Western Water & Land, Inc.

August 08, 2014

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

RE: Drill Pad RWF 342-33 First Subsequent Results Report, May 2014 Event

Dear Mr. Gardner,

Western Water & Land, Inc. (WWL) has completed the first subsequent water quality sampling for the WPX Energy Rocky Mountain LLC (WPX) RWF 342-33 Drill Pad in accordance with the Colorado Oil and Gas Conservation Commission (COGCC) Rule 609. The RWF 342-33 Drill Pad is located in the SE ¼, NE ¼, Section 33, Township 6 South, Range 94 West, 6th PM.

In accordance with Rule 609, the baseline water quality 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 (RWF 342-33 Drill Pad Baseline Water Quality Evaluation, April 26, 2013).

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

SAMPLING LOCATIONS AND FIELD ACTIVITIES

As described in the RWF 342-33 Drill Pad Baseline Water Quality Evaluation, 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, the landowners, water well permit holders or water right holders were mailed access request letters by way of certified U.S. Postal Service mail. Three wells and one spring were identified as preferred sampling locations:

- Winch Spring No. 1
- Water Well Permit No. 130136
- Water Well Permit No. 43579-F

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

- Garrison Well Water Right (Water Well Permit No. 32546-F)

Several landowners, water well permit holders, and water right holders were not sent access request letters due to the lack of clarity to the implementation of Rule 609. Access request letters were not sent for Water Well Permit No. 130136, Water Well Permit No. 43579-F, or Garrison Well Water Right. Access was granted for Winch Spring No. 1. WPX was granted permission to sample three alternative water sources: Water Well Permit No. 163324, Trahern Spring, and Haynes Spring Nos. 10 thru 12.

Four samples were collected for the RWF 342-33 Drill Pad as shown in the table below. Baseline sampling of these water sources was initiated on July 11th, 2013; the first subsequent sampling was conducted on May 6th, 2014.

Sampling Date	Well Identification or Permit No.	Sample Identification	COGCC Facility ID
5/6/2014	163324	Mackley 163324	703119
5/6/2014	Winch Spring No. 1	Winch Spg 1	752707
5/6/2014	Trahern Spring	Trahern Spg	752706
5/6/2014	Haynes Spring	Haynes Spg	752705

WPX Land Representative, Mr. Gary Reed, and Mr. Arnold Mackley were present when sample Mackley 163324 was collected. The sample was collected from a hose bib fitting on the well discharge line. There was no water treatment system or storage tank in use upstream of the sampling point.

There are three undeveloped decreed springs in close proximity to each other: 1) Haynes Spring No. 10, 2) Haynes Spring No. 11, and 3) Haynes Spring No. 12. WWL located one of the three springs and assigned it the name "Haynes Spring". No landowners were present when samples Winch Spg 1, Trahern Spg, or Haynes Spg were collected. All springs were undeveloped and emanated from steep hillsides. Sampled locations were field-staked using a 4-foot long, green, metal stake identified with the sample ID written on an aluminum tag. See Figure 1 for the sampled locations. Photographs of the sampling sites are shown in Attachment A. Field monitoring forms are shown in Attachment B.

All sampling procedures followed the COGCC Model Sampling and Analysis Plan (SAP) protocols as adapted by WPX. Sampling Method 1 for wells with pumps and effervescent samples, described in Version 1 of the COGCC Model SAP, was used to collect Mackley 163324; Sampling Method 1 for spring or seeps, described in Version 1 of the COGCC Model SAP, was used to collect the remaining three samples.

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

QUALITY CONTROL SUMMARY

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

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

ANALYTICAL RESULTS

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

No analyzed hydrocarbon constituents (diesel range organics, gasoline range organics, benzene, toluene, ethylbenzene, and xylenes) were detected in the sampled water sources for the April 2014 sampling event. No significant differences in common ion and metal ion concentrations were observed between the initial and first subsequent sampling event results.

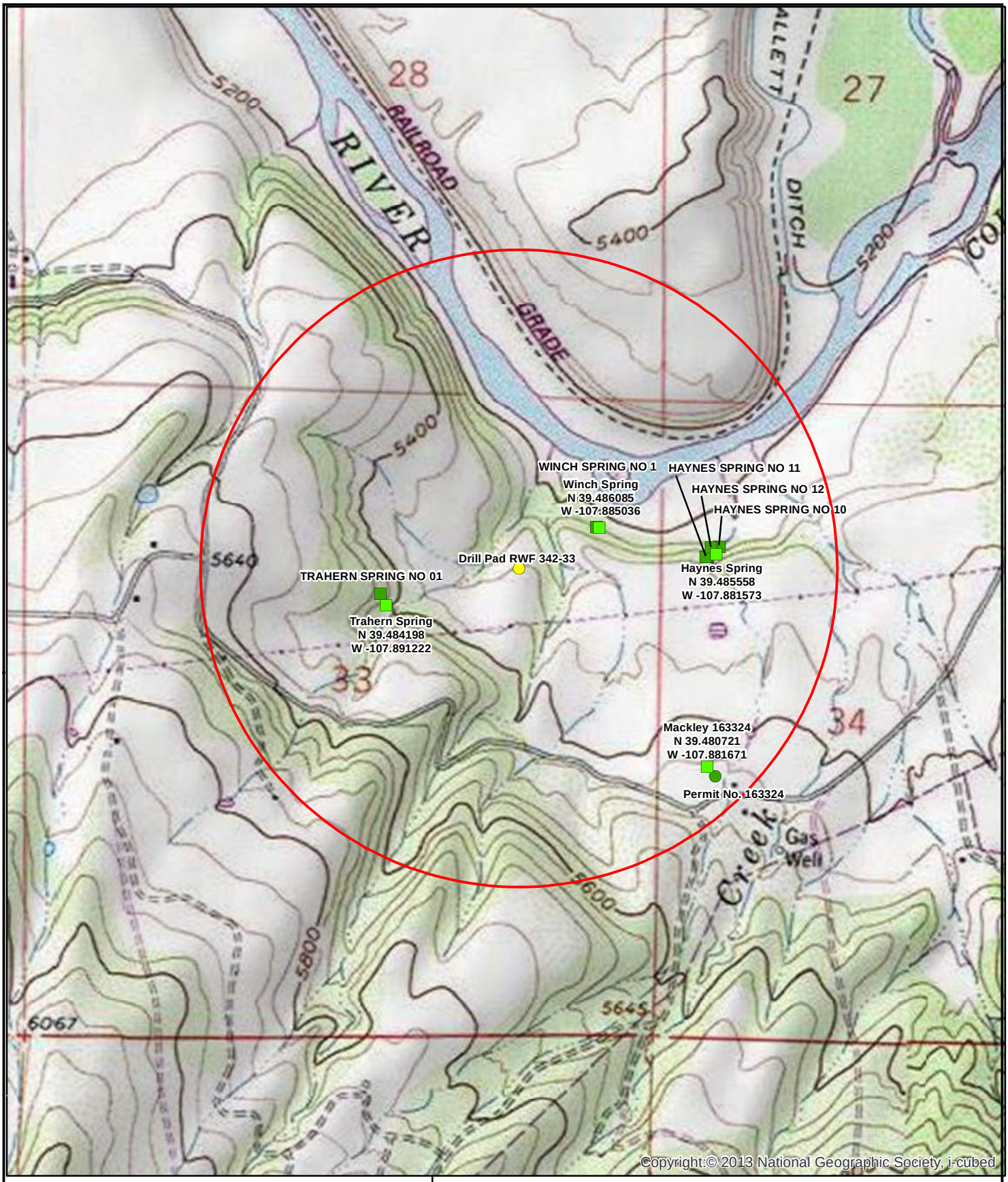
If you have any questions or concerns, please contact me at (970) 242-0170.

