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

FedEx

FROM:
WESTERN WATER & LAND INC (970) 242-0170
743 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 19JUN13
ACTWGT: 44.0 LB MAN
CAD: 9622/POS1400
DIMMED: 28 X 14 X 15 IN
BILL 3rd PARTY

TO
ALS ENVIRONMENTAL
225 COMMERCE DR

FORT COLLINS CO 80524
(970) 490-1511
INV:
PO:
REF:
DEPT:

11
-2
(US)

FedEx Ground

TRK# 7957 9118 3940

2.0

80524

9622 0417 3 (000 045 7800) 7 00 7957 9118 3940

Client: Western Water and Land, Inc. **Date:** *02-Aug-13*
Project: 30000.01.01 WPX Baseline Water Quality **Work Order:** 1306302
Sample ID: RWF 342-33-163324 **Lab ID:** 1306302-1
Legal Location: **Matrix:** WATER
Collection Date: 6/19/2013 11:30 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **6/24/2013**	PrepBy: **AJD**
BICARBONATE AS CaCO3	**360**		**20**	**MG/L**	1	6/24/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	6/24/2013
TOTAL ALKALINITY AS CaCO3	**360**		**20**	**MG/L**	1	6/24/2013
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **6/21/2013**	PrepBy: **BAS**
IRON RELATED BACTERIA	**1**			**NU**	1	7/1/2013
SLIME FORMING BACTERIA	**1**			**NU**	1	7/1/2013
SULFATE REDUCING BACTERIA	ND			NU	1	7/1/2013
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **6/24/2013**	PrepBy: **JAC**
Diesel Range Organics	ND		0.5	MG/L	1	6/24/2013 22:45
Surr: O-TERPHENYL	*97*		*51-97*	*%REC*	1	6/24/2013 22:45
DISSOLVED GASSES			**RSK175**		Prep Date: **6/24/2013**	PrepBy: **JFN**
METHANE	ND		1	UG/L	1	6/24/2013 12:28
ETHANE	ND		2	UG/L	1	6/24/2013 12:28
PROPANE	ND		1	UG/L	1	6/24/2013 12:28
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/20/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/20/2013 13:48
TOLUENE	ND		1	UG/L	1	6/20/2013 13:48
ETHYLBENZENE	ND		1	UG/L	1	6/20/2013 13:48
M+P-XYLENE	ND		1	UG/L	1	6/20/2013 13:48
O-XYLENE	ND		1	UG/L	1	6/20/2013 13:48
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/20/2013 13:48
Surr: DIBROMOFLUOROMETHANE	*101*		*84-118*	*%REC*	1	6/20/2013 13:48
Surr: TOLUENE-D8	*101*		*85-115*	*%REC*	1	6/20/2013 13:48
Surr: 4-BROMOFLUOROBENZENE	*98*		*85-115*	*%REC*	1	6/20/2013 13:48
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **6/20/2013**	PrepBy: **JFN**
BROMIDE	**0.28**		**0.2**	**MG/L**	1	6/20/2013 19:32
CHLORIDE	**32**		**1**	**MG/L**	5	6/20/2013 19:18
FLUORIDE	**0.4**		**0.1**	**MG/L**	1	6/20/2013 19:32
NITRATE AS N	**1.5**		**0.2**	**MG/L**	1	6/20/2013 19:32
NITRITE AS N	ND		0.1	MG/L	1	6/20/2013 19:32
SULFATE	**130**		**5**	**MG/L**	5	6/20/2013 19:18
METALS BY 200.8			**EPA200.8**		Prep Date: **6/26/2013**	PrepBy: **BAS**
BORON	**79**		**50**	**UG/L**	10	6/27/2013 12:15
BARIUM	**110**		**1**	**UG/L**	10	6/27/2013 12:15
CALCIUM	**84000**		**1000**	**UG/L**	10	6/27/2013 12:15
IRON	ND		100	UG/L	10	6/27/2013 12:15
POTASSIUM	**3600**		**1000**	**UG/L**	10	6/27/2013 12:15
MAGNESIUM	**41000**		**100**	**UG/L**	10	6/27/2013 12:15
MANGANESE	ND		2	UG/L	10	6/27/2013 12:15
SODIUM	**72000**		**1000**	**UG/L**	10	6/27/2013 12:15

