



**VIA ELECTRONIC MAIL –**

October 6, 2025

Jake Janicek  
EH&S Specialist  
Environmental Health and Safety  
QB Energy LLC  
143 Diamond Avenue  
Parachute, Colorado 81635

**Subject: Release Investigation Field Activities  
M11-498 – Produced Water Release  
Piceance Creek  
Rio Blanco County, Colorado**

Dear Mr. Janicek:

WSP USA Inc. (WSP), on behalf of QB Energy LLC (QB), completed confirmation soil field screening and soil sampling in response to the produced water release at the M11-498 (Facility ID: 335785) [M11 498 FF 8013A, 8016D] (Site) pad location, discovered on August 15, 2025 through pressure testing. Field activities were performed in response to the release of produced water from a flowline. All spill response activities may be referenced under the State of Colorado Energy and Carbon Management Commission (ECMC) Spill / Release Point Number 491191. All subsequent investigative activities were completed in accordance with the State of Colorado Energy and Carbon Management Commission (ECMC) Rule 913.c.(3): Remediation of Spill Releases Pursuant to Rule 912. This report of work completed (ROWC) was prepared for the purpose of presenting the initial release characterization activities at the Site. The Site is located in the QB's Piceance Creek area of operation in Rio Blanco County, Colorado (Figure 1).

## **SOIL SAMPLING ACTIVITIES – M11-498**

On September 4, 2025, WSP conducted confirmation soil sampling activities related to the produced water release at the Site. Prior to WSP's arrival, the flowline footprint had been excavated to a depth of approximately 4.5 feet below ground surface (bgs). Using a decontaminated hand auger, WSP personnel collected a confirmation soil sample from below the point of release (POR) at approximately 5.2 feet bgs (Figure 2). Additionally, WSP personnel collected four background soil samples from the area around the Site in each cardinal direction (north, south, east, and west). Sample depths ranged from approximately 1 to 3 feet bgs (Figure 3).

The confirmation and background soil samples were field screened via a photoionization detector (PID) to analyze the soil headspaces for the presence or absence of volatile organic compounds (VOCs). The soils were also inspected using visual and olfactory senses for staining and hydrocarbon odors. The field screening results and observations are summarized in the table below.

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## POR and Background Soil Sampling – September 4, 2025

Sample ID	PID (ppm)	Field Observations	Laboratory Analysis
20250904-M11-498-(POR)@4.5	2.1	No Odor or Staining	Full Table 915-1 Suite
20250904-BGBG-(M11-498-N)@3	0.7	No Odor or Staining	ECMC Table 915-1 Metals, SAR, EC, pH, HWS Boron
20250904-BGBG-(M11-498-E)@3	1.8	No Odor or Staining	ECMC Table 915-1 Metals, SAR, EC, pH, HWS Boron
20250904-BGBG-(M11-498-S)@3	1.4	No Odor or Staining	ECMC Table 915-1 Metals, SAR, EC, pH, HWS Boron
20250904-BGBG-(M11-498-W)@3	0.7	No Odor or Staining	ECMC Table 915-1 Metals, SAR, EC, pH, HWS Boron

Key: PID – photoionization detector      ppm – parts per million      ECMC – Energy and Carbon Management Commission  
 SAR – sodium adsorption ratio      EC – electrical conductivity      pH – potential of hydrogen  
 HWS – hot water-soluble

In total, one POR sample and four background soil samples were submitted to Elevation Diagnostics of Aurora, Colorado for laboratory analysis. The POR sample was analyzed for the State of Colorado Energy and Carbon Management Commission (ECMC) full Table 915-1 analytical suite. The background samples were analyzed for Table 915-1 metals, sodium adsorption ratio (SAR), electrical conductivity (EC), potential of hydrogen (pH), and hot water-soluble boron. All soil analytical results were evaluated under ECMC Residential Soil Screening Level Concentrations (RSSLCs). The POR and background sample locations were mapped via a handheld Trimble® Global Positioning System (GPS) receiver and are depicted on the attached Figure 2 and Figure 3. A photographic log of the sampling activities is included in Enclosure A.

## ANALYTICAL RESULTS – M11-498

Laboratory analytical results of the confirmation soil samples collected from the Site on September 4, 2025 indicated exceedances of the RSSLCs for arsenic. All other analytes were either below the laboratory reporting detection limit (RDL) or were within the ECMC Table 915-1 RSSLCs..

The laboratory analytical reports are included in the corresponding Supplemental Form 19 (DN: 404377437). All exceedances are summarized in Table 1 and are depicted in Figure 4.

## BACKGROUND SOIL ASSESSMENT – M11-498

In accordance with ECMC Table 915-1, Footnote 1, WSP recommends that QB request the Director for use of background soil sample analytical data for relief of arsenic. The confirmation soil sample from the September 4, 2025 field activities yielded an arsenic concentration of 3.05 milligrams per kilogram (mg/kg). This result is lower than those obtained from background soil samples collected from the nearby undisturbed locations, which ranged from approximately 4.31 to 7.33 mg/kg.