Sincerely,

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

Attachments

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



Legend

- Sample Location(s)
- Decree
- Constructed well
- Drill Pad RWF 342-33
- 0.5-Mile Radius Evaluation Area

N

Feet

1,000 500 0 1,000

1:13,000

Figure 1: RWF 342-33 Sample Location Map
COGCC Rule 609 First Subsequent Sampling
SE1/4, NE1/4, S33, T6S, R94W, 6 PM

Garfield County, Colorado

WPX Energy Rocky Mountain LLC

Basemap Source: Bing Maps and Esri ArcGIS Online

Western Water & Land, Inc.
Applications in Earth Science

ATTACHMENT A

Photographs

Photo 1. Mackley Well Sampling Location (Mackley 163324)

Photo 2. Mackley Well Sampling Location (Mackley 163324)

Photo 3. Trahern Spring Sampling Location (Trahern Spg)

Photo 4. Trahern Spring Sampling Location (Trahern Spg); View Upstream

Photo 5. Trahern Spring Sampling Location (Trahern Spg); View Downstream

Photo 6. Winch Spring No. 1 Sampling Location (Winch Spg 1)

Photo 7. Haynes Spring Sampling Location (Haynes Spg)

Photo 8. Haynes Spring Sampling Location (Haynes Spg)

ATTACHMENT B

Field Monitoring Forms

WPX BWQ Groundwater Monitoring Field Form

Project Information			
Project:	RWF 342-33 BWQ	Sample Purpose:	Rule 609 subsequent
Site Name (Well Pad):	RWF 342-33	Site API:	045-17470
Station Name:	Mackley, Arnold	Sample Date:	5-6-14
COGCC Facility ID:	703119	Start Time:	0900
Field Sample ID:	Mackley 163324	End Time:	1125
Landowner Name:	Arnold + Darleen Mackley	Sample Time:	1045
Landowner Address:	4031 CR 320, Rifle, CO 81650	Sample Team:	SLK, NWS
Water Right/Well Owner:	Arnold Mackley	Observer:	SLK
Water Right/Well Permit:	163324	Lead Signature/Date:	5-8-14
Receipt Number:	0336223		

Station Information					
Station Description:	well by stock tank				
Approximate Distance to Well Pad:	2,266 ft				
Station Type:	(Well) / Spring / Seep / Other:		Water Use:	(Domestic) / Irrigation /	
Sampling Location:	Kitchen Tap / Pipe / Well House / (Hose bib) / Other:		Hose bib directly off well		
GPS Location:	Zone	Same location as previous sample on 6-19-13			
Total Depth (ft):	120	Static Depth to Water (ft):	81.51	Well diameter (in):	5"
Purge Volume (gal)	39.12	Total Volume Purged (gal)	117.4		

Weather Conditions			
Sky:	(Clear) / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F):	70
Precipitation:	(None) / Light / Moderate / Heavy	Precip Type: (None) / Rain / Sleet / Hail / Snow	
Wind:	Calm / Light / (Mod) / Strong	Wind Speed/Direction:	0

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	~~NS 12.7~~	1111		YSI PRO	Container	
pH	s.u.	7.25					
Sp. Conductivity	uS/cm	954					
Conductivity	uS/cm	~~729~~					
DO Saturation	%	72.4					
DO	mg/L	7.65					
Baro Press	mmHg	616.9					
ORP	RmV	114.6					
Turbidity	NTU	0.70		AV	MICRO TPW		0.87, 0.60, 0.64
Discharge	gpm	1.7	922	VAR			
H2S	mg/L	~~NA~~ NM					

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

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

WPX BWQ Groundwater Monitoring Field Form

Landowner Comments on water quality:

None. Doesn't use the water for drinking/domestic use. Only uses the water during summer months. Well was put in the provide water to a mancamp (couple years ago) down gradient from property.

Additional information:

0910: WL BTOC 81.51 ft.
0922: discharge: 1.7 gpm
0952: WL BTOC 94.16 ft
0953: discharge: 1.6 gpm
P01: WL BTOC 94.50 ft
1028: WL BTOC 94.91 ft
1038: WL BTOC 94.57 ft
Sample Location: -107.88167, 39.480721

Gary Reed & Arnold Mawdsley present for sample

Calibration Information			Date: 5/16/14			Location: WWL office		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
YSI Pro	pH	s.u.	0026	7.0	23.5	7.08		
	pH	s.u.	0029	10.01	23.4	10.00		
	pH	s.u.		4.01	23.4	4.10	4.00	
~~0024~~	SpC	uS/cm	0024	2070	23.2	2077	2071	
	SpC	uS/cm						
	DO	%	0041		23.0	88.2		632.8 mmHg
	DO	%						
	ORP	RmV						
MICROTPW	Turbidity	NTU	0035					

103324

WPX BWQ Groundwater Monitoring Field Form

Well Purging Information

Date: 5-16-14	Purge Method: 3 casing volumes & Submersible Pump parameter stabilization	
Total Depth, ft (d_t): 120	Static Depth to Water, ft (d_w): 81.51	Sample/Set Depth (ft):
Casing Radius (in): 0-34' = 3.5", 34-120 = 2.5"		Casing Volume (ft^3): 5.23
Total Volume (gal or ft^3): 39.12	Total Volume x 3 (gal or ft^3): 117.36	

1 ft^3 = 7.48 gal

Casing Volume = $\pi r^2(d_t-d_w)$ $\pi\left(\frac{2.5}{12}\right)^2(120' - 81.5') = 5.23\ ft^3 \cdot \frac{7.48\ gal}{ft^3} = 39.12$ (38.5)