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306302
Sample ID:	RWF 342-33-163324	**Lab ID:**	1306302-1
Legal Location:		**Matrix:**	WATER
Collection Date:	6/19/2013 11:30	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SELENIUM	**4.3**		**1**	**UG/L**	10	6/27/2013 12:15
STRONTIUM	**760**		**1**	**UG/L**	10	6/27/2013 12:15
PH			**SM4500-H**		Prep Date: **6/21/2013**	PrepBy: **AJD**
PH	**7.64**		**0.1**	**pH**	1	6/21/2013
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **6/21/2013**	PrepBy: **AJD**
SPECIFIC CONDUCTIVITY	**987**		**1**	**umhos/cm**	1	6/21/2013
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **6/21/2013**	PrepBy: **AJD**
TOTAL DISSOLVED SOLIDS	**620**		**20**	**MG/L**	1	6/24/2013
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **6/27/2013**	PrepBy: **TWK**
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	6/27/2013

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306302
Sample ID:	Trip Blank	**Lab ID:**	1306302-2
Legal Location:		**Matrix:**	WATER
Collection Date:	6/19/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			**SW8260_25**		Prep Date: **6/20/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	6/20/2013 13:27
TOLUENE	ND		1	UG/L	1	6/20/2013 13:27
ETHYLBENZENE	ND		1	UG/L	1	6/20/2013 13:27
M+P-XYLENE	ND		1	UG/L	1	6/20/2013 13:27
O-XYLENE	ND		1	UG/L	1	6/20/2013 13:27
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	6/20/2013 13:27
Surr: DIBROMOFLUOROMETHANE	*101*		*84-118*	*%REC*	1	6/20/2013 13:27
Surr: TOLUENE-D8	*100*		*85-115*	*%REC*	1	6/20/2013 13:27
Surr: 4-BROMOFLUOROBENZENE	*96*		*85-115*	*%REC*	1	6/20/2013 13:27

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306302
Sample ID:	Trip Blank	**Lab ID:**	1306302-2
Legal Location:		**Matrix:**	WATER
Collection Date:	6/19/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client:	Western Water and Land, Inc.	**Date:**	*02-Aug-13*
Project:	30000.01.01 WPX Baseline Water Quality	**Work Order:**	1306302
Sample ID:	Trip Blank	**Lab ID:**	1306302-2
Legal Location:		**Matrix:**	WATER
Collection Date:	6/19/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **HC130624-9-1** Instrument ID **MEE-1** Method: **RSK175**

DUP Sample ID: **1306302-1** Units: **UG/L** Analysis Date: **6/24/2013 12:31**

Client ID: **RWF 342-33-163324** Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1					1		25	
ETHANE	ND	2					2		25	
PROPANE	ND	1					1		25	

LCS Sample ID: **HC130624-9** Units: **UG/L** Analysis Date: **6/24/2013 11:48**

Client ID: Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	131	1	142		92	80-120			25	
ETHANE	246	2	267		92	80-120			25	
PROPANE	351	1	391		90	80-120			25	

LCSD Sample ID: **HC130624-9** Units: **UG/L** Analysis Date: **6/24/2013 12:35**

Client ID: Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	124	1	142		87	80-120	131	5	25	
ETHANE	231	2	267		87	80-120	246	6	25	
PROPANE	326	1	391		83	80-120	351	7	25	

MB Sample ID: **HC130624-9** Units: **UG/L** Analysis Date: **6/24/2013 11:51**

Client ID: Run ID: **HC130624-9A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **EX130624-2-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **EX130624-2** Units: **MG/L** Analysis Date: **6/24/2013 21:11**
Client ID: Run ID: **HCD130624-3A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.3	0.5	10		103	36-150			20	
Surr: O-TERPHENYL	1.18		1.25		95	51-97				

LCSD Sample ID: **EX130624-2** Units: **MG/L** Analysis Date: **6/24/2013 21:42**
Client ID: Run ID: **HCD130624-3A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.4	0.5	10		104	36-150	10.3	2	20	
Surr: O-TERPHENYL	1.22		1.25		97	51-97		3		

