July 16, 2020

Josh Carlisle
Environmental Specialist
Extraction Oil & Gas
370 17th Street, Suite 5300
Denver, Colorado 80202

Subject: **Work Summary Report – Remedial Injection**
MORRISON 33-1-61S68W 1NWSE
"Morrison 33-1 #4"
COGCC Location ID: 320318
39.991475, -104.947475
NWSE, 1 1S68W
City of Thornton, Adams County

Dear Mr. Carlisle:

Apex Companies LLC (Apex) has prepared this work completion report to document remedial injection activities performed during the week of December 10, 2019 at the "Morrison 33-1 #4" former tank battery (Location ID: 320318), located in Thornton, Colorado. The remedial activities performed consisted of the injection of a chemically-oxygenated granular activated-carbon (COGAC™) slurry into groundwater at 27 injection points in the vicinity of the former produced water vessel excavation (Figure 2). These efforts were self-directed by Extraction Oil and Gas (XOG) in an effort to reduce lingering hydrocarbon concentrations in monitoring wells BH-01 and BH-04. These efforts were completed under an approved Form 27 (Site Investigation and Remediation Workplan) with a Remediation Project Number 10759, and under Form 19 (Spill/Release Report) with an approved Spill/Release Point ID 453135, both assigned by the Colorado Oil and Gas Conservation Commission (COGCC).

Pre-field Activities

Prior to conducting the remedial injection, the following pre-field activities were completed by Apex:

- Prepared and submitted a Class V Underground Injection Control (UIC) permit application to the Environmental Protection Agency, Region 8. EPA File #CO50000-11919 (EPA; Attachment A);
- Collected pre-injection groundwater samples from temporary groundwater monitoring wells BH-01 through BH-04, and BH-06 through BH-11;
- Demarcated the injection area and notified Colorado 811 One Call center of the public utility locate request;
- Verified that all identified Tier 1 public utility owners provided positive response to completing the public utility locate request.

- Employed GPRS Inc. to confirm the absence of private utilities in the injection area by utilizing underground scanning ground penetrating radar technology and electromagnetic pipe and cable locators; and
- Prepared XOG ground disturbance forms and conducted an onsite utility clearance meeting with XOG personnel to confirm all steps of ground disturbance safety and policy were completed, and ground disturbance safe to proceed.

Remedial Injection

From December 10 to December 13, 2019 an Apex Field Coordinator was dispatched to the location (39.991475, -104.947475) to oversee the injection of COGAC™ by Remington Technologies, LLC (Remington). Injection activities were completed in accordance with the UIC Class V Rule Authorization Letter (EPA File #CO50000-11919). At the beginning of the project, and prior to starting work each day, a job safety analysis (JSA) form was completed and potential hazards were discussed and mitigated

On day 1 and day 2, the COGAC™ injectate was delivered to the site in 250-gallon poly containers and mixed on-site using water obtained from an off-site hydrant to obtain a 12-13% concentration. This slurry was then injected at each injection point using a Geoprobe 7822 DT track-mounted direct-push rig equipped with an injection manifold. Injectate was delivered to the subsurface in 1-foot lifts, starting from 10 feet bgs and raising up to 5 feet bgs, at 27 locations within the treatment area (Figure 2). The number of injection points deviated from the anticipated 33 locations due to difficulty injecting the desired quantities into each injection point (i.e., oversaturation of the injection area). Approximately 1,990 pounds of the proposed 2,475 pounds of COGAC™ slurry was injected into the 1,745 square foot area.

On day 3, after injection activities were completed, Remington spent the remaining time on-site backfilling the injection points and covering soil where COGAC™ had reached the surface, while Apex collected final site photos and GPS data for the injection points. Site photographs from throughout this remedial injection and included in Attachment B, and Remington's *Remedial Injection Report* is included in Attachment C.

Groundwater Monitoring and Sampling Activities

A pre-injection groundwater sampling event was conducted on December 6, 2019, from temporary groundwater monitoring wells BH-01 through BH-04, and BH-06 through BH-11. All samples were submitted for analysis at a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory for the approved constituents of concern, BTEX. Laboratory results remained consistent with prior quarterly groundwater sampling events, at a benzene concentration of 39 micrograms per liter (µg/L) in well BH-1 and benzene concentrations in well BH-4 decreasing from 7.1 µg/L to non-detect above a method reporting limit of 5 µg/L. There was a westerly groundwater gradient, which is somewhat anomalous to prior events where groundwater flowed both to the east and west from a high point centered around wells BH-1, BH-6, and BH-7. The results of this groundwater sampling event are depicted in Figure 3.

A post-injection groundwater sampling event was conducted approximately one month after injection activities, on January 17, 2020, from temporary groundwater monitoring wells BH-01 through BH-04, and BH-06 through BH-11. Laboratory results showed a decrease in benzene concentrations in well BH-1 to non-detect levels, indicating successful remediation of impacted groundwater from the source

area. However, benzene concentrations in well BH-4 increased slightly to 6.9 µg/L, indicating that groundwater impacts were pushed downgradient by injection activities. The groundwater gradient was largely consistent with the first, second, and third quarter 2019 events, with groundwater flowing to the southwest and southeast from a high groundwater elevation centered around BH-7. The results of this groundwater sampling event are depicted in Figure 4.

On March 25, 2020, quarterly groundwater samples were collected from temporary groundwater monitoring wells BH-01 through BH-04, and BH-06 through BH-11 to satisfy First Quarter 2020 groundwater monitoring requirements. Laboratory results showed that benzene concentrations in BH-4 increased from 6.9 µg/L during the previous sampling to 81 µg/L, indicating the benzene impacts are possibly rebounding and were pushed downgradient during injection. Benzene concentrations in the source area well BH-1 also increased from previous sampling, from ND to 2 µg/L. All other monitoring wells remained ND for Table 910-1 constituents of concern, defining the extent of impact plume in the up-, cross- and down-gradient locations. The results of this groundwater sampling event are depicted in Figure 5.

On June 29, 2020, quarterly groundwater samples were collected from temporary groundwater monitoring wells BH-01 through BH-04, and BH-07 through BH-11 to satisfy Second Quarter 2020 groundwater monitoring requirements. Benzene concentrations in the source area well BH-1 increased from previous sampling, from 2 µg/L to 50 2 µg/L. Laboratory results showed that benzene concentrations in BH-4 decreased from 81 µg/L during the previous sampling to 1.2 µg/L. All other monitoring wells remained ND for Table 910-1 constituents of concern. The results of this groundwater sampling event are depicted in Figure 6. Groundwater sampling will occur once a quarter until laboratory results for all groundwater monitoring wells remain below COGCC Table 910-1 allowable limits for BTEX for four consecutive quarters. Groundwater laboratory results are summarized in Figure 7, and copies of the laboratory analytical reports are included in Attachment D.

Summary

The scope of work as proposed by Remington and Apex was carried out to the extent feasible in three work-days. Attached in this report is a site diagram and copy of Remington's work summary report with summaries of each injection point.

Sincerely,
Apex Companies, LLC

Maggie Graham

Maggie Graham
Senior Project Manager

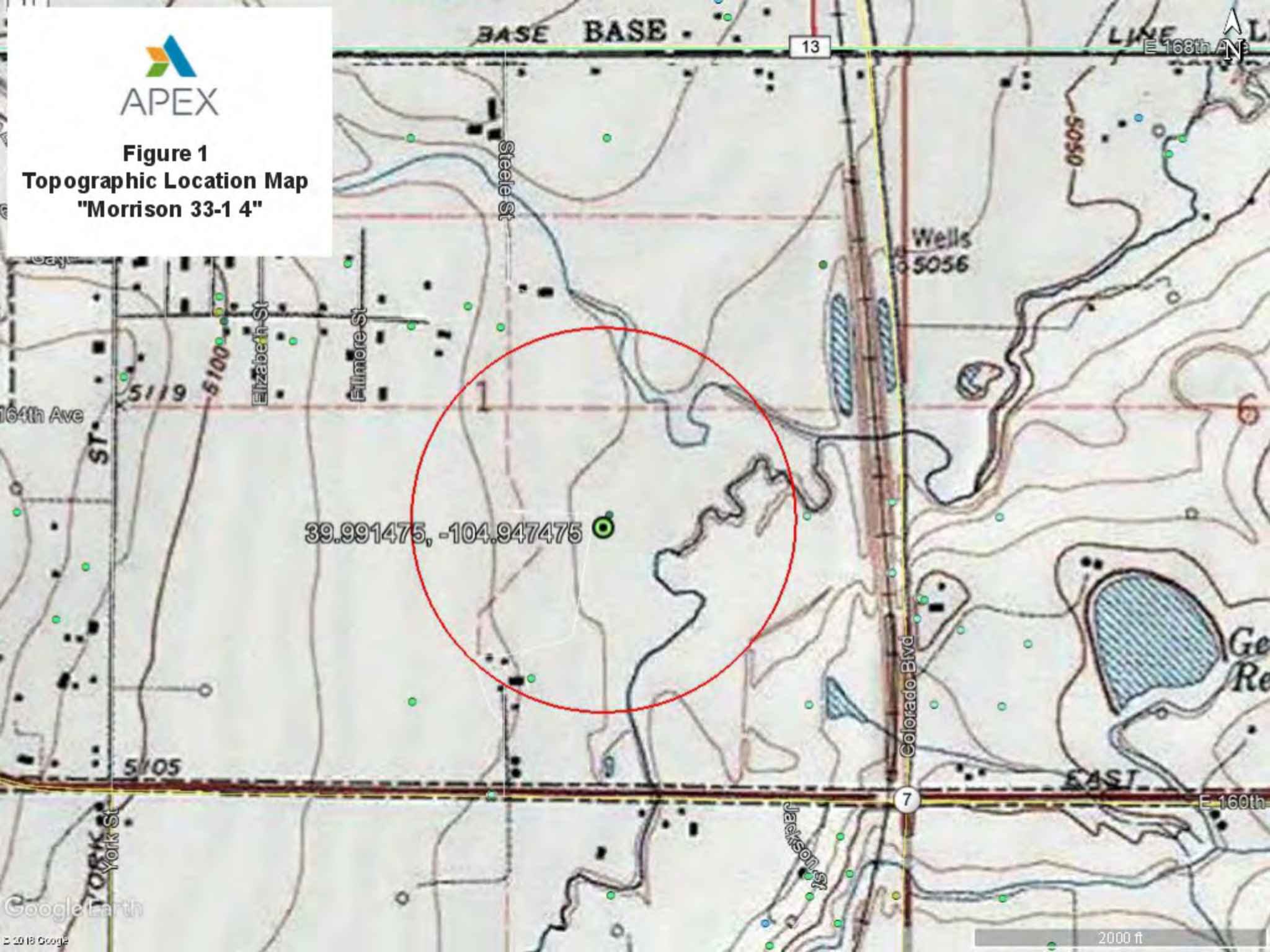
Attachments:

Figure 1 - Topographic Location Map
Figure 2 - Site Diagram
Figure 3 - Temporary Monitoring Well layout & GW Elevations for the 12/6/2019 Sampling Event
Figure 4 – Temporary Monitoring Well layout & GW Elevations for the 1/17/2020 Sampling Event
Figure 5 - Temporary Monitoring Well layout & GW Elevations for the 3/25/2020 Sampling Event
Figure 6 - Temporary Monitoring Well layout & GW Elevations for the 6/29/2020 Sampling Event

Figure 7 – Laboratory Results Summary Table – Groundwater

Attachment A - EPA Region 8 Class V UIC Permit
Attachment B - Site Photographs
Attachment C - Remington's *Remedial Injection Report*
Attachment D – Laboratory Analytical Reports

FIGURES


APEX
Figure 1
Topographic Location Map
"Morrison 33-1 4"
BASE BASE
13
E 168th Ave
Steele St
Wells
5056
5050
Elizabeth St
Fillmore St
5119
5100
164th Ave
1
6
39.991475, -104.947475
Colorado Blvd
5105
7
E 160th
York St
Jackson St
Google Earth
2000 ft

Extraction Oil & Gas

Morrison 33-1 4 (East)
COGCC Location ID: 320318
Site Diagram & Injection Locations

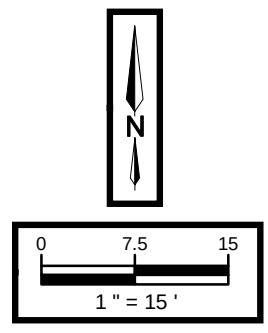
BH-1, BH-2, BH-3, BH-4, BH-5, BH-6, BH-7, BH-8, BH-9, BH-10, BH-11
IP-1, IP-2, IP-3, IP-4, IP-5, IP-6, IP-7, IP-8, IP-9, IP-10, IP-11, IP-12, IP-13, IP-14, IP-15, IP-16, IP-17, IP-18, IP-19, IP-20, IP-21, IP-22, IP-23, IP-24, IP-25, IP-26, IP-27

Temp. Monitoring Well Location

Injection Point

APEX

Legal Description: NWSE, Sec 1, T1S R68W
County: Adams
Land Use: Cropland
Topography: 0-3% Slopes
Run-Off Risk: Low
Soil Type: Arvada loam
Receiving Waters: Big Dry Creek



Sample ID	Latitude NAD83	Longitude NAD 83	Sample ID	Latitude NAD83	Longitude NAD 83
BH-1	39.991684	-104.947656	IP-9	39.991695	-104.947720
BH-2	39.991743	-104.947658	IP-10	39.991650	-104.947688
BH-3	39.991713	-104.947574	IP-11	39.991660	-104.947699
BH-4	39.991642	-104.947570	IP-12	39.991619	-104.947658
BH-5	39.991603	-104.947657	IP-13	39.991628	-104.947547
BH-6	39.991641	-104.947743	IP-14	39.991658	-104.947489
BH-7	39.991711	-104.947747	IP-15	39.991679	-104.947504
BH-8	39.991727	-104.947486	IP-16	39.991674	-104.947584
BH-9	39.991614	-104.947845	IP-17	39.991696	-104.947613
BH-10	39.991662	-104.947479	IP-18	39.991705	-104.947641
BH-11	39.991603	-104.947462	IP-19	39.991628	-104.947669
IP-1	39.991656	-104.947533	IP-20	39.991587	-104.947694
IP-2	39.991690	-104.947552	IP-21	39.991647	-104.947643
IP-3	39.991700	-104.947582	IP-22	39.991681	-104.947654
IP-4	39.991651	-104.947605	IP-23	39.991641	-104.947698
IP-5	39.991621	-104.947580	IP-24	39.991706	-104.947697
IP-6	39.991624	-104.947633	IP-25	39.991630	-104.947520
IP-7	39.991667	-104.947622	IP-26	39.991639	-104.947584
IP-8	39.991704	-104.947669	IP-27	39.991602	-104.947638

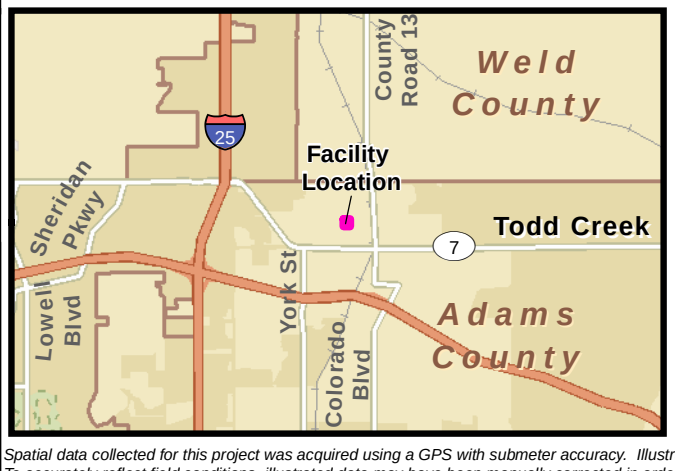
Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.

M:\Projects\Extraction_Oil_Gas\Remediation\Morrison_33-1_4_East\Morrison_33-1_4_East_Inj_20200106.mxd Modified 1/7/2020 by Beau.Bergstrom Apex Companies, LLC NAD 1983 UTM Zone 13N Coordinate System Service Layer Credits: USDA NAIP

Extraction Oil & Gas

Morrison 33-1 4 (EAST)
COGCC Location ID: 320318
Temporary Monitoring Well layout & GW Elevations for the 12/6/2019 Sampling Event

Legal Description: NWSE, Sec 1, T1S R68W
County: Adams
Land Use: Cropland
Topography: 0-3% Slopes
Run-Off Risk: Low
Soil Type: Arvada loam
Receiving Waters: Big Dry Creek



BH-1
80.60-ft

Temp. Monitoring Well Location & Relative GW Elevation

Temp. Monitoring Well Location - Not Sampled

Estimated Groundwater Contour

FLOW Estimated Groundwater Flow Direction

*** Sample ID in Purple font indicates a regulatory exceedance.**

*** Concentration Units in ug/L.**
*** ND - Non-Detect**

N

0 7.5 15
1 " = 15 '

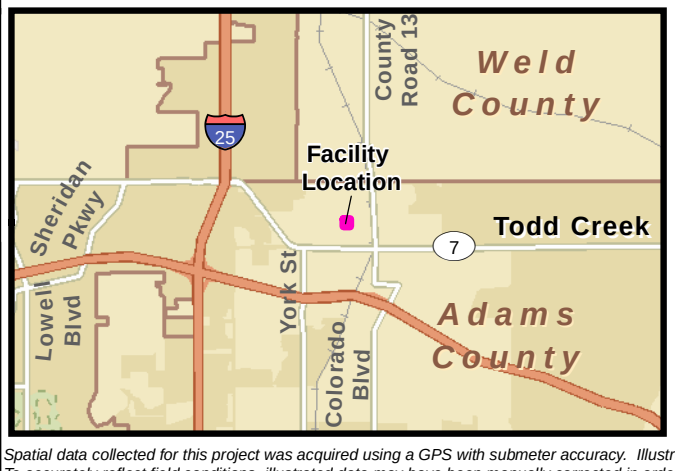
Sample ID	Latitude NAD83	Longitude NAD 83
BH-1	39.991684	-104.947656
BH-2	39.991743	-104.947658
BH-3	39.991713	-104.947574
BH-4	39.991642	-104.947570
BH-5	39.991603	-104.947657
BH-6	39.991641	-104.947743
BH-7	39.991711	-104.947747
BH-8	39.991727	-104.947486
BH-9	39.991614	-104.947845
BH-10	39.991662	-104.947479
BH-11	39.991603	-104.947462

Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.

Extraction Oil & Gas

Morrison 33-1 4 (EAST)
COGCC Location ID: 320318
Temporary Monitoring Well layout & GW Elevations for the 1/17/2020 Sampling Event

Legal Description: NWSE, Sec 1, T1S R68W
County: Adams
Land Use: Cropland
Topography: 0-3% Slopes
Run-Off Risk: Low
Soil Type: Arvada loam
Receiving Waters: Big Dry Creek



BH-1 80.60-ft — Temp. Monitoring Well Location & Relative GW Elevation

Temp. Monitoring Well Location - Not Sampled

Estimated Groundwater Contour

FLOW — Estimated Groundwater Flow Direction

*** Sample ID in Purple font indicates a regulatory exceedance.**

*** Concentration Units in ug/L.**
*** ND - Non-Detect**

N

0 7.5 15
1 " = 15 '

Sample ID	Latitude NAD83	Longitude NAD 83
BH-1	39.991684	-104.947656
BH-2	39.991743	-104.947658
BH-3	39.991713	-104.947574
BH-4	39.991642	-104.947570
BH-5	39.991603	-104.947657
BH-6	39.991641	-104.947743
BH-7	39.991711	-104.947747
BH-8	39.991727	-104.947486
BH-9	39.991614	-104.947845
BH-10	39.991662	-104.947479
BH-11	39.991603	-104.947462

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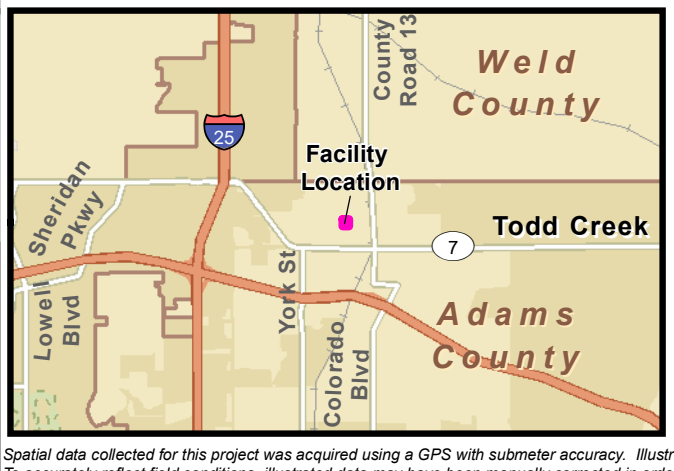
Extraction Oil & Gas

Morrison 33-1 4 (EAST)
COGCC Location ID: 320318
Temporary Monitoring Well layout & GW Elevations for the 3/25/2020 Sampling Event

Legal Description: NWSE, Sec 1, T1S R68W
County: Adams
Land Use: Cropland
Topography: 0-3% Slopes
Run-Off Risk: Low
Soil Type: Arvada loam
Receiving Waters: Big Dry Creek



APEX

BH-1 80.60-ft — Temp. Monitoring Well Location & Relative GW Elevation

Temp. Monitoring Well Location - Not Sampled

Estimated Groundwater Contour

FLOW — Estimated Groundwater Flow Direction

* Sample ID in Purple font indicates a regulatory exceedance.