Purge #	Time	Temp (deg C)	pH (s.u.)	SpC (uS/cm)	Cond (uS/cm)	DO (%)	DO (mg/L)	ORP (RmV)	Water Clarity (Poor/Mod/ Good) or NTUs	Efferves-cence (None /Slight/ Mod/Heavy)	Volume Purged (gal)	Cum Vol Purged (gal)
0											1258.4	
1	0925	12.3	7.17	941	712	68.6	7.34	69.0	8.00	NONE	1267.0	8.6
2	0935	12.5	7.21	949	723	70.4	7.47	103.9	2.31	NONE	1281.5	23.1
3	0945	12.5	7.24	951	725	71.0	7.54	113.6	0.66	NONE	1296.1	37.7
4	0955	12.5	7.24	953	726	71.0	7.55	117.1	0.40	NONE	1311.6	53.2
5	1005	12.5	7.24	954	726	71.2	7.68	120.8	0.22	NONE	1327.5	69.1
6	1015	12.6	7.26	955	728	71.2	7.55	118.4	0.15	NONE	1343.6	85.2
7	1025	12.7	7.27	955	730	71.3	7.53	114.7	0.23	NONE	1359.7	101.3
8	1035	12.7	7.26	955	730	71.3	7.55	119.3	0.17	NONE	1375.8	117.4

WPX BWQ Surface Water Monitoring Field Form

Project Information			
Project:	RWF 342-33 BWQ	Sample Purpose:	Rule 609 Subsequent
Site Name (Well Pad):	RWF 342-33	Site API:	045-17470
Station Name:	Mackley 971	Sample Date:	5-6-14
COGCC Facility ID:	752707	Start Time:	1400
Field Sample ID:	Winch Spg 1	End Time:	1440
Landowner Name: WPX	Energy Rocky Mountain, LLC	Sample Time:	1410
Landowner Address:	PO Box 330, Gainesville, TX 76241	Sample Team:	SLK, NWS
Water Right/Well Owner:	Arnold Mackley	Observer:	SLK
Water Right/Well Permit:	~~Arnold Mackley~~ Winch Spring No 1	Lead Signature/Date:	5-8-14

Station Information	
Station Description:	Spring by CO River, upgradient from pond.
Approximate Distance to Well Pad:	745 ft
Station Type:	Stream / (Spring) / Seep / Pond / Lake / NPDES Outfall / Other:
Sampling Location:	(Bank) / Pipe / Wading / Boat / Bridge / Hose bib / Tank / Other:
Sampling Location Description:	(Pool) / Riffle / Eddy / Backwater / Open / Channel / Braided / Other:
Sampling Location Width:	2 ft — Sampling Location Depth: 3"
GPS Location:	Zone Same location as previously sampled on 6-13-13

Weather Conditions			
Sky:	(Clear) / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F):	75
Precipitation:	(None) / Light / Moderate / Heavy	Precip Type:	(None) / Rain / Sleet / Hail / Snow
Wind:	Calm / Light / (Mod) / Strong	Wind Speed/Direction:	Q

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	13.0	1425		YSI PRO	Container	
pH	s.u.	8.25					
Sp. Conductivity	uS/cm	882					
Conductivity	uS/cm	682					
DO Saturation	%	81.7					
DO	mg/L	8.57					
Baro Press	mmHg	620.4					
ORP	RmV	127.8					
Turbidity	NTU	6.62			MICROTPW		6.92, 7.63, 5.32
Discharge	5 pm	4-5		E			
H2S	mg/L	~~NS~~ NA NM					

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

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

WPX BWQ Surface Water Monitoring Field Form

Landowner Comments on water quality:

N/A

Additional information:

Sample location: -107.89504, 39.486085

Calibration info on Mackey 1633241

Calibration Information			Date: 5-6-14			Location:		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
	pH	s.u.						
	pH	s.u.						
	pH	s.u.						
	SpC	uS/cm						
	SpC	uS/cm						
	DO	%						
	DO	%						
	ORP	RmV						
	Turbidity	NTU						

WPX BWQ Surface Water Monitoring Field Form

Project Information			
Project:	RWF 342-33 BWQ	Sample Purpose:	Rule 609 Subsequent 1
Site Name (Well Pad):	RWF 342-33	Site API:	045-17470
Station Name:	Savage 955	Sample Date:	5-6-14
COGCC Facility ID:	752706	Start Time:	1220
Field Sample ID:	Trahern Spg	End Time:	1350
Landowner Name:	Joan Savage	Sample Time:	1310
Landowner Address:	PO Box 1126, Rifle, CO 81650	Sample Team:	SLK, NWS
~~Water Right~~/Well Owner:	Joan Savage	Observer:	NWS
~~Water Right~~/Well Permit:	~~Joan Savage~~ Trahern Spring No 1	Lead Signature/Date:	5-8-14

Station Information	
Station Description:	Spring in valley by RMV 105-33
Approximate Distance to Well Pad:	1,140 ft
Station Type:	Stream / Spring / Seep / Pond / Lake / NPDES Outfall / Other:
Sampling Location:	~~Bank~~ / Pipe / Wading / Boat / Bridge / Hose bib / Tank / Other:
Sampling Location Description:	Pool / Riffle / Eddy / Backwater / Open / Channel / Braided / Other:
Sampling Location Width:	1 ft — Sampling Location Depth: 1-2"
GPS Location:	Zone Same location as previous y sample on z 6-3-13

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

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	12.7	~~NS~~ 14 1340		YSI PRO	container	
pH	s.u.	8.57					
Sp. Conductivity	uS/cm	958					
Conductivity	uS/cm	734					
DO Saturation	%	82.0					
DO	mg/L	8.65					
Baro Press	mmHg	616.6					
ORP	RmV	92.3					
Turbidity	NTU	3.24		AV	micro TPW		3.67, 3.14, 2.91
Discharge	gpm	2-3		E			
H2S	mg/L	~~NS~~ N/A NM					

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

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

WPX BWQ Surface Water Monitoring Field Form

Landowner Comments on water quality:

N/A

Additional information:

Sample location: -107.89122, 39.484198

Calibration info on Mackey 1633241

Calibration Information			Date: 5-6-14			Location:		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
	pH	s.u.						
	pH	s.u.						
	pH	s.u.						
	SpC	uS/cm						
	SpC	uS/cm						
	DO	%						
	DO	%						
	ORP	RmV						
	Turbidity	NTU						

WPX BWQ Surface Water Monitoring Field Form

Project Information			
Project:	RWF 342-33 BWQ	Sample Purpose:	Rule 609 subsequent 1
Site Name (Well Pad):	RWF 342-33	Site API:	045-17470
Station Name:	Savage 1058	Sample Date:	5-6-14
COGCC Facility ID:	752705	Start Time:	1500
Field Sample ID:	Haynes Spg	End Time:	1605
Landowner Name:	Joan Savage	Sample Time:	1525
Landowner Address:	PO Box 1926, Rifle, CO, 81650	Sample Team:	SLK, NWS
Water Right/Well Owner:	Joan Savage	Observer:	NWS
Water Right/Well Permit:	~~Joan Savage~~ Haynes Spring No 1	Lead Signature/Date:	~~DTS~~ 5-8-14

Station Information	
Station Description:	Spring on hillside by CO River
Approximate Distance to Well Pad:	1,641 ft
Station Type:	Stream / ~~Spring~~ / Seep / Pond / Lake / NPDES Outfall / Other:
Sampling Location:	Bank / Pipe / Wading / Boat / Bridge / Hose bib / Tank / Other:
Sampling Location Description:	Pool / Riffle / Eddy / Backwater / Open / Channel / Braided / Other:
Sampling Location Width:	1 ft — Sampling Location Depth: 2 in
GPS Location:	Zone — same location as previous sample on 6-13-13