MB Sample ID: **EX130624-2** Units: **MG/L** Analysis Date: **6/24/2013 20:40**
Client ID: Run ID: **HCD130624-3A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	1.08		1.25		86	51-97				

MS Sample ID: **1306302-1** Units: **MG/L** Analysis Date: **6/24/2013 23:16**
Client ID: **RWF 342-33-163324** Run ID: **HCD130624-3A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.3	0.5	10	0.5	103	36-150			20	
Surr: O-TERPHENYL	1.2		1.25		96	51-97				

MSD Sample ID: **1306302-1** Units: **MG/L** Analysis Date: **6/24/2013 23:46**
Client ID: **RWF 342-33-163324** Run ID: **HCD130624-3A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.4	0.5	10	0.5	104	36-150	10.3	0	20	
Surr: O-TERPHENYL	1.2		1.25		96	51-97		1		

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **IP130626-3-2** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **F130625-2** Units: **UG/L** Analysis Date: **6/27/2013 12:07**

Client ID: Run ID: **IM130627-10A4** Prep Date: **6/26/2013** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	96.8	1	100		97	85-115			20	
BORON	920	50	1000		92	85-115			20	
CALCIUM	10200	1000	10000		102	85-115			20	
IRON	5250	100	5000		105	85-115			20	
MAGNESIUM	9310	100	10000		93	85-115			20	
MANGANESE	191	2	200		95	85-115			20	
POTASSIUM	4860	1000	5000		97	85-115			20	
SELENIUM	103	1	100		103	85-115			20	
SODIUM	10100	1000	10000		101	85-115			20	
STRONTIUM	95.7	1	100		96	85-115			20	

MB Sample ID: **F130625-2** Units: **UG/L** Analysis Date: **6/27/2013 12:00**

Client ID: Run ID: **IM130627-10A4** Prep Date: **6/26/2013** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	ND	1								
BORON	ND	50								
CALCIUM	ND	1000								
IRON	ND	100								
MAGNESIUM	ND	100								
MANGANESE	ND	2								
POTASSIUM	ND	1000								
SELENIUM	ND	1								
SODIUM	ND	1000								
STRONTIUM	ND	1								

The following samples were analyzed in this batch: 1306302-1

Batch ID: **VL130620-3-1** Instrument ID **HPV3** Method: **SW8260_25**

LCS Sample ID: **VL130620-3** Units: **UG/L** Analysis Date: **6/20/2013 12:09**

Client ID: Run ID: **VL130620-3A** Prep Date: **6/20/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	10.1	1	10		101.42	83-117			20	
TOLUENE	9.7	1	10		97.048	82-113			20	
ETHYLBENZENE	9.81	1	10		98.050	81-113			20	
M+P-XYLENE	19.7	1	20		98.568	82-115			20	
O-XYLENE	10.2	1	10		101.73	81-115			20	
GASOLINE RANGE ORGANICS	483	100	500		96.634	80-120			20	
Surr: DIBROMOFLUOROMETHA	25.7		25		103	84-118				
Surr: TOLUENE-D8	25.1		25		100	85-115				
Surr: 4-BROMOFLUOROBENZE	23.8		25		95	85-115				

LCSD Sample ID: **VL130620-3** Units: **UG/L** Analysis Date: **6/20/2013 12:31**

Client ID: Run ID: **VL130620-3A** Prep Date: **6/20/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	9.68	1	10		96.756	83-117	10.1		20	
TOLUENE	9.33	1	10		93.325	82-113	9.7		20	
ETHYLBENZENE	9.3	1	10		93.033	81-113	9.81		20	
M+P-XYLENE	18.7	1	20		93.697	82-115	19.7		20	
O-XYLENE	9.52	1	10		95.218	81-115	10.2		20	
GASOLINE RANGE ORGANICS	492	100	500		98.416	80-120	483		20	
Surr: DIBROMOFLUOROMETHA	25.9		25		104	84-118		1		
Surr: TOLUENE-D8	25.2		25		101	85-115		0		
Surr: 4-BROMOFLUOROBENZE	24.5		25		98	85-115		3		