* Concentration Units in ug/L.
* ND - Non-Detect

N

0 7.5 15
1 " = 15 '

Sample ID	Latitude NAD83	Longitude NAD 83
BH-1	39.991684	-104.947656
BH-2	39.991743	-104.947658
BH-3	39.991713	-104.947574
BH-4	39.991642	-104.947570
BH-5	39.991603	-104.947657
BH-6	39.991641	-104.947743
BH-7	39.991711	-104.947747
BH-8	39.991727	-104.947486
BH-9	39.991614	-104.947845
BH-10	39.991662	-104.947479
BH-11	39.991603	-104.947462

Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.

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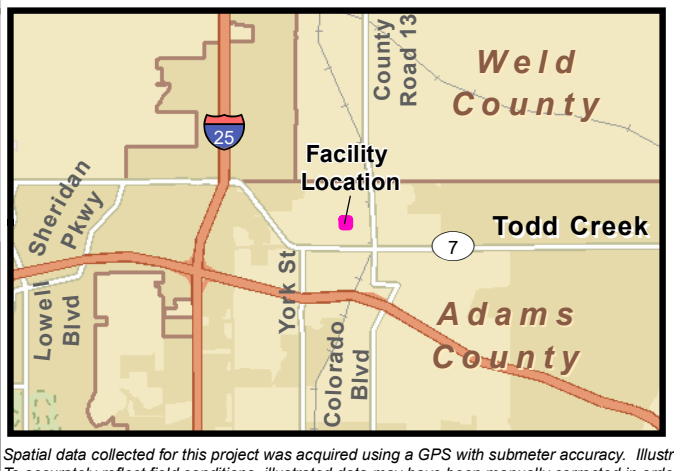
Extraction Oil & Gas

Morrison 33-1 4 (EAST)
COGCC Location ID: 320318
Temporary Monitoring Well layout & GW Elevations for the 6/29/2020 Sampling Event

Legal Description: NWSE, Sec 1, T1S R68W
County: Adams
Land Use: Cropland
Topography: 0-3% Slopes
Run-Off Risk: Low
Soil Type: Arvada loam
Receiving Waters: Big Dry Creek



BH-1
80.60-ft

Temp. Monitoring Well Location & Relative GW Elevation

Damaged Well - Not Sampled

Estimated Groundwater Contour

FLOW Estimated Groundwater Flow Direction

*** Sample ID in Purple font indicates a regulatory exceedance.**

*** Concentration Units in ug/L.**
*** ND - Non-Detect**
*** NS - Not Sampled**

N

0 7.5 15
1 " = 15 '

Sample ID	Latitude NAD83	Longitude NAD 83
BH-1	39.991684	-104.947656
BH-2	39.991743	-104.947658
BH-3	39.991713	-104.947574
BH-4	39.991642	-104.947570
BH-5	39.991603	-104.947657
BH-6	39.991641	-104.947743
BH-7	39.991711	-104.947747
BH-8	39.991727	-104.947486
BH-9	39.991614	-104.947845
BH-10	39.991662	-104.947479
BH-11	39.991603	-104.947462

Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.

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Laboratory Results Summary Table - Groundwater
Morrison 33-1 4

			Organic Compounds (µg/L)			
COGCC Allowable Concentration (Water)			5	1,000	700	10,000
Location	**Sample Date**	**Sample ID**	Benzene	Toluene	Ethylbenzene	Xylenes - total
Morrison 33-1	10/25/18	**BH01**	**410**	*<1.00*	280	250
Morrison 33-1	2/27/19	**BH01**	**26**	*<1.00*	7.2	*<2.00*
Morrison 33-1	5/30/19	**BH01**	**17**	*<1.00*	3.9	*<2.00*
Morrison 33-1	9/6/19	**BH01**	**16**	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH01**	**39**	*<1.00*	20	*<2.00*
Morrison 33-1	1/17/20	**BH01**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH01**	2.0	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH01**	**50**	*<1.0*	13	*<2.0*
Morrison 33-1	10/25/18	**BH02**	2.9	*<1.00*	17	*<2.00*
Morrison 33-1	2/27/19	**BH02**	**6**	*<1.00*	3.5	*<2.00*
Morrison 33-1	5/30/19	**BH02**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	9/6/19	**BH02**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH02**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH02**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH02**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH02**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/25/18	**BH03**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	5/30/19	**BH03**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	9/6/19	**BH03**	*<1.00*	*<1.00*	*<1.00*	*<2.00*

Orange Highlight - Exceedance

Grey Highlight - Below Detection Limit

µg/L - micrograms per liter

Apex Companies, LLC.
1746 Cole Blvd., Suite 250
Lakewood, CO 80401

Laboratory Results Summary Table - Groundwater
Morrison 33-1 4

			Organic Compounds (µg/L)			
COGCC Allowable Concentration (Water)			5	1,000	700	10,000
Location	**Sample Date**	**Sample ID**	Benzene	Toluene	Ethylbenzene	Xylenes - total
Morrison 33-1	12/6/19	**BH03**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH03**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH03**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH03**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/25/18	**BH04**	**140**	*<1.00*	130	*<2.00*
Morrison 33-1	2/27/19	**BH04**	**45**	*<1.00*	1.5	*<2.00*
Morrison 33-1	5/30/19	**BH04**	**450**	1.3	64	*<2.00*
Morrison 33-1	9/6/19	**BH04**	**7.1**	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH04**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH04**	**6.9**	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH04**	**81**	*<1.0*	14	*<2.0*
Morrison 33-1	6/29/20	**BH04**	1.2	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/25/18	**BH05**	*<1.00*	*<1.00*	1.2	*<2.00*
Morrison 33-1	5/30/19	**BH05**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	10/25/18	**BH06**	**20**	*<1.00*	73	200
Morrison 33-1	2/27/19	**BH06**	1.3	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	5/30/19	**BH06**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	9/6/19	**BH06**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH06**	*<1.00*	*<1.00*	*<1.00*	*<2.00*

Orange Highlight - Exceedance

Grey Highlight - Below Detection Limit

µg/L - micrograms per liter

Apex Companies, LLC.
1746 Cole Blvd., Suite 250
Lakewood, CO 80401

Laboratory Results Summary Table - Groundwater
Morrison 33-1 4

			Organic Compounds (µg/L)			
COGCC Allowable Concentration (Water)			5	1,000	700	10,000
Location	**Sample Date**	**Sample ID**	Benzene	Toluene	Ethylbenzene	Xylenes - total
Morrison 33-1	1/17/20	**BH06**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH06**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/25/18	**BH07**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	5/30/19	**BH07**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	9/6/19	**BH07**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH07**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH07**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH07**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH07**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/25/18	**BH08**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	2/27/19	**BH08**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	5/30/19	**BH08**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	9/6/19	**BH08**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH08**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH08**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH08**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH08**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/25/18	**BH09**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	5/30/19	**BH09**	*<1.00*	*<1.00*	*<1.00*	*<2.00*

Orange Highlight - Exceedance

Grey Highlight - Below Detection Limit

µg/L - micrograms per liter

Apex Companies, LLC.
1746 Cole Blvd., Suite 250
Lakewood, CO 80401

Laboratory Results Summary Table - Groundwater
Morrison 33-1 4

			Organic Compounds (µg/L)			
COGCC Allowable Concentration (Water)			5	1,000	700	10,000
Location	**Sample Date**	**Sample ID**	Benzene	Toluene	Ethylbenzene	Xylenes - total
Morrison 33-1	9/6/19	**BH09**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH09**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH09**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH09**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH09**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/4/19	**BH10**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH10**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH10**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH10**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH10**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	10/4/19	**BH11**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	12/6/19	**BH11**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	1/17/20	**BH11**	*<1.00*	*<1.00*	*<1.00*	*<2.00*
Morrison 33-1	3/25/20	**BH11**	*<1.0*	*<1.0*	*<1.0*	*<2.0*
Morrison 33-1	6/29/20	**BH11**	*<1.0*	*<1.0*	*<1.0*	*<2.0*

Orange Highlight - Exceedance

Grey Highlight - Below Detection Limit

µg/L - micrograms per liter

Apex Companies, LLC.
1746 Cole Blvd., Suite 250
Lakewood, CO 80401

ATTACHMENT A

EPA Region 8 Class V UIC Permit

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region8

DEC 0 3 2019

Ref: 8WD-SDU

Mr. Blake Ford
Extraction Oil and Gas, LLC (XOG)
370 17th Street, Suite 5300
Denver, Colorado 80202

RE: CLASS V UIC PROGRAM
Rule Authorization: Aquifer Remediation Well
Morrison 33-1-61S68W 1NWSE
NWSE Sec. 1, T1S, R85W, 6PM
Adams County, Colorado
EPA File #CO50000-11919

Dear Mr. Ford:

The United States Environmental Protection Agency Region 8 Underground Injection Control Program staff has reviewed the application that was submitted by you or on your behalf for the Class V aquifer remediation injection well(s) at the above referenced location. Based on our understanding of the proposed program and limited potential for groundwater contamination, we have determined that a permit is not necessary at this time. Therefore, your aquifer remediation injection well(s) is currently "authorized by rule" in accordance with Title 40 Code of Federal Regulations (40 CFR) Sections 144.24 and 144.84(a). This authorization is based on information provided in your application and is valid for:

Injections of COGAC™ into 33 injection points on site in a manner as described in your application, and is limited to the location(s) indicated in the application that we received on November 2, 2019.

All injection wells are regulated under the UIC Program in accordance with 40 CFR parts 144 and 146, which have been promulgated under Part C of the Safe Drinking Water Act, 42 United States Code Sections 1421 through 1428. Your Class V injection well(s) is subject to periodic compliance inspections, which may include sampling and analysis of your fluids. Finally, be aware that under 40 CFR Sections144.12(c), (d), and (e), the EPA can require you to apply for a permit or close your injection well(s) under certain circumstances.