Weather Conditions			
Sky:	Clear / ~~Scattered~~ / Cloudy / Overcast	Estimated Air Temp (deg F):	70
Precipitation:	None / Light / Moderate / Heavy	Precip Type:	None / Rain / Sleet / Hail / Snow
Wind:	Calm / ~~Light~~ / Mod / Strong	Wind Speed/Direction:	NM

Field Measurements

Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	12.0	1552		YSI pro	Container	
pH	s.u.	7.41					
Sp. Conductivity	uS/cm	974					
Conductivity	uS/cm	732					
DO Saturation	%	61.4					
DO	mg/L	6.58					
Baro Press	mmHg	619.2					
ORP	RmV	87.6					
Turbidity	NTU	0.50		AVG	micro TPW		0.52, 0.57, 0.40
Discharge	gpm	4-5		~~AVG~~ E			
H2S	mg/L	~~N/A~~ NM					

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

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

WPX BWQ Surface Water Monitoring Field Form

Landowner Comments on water quality:

N/A

Additional information:

Sample location: -107.88157, 39.485558

Calibration info on mackley 1103324

Calibration Information			Date: 5-6-14			Location:		
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
	pH	s.u.						
	pH	s.u.						
	pH	s.u.						
	SpC	uS/cm						
	SpC	uS/cm						
	DO	%						
	DO	%						
	ORP	RmV						
	Turbidity	NTU						

ATTACHMENT C

Data Quality Evaluation

QUALITY CONTROL EVALUATION

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

Field Procedures

WWL conducted field sampling procedures in accordance with the WPX SAP and COGCC Model SAP. All samples were collected by direct filling methods; dissolved gas sampling for Mackley 163324 was conducted using Method 1 for wells with pumps and effervescent samples; all other dissolved gas sampling was conducted using Method 1 for springs or seeps. No field procedure deviations occurred that were cause for data qualification.

COC

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

Sample Receipt

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

Holding Times

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

Analytical Methods

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

Detection Limits

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

AMS samples Mackley 163324 and Winch Spg 1: a dilution factor of 10 was applied for nitrate and sulfate; and a dilution factor of 2 for selenium.

AMS sample Trahern Spg: a dilution factor of 2 was applied for bromide, chloride, fluoride, nitrate, and nitrite; dilution factor of 10 for sulfate; and a dilution factor of 2 for selenium. Nitrite had an elevated detection limit due to matrix interference.

AMS sample Haynes Spg: a dilution factor of 2 was applied for bromide, fluoride, nitrite; dilution factor of 5 for nitrate, chloride, sulfate; and a dilution factor of 2 for selenium. Nitrite had an elevated detection limit due to matrix interference. All other analytes had a dilution factor of 1.

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

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

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

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

- Mackley 163324: 2.906%
- Winch Spg 1: 1.279%
- Haynes Spg: 1.736%
- Trahern Spg: 0.477%

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

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

- Mackley 163324: 1.15
- Winch Spg 1: 1.16
- Haynes Spg: 1.23
- Trahern Spg: 1.19

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

Field Duplicates

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

No field duplicates were collected for this sampling event, therefore no field duplicate RPDs were calculated.

Trip Blanks

Trip blanks are analyte-free matrix (water in this case) samples supplied by the analytical laboratory that are shipped inside the sample shipping containers to and from the field investigation site. Field blanks test for potential contamination during shipping and sampling field procedures. For this project, field blanks are analyzed for volatiles only. There were no detections of volatiles (benzene, toluene, ethylbenzene, and xylenes; BTEX) in the analyzed trip blank samples. No data were qualified based on trip blank analytical results.

Laboratory Quality Control

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

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

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

Accuracy

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

AMS selected Haynes Spg for testing matrix quality control samples for analytes bromide, chloride, fluoride, nitrate, nitrite, and sulfate. AMS selected a number of other samples for testing MS and MSD based on the analytical method being used. The MS and MSD recoveries met guidance criteria for precision and accuracy for all analytes with the exception of TPH-DRO associated with all samples. The MS recovery for TPH-DRO was low by 9%. The sample selected for MS and MSD had concentrations of TPH-DRO that were undetectable at the MDL; identical to the Haynes Spg sample. The lab reported the probable cause due to matrix interference.

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

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

Precision

Precision is the measurement of how closely replicate sample constituents agree and is not related to the true value (concentration). Precision is measured using RPD calculations for laboratory duplicate samples such as LCSD and MSD samples and any other duplicate samples generated by the laboratory. The RPDs were compared to the laboratory acceptance limit of 20% for metals and general or wet chemistry and 30% for organic analytes. RPDs were not used when the sample concentration was too low (< 10X MDL) for accurate evaluation. RPDs for TPH-DRO associated with all samples were outside of control limits (high 34%). The lab reported the probable cause for the high recovery was sample nonhomogeneity. No qualifiers were assigned by the laboratory because of RPD values exceeding the laboratory acceptance criteria.

Data Quality Review Sheets are presented within this Attachment.

DATA QUALITY REVIEW SHEET

Facility ID:	703119	Project:	BWQ: RWF 342-33
Station Name:	Mackley, Arnold	Lab Work Order:	D57480
Sample Date:	5/6/2014	QA/QC Review Date:	7/9/2014
Field Sample ID:	Mackley 163324	Reviewer:	S. Kipp

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

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	2.906	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	705.7	616	1.15	0.8 – 1.2	☒
Specific Conductance, µS/cm (SpC)	919	909	1.01	0.8 – 1.2	☒

Comments: pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for manganese to indicate a result greater than the method detection limit but less than the reporting limit. MSD recoveries were outside of control limits for TPH-DRO (low 9%) due to possible matrix interference. RPD for MS and MSD recoveries were outside of control limits for TPH-DRO (high 34%) due to possible sample nonhomogeneity.

DATA QUALITY REVIEW SHEET

Facility ID:	752707	Project:	BWQ: RWF 342-33
Station Name:	Mackley 971	Lab Work Order:	D57480
Sample Date:	5/6/2014	QA/QC Review Date:	7/9/2014
Field Sample ID:	Winch Spg 1	Reviewer:	S. Kipp

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

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	1.279	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	652	562	1.16	0.8 – 1.2	☒
Specific Conductance, µS/cm (SpC)	839	830	1.01	0.8 – 1.2	☒

Comments: pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for manganese to indicate a result greater than the method detection limit but less than the reporting limit. MSD recoveries were outside of control limits for TPH-DRO (low 9%) due to possible matrix interference. RPD for MS and MSD recoveries were outside of control limits for TPH-DRO (high 34%) due to possible sample nonhomogeneity.