WSP believes that the arsenic values within the M11-498 excavation meet the criteria of ECMC Table 915-1, Footnote 1, and are representative of the parent soil material. The geographic proximities of POR and background samples and the related arsenic concentrations are depicted in Figure 4. All related laboratory analytical reports are attached to DN 404377437, which corresponds with this report.

## CONCLUSIONS – M11-498

Based on the analytical data provided herein and pending approval from the Director, there are no impacts affiliated with the flowline produced water release and WSP recommends that QB request “No Further Action” and closure of Spill / Release Point ID Number 491191.



Please contact us at (970) 658-7025 if you have any questions regarding this report or require additional information.

Kind regards,

A handwritten signature in black ink, appearing to read 'Parker Coit'.

Parker Coit, P.G.  
Assistant Vice President, Geologist

A handwritten signature in black ink, appearing to read 'Korey Kennedy'.

Korey Kennedy  
Lead Consultant, Environmental Scientist

Encl.

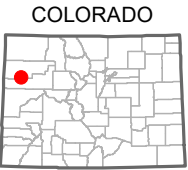
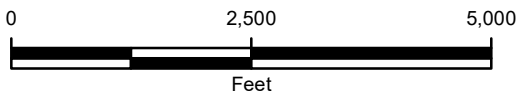
## FIGURES



IMAGE COURTESY OF ESRI/USGS

**LEGEND**

 SITE LOCATION



**FIGURE 1**  
**SITE LOCATION MAP**  
**M11 498**  
**SWSW SEC 11 T4S R98W**  
**39.710507, -108.365504**  
**RIO BLANCO COUNTY, COLORADO**  
**QB ENERGY LLC**





20250904-M11-498-(POR)@4.5



BACKGROUND IMAGERY COURTESY OF GOOGLE EARTH (5/19/2025)

**LEGEND**

 SOIL SAMPLE LOCATION

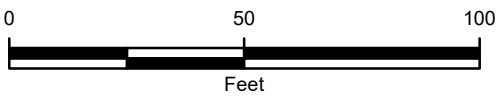


FIGURE 2  
SAMPLE LOCATION MAP  
M11 498  
SWSW SEC 11 T4S R98W  
39.710507, -108.365504  
RIO BLANCO COUNTY, COLORADO  
**QB ENERGY LLC**





20250904-BGBG-(M11-498-N)@1  
20250904-BGBG-(M11-498-N)@3

20250904-BGBG-(M11-498-W)@1  
20250904-BGBG-(M11-498-W)@3

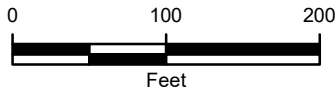
20250904-BGBG-(M11-498-E)@1  
20250904-BGBG-(M11-498-E)@3

20250904-BGBG-(M11-498-S)@1  
20250904-BGBG-(M11-498-S)@3

BACKGROUND IMAGERY COURTESY OF GOOGLE EARTH (5/19/2025)

**LEGEND**

▲ BACKGROUND SOIL SAMPLE LOCATION



**FIGURE 3**  
**BACKGROUND SAMPLE LOCATION MAP**  
 M11 498  
 SWSW SEC 11 T4S R98W  
 39.710507, -108.365504  
 RIO BLANCO COUNTY, COLORADO  
**QB ENERGY LLC**





20250904-BFBG-(M11-498-N)@3  
9/4/2025  
AS: 4.46

20250904-BFBG-(M11-498-W)@3  
9/4/2025  
AS: 4.31

20250904-BFBG-(M11-498-E)@3  
9/4/2025  
AS: 6.26

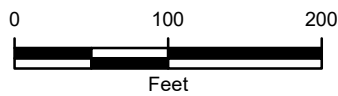
20250904-M11-498-(POR)@4.5  
9/4/2025  
AS: 3.05

20250904-BFBG-(M11-498-S)@3  
9/4/2025  
AS: 7.33

BACKGROUND IMAGERY COURTESY OF GOOGLE EARTH (5/19/2025)

**LEGEND**

- SOIL SAMPLE LOCATION
- ▲ BACKGROUND SAMPLE LOCATION



**FIGURE 4**  
ANALYTICAL EXCEEDANCE MAP  
M11 498  
SWSW SEC 11 T4S R98W  
39.710507, -108.365504  
RIO BLANCO COUNTY, COLORADO  
**QB ENERGY LLC**



## TABLE



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**M11-498**  
**GARFIELD COUNTY, COLORADO**  
**QB ENERGY LLC**