Please notify us if the potential for groundwater contamination increases. If you intend to change the proposed plan, please notify us in advance. Any changes in operating methods or any other conditions that may adversely impact groundwater MUST be approved in advance by the EPA. Failure to comply with the above requirements will result in violations of UIC regulations and possible enforcement actions and penalties.

Please be advised that this rule authorization pertains solely to the UIC Program and does NOT relieve you from satisfying any other federal, state or local regulations that may apply.

Please contact Dennis Hotovec at (800) 227-8917, extension 312-6582 or (303) 312-6582 if you have any questions or need more information. More information on the EPA Region 8 Class V program can also be found online at:
http://www.epa.gov/uic/underground-injection-control-epa-region-8-co-mt-nd-sd-ut-and-wy

Sincerely,

Douglas Minter, Chief
UIC Section

cc:

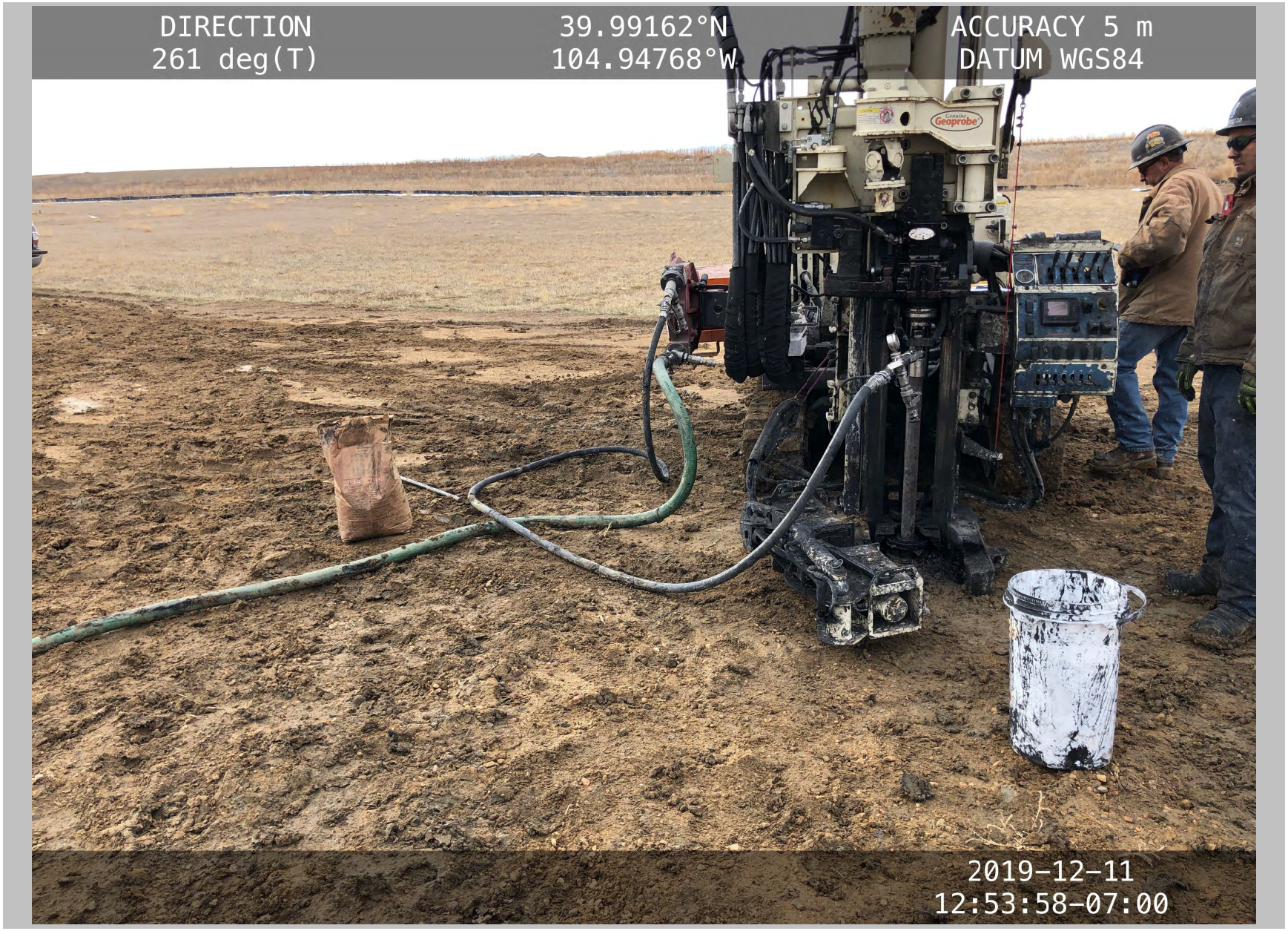
Ms. Maggie Graham
Apex Companies, LLC
1746 Cole Boulevard, Building 21, Suite 250
Lakewood, Colorado 80401
Maggie.graham@apexco.com

Mr. Chris Canfield
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203
Chris.canfield@state.co.us

ATTACHMENT B

Site Photographs

Photo Documentation



Description:	Injection rig and manifold.

Description:	Injection manifold on Geoprobe rig, showing pressure gauge (PSI), pressure release valve, and "whip checks".

Photo Documentation

Description:	COGAC slowing flowing out of boring after removing injection rods; packed with bentonite until sealed.

Photo Documentation

Description: Black pools are COGAC solution "daylighting" due to over-saturation of the subsurface up to 45' away from boring.

Photo Documentation

Description:	Injection Area, view from west. Injection points marked with white pinflags.

Photo Documentation

Description:	Injection Area, view from east. Injection points marked with white pinflags.

ATTACHMENT C

Remington's *Remedial Injection Report*

Remedial Injection Report
Provided for:

Location:
Extraction Oil & Gas
Morrison 33-1 4
39.991684, -104.947656
Thornton, Colorado

December 31, 2019

Ken Worthington
Apex Companies
1746 Cole Blvd., Building 21, Suite 250
Lakewood, CO 80401

December 31, 2019

Re: Remedial Injection Report
Extraction Oil & Gas
Morrison 33-1 4
39.991684, -104.947656
Thornton, Colorado

Dear Mr. Worthington,

Remington Technologies, LLC (Remington) personnel and equipment mobilized to Extraction Oil & Gas Morrison 33-1 4 in Thornton, Colorado on December 10, 2019 for a full-scale remedial injection event. During this event, 1,895 gallons of remedial solution was injected into 27 temporary injection over three days. Remington completed the work on December 12, 2019.

Pre-Injection Activities

- Remington obtained water from an off-site hydrant in neighboring Weld County for injection and clean-up activities.
- Utility locates were reviewed and verified for the ground disturbance permit.
- Remington discussed the Scope of Work (SOW) with consultant Kevin Ambrose of Apex Companies (Apex). An initial plan to perform tasks was communicated between the party representatives of Apex and Remington.
- Before work began, the job hazard analyses (JHAs), health and safety plan (HASP), and emergency evacuation routes were discussed.
- The daily safety meetings were documented by signing Remington's daily tailgate forms. These forms were kept in the Remington company vehicle for inspection for the duration of the project.

Injection Activities

- Remington utilized a Geoprobe 7822 DT and direct push technology (DPT) to advance temporary injection points to specified depths at the above-referenced site.
- A COGAC™ slurry was injected into 27 points in concentrations of 13% and 12%.

- Due to over-saturation in the subsurface, six injection points were eliminated from the injection plan.
- After injections, each point was abandoned by backfilling with bentonite chips from the bottom of the borehole to 1.5 feet bgs. Sand was placed above the bentonite to 6 inches bgs. The remaining 6 inches was completed with native material to match the existing site conditions.
- All actions were communicated with Extraction Oil and Gas and/or Apex representatives.

The proposed SOW was completed with the following deviations:

Proposed SOW	Deviations from Proposed SOW
33 temporary injection points	27 temporary injection points
2,475 gallons COGAC™ slurry	1,895 gallons COGAC™ slurry
2,475 pounds COGAC™ slurry	1,990 pounds COGAC™

Waste Disposal:

During this event, all points were advanced and injected using DPT. Therefore, no 55-gallon drums were used.

Summary

In summary, the scope of work, as outlined in the October 28, 2019 Remedial Injection Plan for the Extraction Oil & Gas Morrison 33-1 Tank Battery Site was completed in three workdays. A total of 1,895 gallons of COGAC™ slurry was injected. The slurry was delivered in concentrations of 12% and 13% and contained 1,990 total pounds of COGAC™. Details regarding injection parameters can be found in Tables 1 through 3 below. An injection summary is provided in Table 4.

Before Remington personnel departed, representatives conducted a site walk to pick up any remaining items on site.

If you have any questions or comments, please feel free to contact me at 970-278-1646.

Sincerely,

Remington Technologies, LLC

Susan Harem
Office Manager
SHarem@RemingtonTech.Net

Table 1

FIELD INJECTION LOG SHEET																
Client / Project			Extraction O&G - Morrison 33-1 4						Client Representative			Kevin Ambrose (Apex Cos.)				
Location			39.991684, -104.947656 -105.026388, Thornton, WY						Remington Technicians			Joe Fletcher, David Moore, John Miller, Marcus Maldonado				
Injection Scope of Work			12 points / COGAC™ - 13% / 905 gal. / 1,000#													
Boring / Well ID No.	Date (m/d/y)	Start Time (hh:mm)	End Time (hh:mm)	Total Time (min)	Injection Interval (bgs)	Average Pressure (psi)	Solution %	Total Injected @ interval (gal)	Total Injected @ interval (lbs.)	Average Flow Rate (gpm)	Pump Method	Borehole Clearance Method	DP / Auger Packer	Break Through Pressure (psi)	Surface Y/N	Feet / Direction Surfacing
IP-1	12/10/19	11:10	11:15	5	5'-10'	10	13%	75	83	15.00	SPX	N/A	DP	120	N	None
IP-2	12/10/19	11:35	11:40	5	5'-10'	10	13%	50	55	10.00	SPX	N/A	DP	100	N	None
IP-2	12/10/19	11:52	11:56	4	5'-10'	10	13%	25	27	6.25	SPX	N/A	DP		N	None
IP-3	12/10/19	12:11	12:15	4	5'-10'	10	13%	75	83	18.75	SPX	N/A	DP	100	N	None
IP-4	12/10/19	12:30	12:38	8	5'-10'	10	13%	75	83	9.38	SPX	N/A	DP	100	N	None
IP-5	12/10/19	13:01	13:08	7	5'-10'	10	13%	75	83	10.71	SPX	N/A	DP	110	N	None
IP-6	12/10/19	13:20	13:35	15	5'-10'	10	13%	75	83	5.00	SPX	N/A	DP	120	N	None
IP-7	12/10/19	14:03	14:08	5	5'-10'	10	13%	75	83	15.00	SPX	N/A	DP	120	N	None
IP-8	12/10/19	14:23	14:32	9	5'-10'	10	13%	75	83	8.33	SPX	N/A	DP	120	N	None
IP-9	12/10/19	14:40	14:47	7	5'-10'	10	13%	75	83	10.71	SPX	N/A	DP	110	N	None
IP-10	12/10/19	14:56	15:04	8	5'-10'	10	13%	80	88	10.00	SPX	N/A	DP	115	N	None
IP-11	12/10/19	15:12	15:20	8	5'-10'	5	13%	30	33	3.75	SPX	N/A	DP	100	N	None
IP-12	12/10/19	15:32	15:42	10	5'-10'	10	13%	120	133	12.00	SPX	N/A	DP	115	N	None
Number of Injection Points			12		Daily Total Injected (gal)				905			Total Number of Locations Daylighted			0	
Number of Drums Used			0		Daily Total Chemical (lbs)				1,000			Number of Wells Installed			0	