DATA QUALITY REVIEW SHEET

Facility ID:	752706	Project:	BWQ: RWF 342-33
Station Name:	Savage 955	Lab Work Order:	D57481
Sample Date:	5/6/2014	QA/QC Review Date:	7/9/2014
Field Sample ID:	Trahern Spg	Reviewer:	S. Kipp

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

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	0.477	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	735	620	1.19	0.8 – 1.2	☒
Specific Conductance, µS/cm (SpC)	925	870	1.06	0.8 – 1.2	☒

Comments: pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for manganese to indicate a result greater than the method detection limit but less than the reporting limit. MSD recoveries were outside of control limits for TPH-DRO (low 9%) due to possible matrix interference. RPD for MS and MSD recoveries were outside of control limits for TPH-DRO (high 34%) due to possible sample nonhomogeneity.

DATA QUALITY REVIEW SHEET

Facility ID:	752705	Project:	BWQ: RWF 342-33
Station Name:	Savage 1058	Lab Work Order:	D57481
Sample Date:	5/6/2014	QA/QC Review Date:	7/9/2014
Field Sample ID:	Haynes Spg	Reviewer:	S. Kipp

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

Corrective Action	*Date to be completed*
None	

Calculated Parameters	**Calculated Value**	**Lab Value**	**Ratio/Percent Difference**	**Acceptable Limit**	**Meets QC Criteria?**
Cation/Anion Balance, % (CAB)	1.736	N/A	N/A	±5%	☒
Total Dissolved Solids, mg/L (TDS)	741	604	1.23	0.8 – 1.2	☐
Specific Conductance, µS/cm (SpC)	901	889	1.01	0.8 – 1.2	☒

Comments: pH analyzed out of analysis holding time, WWL qualified with "H"; result considered estimated. "J" qualifier for manganese to indicate a result greater than the method detection limit but less than the reporting limit. TDS ratio slightly outside of QC criteria, but data not qualified. MSD recoveries were outside of control limits for TPH-DRO (low 9%) due to possible matrix interference. RPD for MS and MSD recoveries were outside of control limits for TPH-DRO (high 34%) due to possible sample nonhomogeneity.

ATTACHMENT D

Summary of Analytical Results

RWF 342-33 BWQ Analytical Results Summary															
Station Name				**Mackley, Arnold**											
Facility ID				**703119**											
Sample Date				**6/19/2013**						**5/6/2014 10:45**					
Field Sample ID				**RWF 342-33-163324**						**MACKLEY 163324**					
Lab Sample ID				**1306302-1**						**D57480-1**					
Sampling Event				**Baseline**						**Subsequent 1**					
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Inorganics															
Alkalinity AS CaCO3, Total	mg/l	SM2320B	SM 2320B-2011	360			20		1	346			5	2	1
Alkalinity, Bicarbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	360			20		1	346			5	2	1
Alkalinity, Carbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	20	U		20		1	5	U		5	2	1
Bromide	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.28			0.2	0.06	1	0.64			0.05	0.025	1
Chloride	mg/l	EPA300.0	EPA 300.0/SW846 9056	32			1	0.3	5	28.9			0.5	0.4	1
Fluoride	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.4			0.1	0.03	1	0.25			0.1	0.05	1
Nitrate as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	1.5			0.2	0.06	1	2.6			0.1	0.06	10
Nitrite as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.1	U		0.1	0.03	1	0.004	U		0.004	0.003	1
pH	s.u.	SM4500-H	SM4500HB+-2011/9040C	7.64			0.1		1	7.4		H			1
Specific Conductivity	umhos/cm	SM2510B	SM 2510B-2011	987			1		1	909			1		1
Sulfate	mg/l	EPA300.0	EPA 300.0/SW846 9056	130			5	1.5	5	125			5	2	10
Total Dissolved Solids	mg/l	SM2540C	SM 2540C-2011	620			20		1	616			10	5	1
Total Phosphorous	mg/l	EPA365.2	HACH8190/SM4500P-B/E	0.05	U		0.05	0.015	1	0.017			0.01	0.008	1
Dissolved Metals															
Barium	ug/l	EPA200.8	EPA 200.7	110			1	0.3	10	112			10	1.4	1
Boron	ug/l	EPA200.8	EPA 200.7	79			50	15	10	67.1			50	6.6	1
Calcium	ug/l	EPA200.8	EPA 200.7	84000			1000	65	10	84000			400	66	1
Iron	ug/l	EPA200.8	EPA 200.7	100	U		100	30	10	26.9			10	3.2	1
Magnesium	ug/l	EPA200.8	EPA 200.7	41000			100	30	10	44700			200	29	1
Manganese	ug/l	EPA200.8	EPA 200.7	2	U		2	0.6	10	1.6	J		5	0.29	1
Potassium	ug/l	EPA200.8	EPA 200.7	3600			1000	300	10	3670			1000	230	1
Selenium	ug/l	EPA200.8	EPA 200.8	4.3			1	0.5	10	4.8			0.8	0.42	2
Sodium	ug/l	EPA200.8	EPA 200.7	72000			1000	300	10	69600			400	36	1
Strontium	ug/l	EPA200.8	EPA 200.7	760			1	0.3	10	829			5	0.12	1
Organics															
Diesel Range Organics	mg/l	SW8015M	SW846-8015B	0.5	U		0.5	0.15	1	0.19	U		0.19	0.17	1
Gasoline Range Organics	ug/l	SW8260_25	SW846 8260B	100	U		100		1	200	U		200		1
Dissolved Gases[1]															
Ethane	ug/l	RSK175	RSK175 MOD	2	U		2	2	1	1.6	U		1.6	0.8	1
Methane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	0.8	U		0.8	0.4	1
Propane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	2.2	U		2.2	1.1	1
VOCs															
Benzene	ug/l	SW8260_25	SW846 8260B	1	U		1		1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW8260_25	SW846 8260B	1	U		1		1	2	U		2	0.31	1
M+P-Xylene	ug/l	SW8260_25	NA	1	U		1		1	NM					
o-Xylene	ug/l	SW8260_25	NA	1	U		1		1	NM					
Toluene	ug/l	SW8260_25	SW846 8260B	1	U		1		1	2	U		2	1	1
Xylenes (Total)	ug/l	NA	SW846 8260B	NM						3	U		3	1.5	1
Bacteria[2,3]															
Iron Related Bacteria	nu	BART	HACH IRB-BART	1					1	1			25		1
Slime forming bacteria	nu	BART	HACH SLYM-BART	1					1	1			500		1
Sulfate Reducing Bacteria	nu	BART	HACH SRB-BART	0	U				1	1			200		1