**Soil Analytical Results**

<b>Analyte</b>				<b>EC</b>	<b>SAR</b>	<b>pH</b>	<b>HWS Boron</b>	<b>Arsenic</b>	<b>Barium</b>	<b>Cadmium</b>	<b>Chromium VI</b>	<b>Copper</b>	<b>Lead</b>	<b>Nickel</b>	<b>Selenium</b>	<b>Silver</b>	<b>Zinc</b>
				4	6	8.3	2	0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
<b>915-1 PROTECTION OF GW</b>																	
<b>915-1 RESIDENTIAL SOIL</b>																	
<b>Units</b>				mmhos/cm	No Unit	SU	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
<b>Sample Name</b>	<b>Sample Type</b>	<b>Sample Date</b>	<b>Lab Report</b>														
20250904-BFBG-(M11-498-E)@3	Background	09/04/2025	6518	0.23	0.13	7.15	0.20	<b>6.26</b>	<b>357.42</b>	0.17	<b>0.11</b>	16.66	<b>15.88</b>	18.27	<b>3.20</b>	< 0.25	50.16
20250904-BFBG-(M11-498-N)@3	Background	09/04/2025	6518	0.15	0.12	6.92	0.20	<b>4.46</b>	<b>353.53</b>	0.18	<b>0.15</b>	14.35	12.79	13.04	<b>2.85</b>	< 0.25	45.54
20250904-BFBG-(M11-498-S)@3	Background	09/04/2025	6518	0.34	0.22	7.58	0.15	<b>7.33</b>	<b>419.62</b>	0.12	<b>0.12</b>	15.15	11.38	14.30	<b>3.19</b>	< 0.25	44.60
20250904-BFBG-(M11-498-W)@3	Background	09/04/2025	6518	0.34	0.33	8.25	0.19	<b>4.31</b>	<b>320.28</b>	0.20	<b>&lt; 0.080</b>	6.20	5.20	7.77	<b>1.62</b>	< 0.25	28.62
20250904-M11-498-(POR)@4.5	POR	09/04/2025	6518	0.55	0.47	7.96	0.17	<b>3.05</b>	<b>270.26</b>	0.13	<b>0.10</b>	16.73	11.86	14.92	<b>2.28</b>	< 0.25	61.10

*Key:*

*EC - electrical conductivity*  
*SAR - sodium adsorption ratio*  
*mmhos/cm - millimhos per centimeter*  
*SU - standard units*  
*mg/kg - milligram per kilogram*  
*mg/l - milligram per liter*

*GRO - gasoline range organics*  
*DRO - diesel range organics*  
*ORO - oil range organics*  
*TMB - trimethylbenzene*  
*< - less than laboratory minimum detection limit*  
*NA - not assessed*



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**M11-498**  
**GARFIELD COUNTY, COLORADO**  
**QB ENERGY LLC**

**Soil Analytical Results**

Analyte	GRO	DRO	ORO	TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Acenaphthene	Anthracene	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)Pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Pyrene		
																										mg/kg	mg/kg
<b>915-1 PROTECTION OF GW</b>				500	0.0026	0.69	0.78	9.9	0.0081	0.0087	0.55	5.8	0.011	0.3	2.9	0.24	9	0.096	5.9	0.54	0.98	0.006	0.019	0.0038	1.3		
<b>915-1 RESIDENTIAL SOIL</b>				500	1.2	490	5.8	58	30	27	360	1800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	2	180		
<b>Sample Name</b>	<b>Sample Type</b>	<b>Sample Date</b>	<b>Lab Report</b>																								
20250904-M11-498-(POR)@4.5	POR	09/04/2025	6518	< 0.223	< 100.00	< 100.00	< 200.223	< 0.0015	< 0.0016	< 0.0014	< 0.0043	< 0.0016	< 0.0015	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.00313	< 0.010	< 0.00306	< 0.010

*Key:*  
SAR - sodium adsorption ratio  
mmhos/cm - micromhos per centimeter  
SU - standard units  
mg/kg - milligram per kilogram  
mg/l - milligram per liter  
TPH - combination of TPH-GRO, TPH-DRO, and TPH-ORO

DRO - diesel range organics  
ORO - oil range organics  
TMB - trimethylbenzene  
< - less than laboratory minimum detection limit  
NA - not assessed

## ENCLOSURE A – PHOTOGRAPHIC LOG




**PHOTOGRAPHIC LOG**

**QB Energy LLC**

**M11-498**

Photo No.	Date	
1	9/04/2025	 <p>Point of Release (POR) Overview</p> <p>View North</p>

Photo No.	Date	
2	9/04/2025	 <p>POR Sample Location</p> <p>View East</p>

**PHOTOGRAPHIC LOG**

**QB Energy LLC**

**M11-498**

Photo No. 3	Date 9/04/2025		
<p>POR Sample and Depth Measurement</p> <p>View East</p>			

Photo No. 4	Date 9/04/2025		
<p>Background North Sample Location</p> <p>View Southeast</p>			

**PHOTOGRAPHIC LOG**

**QB Energy LLC**

**M11-498**

Photo No.	Date		
5	9/04/2025		
<p>Background East Sample Location</p> <p>View Southeast</p>			

Photo No.	Date		
6	9/04/2025		
<p>Background South Sample Location</p> <p>View Southeast</p>			

PHOTOGRAPHIC LOG

QB Energy LLC

M11-498

Photo No.	Date
7	9/04/2025
Background West Sample Location	
View Southeast	

