



Western Water & Land, Inc.

February 13, 2017

Mr. Mike Gardner  
TEP Environmental Specialist  
TEP Rocky Mountain, LLC  
1058 County Road 215  
Parachute, Colorado 81635

**RE: NE Ryan Gulch Pit – Quarterly Monitoring Report, Fourth Quarter 2016**

Dear Mr. Gardner,

Western Water & Land, Inc. (WWL) has completed quarterly monitoring of the TEP Rocky Mountain LLC (TEP) NE Ryan Gulch Pit monitoring wells for the fourth quarter of 2016. The NE Ryan Gulch Pit is located in the NW¼, NE¼, Section 25, Township 1 South, Range 98 West, 6<sup>th</sup> PM.

This report summarizes field sampling activities and water chemistry results. A summary of monitoring results is shown below in Table 1.

**Table 1. Monitoring Results Summary**

Date	MW-1 Water Level <sup>1</sup>	Sample Collected	MW-2 Water Level <sup>1</sup>	Sample Collected
10/28/2014	Well Dry	No	Well Dry	No
2/24/2015	Well Dry	No	Well Dry	No
6/2/2015	Well Dry	No	Well Dry	No
9/29/2015	Well Dry	No	Well Dry	No
1/12/2016	Well Dry	No	Well Dry	No
5/5/2016	Well Dry	No	Well Dry	No
6/9/2016	Well Dry	No	78.12	No
7/13/2016	Well Dry	No	79.37	Yes
8/3/2016	Well Dry	No	67.57	No
8/9/2016	Well Dry	No	68.66	Yes
10/14/2016	Well Dry	No	79.68	No
11/4/2016	Well Dry	No	80.89	No
12/22/2016	Well Dry	No	Well Dry	No

<sup>1</sup> Water levels measurements are in feet below the top of the well casing

## **FIELD ACTIVITIES**

Quarterly monitoring of the NE Ryan Gulch Pit MW-1 and MW-2 monitoring wells was conducted on December 22, 2016. Both wells were dry thus no water quality samples were collected. Figure 1 shows the monitoring well locations. MW-2 water level data are displayed in Figure 2. An analytical summary of all samples collected to date is included in Table 2.

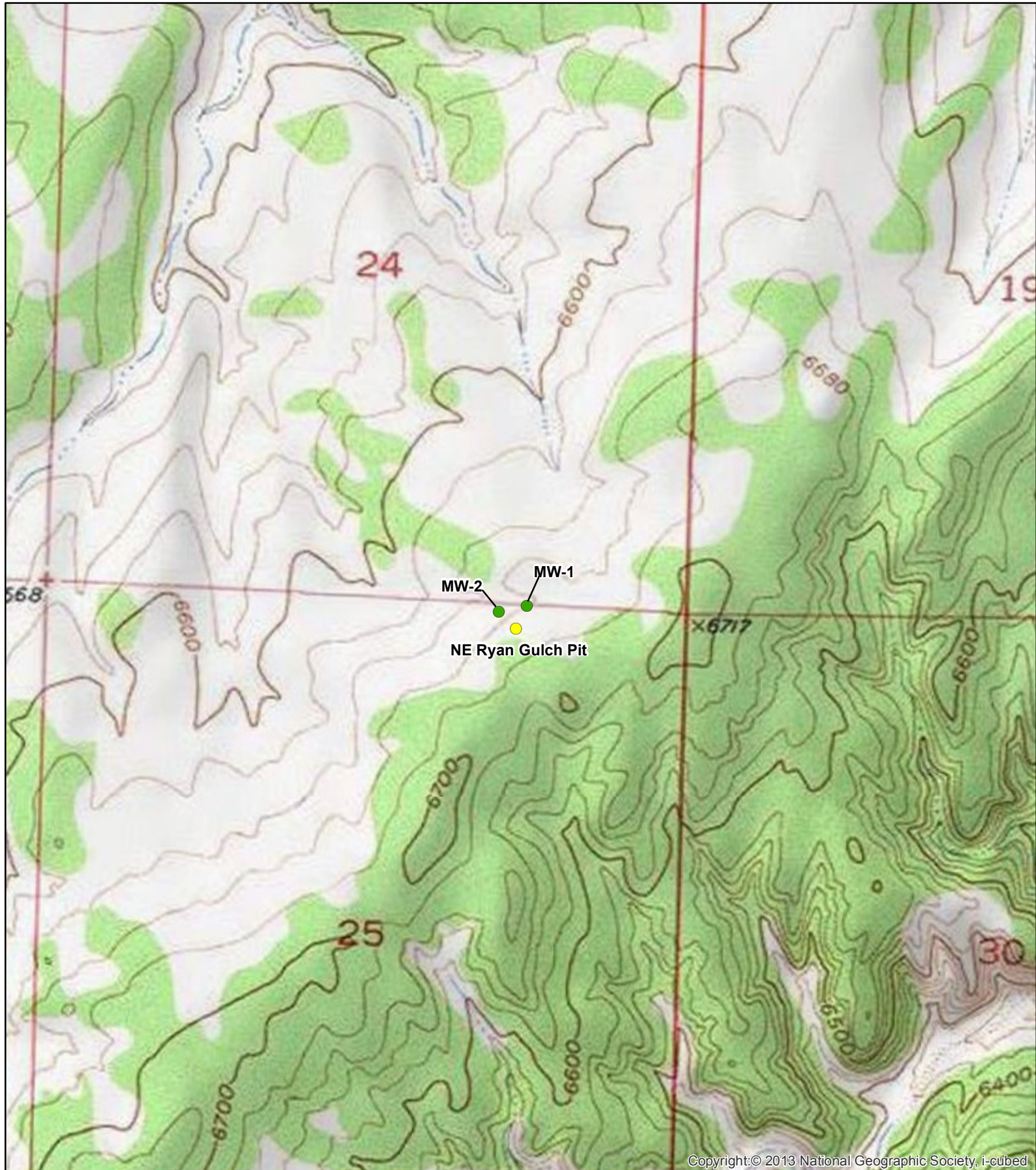
If you have any questions or concerns, please contact me at (970) 242-0170.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce D. Smith". The signature is written in a cursive style with a large initial "B" and "S".