RWF 342-33 BWQ Analytical Results Summary																
Station Name				**Mackley, Arnold**												
Facility ID				**703119**												
Sample Date				**6/19/2013**						**5/6/2014 10:45**					
Field Sample ID				**RWF 342-33-163324**						**MACKLEY 163324**					
Lab Sample ID				**1306302-1**						**D57480-1**					
Sampling Event				**Baseline**						**Subsequent 1**					
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Field_Parameters															
Bubbles	nu	Field	Field	NM						None					1
Color	nu	Field	Field	None					1	Clear					1
Conductivity, Field	uS/cm	Field	Field	745					1	729					1
Discharge, measured	gpm	Field	Field	NM					1	1.7		VAR			1
Dissolved Oxygen, Field	mg/l	Field	Field	7.56					1	7.65					1
Dissolved Oxygen, Field,%	%	Field	Field	71.4					1	72.4					1
Effervescence	nu	Field	Field	None					1	None					1
Odor	nu	Field	Field	None					1	None					1
ORP, field	mv	Field	Field	138.1					1	114.6					1
pH, Field	s.u.	Field	Field	7.18					1	7.25					1
Sediment	nu	Field	Field	NM						None					1
Specific Conductivity, Field	uS/cm	Field	Field	970					1	954					1
Temperature, Water	Deg C	Field	Field	12.9					1	12.7					1
Turbidity, field	NTUs	Field	Field	0.74					1	0.7		AV			1
VOA Headspace	nu	Field	Field	None					1	None					1

Notes:

[1] AMS units coverted from mg/L to ug/L

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

[3] AMS units for bacteria converted from cfu/ml to no units (detect or non-detect)

U = not detected at the reporting limit

H = hold time exceeded

J = result between RL and MDL, estimated

AV = result averaged

VAR = varies

NM = not measured

RWF 342-33 BWQ Analytical Results Summary															
Station Name				**Savage 955**											
Facility ID				**752706**											
Sample Date				**6/13/2013**						**5/6/2014 13:10**					
Field Sample ID				**RWF-342-33-Trahern SPG**						**TRAHERN SPG**					
Lab Sample ID				**1306213-1**						**D57481-1**					
Sampling Event				**Baseline**						**Subsequent 1**					
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Inorganics															
Alkalinity AS CaCO3, Total	mg/l	SM2320B	SM 2320B-2011	400			20		1	387			5	2	1
Alkalinity, Bicarbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	400			20		1	387			5	2	1
Alkalinity, Carbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	20	U		20		1	5	U		5	2	1
Bromide	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.33			0.2	0.06	1	0.27			0.1	0.05	2
Chloride	mg/l	EPA300.0	EPA 300.0/SW846 9056	25			2	0.6	10	25.9			1	0.8	2
Fluoride	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.56			0.1	0.03	1	0.4			0.2	0.1	2
Nitrate as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.62			0.2	0.06	1	0.69			0.02	0.012	2
Nitrite as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.1	U		0.1	0.03	1	0.008	U		0.008	0.006	2
pH	s.u.	SM4500-H	SM4500HB+-2011/9040C	8.39			0.1		1	8.58		H			1
Specific Conductivity	umhos/cm	SM2510B	SM 2510B-2011	971			1		1	870			1		1
Sulfate	mg/l	EPA300.0	EPA 300.0/SW846 9056	100			10	3	10	115			5	2	10
Total Dissolved Solids	mg/l	SM2540C	SM 2540C-2011	640			20		1	620			10	5	1
Total Phosphorous	mg/l	EPA365.2	HACH8190/SM4500P-B/E	0.055			0.05	0.015	1	0.056			0.01	0.008	1
Dissolved Metals															
Barium	ug/l	EPA200.8	EPA 200.7	52			1	0.3	10	53.1			10	1.4	1
Boron	ug/l	EPA200.8	EPA 200.7	180			50	15	10	181			50	6.6	1
Calcium	ug/l	EPA200.8	EPA 200.7	57000			1000	65	10	56400			400	66	1
Iron	ug/l	EPA200.8	EPA 200.7	100	U		100	30	10	10	U		10	3.2	1
Magnesium	ug/l	EPA200.8	EPA 200.7	44000			100	30	10	46100			200	29	1
Manganese	ug/l	EPA200.8	EPA 200.7	4.2			2	0.6	10	2.1	J		5	0.29	1
Potassium	ug/l	EPA200.8	EPA 200.7	3800			1000	300	10	4710			1000	230	1
Selenium	ug/l	EPA200.8	EPA 200.8	3.1			1	0.5	10	4.1			0.8	0.42	2
Sodium	ug/l	EPA200.8	EPA 200.7	100000			1000	300	10	97800			400	36	1
Strontium	ug/l	EPA200.8	EPA 200.7	700			1	0.3	10	763			5	0.12	1
Organics															
Diesel Range Organics	mg/l	SW8015M	SW846-8015B	0.5	U		0.5	0.15	1	0.19	U		0.19	0.17	1
Gasoline Range Organics	ug/l	SW8260_25	SW846 8260B	100	U		100		1	200	U		200		1
Dissolved Gases[1]															
Ethane	ug/l	RSK175	RSK175 MOD	2	U		2	2	1	1.6	U		1.6	0.8	1
Methane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	0.8	U		0.8	0.4	1
Propane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	2.2	U		2.2	1.1	1
VOCs															
Benzene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	2	U		2	0.31	1
M+P-Xylene	ug/l	SW8260_25	NA	1	U		1	0.3	1	NM					
o-Xylene	ug/l	SW8260_25	NA	1	U		1	0.3	1	NM					
Toluene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	2	U		2	1	1
Xylenes (Total)	ug/l	NA	SW846 8260B	NM						3	U		3	1.5	1
Bacteria[2,3]															
Iron Related Bacteria	nu	BART	HACH IRB-BART	1					1	1			25		1
Slime forming bacteria	nu	BART	HACH SLYM-BART	1					1	1			500		1
Sulfate Reducing Bacteria	nu	BART	HACH SRB-BART	0	U				1	1			200		1

RWF 342-33 BWQ Analytical Results Summary																
Station Name				**Savage 955**												
Facility ID				**752706**												
Sample Date				**6/13/2013**						**5/6/2014 13:10**						
Field Sample ID				**RWF-342-33-Trahern SPG**						**TRAHERN SPG**						
Lab Sample ID				**1306213-1**						**D57481-1**						
Sampling Event				**Baseline**						**Subsequent 1**						
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Field_Parameters																
Bubbles	nu	Field	Field	NM						None					1
Color	nu	Field	Field	Brown					1	L. Brown					1
Conductivity, Field	uS/cm	Field	Field	777					1	734					1
Discharge, measured	gpm	Field	Field	3					1	2.5		E			1
Dissolved Oxygen, Field	mg/l	Field	Field	6.67					1	8.65					1
Dissolved Oxygen, Field,%	%	Field	Field	66.6					1	82					1
Effervescence	nu	Field	Field	None					1	None					1
Odor	nu	Field	Field	Low					1	None					1
ORP, field	mv	Field	Field	149.5					1	92.3					1
pH, Field	s.u.	Field	Field	8.29					1	8.57					1
Sediment	nu	Field	Field	NM						Light					1
Specific Conductivity, Field	uS/cm	Field	Field	948					1	958					1
Temperature, Water	Deg C	Field	Field	15.6					1	12.7					1
Turbidity, field	NTUs	Field	Field	9.52					1	3.24					1
VOA Headspace	nu	Field	Field	NM						None					1

Notes:

[1] AMS units coverted from mg/L to ug/L

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

[3] AMS units for bacteria converted from cfu/ml to no units (detect or non-detect)

U = not detected at the reporting limit

H = hold time exceeded

J = result between RL and MDL, estimated

AV = result averaged

VAR = varies

NM = not measured

RWF 342-33 BWQ Analytical Results Summary																
Station Name				**Savage 1058**												
Facility ID				**752705**												
Sample Date				**6/13/2013 0:00**						**5/6/2014 15:25**						
Field Sample ID				**RWF-342-33-Haynes SPG**						**HAYNES SPG**						
Lab Sample ID				**1306213-2**						**D57481-2**						
Sampling Event				**Baseline**						**Subsequent 1**						
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Inorganics																
Alkalinity AS CaCO3, Total	mg/l	SM2320B	SM 2320B-2011	440			20		1	415			5	2	1
Alkalinity, Bicarbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	440			20		1	415			5	2	1
Alkalinity, Carbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	20	U		20		1	5	U		5	2	1
Bromide	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.22			0.2	0.06	1	0.17			0.1	0.05	2
Chloride	mg/l	EPA300.0	EPA 300.0/SW846 9056	28			2	0.6	10	20			0.5	0.4	5
Fluoride	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.4			0.1	0.03	1	0.27			0.2	0.1	2
Nitrate as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	1.1			0.2	0.06	1	0.98			0.05	0.03	5
Nitrite as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.1	U		0.1	0.03	1	0.008	U		0.008	0.006	2
pH	s.u.	SM4500-H	SM4500HB+-2011/9040C	7.64			0.1		1	7.61		H			1
Specific Conductivity	umhos/cm	SM2510B	SM 2510B-2011	1030			1		1	889			1		1
Sulfate	mg/l	EPA300.0	EPA 300.0/SW846 9056	100			10	3	10	94.3			2.5	1	5
Total Dissolved Solids	mg/l	SM2540C	SM 2540C-2011	660			20		1	604			10	5	1
Total Phosphorous	mg/l	EPA365.2	HACH8190/SM4500P-B/E	0.05	U		0.05	0.015	1	0.066			0.01	0.008	1
Dissolved Metals																
Barium	ug/l	EPA200.8	EPA 200.7	85			1	0.3	10	88.6			10	1.4	1
Boron	ug/l	EPA200.8	EPA 200.7	97			50	15	10	81.1			50	6.6	1
Calcium	ug/l	EPA200.8	EPA 200.7	83000			1000	65	10	77500			400	66	1
Iron	ug/l	EPA200.8	EPA 200.7	100	U		100	30	10	10	U		10	3.2	1
Magnesium	ug/l	EPA200.8	EPA 200.7	54000			100	30	10	54600			200	29	1
Manganese	ug/l	EPA200.8	EPA 200.7	2	U		2	0.6	10	0.3	J		5	0.29	1
Potassium	ug/l	EPA200.8	EPA 200.7	4500			1000	300	10	4430			1000	230	1
Selenium	ug/l	EPA200.8	EPA 200.8	2.7			1	0.5	10	2.9			0.8	0.42	2
Sodium	ug/l	EPA200.8	EPA 200.7	72000			1000	300	10	67100			400	36	1
Strontium	ug/l	EPA200.8	EPA 200.7	780			1	0.3	10	812			5	0.12	1
Organics																
Diesel Range Organics	mg/l	SW8015M	SW846-8015B	0.5	U		0.5	0.15	1	0.19	U		0.19	0.17	1
Gasoline Range Organics	ug/l	SW8260_25	SW846 8260B	100	U		100		1	200	U		200		1
Dissolved Gases[1]																
Ethane	ug/l	RSK175	RSK175 MOD	2	U		2	2	1	1.6	U		1.6	0.8	1
Methane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	0.94			0.8	0.4	1
Propane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	2.2	U		2.2	1.1	1
VOCs																
Benzene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	2	U		2	0.31	1
M+P-Xylene	ug/l	SW8260_25	NA	1	U		1	0.3	1	NM					
o-Xylene	ug/l	SW8260_25	NA	1	U		1	0.3	1	NM					
Toluene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	2	U		2	1	1
Xylenes (Total)	ug/l	NA	SW846 8260B	NM						3	U		3	1.5	1
Bacteria[2,3]																
Iron Related Bacteria	nu	BART	HACH IRB-BART	1					1	1			25		1
Slime forming bacteria	nu	BART	HACH SLYM-BART	1					1	1			500		1
Sulfate Reducing Bacteria	nu	BART	HACH SRB-BART	0	U				1	1			200		1

RWF 342-33 BWQ Analytical Results Summary																
Station Name				**Savage 1058**												
Facility ID				**752705**												
Sample Date				**6/13/2013 0:00**						**5/6/2014 15:25**						
Field Sample ID				**RWF-342-33-Haynes SPG**						**HAYNES SPG**						
Lab Sample ID				**1306213-2**						**D57481-2**						
Sampling Event				**Baseline**						**Subsequent 1**						
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Field_Parameters																
Bubbles	nu	Field	Field	NM						None					1
Color	nu	Field	Field	None					1	Clear					1
Conductivity, Field	uS/cm	Field	Field	759					1	732					1
Discharge, measured	gpm	Field	Field	NM					1	4.5		E			1
Dissolved Oxygen, Field	mg/l	Field	Field	6.96					1	6.58					1
Dissolved Oxygen, Field,%	%	Field	Field	64.9					1	61.4					1
Effervescence	nu	Field	Field	None					1	None					1
Odor	nu	Field	Field	None					1	None					1
ORP, field	mv	Field	Field	144.7					1	87.6					1
pH, Field	s.u.	Field	Field	7.32					1	7.41					1
Sediment	nu	Field	Field	NM						Light					1
Specific Conductivity, Field	uS/cm	Field	Field	1006					1	974					1
Temperature, Water	Deg C	Field	Field	12.2					1	12					1
Turbidity, field	NTUs	Field	Field	0.72					1	0.5		AV			1
VOA Headspace	nu	Field	Field	NM						None					1

Notes:

[1] AMS units coverted from mg/L to ug/L

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

[3] AMS units for bacteria converted from cfu/ml to no units (detect or non-detect)