Table 2

FIELD INJECTION LOG SHEET																
Client / Project			Extraction O&G - Morrison 33-1 4						Client Representative		Kevin Ambrose (Apex Cos.)					
Location			39.991684, -104.947656 -105.026388, Thornton, WY						Remington Technicians		Joe Fletcher, David Moore, John Miller, Marcus Maldonado					
Injection Scope of Work			12 points / COGAC™ - 12% / 815 gal. / 815#													
Boring / Well ID No.	Date (m/d/y)	Start Time (hh:mm)	End Time (hh:mm)	Total Time (min)	Injection Interval (bgs)	Average Pressure (psi)	Solution %	Total Injected @ interval (gal)	Total Injected @ interval (lbs.)	Average Flow Rate (gpm)	Pump Method	Borehole Clearance Method	DP / Auger Packer	Break Through Pressure (psi)	Surface Y/N	Feet / Direction Surfacing
IP-13	12/11/19	9:27	9:32	5	5'-10'	10	12%	75	75	15.00	SPX	N/A	DP	100	N	None
IP-14	12/11/19	9:48	9:54	6	5'-10'	15	12%	75	75	12.50	SPX	N/A	DP	100	N	None
IP-15	12/11/19	10:08	10:15	7	5'-10'	15	12%	75	75	10.71	SPX	N/A	DP	115	N	None
IP-16	12/11/19	10:33	10:40	7	5'-10'	10	12%	75	75	10.71	SPX	N/A	DP	110	N	None
IP-17	12/11/19	10:58	11:05	7	5'-10'	10	12%	75	75	10.71	SPX	N/A	DP	100	N	None
IP-18	12/11/19	11:27	11:30	3	5'-10'	10	12%	75	75	25.00	SPX	N/A	DP	100	N	None
IP-19	12/11/19	12:30	12:35	5	5'-10'	20	12%	75	75	15.00	SPX	N/A	DP	100	N	None
IP-20	12/11/19	12:52	13:00	8	5'-10'	150	12%	75	75	9.38	SPX	N/A	DP	100	N	None
IP-21	12/11/19	13:21	13:28	7	5'-10'	15	12%	75	75	10.71	SPX	N/A	DP	100	N	None
IP-22	12/11/19	13:41	13:47	6	5'-10'	15	12%	75	75	12.50	SPX	N/A	DP	115	N	None
IP-23	12/11/19	14:03	14:11	8	5'-10'	15	12%	25	25	3.13	SPX	N/A	DP	120	N	None
IP-24	12/11/19	14:22	14:28	6	5'-10'	10	12%	40	40	6.67	SPX	N/A	DP	115	N	None
Number of Injection Points			12		Daily Total Injected (gal)				815		Total Number of Locations Daylighted				0	
Number of Drums Used			0		Daily Total Chemical (lbs)				815		Number of Wells Installed				0	

Table 3

FIELD INJECTION LOG SHEET																
Client / Project			Extraction O&G - Morrison 33-1 4						Client Representative		Kevin Ambrose (Apex Cos.)					
Location			39.991684, -104.947656 -105.026388, Thornton, WY						Remington Technicians		Joe Fletcher, David Moore, John Miller, Marcus Maldonado					
Injection Scope of Work			3 points / COGAC™ - 12% / 175 gal. / 175#													
Boring / Well ID No.	Date (m/d/y)	Start Time (hh:mm)	End Time (hh:mm)	Total Time (min)	Injection Interval (bgs)	Average Pressure (psi)	Solution %	Total Injected @ interval (gal)	Total Injected @ interval (lbs.)	Average Flow Rate (gpm)	Pump Method	Borehole Clearance Method	DP / Auger Packer	Break Through Pressure (psi)	Surface Y/N	Feet / Direction Surfacing
IP-25	12/12/19	9:15	9:24	9	5'-10'	15	12%	85	85	9.44	SPX	N/A	DP	115	Y	45' NE
IP-26	12/12/19	9:45	9:50	5	5'-10'	30	12%	20	20	4.00	SPX	N/A	DP	115	Y	63" NE
IP-27	12/12/19	10:06	10:13	7	5'-10'	15	12%	70	70	10.00	SPX	N/A	DP	115	N	None
Number of Injection Points			3		Daily Total Injected (gal)				175		Total Number of Locations Daylighted				2	
Number of Drums Used			0		Daily Total Chemical (lbs)				175		Number of Wells Installed				0	

Table 4

INJECTION LOG SUMMARY Extraction O&G - Morrison 33-1 4									
Day	Date (m/d/y)	Total Time (min)	Average Pressure (psi)	Total Injected (gal.)	Total Injected (lbs.)	Average Flow Rate (gal/min)	Average Break Through Pressure (psi)	Total Number of Points That Surfaced	Total Number of Points
Day 1	12/10/19	95	10	905	1000	10	111	0	12
Day 2	12/11/19	75	25	815	815	5	106	0	12
Day 3	12/12/19	21	20	175	175	8	115	2	3
Injection Summary		191	17	1895	1990	11	109	2	27

Injection Maps

Extraction Oil & Gas

Morrison 33-1 4 (EAST)
COGCC Location ID: 320318
Temporary Monitoring Well Layout & GW Elevations for the 5/30/2019 Sampling Event

Legal Description: NWSE, Sec 1, T1S R68W
County: Adams
Land Use: Cropland
Topography: 0-3% Slopes
Run-Off Risk: Low
Soil Type: Arvada loam
Receiving Waters: Big Dry Creek

BH-1
80.60-ft
Temp. Monitoring Well Location & Relative GW Elevation

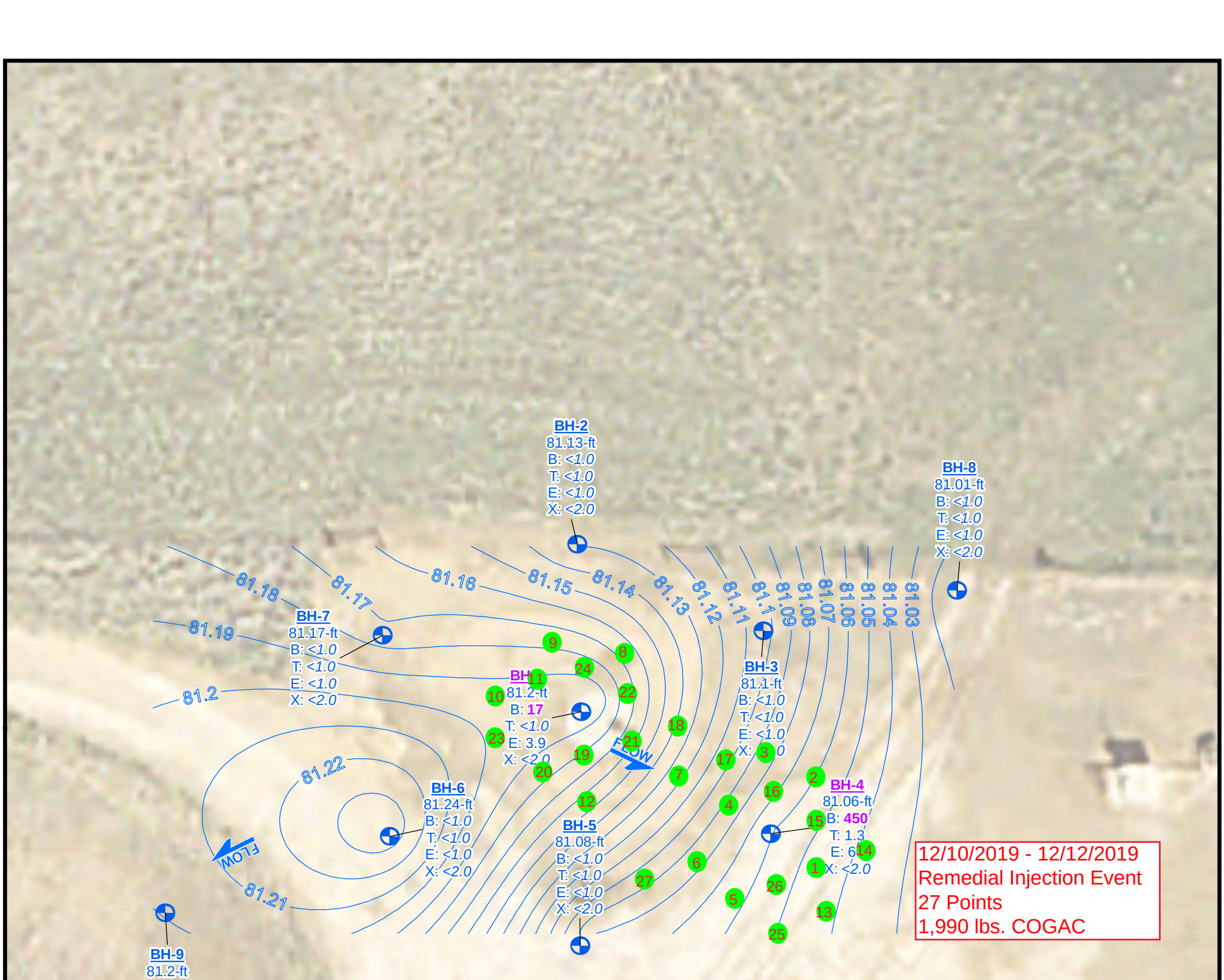
Estimated Groundwater Contour

FLOW
Estimated Groundwater Flow Direction

*** Sample ID in Purple font indicates a regulatory exceedance.**

*** Organic Compounds in ug/L**

Sample ID	Latitude NAD83	Longitude NAD 83
BH-1	39.991684	-104.947656
BH-2	39.991743	-104.947658
BH-3	39.991713	-104.947574
BH-4	39.991642	-104.947570
BH-5	39.991603	-104.947657
BH-6	39.991641	-104.947743
BH-7	39.991711	-104.947747
BH-8	39.991727	-104.947486
BH-9	39.991614	-104.947845



Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.