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

Figures  
Tables



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**Legend**

- NE Ryan Gulch Pit
- Monitoring Well

N

0 500 1,000 2,000 Feet

1:12,000

**Figure 1: NE Ryan Gulch Pit  
Monitoring Well Locations Map**

**NW 1/4, NE 1/4, S25, T1S, R98W, 6 PM**

Rio Blanco County, Colorado

TEP Rocky Mountain, LLC

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**Figure 2. NE Ryan Gulch Pit MW-2 Water Levels**

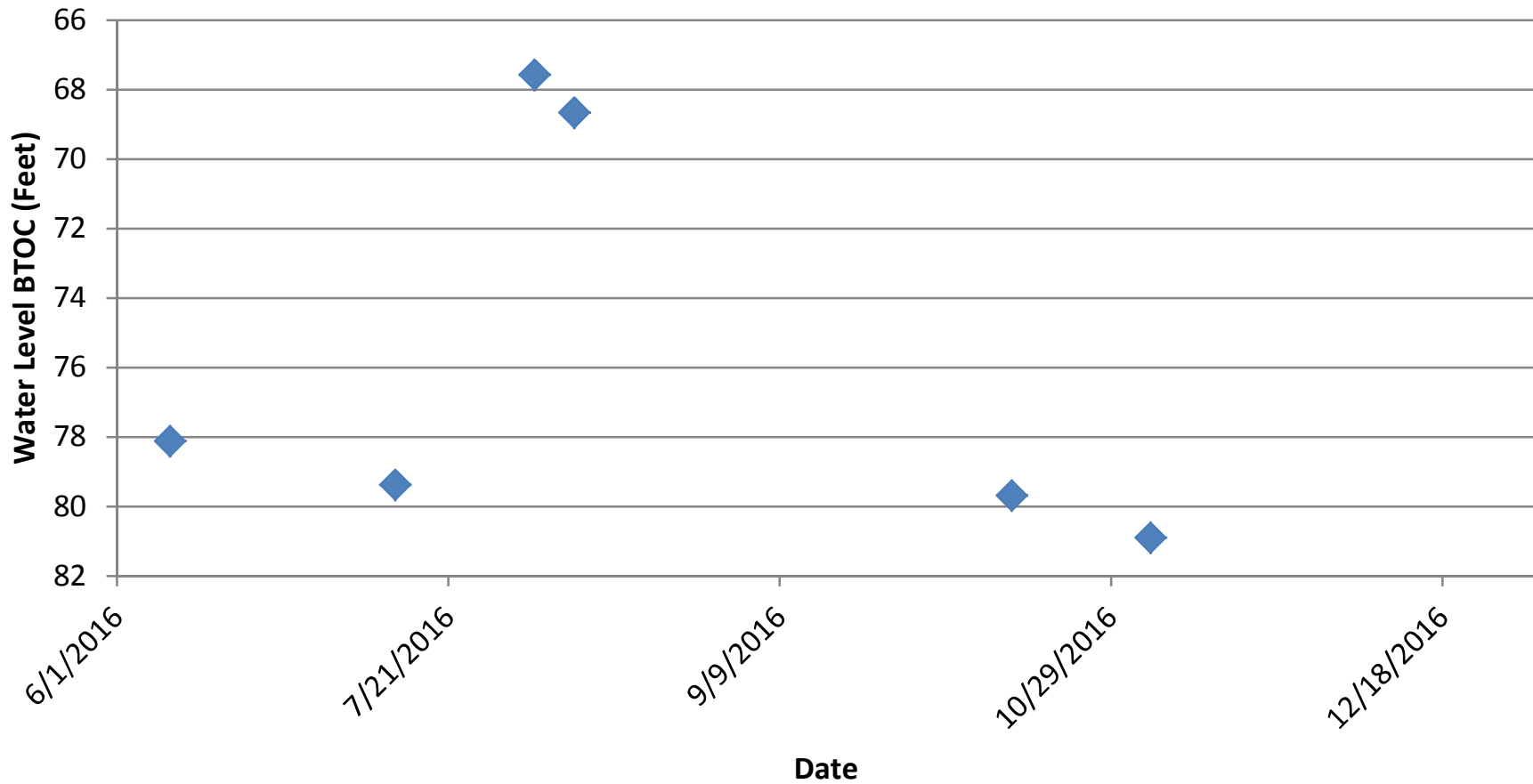


Table 2. TEP NE Ryan Gulch Pit and Monitoring Well Analytical Summary

Station Name		WPX 52558-MH			WPX 52558-MH			NE Ryan Gulch Pit		
Sample Date		7/13/2016			8/9/2016			8/9/2016		
Analytical Lab		ALS Fort Collins			ALS Fort Collins			ALS Fort Collins		
Lab Sample ID		1607211-1			1608203-2			1608203-1		
Parameter	Units	Result	Qual	WWL Qual	Result	Qual	WWL Qual	Result	Qual	WWL Qual
<b>General Chemistry</b>										
Alkalinity, BICARBONATE AS CaCO3	MG/L	220			240			1300		
Alkalinity, CARBONATE AS CaCO3	MG/L	220			240			1300		
ALKALINITY, Total AS CaCO3	MG/L	20	U		20	U		20	U	
PH	PH	7.29		H	7.46		H	7.98		H
HARDNESS (AS CaCO3) (calc)	MG/L	1947			2952			224		
SPECIFIC CONDUCTIVITY	UMHOS/CM	5560			7440			22200		
TOTAL DISSOLVED SOLIDS	MG/L	3600			5300			12000		
<b>Organics</b>										
DIESEL RANGE ORGANICS	MG/L	0.21	J		0.48	U		1.5	L	
BENZENE	UG/L	1	U		1	U		1600		
BENZENE	UG/L	NA			NA			1600		
TOLUENE	UG/L	1	U		1	U		3400	E	
TOLUENE	UG/L	NA			NA			3200		
ETHYLBENZENE	UG/L	1	U		1	U		110		
ETHYLBENZENE	UG/L	NA			NA			500	U	
TOTAL XYLENES	UG/L	1	U		1	U		1800		
TOTAL XYLENES	UG/L	NA			NA			1800		
GASOLINE RANGE ORGANICS	UG/L	100	U		100	U		11000	G	
<b>Anions</b>										
BROMIDE	MG/L	7.7			11			48		
CHLORIDE	MG/L	1200			1600			6400		
FLUORIDE	MG/L	0.32			1	J		0.99	J	
NITRATE AS N	MG/L	15			21			2	U	
NITRITE AS N	MG/L	0.1	U		2	U		1	U	
SULFATE	MG/L	1100			1500			4.7	J	
<b>Dissolved Metals</b>										
BARIUM	MG/L	0.061			0.11			23		
BORON	MG/L	0.25			0.93			13		
CALCIUM	MG/L	450			770			77		
IRON	MG/L	0.14			0.01	J		1.9		
MAGNESIUM	MG/L	200			250			7.6		
MANGANESE	MG/L	0.28			0.14			0.2		
POTASSIUM	MG/L	5.7			4.6			45		
SELENIUM	MG/L	0.037			0.052			0.00066	U	
SODIUM	MG/L	480			610			5200		
STRONTIUM	MG/L	8.2			13			13		
<b>Biological</b>										
IRON REDUCING BACTERIA	CFU/ML	NM			350000			35000		
SLIME FORMING BACTERIA	CFU/ML	NM			2300			700000		
SULFATE REDUCING BACTERIA	CFU/ML	NM			1200			500		

Notes:

- U = not detected at the method detection limit
- J = result between RL and MDL, estimated
- H = hold time exceeded
- L = indicates the fuel pattern was in the lighter end of the retention time window
- G = indicates a pattern resembling gasoline was detected
- E = analyte concentration exceeds upper level of calibration range
- AV = averaged
- NM = not measured
- NA = not applicable