U = not detected at the reporting limit

H = hold time exceeded

J = result between RL and MDL, estimated

AV = result averaged

VAR = varies

NM = not measured

RWF 342-33 BWQ Analytical Results Summary															
Station Name				**Mackley 971**											
Facility ID				**752707**											
Sample Date				**6/13/2013 0:00**						**5/6/2014 14:10**					
Field Sample ID				**RWF 342-33-Winch SPG 1**						**WINCH SPG 1**					
Lab Sample ID				**1306213-3**						**D57480-2**					
Sampling Event				**Baseline**						**Subsequent 1**					
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Inorganics															
Alkalinity AS CaCO3, Total	mg/l	SM2320B	SM 2320B-2011	350			20		1	338			5	2	1
Alkalinity, Bicarbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	350			20		1	338			5	2	1
Alkalinity, Carbonate as CaCO3	mg/l	SM2320B	SM 2320B-2011	20	U		20		1	5	U		5	2	1
Bromide	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.2	U		0.2	0.06	1	0.27			0.05	0.025	1
Chloride	mg/l	EPA300.0	EPA 300.0/SW846 9056	23			2	0.6	10	27.3			0.5	0.4	1
Fluoride	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.44			0.1	0.03	1	0.26			0.1	0.05	1
Nitrate as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	1.1			0.2	0.06	1	1.2			0.1	0.06	10
Nitrite as N	mg/l	EPA300.0	EPA 300.0/SW846 9056	0.1	U		0.1	0.03	1	0.004	U		0.004	0.003	1
pH	s.u.	SM4500-H	SM4500HB+-2011/9040C	8.25			0.1		1	8.27		H			1
Specific Conductivity	umhos/cm	SM2510B	SM 2510B-2011	902			1		1	830			1		1
Sulfate	mg/l	EPA300.0	EPA 300.0/SW846 9056	90			1	0.3	1	105			5	2	10
Total Dissolved Solids	mg/l	SM2540C	SM 2540C-2011	570			20		1	562			10	5	1
Total Phosphorous	mg/l	EPA365.2	HACH8190/SM4500P-B/E	0.05	U		0.05	0.015	1	0.031			0.01	0.008	1
Dissolved Metals															
Barium	ug/l	EPA200.8	EPA 200.7	91			1	0.3	10	92.1			10	1.4	1
Boron	ug/l	EPA200.8	EPA 200.7	89			50	15	10	88.1			50	6.6	1
Calcium	ug/l	EPA200.8	EPA 200.7	68000			1000	65	10	63800			400	66	1
Iron	ug/l	EPA200.8	EPA 200.7	100	U		100	30	10	13.1			10	3.2	1
Magnesium	ug/l	EPA200.8	EPA 200.7	43000			100	30	10	47400			200	29	1
Manganese	ug/l	EPA200.8	EPA 200.7	2			2	0.6	10	1.6	J		5	0.29	1
Potassium	ug/l	EPA200.8	EPA 200.7	3000			1000	300	10	3880			1000	230	1
Selenium	ug/l	EPA200.8	EPA 200.8	3.1			1	0.5	10	3.9			0.8	0.42	2
Sodium	ug/l	EPA200.8	EPA 200.7	68000			1000	300	10	64300			400	36	1
Strontium	ug/l	EPA200.8	EPA 200.7	740			1	0.3	10	789			5	0.12	1
Organics															
Diesel Range Organics	mg/l	SW8015M	SW846-8015B	0.5	U		0.5	0.15	1	0.19	U		0.19	0.17	1
Gasoline Range Organics	ug/l	SW8260_25	SW846 8260B	100	U		100		1	200	U		200		1
Dissolved Gases[1]															
Ethane	ug/l	RSK175	RSK175 MOD	2	U		2	2	1	1.6	U		1.6	0.8	1
Methane	ug/l	RSK175	RSK175 MOD	1.1			1	1	1	1.1			0.8	0.4	1
Propane	ug/l	RSK175	RSK175 MOD	1	U		1	1	1	2.2	U		2.2	1.1	1
VOCs															
Benzene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	2	U		2	0.31	1
M+P-Xylene	ug/l	SW8260_25	NA	1	U		1	0.3	1	NM					
o-Xylene	ug/l	SW8260_25	NA	1	U		1	0.3	1	NM					
Toluene	ug/l	SW8260_25	SW846 8260B	1	U		1	0.3	1	2	U		2	1	1
Xylenes (Total)	ug/l	NA	SW846 8260B	NM						3	U		3	1.5	1
Bacteria[2,3]															
Iron Related Bacteria	nu	BART	HACH IRB-BART	1					1	1			25		1
Slime forming bacteria	nu	BART	HACH SLYM-BART	1					1	1			500		1
Sulfate Reducing Bacteria	nu	BART	HACH SRB-BART	0	U				1	1			200		1

RWF 342-33 BWQ Analytical Results Summary															
Station Name				**Mackley 971**											
Facility ID				**752707**											
Sample Date				**6/13/2013 0:00**						**5/6/2014 14:10**					
Field Sample ID				**RWF 342-33-Winch SPG 1**						**WINCH SPG 1**					
Lab Sample ID				**1306213-3**						**D57480-2**					
Sampling Event				**Baseline**						**Subsequent 1**					
	Units	**ALS Analytic Method**	**Analytic Method**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**	**Result**	**Lab Qual**	**WWL Qual**	**RL**	**MDL**	**DF**
Field_Parameters															
Bubbles	nu	Field	Field	NM						None					1
Color	nu	Field	Field	None					1	Clear					1
Conductivity, Field	uS/cm	Field	Field	700					1	682					1
Discharge, measured	gpm	Field	Field	10.3					1	4.5		E			1
Dissolved Oxygen, Field	mg/l	Field	Field	8.05					1	8.57					1
Dissolved Oxygen, Field,%	%	Field	Field	78.4					1	81.7					1
Effervescence	nu	Field	Field	None					1	None					1
Odor	nu	Field	Field	None					1	None					1
ORP, field	mv	Field	Field	138.5					1	127.8					1
pH, Field	s.u.	Field	Field	7.97					1	8.25					1
Sediment	nu	Field	Field	NM						Light					1
Specific Conductivity, Field	uS/cm	Field	Field	883					1	882					1
Temperature, Water	Deg C	Field	Field	14.2					1	13					1
Turbidity, field	NTUs	Field	Field	1.67					1	6.62		AV			1
VOA Headspace	nu	Field	Field	NM						None					1

Notes:

[1] AMS units coverted from mg/L to ug/L

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

[3] AMS units for bacteria converted from cfu/ml to no units (detect or non-detect)

U = not detected at the reporting limit

H = hold time exceeded

J = result between RL and MDL, estimated

AV = result averaged

VAR = varies

NM = not measured

WPX BWQ														
Station Name			Trip Blank						Trip Blank					
Facility ID														
Sample Date			5/6/2014 0:00						5/6/2014 0:00					
Field Sample ID			Trip.Blank						Trip.Blank					
Lab Sample ID			D57480-3						D57481-3					
	Reporting Units	Analytic Method	Result	Lab Qual	WWL Qual	RL	MDL	DF	Result	Lab Qual	WWL Qual	RL	MDL	DF
Organics														
Gasoline Range Organics	ug/l	SW846 8260B	200	U		200		1	200	U		200		1
VOCs														
Benzene	ug/l	SW846 8260B	1	U		1	0.25	1	1	U		1	0.25	1
Ethylbenzene	ug/l	SW846 8260B	2	U		2	0.31	1	2	U		2	0.31	1
Toluene	ug/l	SW846 8260B	2	U		2	1	1	2	U		2	1	1
Xylenes (Total)	ug/l	SW846 8260B	3	U		3	1.5	1	3	U		3	1.5	1

Notes:

U = not detected at the reporting limit