ATTACHMENT D

Laboratory Analytical Report

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 13, 2019

Maggie Graham

Extraction Oil&Gas

370 17th Street Suite 5300

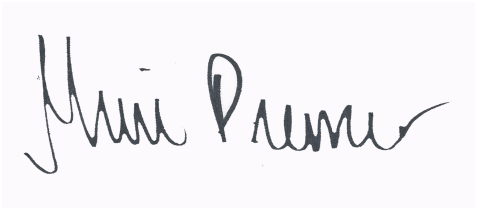
Denver, CO 80202

RE: Morrison 33-1

Work Order # 1912105

Enclosed are the results of analyses for samples received by Summit Scientific on 12/06/19 14:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury

President

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-1	1912105-01	Water	12/06/19 12:50	12/06/19 14:50
BH-2	1912105-02	Water	12/06/19 13:38	12/06/19 14:50
BH-3	1912105-03	Water	12/06/19 13:05	12/06/19 14:50
BH-4	1912105-04	Water	12/06/19 13:22	12/06/19 14:50
BH-6	1912105-05	Water	12/06/19 13:15	12/06/19 14:50
BH-7	1912105-06	Water	12/06/19 13:30	12/06/19 14:50
BH-8	1912105-07	Water	12/06/19 12:42	12/06/19 14:50
BH-9	1912105-08	Water	12/06/19 12:10	12/06/19 14:50
BH-10	1912105-09	Water	12/06/19 12:30	12/06/19 14:50
BH-11	1912105-10	Water	12/06/19 12:10	12/06/19 14:50

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

1912105

Summit Scientific

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 Fax

Client: APEX Companies, LLC
Address: 176 Cole Blvd. Suite 250
City/State/Zip: Lakewood, Colorado 80101
Phone: 720-501-5065 Fax:
Sampler Name: Kevin Ambrose

Project Manager: Maggie Graham 720-501-5065; 907-538-7699c
E-Mail: DenverRemediation@ApexCos.onmicrosoft.com
Project Name: Morrison 33-1
Project Number: 744.1804.01 - 320318

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: BTEX	Analyze For:	Analyze For: RUSH	Analyze For:	Analyze For:	Analyze For:	Analyze For:	Analyze For:	Special Instructions
BH-1	12/6/19	1250	3	X				X				X		X						Call Maggie Graham with questions
BH-2		1338																		
BH-3		1305																		
BH-4		1322												X						Same day TAT on BH-1 & BH-4
BH-6		1315																		
BH-7		1330																		
BH-8		1242																		
BH-9		1210																		
BH-10		1230																		
BH-11		1210																		

Relinquished by: Date/Time: 12/6/19 1450
Received by: Date/Time: 12-6-19 1450

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day [ ]
24 Hours [ ]
48 Hours [ ]
72 Hours [ ]
Standard [X]

Sample Integrity:
Temperature Upon Receipt: 7.8°
Intact: Yes [X] No [ ]

Notes
Circle applicable regulatory agency:
COGCC/ CDPHE
Client Name: XOG

Sample Receipt Checklist

S2 Work Order 1912105

Client: Apex / XOG Client Project ID: Morrison 33-1

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

Matrix (check all that apply): _____Air _____Soil/Solid X Water ____Other:_____ (Describe)

Temp (°C)	7.8°

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [1]? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			on ice
Were all samples received intact [1]?	✓			
Was adequate sample volume provided [1]?	✓			
If custody seals are present, are they intact [1]?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?	✓			Same Day
Is a chain-of-custody (COC) form present and filled out completely [1]?	✓			
Does the COC agree with the number and type of sample bottles received [1]?	✓			
Do the sample IDs on the bottle labels match the COC [1]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		✓		
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2 [1]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**

AT — **Custodian Printed Name or Initials**

Signature of Custodian

12-6-19, 1450 — **Date/Time**

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-1

1912105-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**39**	1.0	ug/l	1	1912085	12/06/19	12/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	**20**	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*116 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-2

1912105-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 13:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 13:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*129 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-3

1912105-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*128 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*106 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.1804.01-320318 Project Manager: Maggie Graham	**Reported:** 12/13/19 10:32

BH-4

1912105-04 (Water)

Summit Scientific

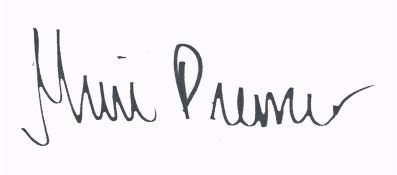
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 13:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/07/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 13:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.1 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.1804.01-320318 Project Manager: Maggie Graham	**Reported:** 12/13/19 10:32

BH-6

1912105-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*126 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-7
1912105-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*127 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.7 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-8

1912105-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 12:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 12:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*123 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-9

1912105-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*125 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.1804.01-320318 Project Manager: Maggie Graham	**Reported:** 12/13/19 10:32

BH-10

1912105-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*129 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

BH-11

1912105-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/06/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1912085	12/06/19	12/09/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **12/06/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*126 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*106 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*21-167*		"	"	"	"	

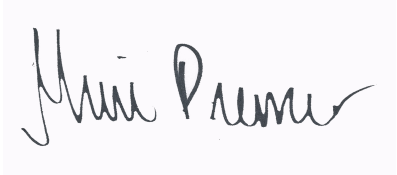
S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1912085 - EPA 5030 Water MS										
Blank (1912085-BLK1)				Prepared & Analyzed: 12/06/19						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*14.7*		*"*	*13.3*		*110*	*23-173*			
Surrogate: Toluene-d8	*13.0*		*"*	*13.3*		*97.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.5*		*"*	*13.3*		*101*	*21-167*			
LCS (1912085-BS1)				Prepared & Analyzed: 12/06/19						
Benzene	35.9	1.0	ug/l	33.3		108	51-132			
Toluene	36.7	1.0	"	33.3		110	51-138			
Ethylbenzene	36.7	1.0	"	33.3		110	58-146			
m,p-Xylene	72.4	2.0	"	66.7		109	57-144			
o-Xylene	35.8	1.0	"	33.3		107	53-146			
Surrogate: 1,2-Dichloroethane-d4	*14.3*		*"*	*13.3*		*107*	*23-173*			
Surrogate: Toluene-d8	*13.4*		*"*	*13.3*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.7*	*21-167*			
Matrix Spike (1912085-MS1)	**Source: 1912105-04**			Prepared & Analyzed: 12/06/19						
Benzene	32.6	1.0	ug/l	33.3	ND	97.8	34-141			
Toluene	33.3	1.0	"	33.3	ND	99.8	27-151			
Ethylbenzene	34.5	1.0	"	33.3	ND	104	29-160			
m,p-Xylene	68.4	2.0	"	66.7	ND	103	20-166			
o-Xylene	33.0	1.0	"	33.3	ND	98.9	33-159			
Surrogate: 1,2-Dichloroethane-d4	*14.6*		*"*	*13.3*		*109*	*23-173*			
Surrogate: Toluene-d8	*13.0*		*"*	*13.3*		*97.3*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.9*	*21-167*			



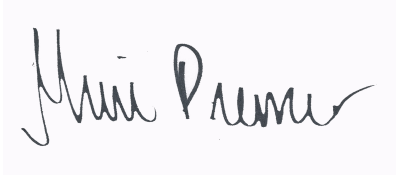
S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1912085 - EPA 5030 Water MS										
Matrix Spike Dup (1912085-MSD1)	**Source: 1912105-04**			Prepared & Analyzed: 12/06/19						
Benzene	33.0	1.0	ug/l	33.3	ND	99.2	34-141	1.40	30	
Toluene	34.6	1.0	"	33.3	ND	104	27-151	3.77	30	
Ethylbenzene	34.9	1.0	"	33.3	ND	105	29-160	1.27	30	
m,p-Xylene	68.4	2.0	"	66.7	ND	103	20-166	0.0292	30	
o-Xylene	32.8	1.0	"	33.3	ND	98.3	33-159	0.639	30	
Surrogate: 1,2-Dichloroethane-d4	*14.2*		*"*	*13.3*		*107*	*23-173*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.3*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.7*	*21-167*			



S2

Extraction Oil&Gas	Project: Morrison 33-1	
370 17th Street Suite 5300	Project Number: 744.1804.01-320318	**Reported:**
Denver CO, 80202	Project Manager: Maggie Graham	12/13/19 10:32

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

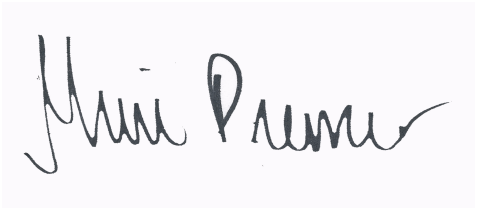
January 23, 2020

Maggie Graham
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Morrison 33-14
Work Order #2001207

Enclosed are the results of analyses for samples received by Summit Scientific on 01/17/20 14:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2001207-01	Water	01/17/20 12:35	01/17/20 14:35
BH02	2001207-02	Water	01/17/20 12:15	01/17/20 14:35
BH03	2001207-03	Water	01/17/20 12:30	01/17/20 14:35
BH04	2001207-04	Water	01/17/20 13:25	01/17/20 14:35
BH06	2001207-05	Water	01/17/20 11:55	01/17/20 14:35
BH07	2001207-06	Water	01/17/20 11:40	01/17/20 14:35
BH08	2001207-07	Water	01/17/20 12:45	01/17/20 14:35
BH09	2001207-08	Water	01/17/20 11:25	01/17/20 14:35
BH10	2001207-09	Water	01/17/20 13:00	01/17/20 14:35
BH11	2001207-10	Water	01/17/20 13:15	01/17/20 14:35

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

200/207

Summit Scientific

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 Fax

Client: APEX Companies, LLC
Address: 176 Cole Blvd. Suite 250
City/State/Zip: Lakewood, Colorado 80101
Phone: 720-501-5065 Fax:
Sampler Name: Kevin Ambrose

Project Manager: Maggie Graham 720-501-5065; 907-538-7699c
E-Mail: DenverRemediation@ApexCos.onmicrosoft.com
Project Name: Morrison 33-14
Project Number: 744.2001.01 - 320318