MB Sample ID: **VL130620-3** Units: **UG/L** Analysis Date: **6/20/2013 12:53**

Client ID: Run ID: **VL130620-3A** Prep Date: **6/20/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
Surr: DIBROMOFLUOROMETHA	25.7		25		103	84-118				
Surr: TOLUENE-D8	24.8		25		99	85-115				
Surr: 4-BROMOFLUOROBENZE	25		25		100	85-115				

The following samples were analyzed in this batch: 1306302-1 1306302-2

QC BATCH REPORT

Batch ID: **AK130624-1-2** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK130624-1** Units: **MG/L** Analysis Date: **6/24/2013**
Client ID: Run ID: **AK130624-1A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	102	5	100		102	85-115			15	

MB Sample ID: **AK130624-1** Units: **MG/L** Analysis Date: **6/24/2013**
Client ID: Run ID: **AK130624-1A** Prep Date: **6/24/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **IC130620-1-1** Instrument ID **IC** Method: **EPA300.0**

LCS Sample ID: **IC130620-1** Units: **MG/L** Analysis Date: **6/20/2013 13:39**

Client ID: Run ID: **IC130620-1A1** Prep Date: **6/20/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	1.98	0.1	2		99	90-110			15	
CHLORIDE	5.11	0.2	5		102	90-110			15	
NITRITE AS N	2.07	0.1	2		103	90-110			15	
BROMIDE	5.41	0.2	5		108	90-110			15	
NITRATE AS N	5.22	0.2	5		104	90-110			15	
SULFATE	19.7	1	20		98	90-110			15	

MB Sample ID: **IC130620-1** Units: **MG/L** Analysis Date: **6/20/2013 13:53**

Client ID: Run ID: **IC130620-1A1** Prep Date: **6/20/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **ph130621-1-2** Instrument ID **pH-1** Method: **SM4500-H**

DUP Sample ID: **1306302-1** Units: **pH** Analysis Date: **6/21/2013**

Client ID: **RWF 342-33-163324** Run ID: **PH130621-1A** Prep Date: **6/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
PH	7.65	0.1					7.64		0.2	

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **SC130621-1-2** Instrument ID **pH-1** Method: **SM2510B**

DUP Sample ID: **1306302-1** Units: **umhos/cm** Analysis Date: **6/21/2013**

Client ID: **RWF 342-33-163324** Run ID: **SC130621-1A** Prep Date: **6/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	989	1					987	0	10	

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **TD130621-1-2** Instrument ID **Balance** Method: **SM2540C**

DUP Sample ID: **1306302-1** Units: **MG/L** Analysis Date: **6/24/2013**
Client ID: **RWF 342-33-163324** Run ID: **TD130624-1A** Prep Date: **6/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	630	20					620	1	5	

LCS Sample ID: **TD130621-1** Units: **MG/L** Analysis Date: **6/24/2013**
Client ID: Run ID: **TD130624-1A** Prep Date: **6/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	411	20	400		103	85-115			5	

MB Sample ID: **TD130621-1** Units: **MG/L** Analysis Date: **6/24/2013**
Client ID: Run ID: **TD130624-1A** Prep Date: **6/21/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch: 1306302-1

QC BATCH REPORT

Batch ID: **TP130627-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS Sample ID: **TP130627-1** Units: **MG/L** Analysis Date: **6/27/2013**
Client ID: Run ID: **TP130627-1** Prep Date: **6/27/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.523	0.05	0.5		105	80-120			20	

MB Sample ID: **TP130627-1** Units: **MG/L** Analysis Date: **6/27/2013**
Client ID: Run ID: **TP130627-1** Prep Date: **6/27/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

MS Sample ID: **1306302-1** Units: **MG/L** Analysis Date: **6/27/2013**
Client ID: **RWF 342-33-163324** Run ID: **TP130627-1** Prep Date: **6/27/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.547	0.05	0.5	0.05	109	80-120			20	

MSD Sample ID: **1306302-1** Units: **MG/L** Analysis Date: **6/27/2013**
Client ID: **RWF 342-33-163324** Run ID: **TP130627-1** Prep Date: **6/27/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.545	0.05	0.5	0.05	109	80-120	0.547	0	20	

The following samples were analyzed in this batch: 1306302-1