				Preservative				Matrix				Analyze For:								
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO_3	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX								Special Instructions
BH01	1/17/20	1335	3	X				X				X								Call Maggie Graham with questions
BH02		1215																		
BH03		1230																		
BH04		1325																		
BH06		1155																		
BH07		1140																		
BH08		1245																		
BH09		1125																		
BH10		1300																		
BH11		1315																		

Relinquished by: Date/Time: 1/17/20 1435
Received by: Date/Time: 1-17-20 1435

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day ☐ 72 Hours ☐
24 Hours ☐ Standard ☒
48 Hours ☐

Sample Integrity:
Temperature Upon Receipt: 9.1°
Intact: Yes ☒ No ☐

Notes
Circle applicable regulatory agency:
COGCC/ CDPHE
Client Name:
XOG

Sample Receipt Checklist

S2 Work Order 200207

Client: Apex/XOG Client Project ID: Morrison 33-14

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

Matrix (check all that apply): _____Air _____Soil/Solid ___X___Water ____Other:_____
(Describe)

Temp (°C)	9.0

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [(1)]? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			on ice
Were all samples received intact [(1)]?	✓			
Was adequate sample volume provided [(1)]?	✓			
If custody seals are present, are they intact [(1)]?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely [(1)]?	✓			
Does the COC agree with the number and type of sample bottles received [(1)]?	✓			
Do the sample IDs on the bottle labels match the COC [(1)]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [(1)]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		✓		
Are samples preserved that require preservation **(excluding cooling)** [(1)]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2[(1)]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

[(1)] If NO, then contact the client before proceeding with analysis and note in case narrative.

AT		1-17-20, 1435
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH01

2001207-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/21/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH02

2001207-02 (Water)

Summit Scientific

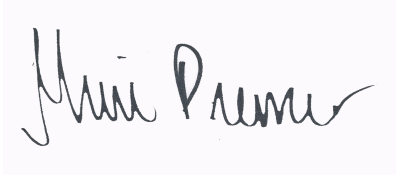
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*119 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.1 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH03

2001207-03 (Water)

Summit Scientific

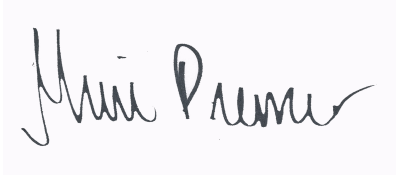
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH04

2001207-04 (Water)

Summit Scientific

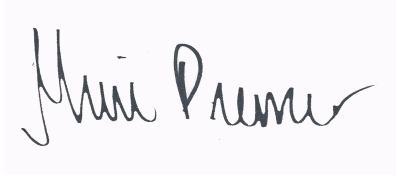
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**6.9**	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*97.5 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*115 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH06

2001207-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*114 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH07

2001207-06 (Water)

Summit Scientific

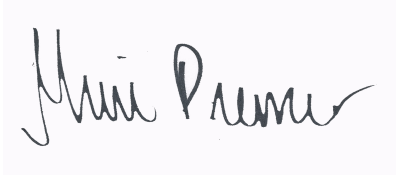
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.4 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH08

2001207-07 (Water)

Summit Scientific

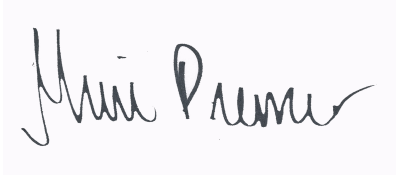
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*114 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH09

2001207-08 (Water)

Summit Scientific

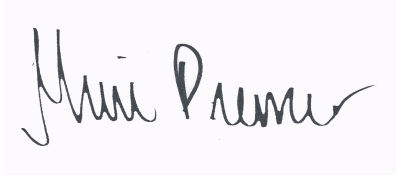
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH10

2001207-09 (Water)

Summit Scientific

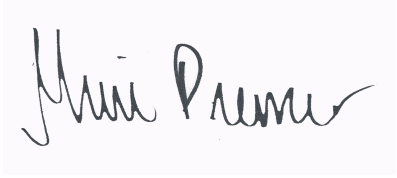
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

BH11

2001207-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/17/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2001262	01/20/20	01/22/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/17/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*112 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*21-167*		"	"	"	"	

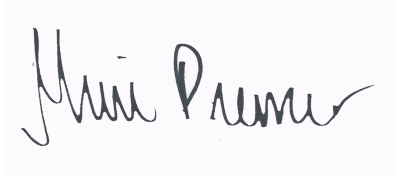
S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2001262 - EPA 5030 Water MS										
Blank (2001262-BLK1)				Prepared: 01/20/20 Analyzed: 01/21/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*14.6*		"	*13.3*		*110*	*23-173*			
Surrogate: Toluene-d8	*13.2*		"	*13.3*		*99.3*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.6*		"	*13.3*		*110*	*21-167*			
LCS (2001262-BS1)				Prepared: 01/20/20 Analyzed: 01/21/20						
Benzene	36.6	1.0	ug/l	33.3		110	51-132			
Toluene	37.6	1.0	"	33.3		113	51-138			
Ethylbenzene	39.5	1.0	"	33.3		119	58-146			
m,p-Xylene	76.4	2.0	"	66.7		115	57-144			
o-Xylene	37.7	1.0	"	33.3		113	53-146			
Surrogate: 1,2-Dichloroethane-d4	*13.6*		"	*13.3*		*102*	*23-173*			
Surrogate: Toluene-d8	*13.5*		"	*13.3*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.0*		"	*13.3*		*105*	*21-167*			
Matrix Spike (2001262-MS1)		**Source: 2001206-01**		Prepared: 01/20/20 Analyzed: 01/21/20						
Benzene	37.8	1.0	ug/l	33.3	ND	114	34-141			
Toluene	38.8	1.0	"	33.3	ND	116	27-151			
Ethylbenzene	41.0	1.0	"	33.3	ND	123	29-160			
m,p-Xylene	79.1	2.0	"	66.7	ND	119	20-166			
o-Xylene	38.9	1.0	"	33.3	ND	117	33-159			
Surrogate: 1,2-Dichloroethane-d4	*14.6*		"	*13.3*		*110*	*23-173*			
Surrogate: Toluene-d8	*13.5*		"	*13.3*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.9*		"	*13.3*		*104*	*21-167*			



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2001262 - EPA 5030 Water MS										
Matrix Spike Dup (2001262-MSD1)	**Source: 2001206-01**			Prepared: 01/20/20 Analyzed: 01/21/20						
Benzene	36.0	1.0	ug/l	33.3	ND	108	34-141	4.87	30	
Toluene	36.8	1.0	"	33.3	ND	110	27-151	5.27	30	
Ethylbenzene	40.0	1.0	"	33.3	ND	120	29-160	2.37	30	
m,p-Xylene	77.0	2.0	"	66.7	ND	116	20-166	2.66	30	
o-Xylene	38.0	1.0	"	33.3	ND	114	33-159	2.37	30	
Surrogate: 1,2-Dichloroethane-d4	*14.3*		*"*	*13.3*		*107*	*23-173*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.1*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.0*		*"*	*13.3*		*105*	*21-167*			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 744.2001.01-320318 Project Manager: Maggie Graham	**Reported:** 01/23/20 13:11

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 01, 2020

Maggie Graham
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Morrison 33-1
Work Order #2003303

Enclosed are the results of analyses for samples received by Summit Scientific on 03/25/20 16:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH09	2003303-01	Water	03/25/20 11:40	03/25/20 16:05
BH07	2003303-02	Water	03/25/20 12:05	03/25/20 16:05
BH06	2003303-03	Water	03/25/20 12:30	03/25/20 16:05
BH02	2003303-04	Water	03/25/20 13:05	03/25/20 16:05
BH03	2003303-05	Water	03/25/20 13:25	03/25/20 16:05
BH08	2003303-06	Water	03/25/20 13:50	03/25/20 16:05
BH10	2003303-07	Water	03/25/20 14:05	03/25/20 16:05
BH11	2003303-08	Water	03/25/20 14:20	03/25/20 16:05
BH01	2003303-09	Water	03/25/20 14:45	03/25/20 16:05
BH04	2003303-10	Water	03/25/20 15:00	03/25/20 16:05

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

2003303

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: APEX Companies, LLC
Address: 176 Cole Blvd. Suite 250
City/State/Zip: Lakewood, Colorado 80101
Phone: 720-501-5065 Fax:
Sampler Name: Kevin Ambrose

Project Manager: Maggie Graham 720-501-5065; 907-538-7699c
E-Mail: DenverRemediation@ApexCos.onmicrosoft.com
Project Name: Morrison 33-1
Project Number: 744.2007.01 320318

				Preservative				Matrix				Analyze For:								
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO_3	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX								Special Instructions
BH09	3/25/20	1140	3	X				X				X								Call Maggie Graham with questions
BH07		1205																		
BH06		1230																		
BH02		1305																		
BH03		1325																		
BH08		1350																		
BH10		1405																		
BH11		1420																		
BH01		1445																		
BH04		1500																		

Relinquished by: Date/Time: 3/25/20 1605
Received by: Date/Time: 3-25-2020 1605

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day
24 Hours
48 Hours
72 Hours
Standard X

Sample Integrity:
Temperature Upon Receipt: 4.5°
Intact: Yes No

Notes
Circle applicable regulatory agency:
COGCC/ CDPHE
Client Name: XOG

Sample Receipt Checklist

S2 Work Order 2003303

Client: Apex/XOG Client Project ID: Morrison 33-1

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

Matrix (check all that apply): _____Air _____Soil/Solid ✓ Water ____Other:_____ (Describe)

Temp (°C)	4.5°

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [1]? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			on ice
Were all samples received intact [1]?	✓			
Was adequate sample volume provided [1]?	✓			
If custody seals are present, are they intact [1]?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely [1]?	✓			
Does the COC agree with the number and type of sample bottles received [1]?	✓			
Do the sample IDs on the bottle labels match the COC [1]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		✓		
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**

Custodian Printed Name or Initials	Signature of Custodian	Date/Time
AJ		3-25-2020

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH09

2003303-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	03/31/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*99.9 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.7 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.4 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH07

2003303-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	03/31/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*93.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.6 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH06

2003303-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	03/31/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*93.4 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH02

2003303-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	03/31/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*91.0 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH03

2003303-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	03/31/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.6 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.7 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH08

2003303-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	03/31/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*93.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.3 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH10

2003303-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	04/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.1 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH11

2003303-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003348	03/27/20	04/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.7 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.2 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH01

2003303-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**2.0**	1.0	ug/l	1	2003348	03/27/20	04/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*98.7 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.5 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

BH04

2003303-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/25/20 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**81**	1.0	ug/l	1	2003348	03/27/20	04/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	**14**	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/25/20 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*92.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*124 %*	*21-167*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2003348 - EPA 5030 Water MS										
Blank (2003348-BLK1)				Prepared: 03/27/20 Analyzed: 03/31/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*12.6*		*"*	*13.3*		*94.4*	*23-173*			
Surrogate: Toluene-d8	*12.4*		*"*	*13.3*		*93.2*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.5*		*"*	*13.3*		*93.8*	*21-167*			
LCS (2003348-BS1)				Prepared: 03/27/20 Analyzed: 03/31/20						
Benzene	30.9	1.0	ug/l	33.3		92.7	51-132			
Toluene	31.0	1.0	"	33.3		92.9	51-138			
Ethylbenzene	31.2	1.0	"	33.3		93.6	58-146			
m,p-Xylene	61.8	2.0	"	66.7		92.7	57-144			
o-Xylene	30.1	1.0	"	33.3		90.2	53-146			
Surrogate: 1,2-Dichloroethane-d4	*12.8*		*"*	*13.3*		*96.3*	*23-173*			
Surrogate: Toluene-d8	*12.1*		*"*	*13.3*		*90.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.1*		*"*	*13.3*		*98.0*	*21-167*			
Matrix Spike (2003348-MS1)	**Source: 2003303-03**			Prepared: 03/27/20 Analyzed: 03/31/20						
Benzene	30.5	1.0	ug/l	33.3	ND	91.4	34-141			
Toluene	30.1	1.0	"	33.3	ND	90.2	27-151			
Ethylbenzene	33.1	1.0	"	33.3	ND	99.2	29-160			
m,p-Xylene	64.7	2.0	"	66.7	ND	97.0	20-166			
o-Xylene	31.4	1.0	"	33.3	ND	94.2	33-159			
Surrogate: 1,2-Dichloroethane-d4	*13.5*		*"*	*13.3*		*101*	*23-173*			
Surrogate: Toluene-d8	*12.3*		*"*	*13.3*		*92.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.3*		*"*	*13.3*		*107*	*21-167*			

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2003348 - EPA 5030 Water MS										
Matrix Spike Dup (2003348-MSD1)	**Source: 2003303-03**			Prepared: 03/27/20 Analyzed: 03/31/20						
Benzene	30.3	1.0	ug/l	33.3	ND	90.8	34-141	0.659	30	
Toluene	30.8	1.0	"	33.3	ND	92.4	27-151	2.37	30	
Ethylbenzene	31.5	1.0	"	33.3	ND	94.6	29-160	4.71	30	
m,p-Xylene	61.2	2.0	"	66.7	ND	91.8	20-166	5.51	30	
o-Xylene	29.8	1.0	"	33.3	ND	89.4	33-159	5.20	30	
Surrogate: 1,2-Dichloroethane-d4	*13.5*		*"*	*13.3*		*101*	*23-173*			
Surrogate: Toluene-d8	*12.7*		*"*	*13.3*		*95.4*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.8*		*"*	*13.3*		*104*	*21-167*			

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-1 Project Number: 744.2002.01 320318 Project Manager: Maggie Graham	**Reported:** 04/01/20 14:25

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

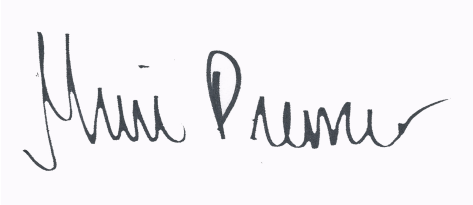
July 07, 2020

Maggie Graham
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Morrison 33-14
Work Order #2006360

Enclosed are the results of analyses for samples received by Summit Scientific on 06/29/20 14:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2006360-01	Water	06/29/20 13:05	06/29/20 14:35
BH02	2006360-02	Water	06/29/20 12:31	06/29/20 14:35
BH03	2006360-03	Water	06/29/20 12:03	06/29/20 14:35
BH04	2006360-04	Water	06/29/20 13:30	06/29/20 14:35
BH07	2006360-05	Water	06/29/20 11:33	06/29/20 14:35
BH08	2006360-06	Water	06/29/20 12:30	06/29/20 14:35
BH09	2006360-07	Water	06/29/20 11:11	06/29/20 14:35
BH10	2006360-08	Water	06/29/20 11:30	06/29/20 14:35
BH11	2006360-09	Water	06/29/20 10:30	06/29/20 14:35

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

2006360

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: APEX Companies, LLC
Address: 176 Cole Blvd. Suite 250
City/State/Zip: Lakewood, Colorado 80101
Phone: 720-501-5065 Fax:
Sampler Name:

Project Manager: Maggie Graham 720-501-5065; 907-538-7699c
E-Mail: DenverRemediation@ApexCos.onmicrosoft.com
Project Name: Morrison 33-14
Project Number: 2347-

				Preservative				Matrix				Analyze For:								
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO_3	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX								Special Instructions
BH01	6/29/10	1305	3	X				X				X								Call Maggie Graham with questions
BH02		1231																		
BH03		1203																		
BH04		1330																		
BH07		1133																		
BH08		1230																		
BH09		1111																		
BH10		1130																		
BH11		1030																		

Relinquished by: Date/Time: 6/29/30 1435
Received by: Date/Time: 6-29-2010 1435

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day ☐ 72 Hours ☐
24 Hours ☐ Standard ☒
48 Hours ☐

Sample Integrity:
Temperature Upon Receipt: 21.5°
Intact: Yes ☑ No ☐

Notes
Circle applicable regulatory agency:
COGCC/ CDPHE
Client Name:
XOG

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order 2006360

Client: Apex / XOG Client Project ID: Morrison 33-1 4

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (check all that apply): ____Air ____Soil/Solid ✓ Water ____Other: _____ (Describe)

Temp (°C)	21.5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [1]? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			on ice
Were all samples received intact [1]?	✓			
Was adequate sample volume provided [1]?	✓			
If custody seals are present, are they intact [1]?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely [1]?	✓			
Does the COC agree with the number and type of sample bottles received [1]?	✓			
Do the sample IDs on the bottle labels match the COC [1]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		✓		
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2 [1]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				
[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**				

AT — **Custodian Printed Name or Initials**

Signature of Custodian

6-29-2020 — **Date/Time**

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH01

2006360-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**50**	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	**13**	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*84.7 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*77.8 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH02

2006360-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 12:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 12:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*68.6 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*73.0 %*	*21-167*		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH03

2006360-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*99.5 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*73.5 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.1 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH04

2006360-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**1.2**	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*75.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*74.6 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH07

2006360-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*48.8 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.1 %*	*21-167*		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH08

2006360-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*62.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*83.5 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH09

2006360-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*74.1 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*83.8 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH10

2006360-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*72.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*84.5 %*	*21-167*		"	"	"	"	

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

BH11

2006360-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2007019	07/01/20	07/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **06/29/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*75.1 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*83.2 %*	*21-167*		"	"	"	"	

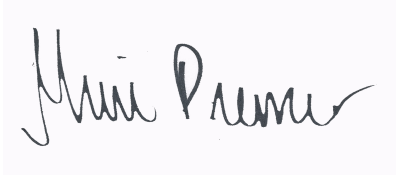
S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2007019 - EPA 5030 Water MS										
Blank (2007019-BLK1)				Prepared: 07/01/20 Analyzed: 07/02/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*7.82*		*"*	*13.3*		*58.7*	*23-173*			
Surrogate: Toluene-d8	*12.6*		*"*	*13.3*		*94.1*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*11.5*		*"*	*13.3*		*86.0*	*21-167*			
LCS (2007019-BS1)				Prepared: 07/01/20 Analyzed: 07/02/20						
Benzene	21.9	1.0	ug/l	33.3		65.7	51-132			
Toluene	27.0	1.0	"	33.3		80.9	51-138			
Ethylbenzene	33.2	1.0	"	33.3		99.7	58-146			
m,p-Xylene	61.2	2.0	"	66.7		91.7	57-144			
o-Xylene	29.0	1.0	"	33.3		87.1	53-146			
Surrogate: 1,2-Dichloroethane-d4	*7.58*		*"*	*13.3*		*56.9*	*23-173*			
Surrogate: Toluene-d8	*13.8*		*"*	*13.3*		*103*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.3*		*"*	*13.3*		*92.2*	*21-167*			
Matrix Spike (2007019-MS1)		**Source: 2006342-06**		Prepared: 07/01/20 Analyzed: 07/02/20						
Benzene	26.3	1.0	ug/l	33.3	ND	78.8	34-141			
Toluene	27.8	1.0	"	33.3	ND	83.3	27-151			
Ethylbenzene	33.0	1.0	"	33.3	ND	98.9	29-160			
m,p-Xylene	63.7	2.0	"	66.7	ND	95.5	20-166			
o-Xylene	29.5	1.0	"	33.3	ND	88.5	33-159			
Surrogate: 1,2-Dichloroethane-d4	*6.67*		*"*	*13.3*		*50.0*	*23-173*			
Surrogate: Toluene-d8	*13.8*		*"*	*13.3*		*103*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.8*		*"*	*13.3*		*96.3*	*21-167*			



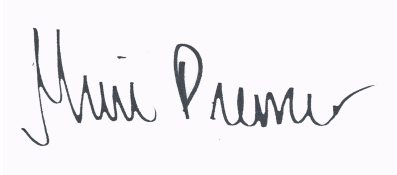
S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2007019 - EPA 5030 Water MS										
Matrix Spike Dup (2007019-MSD1)	**Source: 2006342-06**			Prepared: 07/01/20 Analyzed: 07/02/20						
Benzene	26.8	1.0	ug/l	33.3	ND	80.5	34-141	2.11	30	
Toluene	28.2	1.0	"	33.3	ND	84.5	27-151	1.50	30	
Ethylbenzene	31.6	1.0	"	33.3	ND	94.7	29-160	4.25	30	
m,p-Xylene	59.6	2.0	"	66.7	ND	89.3	20-166	6.65	30	
o-Xylene	27.9	1.0	"	33.3	ND	83.8	33-159	5.47	30	
Surrogate: 1,2-Dichloroethane-d4	*9.30*		*"*	*13.3*		*69.8*	*23-173*			
Surrogate: Toluene-d8	*13.5*		*"*	*13.3*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.9*		*"*	*13.3*		*96.9*	*21-167*			



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Morrison 33-14 Project Number: 2347- Project Manager: Maggie Graham	**Reported:** 07/07/20 12:42

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference