Groundwater and Soil Vapor Sampling Results

District Six C6
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NENE Section 20, Township 5 North, Range 65 West

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INTRODUCTION

Apex Companies, LLC (Apex) has been contracted by Extraction Oil & Gas Inc. (Extraction) to complete monitoring activities, provide data review services, and to prepare reports detailing the results and findings of monitoring activities. The following document is the initial installation and monitoring report for activities conducted during the second quarter of 2020 to support the site investigation of the plugged and abandoned well District Six C6 following a mechanical integrity test failure.

Per the site investigation and remediation project #13928 conditions of approval and amended by the Site Investigation and Remediation Workplan (Form 27), document 402332199, five monitoring wells were installed, and sample analyzed for all constituents in Table 7-1 of the Colorado Oil and Gas Conservation Commission (COGCC) Model Sample and Analysis Plan (SAP) with the exception of biological activity reaction tests (BART). Laboratory results will be uploaded into the Colorado Environmental (COENV) database and identified impacts will be reported, as required for each discovery. In addition, eight soil vapor monitoring points were installed, and field screened for methane. A subsequent Form 27 will be submitted following work completion.

BACKGROUND

Groundwater Well Installation and Development

Groundwater monitoring well 5993-MH MW-1 (MW-1) was installed on August 28, 2019, using an auger drilling rig. The total depth is 85-feet below ground surface (bgs) and has 40-feet of screen (45 to 85-feet bgs). The well is completed at the surface with a flush-mounted well box and is set in a two-foot by two-foot by six-inch concrete pad. The groundwater monitoring well was permitted through the Division of Water Resources. See **Attachment B** for well permit records.

Immediately upon installation of the well, positive pressure and emitting vapors were reported at the well site. Positive pressuring during the MW-1 well development was observed to be less than after well installation and remained low during the well development purging process.

MW-1 well development was re-completed on October 15, 2019 to confirm parameter stabilization using a low-flow purge method. Per *U.S EPA Environmental Response Standard Operating Procedures for Monitoring Well Development* (2001), the well shall be considered developed upon parameter stabilization or once the turbidity is below 50 Nephelometric Turbidity Units (NTU). During the well development, turbidity never reached values of less than 100 NTU; however, field parameters values did stabilize per ASTM D4448-01 (Reapproved 2019) Standard Guide for Sampling Ground-Water Monitoring Wells guidance. No positive pressure values of concerns were noted.

Groundwater Sampling Activities and Results

The initial sample at MW-1 was collected on October 17, 2019. Laboratory data for the sample is accessible in the Colorado Environmental Database, Sample ID 613357. During the initial sample, laboratory reported levels for benzene exceeded the Table 910-1threshold; there was a slight detection of total petroleum hydrocarbon, gasoline range organics (GRO); and methane results indicated the gas was of thermogenic origin.

Groundwater Isotopic Interpretation

Isotopic water data from MW-1 was compared to the District Six C6 bradenhead sample (Sample ID 606506), gathered from the Colorado Environmental Database. The data indicates that the MW-1 sample could be related to the bradenhead sample. The methane, ethane, and propane have the same thermogenic source and there was no appreciable mixing of methane from alternative sources. The likely source would be consistent with gas from the J-Sand / Codell / Niobrara production zone. Variations in mole % (MOL) can be explained by solubility and dilution effects that are acting on the MW-1 sample, but not on the bradenhead sample. Hydrocarbons tend to have low solubilities in water and water solubilities tend to decrease with hydrocarbon mass, thus the expectation is progressively less of the heavier hydrocarbons dissolve in water for aqueous samples that are in equilibrium with gas. Therefore, it is expected to see much less butane, pentane and C6+ in the MW-1 sample than we see in the bradenhead gas. The lower British Thermal Unit (BTU) of the MW-1 sample is also explainable by this effect.

Isotope ratio plots, indicate the bradenhead plots almost coincident with the MW-1 sample with variation of <5%. Variations for d13C2 and d13C3 between the two samples are even lower (within 2%) as expected due to reduced chance for any minor mixing with biogenic methane in the area.

Soil Vapor Monitoring Well Installations

Eight soil vapor monitoring wells were installed on August 28, 2019. The wells are dual-nested into four casings and are radially located, approximately 5-feet from the District Six C6 production well, and are identified as:

- SVP-1-5
- SVP-1-30
- SVP-2-5
- SVP-2-30
- SVP-3-5
- SVP-3-30
- SVP-4-5
- SVP-4-30

Soil vapor probes SVP-1 through SVP-4 were each advanced to 30-feet bgs using a hollow stem auger rig equipped with 6-inch augers. Probes were installed at each location at approximately five and 30-feet bgs. The probe depths are differentiated at the surface using different lengths of stick-up, with the longer tubing associated with the 30-foot probe and the shorter tubing associated with the five-foot probe.

See **Attachment D** for the Soil Vapor Monitoring Probe Construction Diagram

Division of Water Resources Water Wells

All Colorado Division of Water Resources (DWR) water wells within a quarter mile radius were identified and evaluated for inclusion in a sampling event as part of the COGCC approved action plan. All DWR permitted water sources within the quarter-mile radius were eliminated based on an abandoned, incomplete, or expired permit status or after completion of field verification. One water source, Doty 160051, Facility ID 754055, located 0.33 miles from the District Six C6 well was sampled on

March 27, 2020. Laboratory data for the sample is accessible in the Colorado Environmental Database, Sample ID 615638. Laboratory analysis indicated no constituents exceeded the threshold limits for immediate COGCC or landowner notification as specified in the COGCC Model SAP.

QUARTERLY ACTIVITIES

Groundwater Well Elevation Survey

Surface elevations were surveyed at a point at the top of the well casings. These locations were used as a reference point for measuring groundwater depths. See **Attachment E** for monitoring well gauging and inferred groundwater flow diagrams.

Based on elevation data, groundwater flow direction is assumed to be moving in a southwesterly direction.

Groundwater Well Installation

Per the COGCC approved action plan, four additional groundwater monitoring wells around MW-1 were installed to further define the point of compliance. Apex contracted Cascade Drilling and Technical Services (Cascade) for drilling and well completion activities. Groundwater monitoring wells MW-2 through MW-5 were installed between April 21, 2020 to April 30, 2020 using an auger drilling rig. The wells were laid out radially around MW-1. See **Attachment A** for a well location map.

Monitoring wells 60666-MH MW-3 (MW-3), 60666-MH MW-4 (MW-4), and 60666- MH MW-5 (MW-5), were drilling and installed at a depth of approximately 85-feet bgs. Each well has a screened interval of 40 feet.

60666-MH MW-2 (MW-2) was drilled and set at a of depth of 60 feet bgs with 25 feet of screen. MW-2 was placed at a shallower depth than other onsite wells due to heath and safety concerns associated with methane observed during drilling activities.

The groundwater monitoring wells were permitted through the Division of Water Resources – Permit #60666-MH, Receipt #0060666. See **Attachment B** for well permit records and **Attachment C** for well borehole logs and monitoring well completion reports.

Groundwater Wells Development

All monitoring wells were developed prior to sampling using a low-flow purge method and parameter stabilization per *U.S EPA Environmental Response Standard Operating Procedures for Monitoring Well Development* (2001) procedures at MW-3, MW-4, and MW-5.

During the development at MW-2, elevated atmospheric gas readings were again detected, and additional safety measures were taken to dissipate any potential for an explosive atmosphere at the surface during well development. Field parameter stabilization was not achieved at MW-2, so a volumetric purge method was used.

FIELD MEASUREMENTS AND LABORATORY DATA SUMMARY

Groundwater Monitoring Wells

The water samples were collected in laboratory-supplied containers and submitted to Summit Scientific Inc. (Summit) in Golden, Colorado for analysis of the required water quality parameters. The results from Summit are listed in the attached Groundwater Monitoring Well Sample Results summary table, **Table 1-1**, and 2020 Q2 Groundwater Laboratory Reports, **Attachment F**.

For comparison purposes, a regulatory limit for each analyte is included in the summary table where applicable. Laboratory results at MW-1 indicated that benzene again exceeded the Table 910-1 thresholds; GRO was detected again as well as a total petroleum hydrocarbon diesel range organics (DRO) hit. Methane results once again indicated the gas was of thermogenic origin. Methane levels were the greatest at MW-1 during Q2 2020; however, those results did decrease between the initial and first subsequent sampling events.

Additional stable isotope analysis of hydrocarbon gases C1 through C5 was analyzed of the dissolved gas during the latest sampling events. Isotopic analysis on the MW-1, MW-2, MW-4, and MW-5 indicates the stable isotope distribution for methane in this sample plots in the thermogenic range. No methane was detected in MW-3. See Attachment F for the Isotope ratio plots, see **Attachment G**.

Soil Vapor Monitoring Wells

On April 1, 2020, Extraction completed a forward-looking infrared (FLIR) sweep at soil vapor monitoring points SVP-1 through SVP-4 to determine if fugitive vapors were visible. No evidence of hydrocarbons was found, and no additional soil vapor monitoring points were installed.

Readings were collected from each soil vapor point using a Photo Ionization Detector (PID) and gas readings were collected from each soil vapor well. Gas readings were collected with a RKI Eagle 2 gas meter. The gas meter was equipped with methane (CH_4), hydrogen sulfide (H_2S), carbon monoxide (CO), and O_2 sensors. The field reported results are listed in the attached Soil Vapor Monitoring Point Results summary table, **Table 1-2**.

Field and laboratory results from the latest sampling events will be uploaded into the Colorado Environmental (COENV) database via Form 43. Upon COGCC approval and as defined in the action plan to establish point of compliance, Extraction will continue to collect quarterly groundwater samples and complete soil vapor monitoring at the District Six C6 well site for another three events before the plan is re-evaluated.

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F. Groundwater Laboratory Reports
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TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	59993-MH MW1 Facility ID 762176	
				Initial	1
Date Sampled	-	-	-	10/17/19	05/18/20
ALKALINITY AS CALCIUM CARBONATE - SM2320B					
Total Alkalinity	mg/l	None	-	260	260
Bicarbonate	mg/l	None	-	260	260
Carbonate	mg/l	None	-	ND	ND
BTEX - SW8260B					
Benzene	µg/l	5	910-1	**160**	**460**
Toluene	µg/l	560	910-1	58	51
Ethylbenzene	µg/l	700	910-1	40	49
Xylenes (Total)	µg/l	1,400	910-1	49	130
M+P-Xylene	µg/l	None	-	0.040	110
O-Xylene	µg/l	None	-	0.049	22
TPH-DRO/GRO - SW8015M/SW8015					
TPH - DRO	mg/l	None	-	ND	0.227
TPH - GRO	mg/l	None	-	0.67	1.3
DISSOLVED GASES - RSK 175					
Dissolved Methane	µg/l	None	-	14,000	6,000
Dissolved Ethane	µg/l	None	-	4800	5,400
Dissolved Propane	µg/l	None	-	1700	2,700
IONS - EPA 300.0					
Bromide	mg/l	None	-	9.64	7.63
Chloride	mg/l	250	Reg 41	**771**	**512**
Fluoride	mg/l	4	Reg 41	0.899	0.603
Nitrate + Nitrite as N	mg/l	10	Reg 41	1.87	0.491
Nitrate as N	mg/l	10	Reg 41	1.87	0.491
Nitrite as N	mg/l	1	Reg 41	ND	ND
Sulfate	mg/l	250	Reg 41	105	63.8
METALS EPA 200.8					
Dissolved Barium	mg/l	2	Reg 41	0.125	0.153
Dissolved Boron	mg/l	0.4	RSL	0.0751	0.127
Dissolved Calcium	mg/l	None	-	150	197
Dissolved Iron	mg/l	0.3	Reg 41	ND	0.0508
Dissolved Magnesium	mg/l	None	-	88.5	107
Dissolved Manganese	mg/l	0.05	Reg 41	**1.43**	1.49
Dissolved Potassium	mg/l	None	-	3.88	4.91
Dissolved Selenium	mg/l	0.05	Reg 41	0.00131	ND
Dissolved Sodium	mg/l	None	-	104	174
Dissolved Strontium	mg/l	1.2	RSL	**1.9**	2.53
WATER QUALITY					
pH	s.u.	6-9	910-1	7.25	8.09
Specific Conductivity	µmhos/cm	None	-	1910	3,180
Total Dissolved Solids	mg/l	1.25 X background	910-1	942	1,580
Total Phosphorous	mg/l	None	-	0.0940	0.222
VOLATILE DETECTIONS - SW8260					
1,2,4-Trimethylbenzene	µg/l	None	-	NA	NA
1,3,5-Trimethylbenzene	µg/l	None	-	NA	NA
2-Butanone (MEK)	µg/l	None	-	NA	NA
Acetone	µg/l	6,300	Reg 41	NA	NA
Butane, 2-methyl-	µg/l	None	-	NA	NA
Cyclohexane	µg/l	None	-	NA	NA

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	59993-MH MW1 Facility ID 762176	
				Initial	1
Cyclohexane, methyl-	µg/l	None	-	NA	NA
Cyclohexanone	µg/l	None	-	NA	NA
Cyclopentane	µg/l	None	-	NA	NA
Cyclopentane, methyl-	µg/l	None	-	NA	NA
Hexane	µg/l	None	-	NA	NA
Naphthalene	µg/l	140	Reg 41	NA	NA
Pentane	µg/l	None	-	NA	NA
Tert-butyl Alcohol	µg/l	None	-	NA	NA
Aqueous					
Delta 13C DIC ($d^{13}C$ of DIC)	% per mil	None	-	NA	-17.6
Delta 18O H2O ($d^{18}O$ of water)	% per mil	None	-	NA	-13.8
Delta D H2O (dD of water)	% per mil	None	-	NA	-108.3
Gaseous					
Argon (Ar)	MOL %	None	-	0.213	0.203
C_6+ (hexanes +)	MOL %	None	-	0.0324	0.044
Carbon Dioxide (CO_2)	MOL %	None	-	2.37	1.63
Carbon Monoxide (CO)	MOL %	None	-	ND	ND
Delta 13C C1 ($d^{13}C_1$)	% per mil	None	-	NA	NA
Delta 13C C2 ($d^{13}C_2$)	% per mil	None	-	NA	NA
Delta 13C C3 ($d^{13}C_3$)	% per mil	None	-	NA	NA
Delta 13C CO2 ($d^{13}CO_2$)	per mil VPDB	None	-	NA	NA
Delta 13C iC4 ($d^{13}iC_4$)	per mil VPDB	None	-	NA	NA
Delta 13C nC4 ($d^{13}nC_4$)	per mil VPDB	None	-	NA	NA
Delta D C1 (dDC_1)	% per mil	None	-	NA	NA
Ethane (C_2)	MOL %	None	-	10.19	11.86
Ethane, Dissolved (C_2H_6)	cc/L	None	-	8.4	7.5
Ethane, Dissolved (C_2H_6)	mg/L	None	-	10	9.4
Ethylene (C_2H_4)	MOL %	None	-	ND	ND
Helium (He)	MOL %	None	-	NA	NA
Helium Dilution Factor	Other	None	-	0.5	0.67
Hydrogen (H_2)	MOL %	None	-	ND	ND
Isobutane (iC_4)	MOL %	None	-	0.273	0.368
Isopentane (iC_5)	MOL %	None	-	0.0667	0.0883
Methane (C_1)	MOL %	None	-	65.45	70.18
Methane, Dissolved (CH_4)	cc/L	None	-	50	42
Methane, Dissolved (CH_4)	mg/L	None	-	33	28
n-Butane (nC_4)	MOL %	None	-	0.326	0.647
Nitrogen (N_2)	MOL %	None	-	15.63	10.79
n-Pentane (nC_5)	MOL %	None	-	0.0404	0.0485
Oxygen (O_2)	MOL %	None	-	2.74	ND
Propane (C_3)	MOL %	None	-	2.67	4.14
Propane, Dissolved (C_3H_8)	cc/L	None	-	2.1	2.5
Propane, Dissolved (C_3H_8)	mg/L	None	-	3.8	4.6
Propylene (C_3H_6)	MOL %	None	-	ND	ND

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW2 Facility ID TBD
				Initial
Date Sampled	-	-	-	05/19/20
ALKALINITY AS CALCIUM CARBONATE - SM2320B				
Total Alkalinity	mg/l	None	-	280
Bicarbonate	mg/l	None	-	280
Carbonate	mg/l	None	-	ND
BTEX - SW8260B				
Benzene	µg/l	5	910-1	**ND**
Toluene	µg/l	560	910-1	ND
Ethylbenzene	µg/l	700	910-1	ND
Xylenes (Total)	µg/l	1,400	910-1	ND
M+P-Xylene	µg/l	None	-	0.0038
O-Xylene	µg/l	None	-	0.013
TPH-DRO/GRO - SW8015M/SW8015				
TPH - DRO	mg/l	None	-	ND
TPH - GRO	mg/l	None	-	0.17
DISSOLVED GASES - RSK 175				
Dissolved Methane	µg/l	None	-	2,300
Dissolved Ethane	µg/l	None	-	1,400
Dissolved Propane	µg/l	None	-	ND
IONS - EPA 300.0				
Bromide	mg/l	None	-	0.254
Chloride	mg/l	250	Reg 41	26.4
Fluoride	mg/l	4	Reg 41	0.383
Nitrate + Nitrite as N	mg/l	10	Reg 41	ND
Nitrate as N	mg/l	10	Reg 41	ND
Nitrite as N	mg/l	1	Reg 41	0.112
Sulfate	mg/l	250	Reg 41	157
METALS EPA 200.8				
Dissolved Barium	mg/l	2	Reg 41	0.0388
Dissolved Boron	mg/l	0.4	RSL	0.202
Dissolved Calcium	mg/l	None	-	92.3
Dissolved Iron	mg/l	0.3	Reg 41	ND
Dissolved Magnesium	mg/l	None	-	38.9
Dissolved Manganese	mg/l	0.05	Reg 41	0.165
Dissolved Potassium	mg/l	None	-	4.58
Dissolved Selenium	mg/l	0.05	Reg 41	0.00409
Dissolved Sodium	mg/l	None	-	97.5
Dissolved Strontium	mg/l	1.2	RSL	**1.08**
WATER QUALITY				
pH	s.u.	6-9	910-1	7.47
Specific Conductivity	µmhos/cm	None	-	1220
Total Dissolved Solids	mg/l	1.25 X background	910-1	602
Total Phosphorous	mg/l	None	-	ND
VOLATILE DETECTIONS - SW8260				
1,2,4-Trimethylbenzene	µg/l	None	-	NA
1,3,5-Trimethylbenzene	µg/l	None	-	NA
2-Butanone (MEK)	µg/l	None	-	NA
Acetone	µg/l	6,300	Reg 41	NA
Butane, 2-methyl-	µg/l	None	-	NA
Cyclohexane	µg/l	None	-	NA

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW2 Facility ID TBD
				Initial
Cyclohexane, methyl-	µg/l	None	-	NA
Cyclohexanone	µg/l	None	-	NA
Cyclopentane	µg/l	None	-	NA
Cyclopentane, methyl-	µg/l	None	-	NA
Hexane	µg/l	None	-	NA
Naphthalene	µg/l	140	Reg 41	NA
Pentane	µg/l	None	-	NA
Tert-butyl Alcohol	µg/l	None	-	NA
Aqueous				
Delta 13C DIC ($d^{13}C$ of DIC)	% per mil	None	-	-13.4
Delta 18O H2O ($d^{18}O$ of water)	% per mil	None	-	-13.43
Delta D H2O (dD of water)	% per mil	None	-	-105.4
Gaseous				
Argon (Ar)	MOL %	None	-	0.817
C_6+ (hexanes +)	MOL %	None	-	0.0122
Carbon Dioxide (CO_2)	MOL %	None	-	0.7
Carbon Monoxide (CO)	MOL %	None	-	ND
Delta 13C C1 ($d^{13}C_1$)	% per mil	None	-	NA
Delta 13C C2 ($d^{13}C_2$)	% per mil	None	-	NA
Delta 13C C3 ($d^{13}C_3$)	% per mil	None	-	NA
Delta 13C CO2 ($d^{13}CO_2$)	per mil VPDB	None	-	NA
Delta 13C iC4 ($d^{13}iC_4$)	per mil VPDB	None	-	NA
Delta 13C nC4 ($d^{13}nC_4$)	per mil VPDB	None	-	NA
Delta D C1 (dDC_1)	% per mil	None	-	NA
Ethane (C_2)	MOL %	None	-	1.22
Ethane, Dissolved (C_2H_6)	cc/L	None	-	13
Ethane, Dissolved (C_2H_6)	mg/L	None	-	16
Ethylene (C_2H_4)	MOL %	None	-	ND
Helium (He)	MOL %	None	-	0.0109
Helium Dilution Factor	Other	None	-	-
Hydrogen (H_2)	MOL %	None	-	ND
Isobutane (iC_4)	MOL %	None	-	0.0561
Isopentane (iC_5)	MOL %	None	-	0.0212
Methane (C_1)	MOL %	None	-	9.1
Methane, Dissolved (CH_4)	cc/L	None	-	96
Methane, Dissolved (CH_4)	mg/L	None	-	64
n-Butane (nC_4)	MOL %	None	-	0.0984
Nitrogen (N_2)	MOL %	None	-	68.9
n-Pentane (nC_5)	MOL %	None	-	0.0134
Oxygen (O_2)	MOL %	None	-	18.59
Propane (C_3)	MOL %	None	-	0.457
Propane, Dissolved (C_3H_8)	cc/L	None	-	4.8
Propane, Dissolved (C_3H_8)	mg/L	None	-	8.9
Propylene (C_3H_6)	MOL %	None	-	ND

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW3 Facility ID TBD
				Initial
Date Sampled	-	-	-	05/15/20
ALKALINITY AS CALCIUM CARBONATE - SM2320B				
Total Alkalinity	mg/l	None	-	340
Bicarbonate	mg/l	None	-	340
Carbonate	mg/l	None	-	ND
BTEX - SW8260B				
Benzene	µg/l	5	910-1	ND
Toluene	µg/l	560	910-1	ND
Ethylbenzene	µg/l	700	910-1	ND
Xylenes (Total)	µg/l	1,400	910-1	ND
M+P-Xylene	µg/l	None	-	ND
O-Xylene	µg/l	None	-	ND
TPH-DRO/GRO - SW8015M/SW8015				
TPH - DRO	mg/l	None	-	ND
TPH - GRO	mg/l	None	-	ND
DISSOLVED GASES - RSK 175				
Dissolved Methane	µg/l	None	-	ND
Dissolved Ethane	µg/l	None	-	ND
Dissolved Propane	µg/l	None	-	ND
IONS - EPA 300.0				
Bromide	mg/l	None	-	0.404
Chloride	mg/l	250	Reg 41	47.9
Fluoride	mg/l	4	Reg 41	0.637
Nitrate + Nitrite as N	mg/l	10	Reg 41	9.62
Nitrate as N	mg/l	10	Reg 41	9.62
Nitrite as N	mg/l	1	Reg 41	ND
Sulfate	mg/l	250	Reg 41	98.7
METALS EPA 200.8				
Dissolved Barium	mg/l	2	Reg 41	0.0753
Dissolved Boron	mg/l	0.4	RSL	0.167
Dissolved Calcium	mg/l	None	-	109
Dissolved Iron	mg/l	0.3	Reg 41	0.0316
Dissolved Magnesium	mg/l	None	-	45
Dissolved Manganese	mg/l	0.05	Reg 41	0.327
Dissolved Potassium	mg/l	None	-	4.92
Dissolved Selenium	mg/l	0.05	Reg 41	0.00246
Dissolved Sodium	mg/l	None	-	69.3
Dissolved Strontium	mg/l	1.2	RSL	1.27
WATER QUALITY				
pH	s.u.	6-9	910-1	7.44
Specific Conductivity	µmhos/cm	None	-	1260
Total Dissolved Solids	mg/l	1.25 X background	910-1	609
Total Phosphorous	mg/l	None	-	0.0620
VOLATILE DETECTIONS - SW8260				
1,2,4-Trimethylbenzene	µg/l	None	-	NA
1,3,5-Trimethylbenzene	µg/l	None	-	NA
2-Butanone (MEK)	µg/l	None	-	NA
Acetone	µg/l	6,300	Reg 41	NA
Butane, 2-methyl-	µg/l	None	-	NA
Cyclohexane	µg/l	None	-	NA

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW3 Facility ID TBD
				Initial
Cyclohexane, methyl-	µg/l	None	-	NA
Cyclohexanone	µg/l	None	-	NA
Cyclopentane	µg/l	None	-	NA
Cyclopentane, methyl-	µg/l	None	-	NA
Hexane	µg/l	None	-	NA
Naphthalene	µg/l	140	Reg 41	NA
Pentane	µg/l	None	-	NA
Tert-butyl Alcohol	µg/l	None	-	NA
Aqueous				
Delta 13C DIC ($d^{13}C$ of DIC)	% per mil	None	-	-13.1
Delta 18O H2O ($d^{18}O$ of water)	% per mil	None	-	-13.21
Delta D H2O (dD of water)	% per mil	None	-	-102.9
Gaseous				
Argon (Ar)	MOL %	None	-	NA
C_6+ (hexanes +)	MOL %	None	-	NA
Carbon Dioxide (CO_2)	MOL %	None	-	NA
Carbon Monoxide (CO)	MOL %	None	-	NA
Delta 13C C1 ($d^{13}C_1$)	% per mil	None	-	NA
Delta 13C C2 ($d^{13}C_2$)	% per mil	None	-	NA
Delta 13C C3 ($d^{13}C_3$)	% per mil	None	-	NA
Delta 13C CO2 ($d^{13}CO_2$)	per mil VPDB	None	-	NA
Delta 13C iC4 ($d^{13}iC_4$)	per mil VPDB	None	-	NA
Delta 13C nC4 ($d^{13}nC_4$)	per mil VPDB	None	-	NA
Delta D C1 (dDC_1)	% per mil	None	-	NA
Ethane (C_2)	MOL %	None	-	NA
Ethane, Dissolved (C_2H_6)	cc/L	None	-	NA
Ethane, Dissolved (C_2H_6)	mg/L	None	-	NA
Ethylene (C_2H_4)	MOL %	None	-	NA
Helium (He)	MOL %	None	-	NA
Helium Dilution Factor	Other	None	-	NA
Hydrogen (H_2)	MOL %	None	-	NA
Isobutane (iC_4)	MOL %	None	-	NA
Isopentane (iC_5)	MOL %	None	-	NA
Methane (C_1)	MOL %	None	-	NA
Methane, Dissolved (CH_4)	cc/L	None	-	NA
Methane, Dissolved (CH_4)	mg/L	None	-	NA
n-Butane (nC_4)	MOL %	None	-	NA
Nitrogen (N_2)	MOL %	None	-	NA
n-Pentane (nC_5)	MOL %	None	-	NA
Oxygen (O_2)	MOL %	None	-	NA
Propane (C_3)	MOL %	None	-	NA
Propane, Dissolved (C_3H_8)	cc/L	None	-	NA
Propane, Dissolved (C_3H_8)	mg/L	None	-	NA
Propylene (C_3H_6)	MOL %	None	-	NA

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW4 Facility ID TBD
				Initial
Date Sampled	-	-	-	05/05/20
ALKALINITY AS CALCIUM CARBONATE - SM2320B				
Total Alkalinity	mg/l	None	-	280
Bicarbonate	mg/l	None	-	280
Carbonate	mg/l	None	-	ND
BTEX - SW8260B				
Benzene	µg/l	5	910-1	**ND**
Toluene	µg/l	560	910-1	**ND**
Ethylbenzene	µg/l	700	910-1	**ND**
Xylenes (Total)	µg/l	1,400	910-1	3.3
M+P-Xylene	µg/l	None	-	ND
O-Xylene	µg/l	None	-	3.3
TPH-DRO/GRO - SW8015M/SW8015				
TPH - DRO	mg/l	None	-	ND
TPH - GRO	mg/l	None	-	0.067
DISSOLVED GASES - RSK 175				
Dissolved Methane	µg/l	None	-	5,600
Dissolved Ethane	µg/l	None	-	7,600
Dissolved Propane	µg/l	None	-	33
IONS - EPA 300.0				
Bromide	mg/l	None	-	0.872
Chloride	mg/l	250	Reg 41	72.1
Fluoride	mg/l	4	Reg 41	0.9
Nitrate + Nitrite as N	mg/l	10	Reg 41	3.65
Nitrate as N	mg/l	10	Reg 41	3.54
Nitrite as N	mg/l	1	Reg 41	0.114
Sulfate	mg/l	250	Reg 41	**282**
METALS EPA 200.8				
Dissolved Barium	mg/l	2	Reg 41	0.043
Dissolved Boron	mg/l	0.4	RSL	0.221
Dissolved Calcium	mg/l	None	-	93.2
Dissolved Iron	mg/l	0.3	Reg 41	0.017
Dissolved Magnesium	mg/l	None	-	38.9
Dissolved Manganese	mg/l	0.05	Reg 41	**0.253**
Dissolved Potassium	mg/l	None	-	2.47
Dissolved Selenium	mg/l	0.05	Reg 41	ND
Dissolved Sodium	mg/l	None	-	86.4
Dissolved Strontium	mg/l	1.2	RSL	**1.19**
WATER QUALITY				
pH	s.u.	6-9	910-1	7.69
Specific Conductivity	µmhos/cm	None	-	1220
Total Dissolved Solids	mg/l	1.25 X background	910-1	608
Total Phosphorous	mg/l	None	-	ND
VOLATILE DETECTIONS - SW8260				
1,2,4-Trimethylbenzene	µg/l	None	-	NA
1,3,5-Trimethylbenzene	µg/l	None	-	NA
2-Butanone (MEK)	µg/l	None	-	NA
Acetone	µg/l	6,300	Reg 41	NA
Butane, 2-methyl-	µg/l	None	-	NA
Cyclohexane	µg/l	None	-	NA

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW4 Facility ID TBD
				Initial
Cyclohexane, methyl-	µg/l	None	-	NA
Cyclohexanone	µg/l	None	-	NA
Cyclopentane	µg/l	None	-	NA
Cyclopentane, methyl-	µg/l	None	-	NA
Hexane	µg/l	None	-	NA
Naphthalene	µg/l	140	Reg 41	NA
Pentane	µg/l	None	-	NA
Tert-butyl Alcohol	µg/l	None	-	NA
Aqueous				
Delta 13C DIC ($d^{13}C$ of DIC)	% per mil	None	-	-11.1
Delta 18O H2O ($d^{18}O$ of water)	% per mil	None	-	-13.69
Delta D H2O (dD of water)	% per mil	None	-	-107.4
Gaseous				
Argon (Ar)	MOL %	None	-	0.392
C_6+ (hexanes +)	MOL %	None	-	0.0168
Carbon Dioxide (CO_2)	MOL %	None	-	3.8
Carbon Monoxide (CO)	MOL %	None	-	ND
Delta 13C C1 ($d^{13}C_1$)	% per mil	None	-	NA
Delta 13C C2 ($d^{13}C_2$)	% per mil	None	-	NA
Delta 13C C3 ($d^{13}C_3$)	% per mil	None	-	NA
Delta 13C CO2 ($d^{13}CO_2$)	per mil VPDB	None	-	NA
Delta 13C iC4 ($d^{13}iC_4$)	per mil VPDB	None	-	NA
Delta 13C nC4 ($d^{13}nC_4$)	per mil VPDB	None	-	NA
Delta D C1 (dDC_1)	% per mil	None	-	NA
Ethane (C_2)	MOL %	None	-	8.79
Ethane, Dissolved (C_2H_6)	cc/L	None	-	4.2
Ethane, Dissolved (C_2H_6)	mg/L	None	-	5.3
Ethylene (C_2H_4)	MOL %	None	-	ND
Helium (He)	MOL %	None	-	NA
Helium Dilution Factor	Other	None	-	0.72
Hydrogen (H_2)	MOL %	None	-	ND
Isobutane (iC_4)	MOL %	None	-	0.297
Isopentane (iC_5)	MOL %	None	-	0.0686
Methane (C_1)	MOL %	None	-	62.02
Methane, Dissolved (CH_4)	cc/L	None	-	28
Methane, Dissolved (CH_4)	mg/L	None	-	19
n-Butane (nC_4)	MOL %	None	-	0.391
Nitrogen (N_2)	MOL %	None	-	20.17
n-Pentane (nC_5)	MOL %	None	-	0.0272
Oxygen (O_2)	MOL %	None	-	1.49
Propane (C_3)	MOL %	None	-	2.54
Propane, Dissolved (C_3H_8)	cc/L	None	-	1.2
Propane, Dissolved (C_3H_8)	mg/L	None	-	2.1
Propylene (C_3H_6)	MOL %	None	-	ND

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW5 Facility ID TBD
				Initial
Date Sampled	-	-	-	05/06/20
ALKALINITY AS CALCIUM CARBONATE - SM2320B				
Total Alkalinity	mg/l	None	-	230
Bicarbonate	mg/l	None	-	230
Carbonate	mg/l	None	-	ND
BTEX - SW8260B				
Benzene	µg/l	5	910-1	ND
Toluene	µg/l	560	910-1	ND
Ethylbenzene	µg/l	700	910-1	ND
Xylenes (Total)	µg/l	1,400	910-1	ND
M+P-Xylene	µg/l	None	-	ND
O-Xylene	µg/l	None	-	ND
TPH-DRO/GRO - SW8015M/SW8015				
TPH - DRO	mg/l	None	-	ND
TPH - GRO	mg/l	None	-	ND
DISSOLVED GASES - RSK 175				
Dissolved Methane	µg/l	None	-	190
Dissolved Ethane	µg/l	None	-	ND
Dissolved Propane	µg/l	None	-	ND
IONS - EPA 300.0				
Bromide	mg/l	None	-	8.38
Chloride	mg/l	250	Reg 41	**740**
Fluoride	mg/l	4	Reg 41	0.678
Nitrate + Nitrite as N	mg/l	10	Reg 41	8.47
Nitrate as N	mg/l	10	Reg 41	8.47
Nitrite as N	mg/l	1	Reg 41	ND
Sulfate	mg/l	250	Reg 41	216
METALS EPA 200.8				
Dissolved Barium	mg/l	2	Reg 41	0.0641
Dissolved Boron	mg/l	0.4	RSL	0.181
Dissolved Calcium	mg/l	None	-	227
Dissolved Iron	mg/l	0.3	Reg 41	ND
Dissolved Magnesium	mg/l	None	-	94.9
Dissolved Manganese	mg/l	0.05	Reg 41	**0.252**
Dissolved Potassium	mg/l	None	-	4.19
Dissolved Selenium	mg/l	0.05	Reg 41	0.0024
Dissolved Sodium	mg/l	None	-	156
Dissolved Strontium	mg/l	1.2	RSL	**2.96**
WATER QUALITY				
pH	s.u.	6-9	910-1	7.41
Specific Conductivity	µmhos/cm	None	-	2960
Total Dissolved Solids	mg/l	1.25 X background	910-1	1460
Total Phosphorous	mg/l	None	-	0.0770
VOLATILE DETECTIONS - SW8260				
1,2,4-Trimethylbenzene	µg/l	None	-	NA
1,3,5-Trimethylbenzene	µg/l	None	-	NA
2-Butanone (MEK)	µg/l	None	-	NA
Acetone	µg/l	6,300	Reg 41	NA
Butane, 2-methyl-	µg/l	None	-	NA
Cyclohexane	µg/l	None	-	NA

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Parameter	Units	Standard	Source	60666-MH MW5 Facility ID TBD
				Initial
Date Sampled	-	-	-	05/06/20
Cyclohexane, methyl-	µg/l	None	-	NA
Cyclohexanone	µg/l	None	-	NA
Cyclopentane	µg/l	None	-	NA
Cyclopentane, methyl-	µg/l	None	-	NA
Hexane	µg/l	None	-	NA
Naphthalene	µg/l	140	Reg 41	NA
Pentane	µg/l	None	-	NA
Tert-butyl Alcohol	µg/l	None	-	NA
Aqueous				
Delta 13C DIC ($d^{13}C$ of DIC)	% per mil	None	-	-9.8
Delta 18O H2O ($d^{18}O$ of water)	% per mil	None	-	-13.43
Delta D H2O (dD of water)	% per mil	None	-	-105.8
Gaseous				
Argon (Ar)	MOL %	None	-	1.39
C_6+ (hexanes +)	MOL %	None	-	0.0006
Carbon Dioxide (CO_2)	MOL %	None	-	6.66
Carbon Monoxide (CO)	MOL %	None	-	ND
Delta 13C C1 ($d^{13}C_1$)	% per mil	None	-	NA
Delta 13C C2 ($d^{13}C_2$)	% per mil	None	-	NA
Delta 13C C3 ($d^{13}C_3$)	% per mil	None	-	NA
Delta 13C CO2 ($d^{13}CO_2$)	per mil VPDB	None	-	NA
Delta 13C iC4 ($d^{13}iC_4$)	per mil VPDB	None	-	NA
Delta 13C nC4 ($d^{13}nC_4$)	per mil VPDB	None	-	NA
Delta D C1 (dDC_1)	% per mil	None	-	NA
Ethane (C_2)	MOL %	None	-	0.949
Ethane, Dissolved (C_2H_6)	cc/L	None	-	0.25
Ethane, Dissolved (C_2H_6)	mg/L	None	-	0.31
Ethylene (C_2H_4)	MOL %	None	-	ND
Helium (He)	MOL %	None	-	NA
Helium Dilution Factor	Other	None	-	0.83
Hydrogen (H_2)	MOL %	None	-	ND
Isobutane (iC_4)	MOL %	None	-	0.0238
Isopentane (iC_5)	MOL %	None	-	0.0006
Methane (C_1)	MOL %	None	-	11.83
Methane, Dissolved (CH_4)	cc/L	None	-	2.8
Methane, Dissolved (CH_4)	mg/L	None	-	1.9
n-Butane (nC_4)	MOL %	None	-	0.0238
Nitrogen (N_2)	MOL %	None	-	72.58
n-Pentane (nC_5)	MOL %	None	-	0.0046
Oxygen (O_2)	MOL %	None	-	6.31
Propane (C_3)	MOL %	None	-	0.232
Propane, Dissolved (C_3H_8)	cc/L	None	-	0.056
Propane, Dissolved (C_3H_8)	mg/L	None	-	0.1
Propylene (C_3H_6)	MOL %	None	-	ND

TABLE 1-1: ANALTYICAL SUMMARY
GROUNDWATER MONITORING WELL SAMPLE RESULTS

Notes:

COGCC - Colorado Oil and Gas Conservation Commission
BART - Biological Activity Reaction Test
cfu/ml - colony forming units per millimeter
µg/l - micrograms per liter
Bolded concentrations exceed regulatory comparison value.
E - Analyte detection exceeds the upper level of the calibration range.
910-1 - Regulatory comparison value taken from concentration levels as presented in COGCC Table 910-1
Reg 41 - Regulatory comparison value taken from Colorado Department of Health and Environment,
Water Quality Control Commission, Regulation 41, The Basic Standards for Ground Water.
< - Analyte was not detected above the laboratory detection limit.
RSL - Regulatory comparison value taken from EPA Regional Screening Levels, June 2015.
s.u. - standard units
µmhos/cm - micromhos per centimeter
MEK - Methyl Ethyl Ketone
ND - None of the analytes were detected above the laboratory detection limit.
NI - Compound Not Identified in Laboratory TIC Report
* - Dissolved gas content measured greater than 1.0 ppm, therefore the sample was further analyzed for gas composition.
mg/l - milligrams per liter
NA - not analyzed
TPH - Total Petroleum Hydrocarbons
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
EPA - Environmental Protection Agency

TABLE 1-2: FIELD SUMMARY
SOIL VAPOR MONITORING WELL SAMPLE RESULTS

Probe ID	Sample Date	Units	Balance %	CH_4 %	CO_2 %	O_2 %	H_2S ppm	CO ppm	PID ppm
SVP-1-5′	8/30/19		96.3	3.6	0.0	0.1	NA	NA	6.3
	9/10/19		80.7	0.2	5.2	13.9	0.0	0.0	30.5
	10/15/19		80.5	0.0	2.1	17.3	0.0	1.0	0.0
	05/13/20[1]		83.6	5.0	11.4	0.0	0.0	0.0	NA
SVP-1-30′	8/30/19		81.1	8.1	10.8	0.0	NA	NA	5.3
	9/10/19		68.5	18.9	12.6	0.0	0.0	0.0	68
	10/15/19		60.3	29.6	13.1	0.0	0.0	1.0	5.3
SVP-2-5′	8/30/19		93.8	3.2	0.0	3.0	NA	NA	3.5
	9/10/19		80.1	0.4	4.1	15.4	0.0	0.0	0.0
	10/15/19		79.3	0.0	2.2	18.5	0.0	1.0	1.3
	05/13/20[1]		73.5	14.5	12.0	0.0	0.0	0.0	NA
SVP-2-30′	8/30/19		67.1	22.2	10.7	0.0	NA	NA	9.8
	9/10/19		0.0	87.8	12.2	0.0	0.0	0.0	5.5
	10/15/19		0.0	87.6	12.4	0.0	0.0	1.0	23.1
SVP-3-5′	8/30/19		92.0	8.0	0.0	0.0	NA	NA	19.2
	9/10/19		79.4	0.4	4.8	15.4	0.0	0.0	416
	10/15/19		78.4	0.0	2.3	19.3	0.0	1.0	2.3
	05/13/20[1]		24.9	64.0	11.1	0.0	6.5	0.0	NA
SVP-3-30′	8/30/19		39.7	51.0	9.3	0.0	NA	NA	59.1
	9/10/19		0.0	89.4	10.2	0.4	0.0	0.0	782
	10/15/19		0.0	89.2	10.8	0.0	1.0	2.0	39
SVP-4-5′	8/30/19		85.9	0.7	0.0	13.3	NA	NA	0.2
	9/10/19		91.3	1.4	1.2	6.1	0.0	0.0	250
	10/15/19		88.5	0.0	4.3	7.2	0.0	1.0	0.1
	05/13/20[1]		91.1	0.1	8.8	0.0	0.0	0.0	NA
SVP-4-30′	8/30/19		74.2	15.3	10.5	0.0	NA	NA	6.3
	9/10/19		60.8	27.1	11.7	0.4	0.0	0.0	819
	10/15/19		57.9	33.5	12.7	0.0	0.0	1.0	13

Notes:
[1] Atmospheric readings collected from the top of casing

APEX

ATTACHMENT A

Groundwater Well Location Map


EXTRACTION
Oil & Gas
District Six C6
Location ID 286487
Monitoring Well Locations
N
MW05
SVP-1
MW04
SVP-2
SVP-4
SVP-3
MW01
MW02
MW03
Google Earth
40 ft

ATTACHMENT B

Groundwater Well Permit Records

GWS-51
02/2017

NOTICE OF INTENT TO CONSTRUCT MONITORING HOLE(S)

Please type or print legibly in black or blue ink or file online, dwrpermitsonline@state.co.us

State of Colorado, Office of the State Engineer 1313 Sherman St, Room 821, Denver, CO 80203 Phone 303-866-3581 www.water.state.co.us

RECEIVED
AUG 23 2019
WATER RESOURCES
STATE ENGINEER
COLO

Well Owner Name(s): Extraction Oil and Gas, LLC
Address: 370 17th Street, Suite 5300, Denver, CO 80202
Phone: (970) 778-5956
Email: bford@extractionOG.com
Landowner's Name: Extraction Oil and Gas LLC

Please check one and complete as indicated including contact info:

☐ Water Well Driller Licensed in Colorado - Lic. No. _____

☐ Professional Engineer Registered in Colorado - Reg. No. _____

☐ Professional Geologist per C.R.S. 23-41-208(b)

☑ Other – anyone directly employed by or under the supervision of a licensed driller, registered professional engineer or professional geologist

Contact / Company Maggie Graham/Apex Companies LLC
Address 1746 Cole Blvd, Suite 250, Building 21
City, State & Zip Lakewood, Colorado 80401
Phone (720) 501-5065
Email maggie.graham@apexcos.com
Print Name: Maggie Graham
Signature or enter full name here: Maggie Graham

Location: Section 20
Township 5 ☒N ☐S, Range 65 ☐E ☒W, 6 PM
County: Weld
Subdivision: NENE
Lot: _____ Block: _____ Filing: _____
Site/Property Address _____
40.391325°, -104.681889°
GPS Location in UTM format if known:
Set GPS unit to true north, datum NAD83, and use meters for the distance units, ☐Zone 12 or ☒Zone 13.
Easting 526998.24 Northing 4471240.51

# of Monitoring Holes to be constructed in Section: 1
Estimated Depth 90 Ft., Aquifer Type III/II

Purpose of Monitoring Hole(s) _____
Groundwater monitoring

Anticipated Date of Construction: 08/26/2019

Date Notice Submitted: 08/23/2019
(Must be at least 3 days prior to construction)

ACKNOWLEDGEMENT FROM STATE ENGINEER'S OFFICE

FOR OFFICE USE ONLY

59993 - MH

Div. 1 WD 2 Bas _____ MD _____

Processed By [signature]

Date Acknowledged 8/23/2019

CONDITIONS OF MONITORING HOLE ACKNOWLEDGEMENT

A COPY OF THE WRITTEN NOTICE OR ACKNOWLEDGEMENT SHALL BE AVAILABLE AT THE DRILLING SITE.

1) Notice was provided to the State Engineer at least 72 hours prior to construction of monitoring & observation hole(s).

2) Construction of the hole(s) must be completed within 90 days of the date notice was given to the State Engineer. Testing and/or pumping shall not exceed a total of 200 hours unless prior written approval is obtained from the State Engineer. Water diverted during testing must not be used for beneficial purposes. The owner of the hole(s) is responsible for obtaining permit(s) and complying with all rules and regulations pertaining to the discharge of fluids produced during testing.

3) All work must comply with the Water Well Construction Rules, 2 CCR 402-2. Standard permit application and work report forms are found on the DWR website at http://www.water.state.co.us. Well Construction and Yield Estimate Reports (GWS-31) must be completed for each hole drilled. The licensed contractor or authorized individual must submit the completed forms to this office within 60 days of monitoring hole completion. Aquifer testing information must be submitted on Well Yield Test Report (GWS-39).

4) Unless a well permit is obtained or variance approved, the hole(s) must be plugged and sealed within eighteen (18) months after construction. An Abandonment Report (GWS-09) must be submitted within 60 days of plugging & sealing. The above MH acknowledgement number, owner's structure name, and owner's name and address must be provided on all well permit application(s), well construction and abandonment reports.

5) A MONITORING HOLE CANNOT BE CONVERTED TO A PRODUCTION WATER WELL, except for purposes of remediation (recovery) or as a permanent dewatering system, if constructed in accordance with the Water Well Construction Rules and policies of the State Engineer.

6) IF HOLES WILL NOT BE CONSTRUCTED UNDER THIS NOTICE WITHIN 90 DAYS, PLEASE WRITE "NO HOLES CONSTRUCTED" ON A COPY OF THE ACKNOWLEDGED NOTICE WITH THE FILE NUMBER AND EMAIL TO THE DIVISION OF WATER RESOURCES AT DWRpermitsonline@state.co.us.

THIS ACKNOWLEDGEMENT OF NOTICE DOES NOT INDICATE THAT WELL PERMIT(S) CAN BE APPROVED.

Incomplete forms or Notice provided less than 72 hours prior to well construction will not be acknowledged

STATE OF COLORADO

DWRPermitsOnline, DNR <dnr_dwrpermitsonline@state.co.us>

Notice of Intent to Construct Monitoring Hole - APEX Companies LLC - Greeley Directional location

1 message

Maggie Graham <Maggie.Graham@apexcos.com> Fri, Aug 23, 2019 at 1:10 PM
To: "dwrpermitsonline@state.co.us" <dwrpermitsonline@state.co.us>
Cc: Denver Remediation <DenverRemediation@apexcos.onmicrosoft.com>, Kevin Ambrose <Kevin.Ambrose@apexcos.com>, Maggie Graham <Maggie.Graham@apexcos.com>

Good Afternoon,

Please find attached a Notice of Intent to construct 1 (one) Monitoring Hole at the location referenced within.

Kind Regards,

Maggie Graham

RECEIVED

AUG 23 2019

WATER RESOURCES
STATE ENGINEER
COLO

Maggie Graham

Sr Project Manager

1746 Cole Blvd Bldg 21, Ste 250

Lakewood, CO 80401

APEX
apexcos.com

O) 720-501-5065

Add me to your contact list!

Form No. GWS-31
02/2017

WELL CONSTRUCTION AND YIELD ESTIMATE REPORT

State of Colorado, Office of the State Engineer
1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581
www.water.state.co.us and dwrpermitsonline@state.co.us

For Office Use Only
RECEIVED
OCT 18 2019
WATER RESOURCES
STATE ENGINEER
COLO

1. Well Permit Number: 59993-MH **Receipt Number:**

2. Owner's Well Designation: MW-1

3. Well Owner Name: Extraction Oil and Gas, LLC

4. Well Location Street Address: ~~20 29th Street, Greeley, CO 80631~~

5. As Built GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 526998.2 Northing: 4471240.51

6. Legal Well Location: NE 1/4, NE 1/4, Sec., 20 Twp. 5 ☒ N or S ☐, Range 65 ☐ E or W ☒, 6 P.M.
County: Weld
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 4672 feet **Date Completed:** 08/28/2019 **Drilling Method:** Hollow Stem Auger

8. Completed Aquifer Name : Unnamed Type III/II **Total Depth:** 85 feet **Depth Completed:** 85 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: 08/23/2019

10. Aquifer Type: (Check one)
☐ Type I (One Confining Layer) ☐ Type I (Multiple Confining Layers) ☐ Laramie-Fox Hills
☐ Type II (Not overlain by Type III) ☒ Type II (Overlain by Type III) ☐ Type III (alluvial/colluvial)

11. Geologic Log:

Depth	Type	Grain Size	Color	Water Loc.
0' - 3'	Silty Sand	fg	Bwn.	
3' - 8'	Sandy Clay	vfg - fg	Bwn.	
8' - 18'	Silty Sand	vfg - mg	Grey Bwn.	
18' - 30'	Sand	fg - cg	Yellow Bwn.	28' (Perch)
30' - 39'	Clay	vfg	Grey	
39' - 48'	Sand	fg	Bwn.	40' (Stable)
48' - 50'	Sandy Clay	vfg - fg	Bwn.	
50' - 70'	Sand	fg - mg	Bwn.	
70' - 80'	Sand	fg - cg	Bwn.	
80' - 85'	Clay	vfg - fg	Bwn.	
85'	NR/Bedrock			

12. Hole Diameter (in.)

	From (ft)	To (ft)
8	0	85

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	0	45

Perforated Casing Screen Slot Size (in): 0.010

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	45	85

14. Filter Pack:
Material: Sand
Size: 10-20
Interval: 43 - 85

15. Packer Placement:
Type: ____
Depth: ____

16. Grouting Record

Material	Amount	Density	Interval	Method
Cement Grout	800 lbs	Grout	0 - 40	Tremie Pipe

Remarks:

17. Disinfection: Type N/A Amt. Used

18. Well Yield Estimate Data: ☐ Check box if Test Data is submitted on Form Number GWS-39, Well Yield Test Report
Well Yield Estimate Method: N/A
Static Level: 38.51
Date/Time measured: 10/15/19, 9:50 am
Estimated Yield (gpm) N/A
Estimate Length (hrs) N/A

Remarks:

19. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402 2. The filing of a document that contains false statements is a violation of section 37 91 108(1)(e), C.R.S., and is punishable by fines up to $1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be compliance with Rule 17.4.

Company Name:	Email:	Phone w/area code:	License Number:
Apex Companies, LLC	kevin.ambrose@apexcos.com	(925) 596-1862	CA-PG# 9617

Mailing Address: 1746 Cole Blvd, Suite 250, Lakewood, CO 80401

Sign (or enter name if filing online)	Print Name and Title	Date:
Kevin Ambrose	Kevin Ambrose, Project Geologist	10/16/2019

Form No. GWS-31
02/2017

WELL CONSTRUCTION AND YIELD ESTIMATE REPORT

State of Colorado, Office of the State Engineer
1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581
www.water.state.co.us and dwrpermitsonline@state.co.us

For Office Use Only

1. Well Permit Number: 60666-MH **Receipt Number:**

2. Owner's Well Designation: MW-2

3. Well Owner Name: Extraction Oil and Gas, LLC

4. Well Location Street Address: 20 29th Street, Greeley, CO 90631

5. As Built GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 527013.3 Northing: 4471236.01

6. Legal Well Location: NE 1/4, NE 1/4, Sec., 20 Twp. 5 ☒ N or S ☐, Range 65 ☐ E or W ☒, 6 P.M.
County: Weld
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 4672 feet **Date Completed:** 05/05/2020 **Drilling Method:** Hollow Stem Auger

8. Completed Aquifer Name : Unnamed Type III/II **Total Depth:** 60 feet **Depth Completed:** 60 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: 04/07/2020

10. Aquifer Type: (Check one)
☐ Type I (One Confining Layer) ☐ Type I (Multiple Confining Layers) ☐ Laramie-Fox Hills
☐ Type II (Not overlain by Type III) ☒ Type II (Overlain by Type III) ☐ Type III (alluvial/colluvial)

11. Geologic Log:

Depth	Type	Grain Size	Color	Water Loc.
0 - 20	SP-SM	vfg - mg	Bwn.	
20 - 31	SP	fg - cg, G	Bwn., Gray	
31 - 50	ML	fg	Green, Gray	40
50 - 60	SM	fg	Light Bwn.	

12. Hole Diameter (in.)

	From (ft)	To (ft)
8	0	60

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	0	35

Perforated Casing Screen Slot Size (in): ____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	35	60

14. Filter Pack:
Material: Sand
Size: 10-20
Interval: 32-60

15. Packer Placement:
Type: ____
Depth: ____

16. Grouting Record

Material	Amount	Density	Interval	Method
Cement Grout	580 lbs	Grout	0 - 29	Tremie Pipe

Remarks: v = very, f = fine, m = medium, c = coarse, g = grain, G = gravel, Bwn. = Brown

17. Disinfection: Type N/A Amt. Used

18. Well Yield Estimate Data: ☐ Check box if Test Data is submitted on Form Number GWS-39, Well Yield Test Report
Well Yield Estimate Method: N/A
Static Level: 38.03
Date/Time measured: 5/14/20
Estimated Yield (gpm) N/A
Estimate Length (hrs) N/A

Remarks:

19. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402 2. The filing of a document that contains false statements is a violation of section 37 91 108(1)(e), C.R.S., and is punishable by fines up to $1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be compliance with Rule 17.4.

Company Name:	Email:	Phone w/area code:	License Number:
Apex Companies, LLC	Kevin.Ambrose@apexcos.com	(925) 596-1862	CA-PG# 9617

Mailing Address: 1746 Cole Blvd, Suite 250, Lakewood, CO 80401

Sign (or enter name if filing online)	Print Name and Title	Date:
Kevin Ambrose	Kevin Ambrose, Project Geologist	06/02/2020

Form No. GWS-31
02/2017

WELL CONSTRUCTION AND YIELD ESTIMATE REPORT

State of Colorado, Office of the State Engineer
1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581
www.water.state.co.us and dwrpermitsonline@state.co.us

For Office Use Only

1. Well Permit Number: 60666-MH **Receipt Number:**

2. Owner's Well Designation: MW-3

3. Well Owner Name: Extraction Oil and Gas, LLC

4. Well Location Street Address: 20 29th Street, Greeley, CO 90631

5. As Built GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 526999.8 Northing: 4471232.63

6. Legal Well Location: NE 1/4, NE 1/4, Sec., 20 Twp. 5 ☒ N or S ☐, Range 65 ☐ E or W ☒, 6 P.M.
County: Weld
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 4672 feet **Date Completed:** 04/23/2020 **Drilling Method:** Hollow Stem Auger

8. Completed Aquifer Name : Unnamed Type III/II **Total Depth:** 85 feet **Depth Completed:** 85 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: 04/07/2020

10. Aquifer Type: (Check one)
☐ Type I (One Confining Layer) ☐ Type I (Multiple Confining Layers) ☐ Laramie-Fox Hills
☐ Type II (Not overlain by Type III) ☒ Type II (Overlain by Type III) ☐ Type III (alluvial/colluvial)

11. Geologic Log:

Depth	Type	Grain Size	Color	Water Loc.
0 - 11	SP	fg	Light Bwn.	
11 - 20	SM	vfg - fg	Light Bwn.	
20 - 30	SP	fg - cg, G	Light Bwn.	
30 - 31	SM	fg - mg	Bwn.	
31 - 51	ML	fg	Gray	40
51 - 60	SM	fg	Bwn.	
60 - 70	SP-SM	fg - cg, G	Gley	
70 - 81.5	SM	fg	Bwn.	
81.5 - 85	ML	fg	Gley	

12. Hole Diameter (in.)

	From (ft)	To (ft)
8	0	85

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	0	45

Perforated Casing Screen Slot Size (in): ____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	45	85

14. Filter Pack:
Material: Sand
Size: 10-20
Interval: 43-85

15. Packer Placement:
Type: ____
Depth: ____

16. Grouting Record

Material	Amount	Density	Interval	Method
Cement Grout	800 lbs	Grout	0 - 40	Tremie Pipe

Remarks: v = very, f = fine, m = medium, c = coarse, g = grain, G = gravel, Bwn. = Brown, Gley = Greenish-Gray

17. Disinfection: Type N/A Amt. Used

18. Well Yield Estimate Data: ☐ Check box if Test Data is submitted on Form Number GWS-39, Well Yield Test Report
Well Yield Estimate Method: N/A
Static Level: 39.76
Date/Time measured: 5/6/20
Estimated Yield (gpm) N/A
Estimate Length (hrs) N/A

Remarks:

19. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402 2. The filing of a document that contains false statements is a violation of section 37 91 108(1)(e), C.R.S., and is punishable by fines up to $1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be compliance with Rule 17.4.

Company Name:	Email:	Phone w/area code:	License Number:
Apex Companies, LLC	Kevin.Ambrose@apexcos.com	(925) 596-1862	CA-PG# 9617

Mailing Address: 1746 Cole Blvd., Suite 250, Lakewood, CO 80401

Sign (or enter name if filing online)	Print Name and Title	Date:
Kevin Ambrose	Kevin Ambrose, Project Geologist	06/02/2020

Form No. GWS-31
02/2017

WELL CONSTRUCTION AND YIELD ESTIMATE REPORT

State of Colorado, Office of the State Engineer
1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581
www.water.state.co.us and dwrpermitsonline@state.co.us

For Office Use Only

1. **Well Permit Number:** 60666-MH **Receipt Number:**
2. **Owner's Well Designation:** MW-4
3. **Well Owner Name:** Extraction Oil and Gas, LLC
4. **Well Location Street Address:** 20 29th Street, Greeley, CO 90631
5. **As Built GPS Well Location (required):** ☐ Zone 12 ☒ Zone 13 Easting: 526994.4 Northing: 4471243.04
6. **Legal Well Location:** NE 1/4, NE 1/4, Sec., 20 Twp. 5 ☒ N or S ☐, Range 65 ☐ E or W ☒, 6 P.M.
   County: Weld
   Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____
7. **Ground Surface Elevation:** 4672 feet **Date Completed:** 04/27/2020 **Drilling Method:** Hollow Stem Auger
8. **Completed Aquifer Name :** Unnamed Type III/II **Total Depth:** 87 feet **Depth Completed:** 85 feet
9. **Advance Notification:** Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: 04/07/2020
10. **Aquifer Type:** (Check one) ☐ Type I (One Confining Layer) ☐ Type I (Multiple Confining Layers) ☐ Laramie-Fox Hills ☐ Type II (Not overlain by Type III) ☒ Type II (Overlain by Type III) ☐ Type III (alluvial/colluvial)

11. **Geologic Log:**

Depth	Type	Grain Size	Color	Water Loc.
0 - 11	ML	fg	Bwn.	
11 - 20	SM	fg - cg, G	Bwn.	
20 - 31	SP	fg - cg	Bwn.	
31 - 50	ML	fg	Gley	40
50 - 60	SM	fg	Bwn.	
60 - 61	GP	fg - cg, G	Bwn.	
61 - 70	CL	vfg	Bwn.	
70 - 80	SM	fg - cg, G	Bwn.	
80 - 85	ML	vfg	Bwn.	
85 - 87	CL	vfg	Bwn.	

12. **Hole Diameter (in.)**

	From (ft)	To (ft)
8	0	85

13. **Plain Casing**

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	0	45

Perforated Casing Screen Slot Size (in): ____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	45	85

14. **Filter Pack:**
Material: Sand
Size: 10-20
Interval: 43-87

15. **Packer Placement:**
Type: ____
Depth: ____

16. **Grouting Record**

Material	Amount	Density	Interval	Method
Cement Grout	800 lbs	Grout	0 - 40	Tremie Pipe

Remarks: v = very, f = fine, m = medium, c = coarse, g = grain, G = gravel, Bwn. = Brown, Gley - Greenish-Gray

17. **Disinfection:** Type N/A Amt. Used

18. **Well Yield Estimate Data:** ☐ Check box if Test Data is submitted on Form Number GWS-39, Well Yield Test Report
Well Yield Estimate Method: N/A
Static Level: 39.90
Date/Time measured: 5/5/20
Estimated Yield (gpm) N/A
Estimate Length (hrs) N/A

Remarks:

19. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402 2. The filing of a document that contains false statements is a violation of section 37 91 108(1)(e), C.R.S., and is punishable by fines up to $1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be compliance with Rule 17.4.

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Apex Companies, LLC	Kevin.Ambrose@apexcos.com	(925) 596-1862	CA-PG# 9617

Mailing Address: 1746 Cole Blvd., Suite 250, Lakewood, CO 80401

Sign (or enter name if filing online)	Print Name and Title	Date:
Kevin Ambrose	Kevin Ambrose, Project Geologist	06/02/2020

Form No. GWS-31
02/2017

WELL CONSTRUCTION AND YIELD ESTIMATE REPORT

State of Colorado, Office of the State Engineer
1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581
www.water.state.co.us and dwrpermitsonline@state.co.us

For Office Use Only

1. **Well Permit Number:** 60666-MH **Receipt Number:**
2. **Owner's Well Designation:** MW-5
3. **Well Owner Name:** Extraction Oil and Gas, LLC
4. **Well Location Street Address:** 20 29th Street, Greeley, CO 90631
5. **As Built GPS Well Location (required):** ☐ Zone 12 ☒ Zone 13 Easting: 527004.9 Northing: 4471248.52
6. **Legal Well Location:** NE 1/4, NE 1/4, Sec., 20 Twp. 5 ☒ N or S ☐, Range 65 ☐ E or W ☒, 6 P.M.
   County: Weld
   Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____
7. **Ground Surface Elevation:** 4672 feet **Date Completed:** 04/30/2020 **Drilling Method:** Hollow Stem Auger
8. **Completed Aquifer Name :** Unnamed Type III/II **Total Depth:** 85 feet **Depth Completed:** 85 feet
9. **Advance Notification:** Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: 04/07/2020
10. **Aquifer Type:** (Check one) ☐ Type I (One Confining Layer) ☐ Type I (Multiple Confining Layers) ☐ Laramie-Fox Hills ☐ Type II (Not overlain by Type III) ☒ Type II (Overlain by Type III) ☐ Type III (alluvial/colluvial)

11. **Geologic Log:**

Depth	Type	Grain Size	Color	Water Loc.
0 - 11	ML	fg	Bwn.	
11 - 20	SM	fg	Bwn.	
20 - 32	SP	fg - cg	Bwn.	
32 - 50	ML	vfg - fg	Grey	40
50 - 51.5	SP-SM	fg	Bwn.	
60 - 61	ML	fg	Bwn.	
61 - 70	CL	vfg - fg	Bwn.	
70 - 71	SM	fg	Bwn.	
71 - 80	ML	fg	Bwn.	
80 - 81	SM	fg - mg	Bwn.	
81 - 84	ML	fg	Bwn.	
84 - 85	CL	vfg	Grey	

Remarks: v = very, f = fine, m = medium, c = coarse, g = grain, G = gravel, Bwn. = Brown

12. **Hole Diameter (in.)**

	From (ft)	To (ft)
8	0	85

13. **Plain Casing**

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	0	45

Perforated Casing Screen Slot Size (in): ____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	Sch40PVC	0.328	45	85

14. **Filter Pack:** Material: Sand; Size: 10-20; Interval: 43-85

15. **Packer Placement:** Type: ____ Depth: ____

16. **Grouting Record**

Material	Amount	Density	Interval	Method
Cement Grout	800 lbs	Grout	0 - 40	Tremie Pipe

17. **Disinfection:** Type N/A Amt. Used

18. **Well Yield Estimate Data:** ☐ Check box if Test Data is submitted on Form Number GWS-39, Well Yield Test Report
    Well Yield Estimate Method: N/A
    Static Level: 39.51
    Date/Time measured: 5/6/20
    Estimated Yield (gpm) N/A
    Estimate Length (hrs) N/A

Remarks:

19. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402 2. The filing of a document that contains false statements is a violation of section 37 91 108(1)(e), C.R.S., and is punishable by fines up to $1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be compliance with Rule 17.4.

Company Name:	Email:	Phone w/area code:	License Number:
Apex Companies, LLC	Kevin.Ambrose@apexcos.com	(925) 596-1862	CA-PG# 9617

Mailing Address: 1746 Cole Blvd., Suite 250, Lakewood, CO 80401

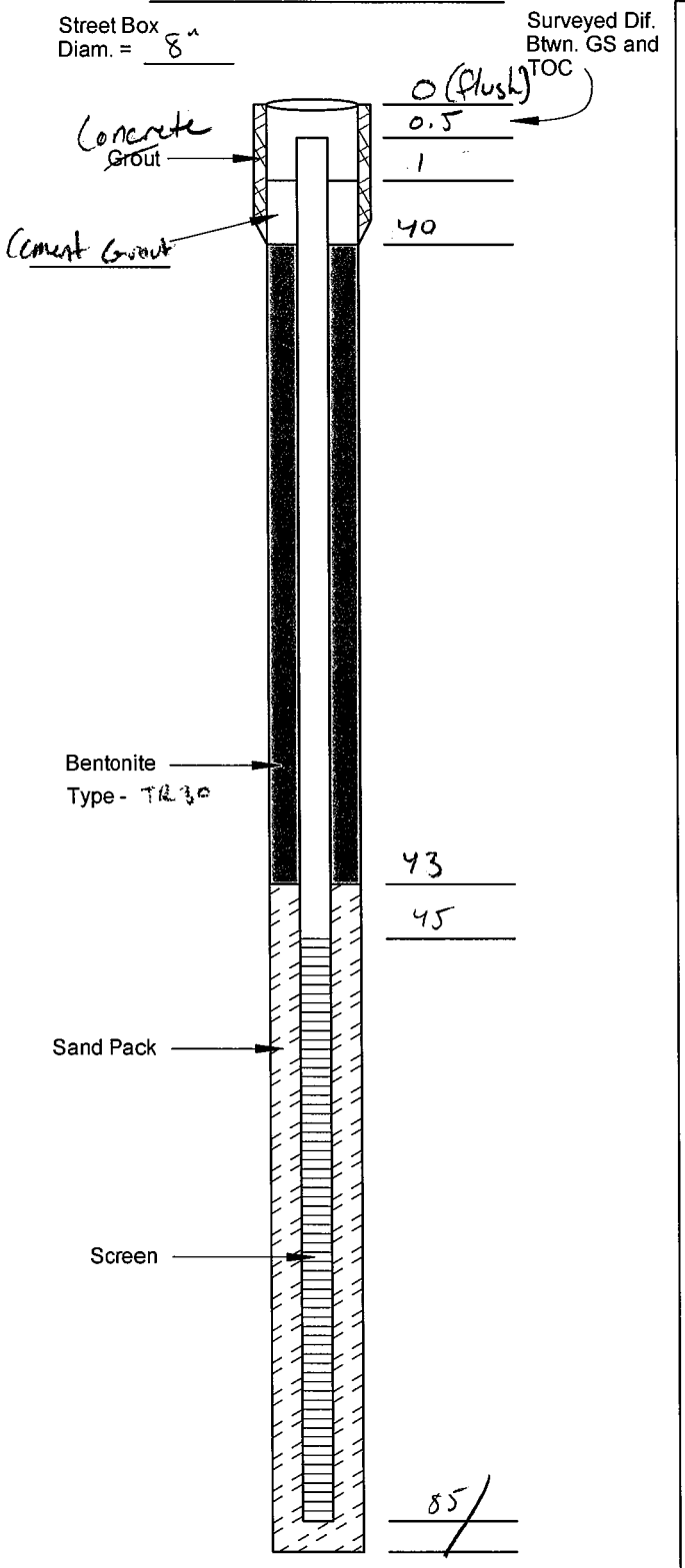
Sign (or enter name if filing online)	Print Name and Title	Date:
Kevin Ambrose	Kevin Ambrose, Project Geologist	06/02/2020

ATTACHMENT C

Groundwater Well Borehole and Completion Logs

APEX

Well Completion Detail



* Measuring Point is Below Ground Surface (bgs)

Total Depth from TOC = 85'

WELL CONSTRUCTION LOG

Project Number 744.1804.01 332837A

Well Number MW-1

Drilling Summary

Total Depth of Hole: 85'
Hole Diameter: 8"
Drilling Company: Site Services Drilling LLC
Driller: Jason A
Rig Type: CME-75
Bits:
Geologist: Kevin Ambrose

Time Log

	Start Date	Start Time	Finish Date	Finish Time
Drilling:	8/26		8/27	
Well Completion:	8/27		8/27	
Grouting:	8/28		8/28	

Depth to Water (Below TOC)

Depth: 38.51 Date: 10/15/19 Time: 9:50

Well Construction Materials

	Grout	Seals	Filter
Quantity:	800 lbs	100 lbs	750 lbs
Type:	Portland	Bent. Pellets	10-20 Sand

Screen			
Size:	2" Sch 40	Config.:	
Area/Ft.:	0.169 in²/ft	Comp.:	PVC
Inside Diam.:	2"	Outside Diam.:	2.3"

Comments

The Source Group, Inc. a division of Apex Companies, LLC

PROJECT NAME AND SITE ADDRESS: 40.39783, -104.68185°		BORING/WELL ID: MW-1
BORING LOCATION (AT SITE): Greeley Directional, D66G 7'SE	PROJECT NO.:	
SUBCONTRACTOR AND EQUIPMENT: CME	LOGGED BY: K Ambrose	
SAMPLING METHOD: Spl. SS w/ liners	MONITORING DEVICE: Mini Rae 2000 PID	Isobutylene
START DATE/ (TIME): 2/22/19	FINISH DATE/ (TIME):	
FIRST WATER (BGS):	STABILIZED WATER LEVEL (BGS):	
SURFACE ELEVATION:	CASING TOP ELEVATION:	
TOTAL WELL DEPTH(S):	BORING DIAMETER AND DEPTH: 8" HSA (0-0)	
CASING DIAMETER(S):	SCREEN INTERVAL(S): SLOT (IN):	
ANNULUS MATERIAL:		
REVIEWED BY:		

Length of Sample Recovery →
Sample Packaged for Potential Analysis →
← Sample Interval

TIME	SAMPLE INTERVAL	BLOW COUNTS	PID (ppmV)	DEPTH	USCS LITHOLOGY	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES APPROXIMATE UNLESS STATED OTHERWISE	WELL CONST.
				+2			
				0		Clear w/ air knife to 8' bgs (10" dia)	
					SM	Compacted sand & gravel w/ silt brown, dry, dense	
					CL	Sandy clay w/ gravel brown, dry hard	
				5			5
1105		2 3 7 11	0.8		SM	50% fine sand, 30% silt, 20% clay, grayish brown, medium dense, moist, trace med-coarse sand, trace v fine gravel	
				10			10
		2 12 19 25		18 20	SP	90% fine-coarse sand (mostly coarse), 10% fine gravel, yellowish brown, wet, med. dense 100% fine sand, wet, yellowish brown, dense	
							15
		9 24 21 11		18 20	SP CL	wet, fine-coarse sand, 5% gravel, greyish brown, dense w/ grey/black right before clay interface (~ 2.5" thick) sand (slight hc odor) grey, hard clay, wet, medium plasticity	
							20

The Source Group, Inc. a division of Apex Companies, LLC

BORING/WELL ID: MW-1

PROJECT NAME AND SITE ADDRESS: Greeley Directional

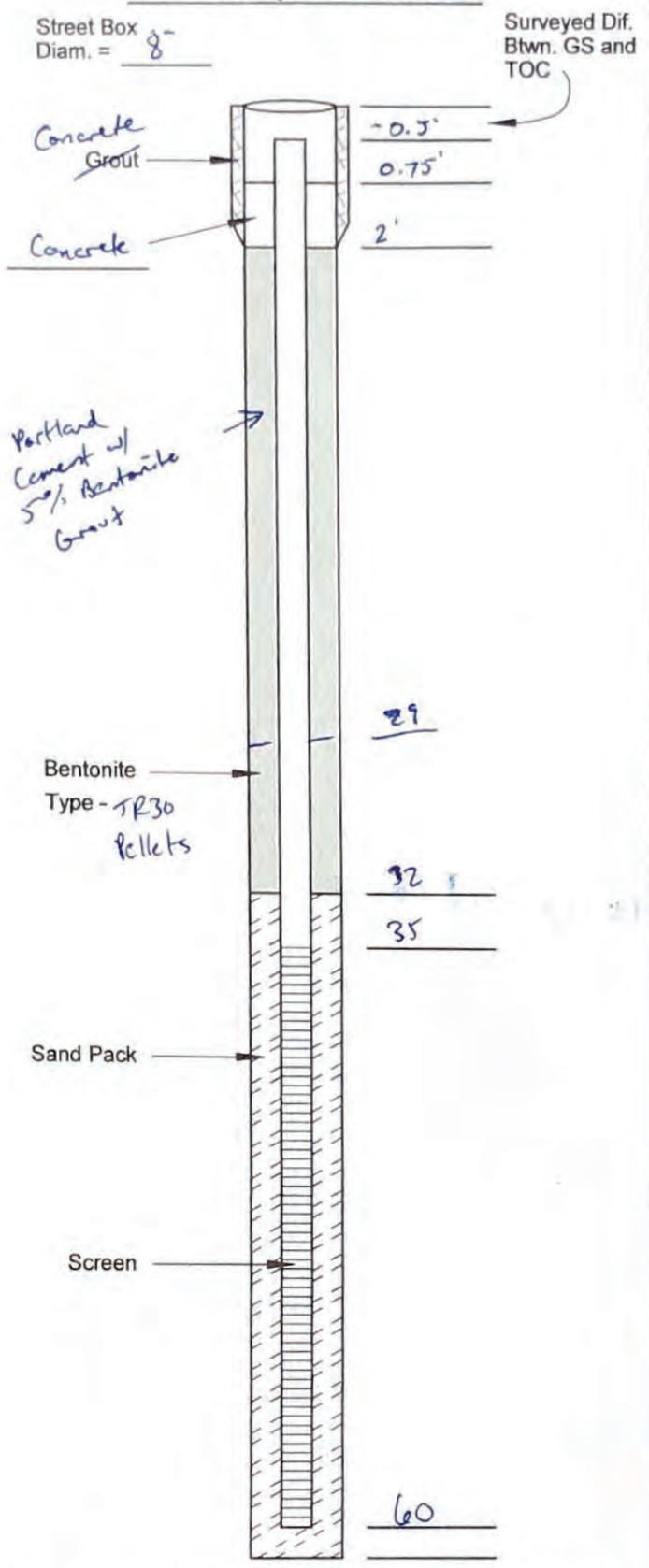
BORING LOCATION (AT SITE):

PROJECT NO.:

TIME	SAMPLE INTERVAL	BLOW COUNTS	PID (ppmV)	DEPTH	USCS LITHOLOGY	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES APPROXIMATE UNLESS STATED OTHERWISE	WELL CONST.
1230		2 5 6 7	3.5	38 40	CL SM	brown clay, stiff, medium plasticity, slight hc odor @ 38-38.5 w/ black streaks, trace (5-10% fine sand), wet * driller notes water on side of sampler & can hear it coming into borehole. Pull augers 10' to allow water to enter, table lively & check stabilized dtw	
1355		2 6 13 17	6.4	48 50	SM SP SM	fine sand, brown, wet, m. dense saturated, brown, m. stiff, m. plasticity, 10-20% fine sand saturated, brown, fine sand, m dense	
1440		2 10 15 20	2.4	58 60	SP	saturated, dense, fine-med sand w/ 5% coarse gravel stabilized water @ 37.70 1530 - auger gets stuck @ ~65' due to heaving sands	
1540		6 12 14	2.7	70 72	SP	med-coarse sand w/ 20% coarse gravel, saturated, brown, m dense fine sand (4") in shoe, m dense, saturated, brown	
915		1 5 8 10	6.3	80 82	SM CL	saturated, fine sand m dense, brown stiff, saturated, brown, medium plasticity clay, trace fine sand	
						@ 85' drillers encounter bedrock @ 85'. Stop drilling & call in to client & project manager. Wait for water to stabilize & collect multiple readings @ 59.5' bgs. Set well screen @ 45 to 85' bgs (20' above & below assumed breach @ 65')	

APEX

Well Completion Detail



* Measuring Point is Below Ground Surface (bgs)

Total Depth from TOC = 60'

WELL CONSTRUCTION LOG

Project Number 744.1708.01 286487

Well Number MW02

Drilling Summary

Total Depth of Hole: 60'
Hole Diameter: 8"
Drilling Company: Cascade Environmental
Driller: Robbie Gildea
Rig Type: B-59 Hollow Stem Auger
Bits: 8" diameter, 5' auger flights
Geologist: Kevin Ambrose

Time Log

	Start Date	Start Time	Finish Date	Finish Time
Drilling:	4/30/20		4/30/20	
Well Completion:	5/5/20			
Grouting:			5/5/20	

Depth to Water (Below TOC)

Depth: _____ Date: _____ Time: _____

Well Construction Materials

	Grout	Seals	Filter
Quantity:	2-29	29-32	32-60
Type:	Portland w/ Bent. Grout	TR30 Bent	10/20 Sand

Screen			
Size:	Sch. 40	Config.:	
Area/Ft.:	0.163 in²/ft	Comp.:	PVC
Inside Diam.:	2"	Outside Diam.:	2.3"

Comments

Drilling stopped at 60' bgs due to presence of methane gas in borehole. After the explosive atmosphere remained for several days, the borehole was completed w/ a well at 60' instead of attempting advancement to 85'.

APEX

SOIL BORING LOG

Boring Location Sketch

MW04 · MW05 · MW01 · MW03 · X MW02 · N

Project Number	Boring Number	Sheet
	MW02	1 of 1

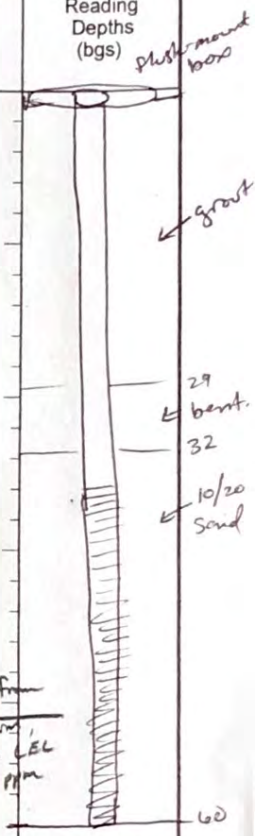
Project: District Six C6 Investigation — Location: Greeley Directional Pad

Drilling Method & Equipment: B-59 HSA Rig, 8" OD auger flights — Drilling Contractor: Cascade, Robbie Gildea

Date: 4/21/20, clear 60° — Water Level: — Start: 4/30/20, 1300 — Finish: — Logger: K. Ambrose

Depth Below Surface	Sample Interval	Sample Depth/Time	Sample Recovery	Standard Penetration Test Results 6"/6"/6"/6"	Soil Description: USCS Group Symbol, Name, Gradation or Plasticity, Particle Size Distribution, Color, Moisture Content Relative Density or Consistency, Soil Structure, Mineralogy, Stain or Odor	Symbol of USCS Log	Staining	PID Readings (ppm)
10	10-12	1330	66%	2/4/4	(0, 90, 10, 0) brown, moist, fine sand, trace med sand, loose	SP-SM	N	0
20	20-22	1345	50%	9/18/20	(20, 80, 0, 0) brown w/ lt grey pulverized grout, fine-coarse sand, fine gravel, damp, dense	SP	N	0
30	30-32	1415	50%	5/5/5 (20/30)	(5, 90, 5, 0) brown, damp, loose, fine-c sand, trace f gravel	SP	N	0
					(0, 20, 50, 30) greenish grey w/ brown mottling, moist, soft, fine sand, med. plasticity	ML	N	0
40	40-42	1430	75%	4/7/9	SAA, wet	ML	N	0
50	50-52	1450	100%	7/12/12	(0, 60, 40, 0) m. dense, lt brown, wet, fine sand	SM	N	0
60		1530		*	Gurgling/boiling sound, gassy odor, & fumes from augers when drillers reach 60'. Stop work to collect gas readings & see if gas action dissipates.			Readings from auger: 4-gas alarm, 20-25% LEL, PID = 15-20 ppm
70								
80								
85								

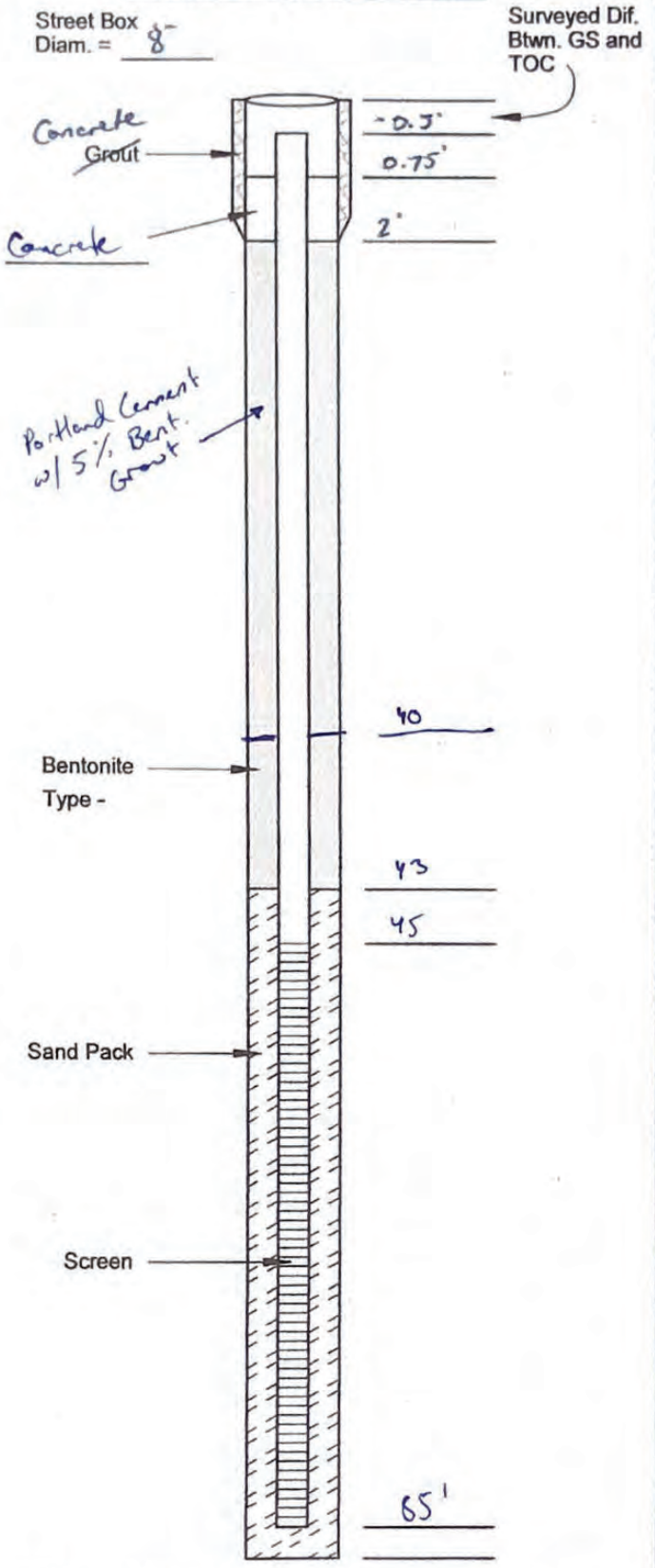
PID Reading Depths (bgs)



Total Depth(s) =	Soil Sample(s):	Rationale	Additional Information:

APEX

Well Completion Detail



* Measuring Point is Below Ground Surface (bgs)

Total Depth from TOC = 85'

WELL CONSTRUCTION LOG

Project Number	Well Number
744.1708.01 286487	MW03

Drilling Summary

Total Depth of Hole: 85'
Hole Diameter: 8"
Drilling Company: Cascade Environmental
Driller: Robbie Gildea
Rig Type: B-59 Hollow Stem Auger
Bits: 8" diameter, 5' auger flights
Geologist: Kevin Ambrose

Time Log

	Start Date	Start Time	Finish Date	Finish Time
Drilling:	4/21/20		4/22/20	
Well Completion:	4/22/20			
Grouting:			4/23/20	

Depth to Water (Below TOC)

Depth: ~39' (stabilized) Date: Time:

Well Construction Materials

	Grout	Seals	Filter
Quantity:	2-40	40-43	43-85
Type:	Portland Cement w/ Bent	TR30 Bent.	10/20 Sand

Screen			
Size:	Sch. 40	Config.:	
Area/Ft.:	0.16 in²/ft	Comp.:	PVC
Inside Diam.:	2"	Outside Diam.:	2.3"

Comments

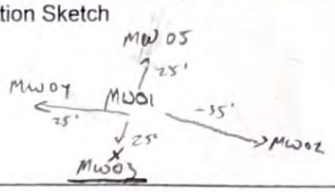
4/23 5:45

APEX

SOIL BORING LOG

Project Number	Boring Number	Sheet
	MW03	1 of 1

Boring Location Sketch



Project District Six C6 Location Greeley Dir. Pad

Drilling Method & Equipment HydroVac, B-59 HSA w/ 8" bit Drilling Contractor Cascade Drilling, Robbie Gildea

Date 4/21/20 Water Level ~45-50' bgs Start 4/21/20, 1000 Finish 4/23/20, Logger K. Ambrose

Depth Below Surface	Sample Interval	Sample Depth/Time	Sample Recovery	Standard Penetration Test Results 6"/6"/6"/6"	Soil Description: USCS Group Symbol, Name, Gradation or Plasticity, Particle Size Distribution, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, Stain or Odor	Symbol of USCS Log	Staining	PID Readings (ppm)	Well Construction Diagram
		4/21			hydrovac to 6' bgs x 10" wide for clearance. m. dense, lt brown sand, dry, no signs of odor or staining	SP	N	0	
10	10-12	1145	100%	3/5/5	(0, 95, 5, 0) lt brn, dry, m. dense ↓ grades into fine sand	SP	N	10: 0, 10.5: 0, 11: 0, 11.5: 0	
					(0, 60, 40, 0) lt brn, dry, m. dense	SM			
20	20-22	1205	50%	5/8/9	(10, 90, 0, 0) fine to coarse sand, fine gravel, lt brown, damp, m dense	SP	N	20: 0, 20.5: 0, 21: 0, 21.5: 0	cement grout
30	30-32	1330	75%	8/8/8	(0, 70, 30, 0) fine sand, brownish, wet, trace med sand, med dense, grades into	SM	N	30: 0, 30.5: 0, 31: 0, 31.5: 0	bent. 37
					(0, 30, 40, 20) fine sand, grayish brown, wet, med. plasticity, v. stiff	ML			40
40	40-42	1405	100%	5/8/13	(0, 20, 40, 40) fine sand, lt grey, damp, med plast ↓	ML	N	40: 0, 40.5: 0, 41: 0, 41.5: 0	43
					(0, 40, 50, 10) fine sand, lt grey w/ brown mottling, damp, low plasticity	ML			
50	50-52	1505	66%	10/11/10	(0, 40, 50, 10) yellowish brown, saturated, fine sand, low plasticity, stiff	ML	N	50: 6, 50.5: 0, 51: 0, 51.5: 0	0.010" slot screen 45-85
					(0, 70, 30, 0) y. brown, saturated, m. dense, fine sand	SM	N		
60	60-62	1616	80%	13/8/5	(10, 80, 10, 0) greenish grey, saturated, mostly fine to med sand, fine gravel, trace coarse sand	SP-SM	N	60: 0, 60.5: 0, 61: 0, 61.5: 0	Plow sands, extend boring
	--	4/22	--	--					
70	70-72	1020	66%	9/21/24	(0, 80, 20, 0) med brown, saturated, fine gr sand, dense	SM	N	70: 0, 70.5: 0, 71: 0, 71.5: 0	10-20 filter sand
					(5, 65, 30, 0) brown, wet, fine-med sand, trace fine gravel, m. dense,	SM			
80	80-82	1130	100%	7/11/13	(0, 40, 50, 10) brown, stiff, fine sand, low plasticity, wet	ML		80: 0, 80.5: 0, 81: 0, 81.5: 0	
85	84-86	1230	100%		SAA (brown, wet)			84: 0, 84.5: 0, 85: 0	end cap
					(0, 20, 50, 30) greenish grey w/ black seam, hard, wet, no he odor, med plasticity	ML			8" backfill

Total Depth(s) = 85'

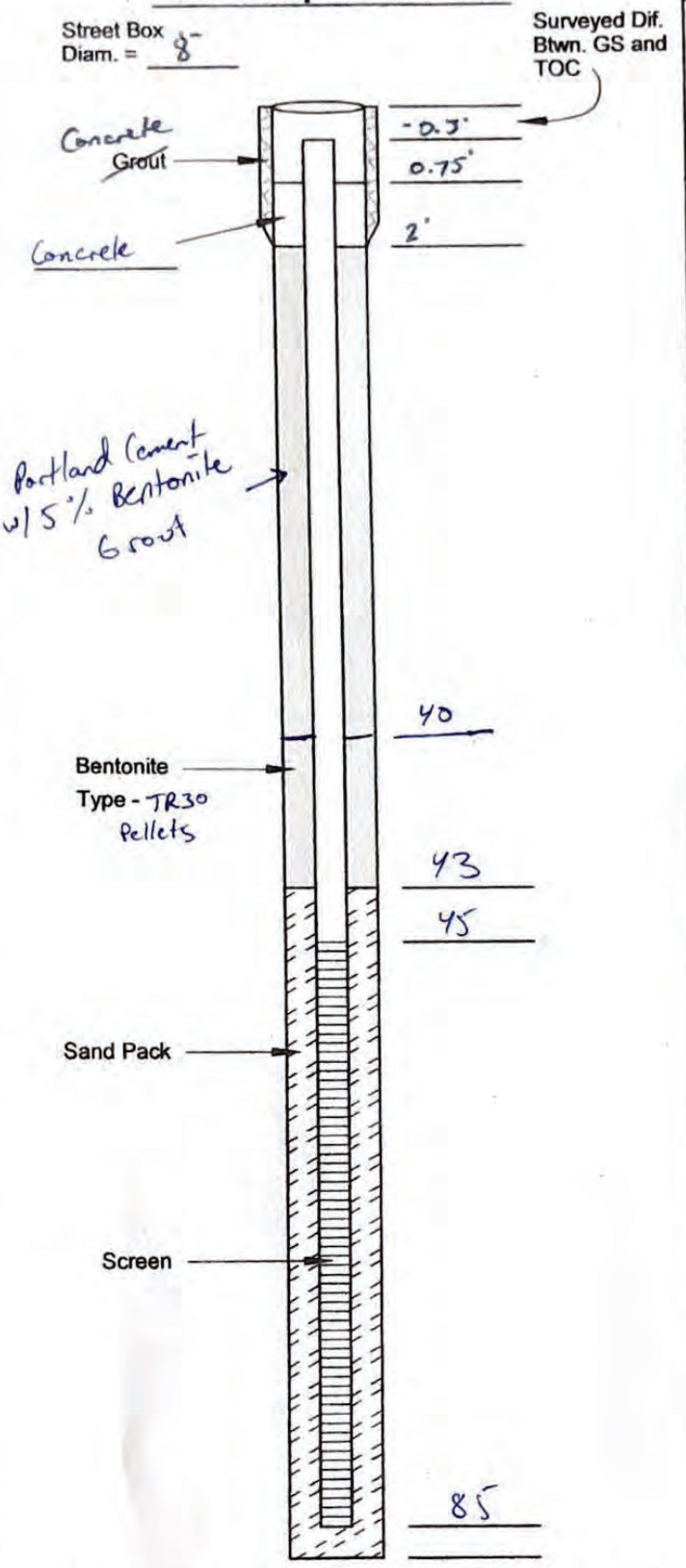
Soil Sample(s): No soil samples retained for lab analysis

Rationale: No staining or elevated PID readings

Additional Information:

APEX

Well Completion Detail



* Measuring Point is Below Ground Surface (bgs)

Total Depth from TOC = 85'

WELL CONSTRUCTION LOG

Project Number 744.1708.01 286487

Well Number MW04

Drilling Summary

Total Depth of Hole: 85'
Hole Diameter: 8"
Drilling Company: Cascade Environmental
Driller: Robbie Gildea
Rig Type: B-59 Hollow Stem Auger
Bits: 8" diameter, 5" auger flights
Geologist: Kevin Ambrose

Time Log

	Start Date	Start Time	Finish Date	Finish Time
Drilling:	4/23/20		4/24/20	
Well Completion:	4/24/20		4/27/20	
Grouting:	4/27/20		4/27/20	

Depth to Water (Below TOC)

Stabilized Depth: ~39' Date: Time:

Well Construction Materials

	Grout	Seals	Filter
Quantity:	2-40	40-43	43-85
Type:	Portland/ Bent. Grout	TR30 Bent	10/20 Sand

Screen			
Size:	Sch 40	Config.:	
Area/Ft.:	0.16 in^2/ft	Comp.:	PVC
Inside Diam.:	2"	Outside Diam.:	2.3"

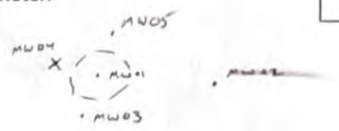
Comments

SOIL BORING LOG

APEX

Project Number	Boring Number	Sheet
	MW04	1 of 1

Boring Location Sketch



Project: District Six CG — Location: Greeley Directional Pad

Drilling Method & Equipment: Hydrovac (CG's), 8" auger flights; B59 HSA w/ — Drilling Contractor: Cascade : Robbie Gildea

Date: 4/21/20 - cleaning — Water Level: 6' — Start: 4/23/20, 1130 — Finish: — Logger: K Ambrose

Depth Below Surface	Sample Interval	Sample Depth/Time	Sample Recovery	Standard Penetration Test Results 6"/6"/6"/6"	Soil Description: USCS Group Symbol, Name, Gradation or Plasticity, Particle Size Distribution, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, Stain or Odor	Symbol of USCS Log	Staining	PID Readings (ppm)	PID Reading Depths (bgs) / Well Const.
		4/23			Clear to ~5.5' bgs using hydrovac & hand tools. Compacted gravelly sand & wood debris.				
10	10-12	1140	75%	4/7/9	10 (0,30,70,0) fine sand, brwn w/ lt brwn streaking, no plasticity, stiff, dry ↓grades into	ML ↓ SM	N	@ 10 ● 11	
					11.5 (5,70,25,0) fine sand w/ trace med/coarse sand, trace fine gravel, brown, damp, m. dense				
20	20-22	1200	66%	6/13/14	(0,85,5,0) fine-coarse sand, lt brown, m. dense, moist, fine gravel	SP	N	○ 20 ○ 21 ○ 22	
30	30-32	1325	75%	12/7/4	30 ↓ Sil Above	SP	N	○ 30	
					31 (0,30,50,20) greenish grey, low plasticity, fine gr. sand, wet	ML	N	○ 31 ○ 32	
40	40-42	1350	100%	5/5/7	(0,20,50,30) brown, wet, med plast., fine grain sand	ML	N	○ 40 ○ 41 ○ 42	5' TR Bent Pellets 40
50	50-52	1420	100%	5/8/11	(0,60,40,0) brown, saturated, m. dense, fine gr. sand	SM	N	○ 50 ○ 51	44.5' 10/20 Sand
		1/24							
60	60-62	930	100%	6/29/37	(60,30,10,0) brown, wet, fine-coarse sanded gravel, fine-coarse sand, dense	GP	N	○ 52 ○ 60	
					64 2" layer of black silty sand, trace fine gravel, wet, no odor (organic?)	SM	?	● black SM	Some leaving sands throughout
					(0,20,30,50) brown, wet, high plasticity, hard, fine sand	CL	N	○ CL	
70	70-72	1030	100%	5/11/13	(0,80,20,0) brown, saturated, fine gr. sand, m. dense, trace coarse gravel @ 71.5' (1 stone ~ 0.75")	SM	N	○ 70 ○ 71 ○ 72	
80	80-82	1130	100%	5/1-/20	(0,60,40,0) brown, saturated, dense	SM	N	○ 80 ○ 81	
					85 (0,40,60,0) brwn, saturated, fine gr sand	ML	N	○ 85	84.5'
85	85-87	1150	100%	7/11/13	86 (0,0,30,70) greyish brown, hard, wet	CL	N	○ 86	2" Pre-Pack PVC Screen (0.010"-slot)
					87				

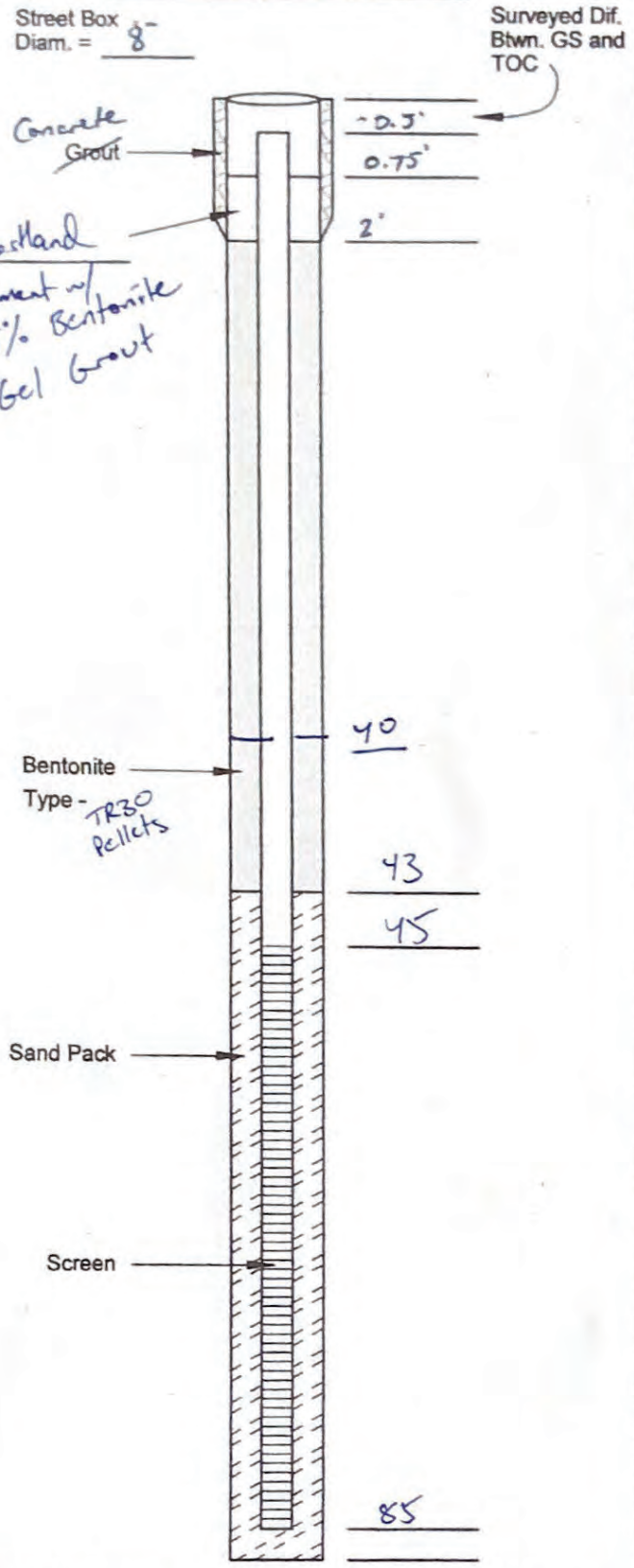
Total Depth(s) =

Soil Sample(s): Rationale

Additional Information:

APEX

Well Completion Detail



* Measuring Point is Below Ground Surface (bgs)

Total Depth from TOC = 85'

WELL CONSTRUCTION LOG

Project Number 744.1708.01 2B6487

Well Number MW05

Drilling Summary

Total Depth of Hole: 85'
Hole Diameter: 8"
Drilling Company: Cascade Environmental
Driller: Robbie Gildea
Rig Type: B-59 Hollow Stem Auger
Bits: 8" diameter, 5' auger flights
Geologist: Kevin Ambrose

Time Log

	Start Date	Start Time	Finish Date	Finish Time
Drilling:	4/27/20		4/28/20	
Well Completion:	4/28/20			
Grouting:			4/30/20	

Depth to Water (Below TOC)

Depth: ~45' Date: 4/27/20 Time: first water, drilling
~39' 4/30/20 stabilized water

Well Construction Materials

	Grout	Seals	Filter
Quantity:	2-40	40-43	43-85
Type:	Bent./Cement Grout	TR30 Bent.	10-20 Sand

Screen

Size: 2" Sch 40 Config.:
Area/Ft.: 6.16 in²/ft Comp.: PVC
Inside Diam.: 2" Outside Diam.: 2.3"

Comments

APEX

SOIL BORING LOG

Boring Location Sketch: MW04, MW05, MW01, MW02, MW03, N

Project Number	Boring Number	Sheet
	MW05	1 of 1

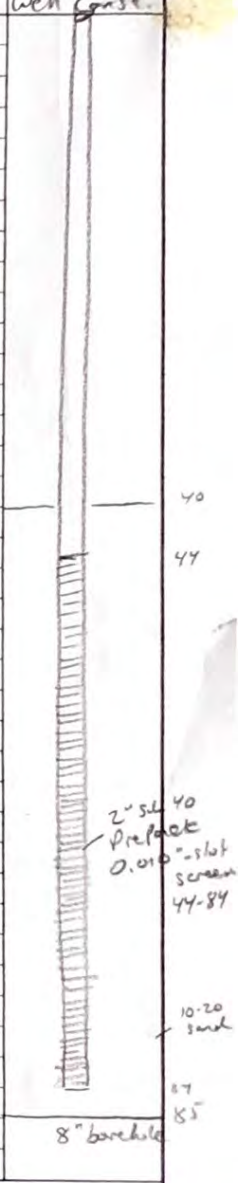
Project: District Six C6 — Location: Greeley Directional Pad

Drilling Method & Equipment: Hydrovac 6", B-59 HSA w/ 8"-OD auger flights — Drilling Contractor: Cascade, Robbie Gildea

Date: 4/21/20 clear 6° — Water Level: — Start: 4/27/20 12:00 — Finish: 4/30/20 — Logger: IC Ambrose

Depth Below Surface	Sample Interval	Sample Depth/Time	Sample Recovery	Standard Penetration Test Results (6"/6"/6"/6")	Soil Description (USCS Group Symbol, Name, Gradation or Plasticity, Particle Size Distribution, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, Stain or Odor)	Symbol of USCS Log	Staining	PID Readings (ppm)
10	10-12	4/27 1305	80%	3/6/7	(0,30,70,0) lt brown, dry, m. stiff, v. low/no plasticity, fine gr sand, grades into	ML	N	0
					(0,60,40,0) lt brown, m. dense, dry, fine gr sand	SM	N	0
20	20-22	1330	66%	3/11/10	(0,100,0,0) lt brown, fine-coarse sand, damp, m. dense	SP	N	0 0
30	30-32	1405	66%	11/17/9	(0,100,0,0) greenish brown from 30-30.5', yellowish brown 30.5-31.5, fine-coarse sand, wet, m. dense	SP	N	0
					in shoe, 2" dark grey low plasticity silt w/ fine gr sand, damp	ML	N	0
40	40-42	1430	100%	3/6/8	(0,20,50,30) greyish brown, med plasticity, moist, stiff	ML	N	0 0
50	50-52	1455	10%	4/7/7	Saturated yellowish brown fine sand, m. dense	SP-SM	N	0
		4/28			(0,40,60,0) lt brown, fine sand, saturated, hard, grades to	ML	N	0
60	60-62	930	100%	8/28/33	(0,20,30,50) lt brown, saturated, fine sand, v. hard, high plasticity	CL	N	0
70	70-72	1035	100%	11/12/23	(0,60,40,0), saturated, lt brown, m dense/mush, fine gr sand	SM	N	0
					(0,40,50,10) wet, lt brown, hard, fine sand, low plasticity/smearing	ML	N	0
80	80-82	1100	75%	5/6/9	(0,60,30,10) lt brown, saturated, louse, fine-med sand	SM	N	0
					(0,30,50,20) lt brown, wet, stiff, fine sand, low plasticity	ML	N	0
					↓	ML	N	0
85	84-86	1200	100%	7/11/13	(0,10,40,50) lt grey, wet, stiff, high plasticity	CL	N	0

Well Const.



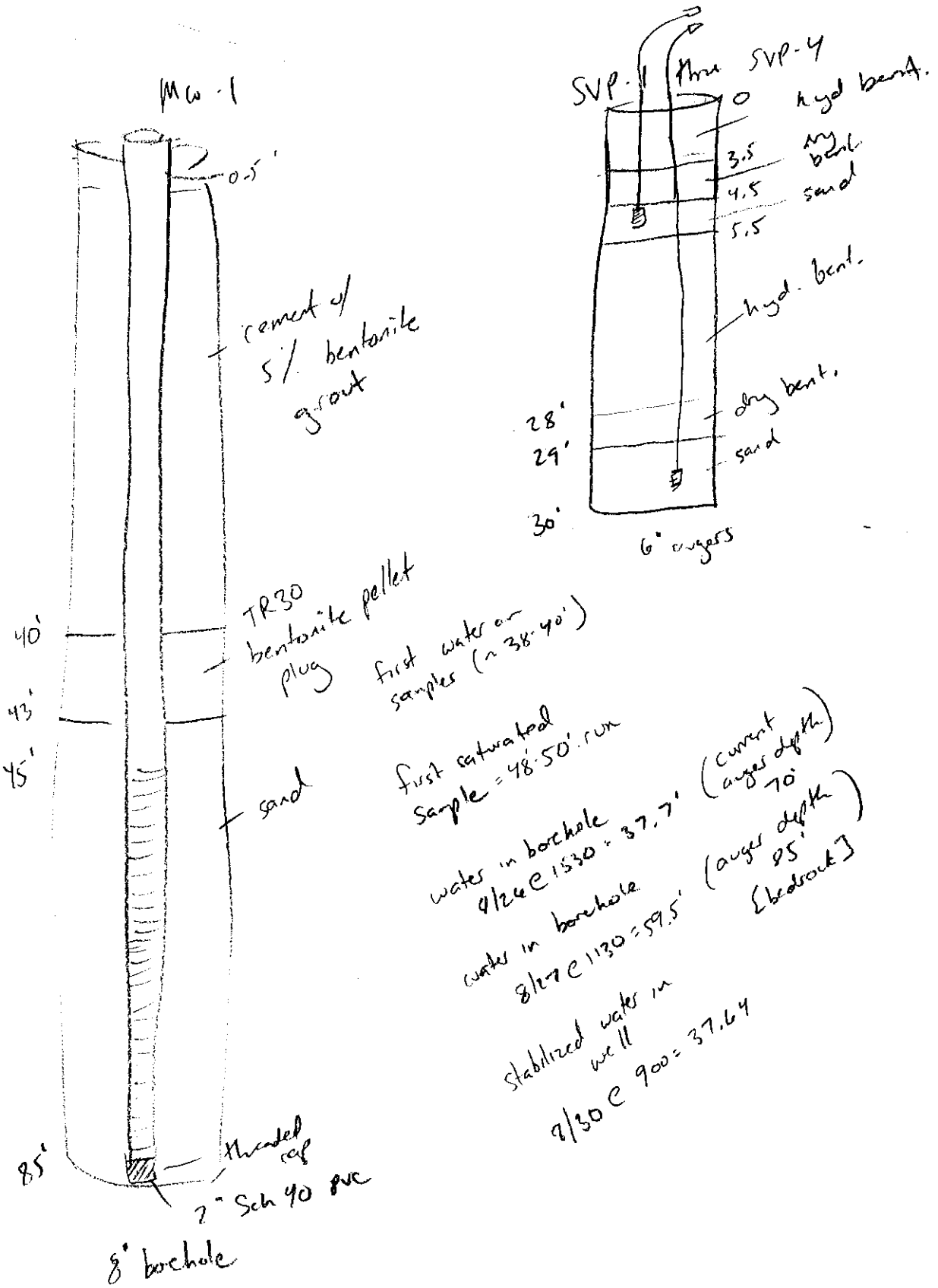
Total Depth(s) = 85'

Soil Sample(s): — Rationale

Additional Information: Flush mount well box (8") set in 2' x 2' concrete pad

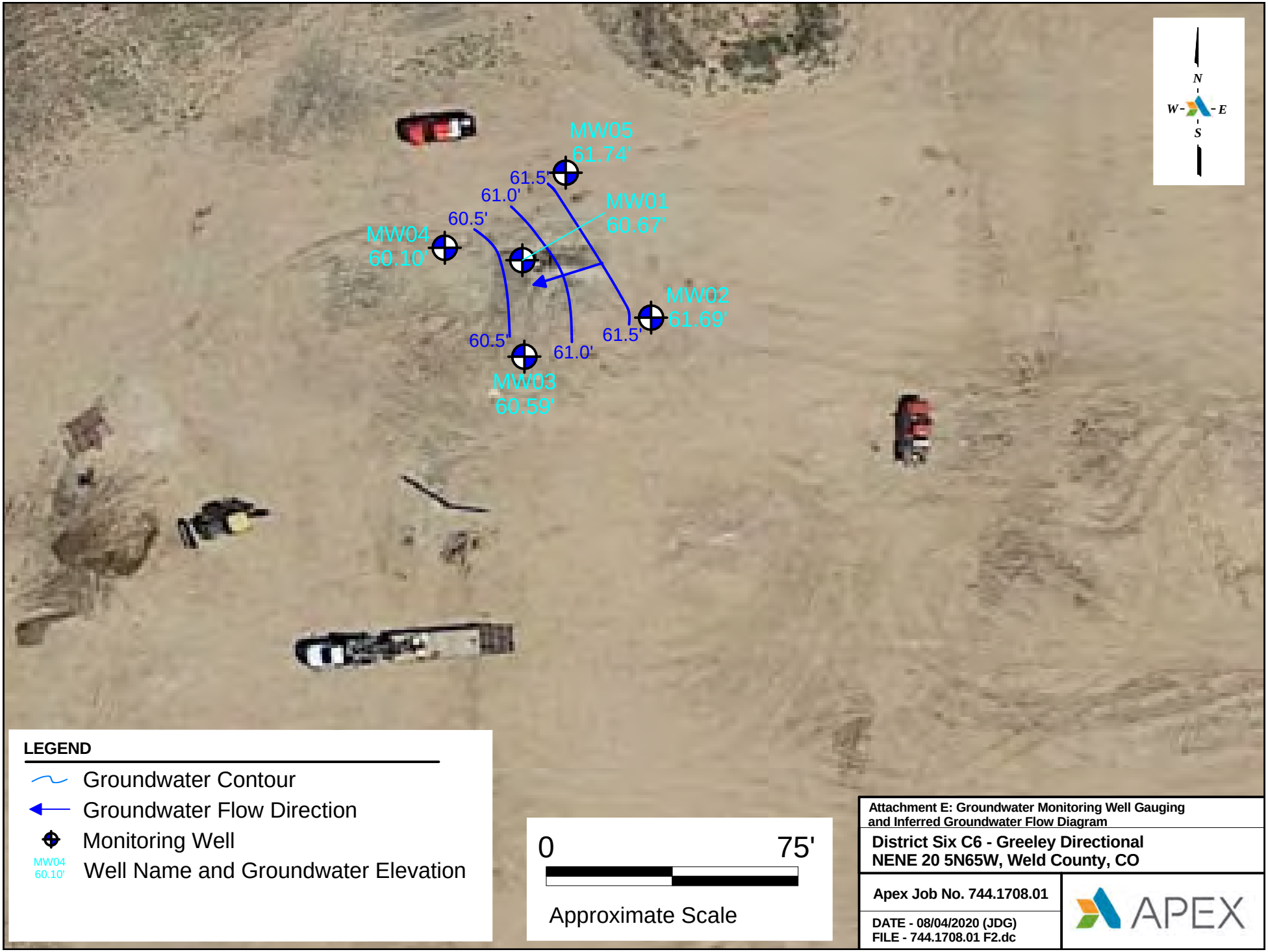
ATTACHMENT D

Soil Vapor Monitoring Probe Construction Diagram


MW-1
0.5'
cement w/ 5% bentonite grout
40'
TR30 bentonite pellet plug
43'
45'
sand
85'
threaded cap
2" Sch 40 pvc
8" borehole
SVP-1 thru SVP-4
0
hyd bent.
3.5
dry bent.
4.5
sand
5.5
hyd. bent.
28'
dry bent.
29'
sand
30'
6" augers
first water on samples (~38-40')
first saturated sample = 48-50' run
water in borehole 9/26 @ 1530 = 37.7' (current auger depth 70')
water in borehole 8/27 @ 1130 = 59.5' (auger depth 85' [bedrock])
stabilized water in well 9/30 @ 900 = 37.64

ATTACHMENT E

Groundwater Monitoring Well Gauging and Inferred Groundwater Flow Diagrams.



Attachment E: Groundwater Monitoring Well Gauging and Inferred Groundwater Flow Diagram

District Six C6 - Greeley Directional
NENE 20 5N65W, Weld County, CO

Apex Job No. 744.1708.01

DATE - 08/04/2020 (JDG)
FILE - 744.1708.01 F2.dc

APEX

ATTACHMENT F

2020 Q2 Groundwater Laboratory Reports

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 27, 2020

Heather Shideman

Extraction Oil&Gas

370 17th Street Suite 5300

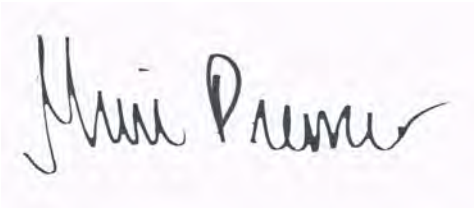
Denver, CO 80202

RE: Ground_Water/GWA_District_Six_C6

Work Order # 2005192

Enclosed are the results of analyses for samples received by Summit Scientific on 05/18/20 16:50. 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: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_59993_MH_MW_1	2005192-01	Water	05/18/20 14:24	05/18/20 16:50

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.

2005192

Summit Scientific

S2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Client:	Extraction Oil and Gas (XOG)	**Report to:** Apex Companies, LLC	**Project Manager:** Heather Shideman
Address:	2234 117th Ave, Ste 106		**E-Mail:** Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634		**cc:** bford@extractionog.com
Phone:	(970) 576-3446		**Project Name:** Ground_Water/GWA_District_Six_C6
Sampler Name:	Kade MacDougall		**Project No.:** Alloc-421 930, 88 **Facility ID** 762176

					Preservative				**Matrix**				**Analysis Requested**							**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)** H2SO4	**Ground Water**	**Soil**	**Air-Canister #**	**Other (Specify)**	**COGCC 609**	**No BART**						
1	GW_59993_MH_MW_1	20/05/18	1424		X	X		X	X				X	X						**Sample Frequency:**
	NENE_20_5N_65W																			Q2
	Temperature, field:	15.5	°C																	
	pH, field:	7.51	s.u.																	
	Conductivity, field:	2758	uS/cm																	
	ORP, field:	-334.5	mV																	
	Dissolved Oxygen, field:	0.04	mg/L																	
	Turbidity, field:	34.2	NTU																	

Relinquished by:	Date/Time: 20/05/18/1650	Received by:	Date/Time: 05-18-2020 16:50
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours
___ 24 hours _X_ Standard
___ 48 hours ___

Sample Integrity:
Temperature Upon Receipt: 5.5
Intact: (Yes) No

Notes: ON ICE

Sample Receipt Checklist

S2 Work Order 2005192

Client: APEX Companies Client Project ID: GWA District Six C6

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

☑ ☐ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other:_____ (Describe)

Temp (°C)	8.5

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.	X			
Were all samples received intact [1]?	X			
Was adequate sample volume provided [1]?	X			
If custody seals are present, are they intact [1]?	X			
Are samples with holding times due within 48 hours sample due within 48 hours present?		X		
Is a chain-of-custody (COC) form present and filled out completely [1]?	X			
Does the COC agree with the number and type of sample bottles received [1]?	X			
Do the sample IDs on the bottle labels match the COC [1]?	X			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	X			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		X		
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	X			HCL H_2SO_4 HNO_3
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.	X			pH 1
If dissolved metals are requested, were samples field filtered?		X		
Additional Comments (if any):				

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

TG — **Custodian Printed Name or Initials**

Signature of Custodian

05/18/2020 — **Date/Time**

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

GW_59993_MH_MW_1
NENE_20_5N_65W
2005192-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**0.46**	0.010	mg/L	10	2005231	05/19/20	05/19/20	EPA 8260B	
Toluene	**0.051**	0.0010	"	1	"	"	"	"	
Ethylbenzene	**0.049**	0.0010	"	"	"	"	"	"	
m,p-Xylene	**0.11**	0.0020	"	"	"	"	"	"	
o-Xylene	**0.022**	0.0010	"	"	"	"	"	"	
Xylenes (total)	**0.13**	0.0020	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1.3**	0.050	"	"	"	"	"	"	

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*94.0 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*93.1 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	**0.227**	0.100	mg/L	1	2005292	05/26/20	05/26/20	EPA 8015M	

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*93.4 %*	*44.8-129*		"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	**6.0**	1.0	mg/L	100	2005303	05/26/20	05/26/20	RSK-175 mod	

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S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

GW_59993_MH_MW_1
NENE_20_5N_65W

2005192-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Ethane	**5.4**	1.0	mg/L	100	2005303	05/26/20	05/26/20	RSK-175 mod	
Propane	**2.7**	1.0	"	"	"	"	"	"	

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		*89.3 %*	*70-130*		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**197**	0.0500	mg/L	1	2005257	05/20/20	05/20/20	EPA 200.8	
Iron	**0.0508**	0.0100	"	"	"	"	"	"	
Magnesium	**107**	0.0500	"	"	"	"	"	"	
Manganese	**1.49**	0.00100	"	"	"	"	"	"	
Potassium	**4.91**	0.0500	"	"	"	"	"	"	
Sodium	**174**	0.0500	"	"	"	"	"	"	
Barium	**0.153**	0.00100	"	"	"	"	"	"	
Boron	**0.127**	0.0100	"	"	"	"	"	"	
Selenium	ND	0.00100	"	"	"	"	"	"	
Strontium	**2.53**	0.0100	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromide	**7.63**	0.200	mg/L	1	2005256	05/20/20	05/20/20	EPA 300.0	
Chloride	**512**	10.0	"	100	"	"	"	"	
Fluoride	**0.603**	0.200	"	1	"	"	"	"	
Sulfate	**63.8**	30.0	"	100	"	"	"	"	
Nitrate as N	**0.491**	0.100	"	1	"	"	"	"	
Nitrite as N	ND	0.100	"	"	"	"	"	"	
Nitrate/Nitrite as N	**0.491**	0.200	"	"	"	"	"	"	

Summit Scientific

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S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:43

GW_59993_MH_MW_1
NENE_20_5N_65W

2005192-01 (Water)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Alkalinity	**260**	10.0	mg/L as CaCO3	1	2005270	05/21/20	05/22/20	SM2320-B	
Carbonate	ND	10.0	"	"	"	"	"	"	
Bicarbonate	**260**	10.0	"	"	"	"	"	"	

Conventional Chemistry Parameters by APHA/EPA Methods

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phosphorus - Total	**0.222**	0.0500	mg/L	1	2005285	05/22/20	05/22/20	SM4500-P-E	

Specific Conductance by SM2510B

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**3180**	1.00	umhos/cm	1	2005243	05/20/20	05/20/20	SM2510B	

Total Dissolved Solids by SM2540C

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**1580**	10.0	mg/L	1	2005244	05/20/20	05/20/20	SM2540C	

pH by SM4500

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.09**	1.00	pH Units	1	2005254	05/18/20	05/20/20	SM4500-H+ B	

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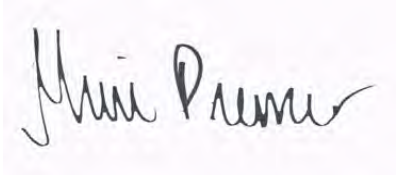


The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

GW_59993_MH_MW_1
NENE_20_5N_65W

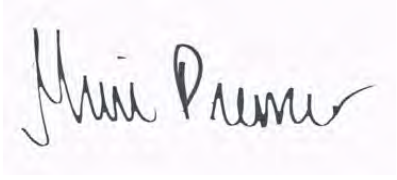
2005192-01 (Water)

Summit Scientific

Field Data

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2758**		uS/cm	1	2005227	05/18/20	05/18/20	Field Method	
Temperature	**15.5**		Degrees C	"	"	"	"	"	
Turbidity	**34.2**		NTU	"	"	"	"	"	
Oxidation/Reduction Potential	**-334.5**		mv	"	"	"	"	"	
Dissolved Oxygen	**0.04**		mg/L	"	"	"	"	"	
pH	**7.51**		SU	"	"	"	"	"	



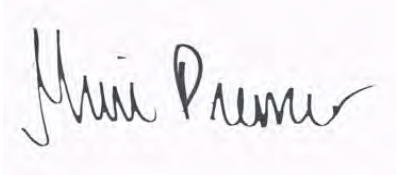
S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:43

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 2005231 - EPA 5030 Water MS										
Blank (2005231-BLK1)				Prepared & Analyzed: 05/19/20						
Benzene	ND	0.0010	mg/L							
Toluene	ND	0.0010	"							
Ethylbenzene	ND	0.0010	"							
m,p-Xylene	ND	0.0020	"							
o-Xylene	ND	0.0010	"							
Xylenes (total)	ND	0.0020	"							
Gasoline Range Hydrocarbons	ND	0.050	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0164*		"	*0.0133*		*123*	*23-173*			
Surrogate: Toluene-d8	*0.0125*		"	*0.0133*		*93.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0140*		"	*0.0133*		*105*	*21-167*			
LCS (2005231-BS1)				Prepared & Analyzed: 05/19/20						
Benzene	0.0411	0.0010	mg/L	0.0333		123	51-132			
Toluene	0.0379	0.0010	"	0.0333		114	51-138			
Ethylbenzene	0.0432	0.0010	"	0.0333		130	58-146			
m,p-Xylene	0.0762	0.0020	"	0.0667		114	57-144			
o-Xylene	0.0389	0.0010	"	0.0333		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	*0.0148*		"	*0.0133*		*111*	*23-173*			
Surrogate: Toluene-d8	*0.0129*		"	*0.0133*		*97.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0133*		"	*0.0133*		*99.9*	*21-167*			
Matrix Spike (2005231-MS1)		**Source: 2005157-05**		Prepared & Analyzed: 05/19/20						
Benzene	0.315	0.0010	mg/L	0.0333	0.181	404	34-141			QM-07
Toluene	0.0432	0.0010	"	0.0333	ND	130	27-151			
Ethylbenzene	0.106	0.0010	"	0.0333	0.130	NR	29-160			QM-07
m,p-Xylene	0.434	0.0020	"	0.0667	0.249	277	20-166			QM-07
o-Xylene	0.149	0.0010	"	0.0333	0.0589	270	33-159			QM-07
Surrogate: 1,2-Dichloroethane-d4	*0.0131*		"	*0.0133*		*98.3*	*23-173*			
Surrogate: Toluene-d8	*0.0119*		"	*0.0133*		*89.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0146*		"	*0.0133*		*110*	*21-167*			



S2

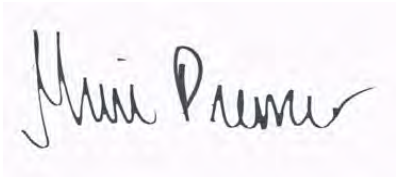
Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported: 05/27/20 16:43

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 2005231 - EPA 5030 Water MS										
Matrix Spike Dup (2005231-MSD1)	**Source: 2005157-05**			Prepared & Analyzed: 05/19/20						
Benzene	0.321	0.0010	mg/L	0.0333	0.181	423	34-141	1.94	32	QM-07
Toluene	0.0452	0.0010	"	0.0333	ND	136	27-151	4.52	25	
Ethylbenzene	0.104	0.0010	"	0.0333	0.130	NR	29-160	1.97	50	QM-07
m,p-Xylene	0.430	0.0020	"	0.0667	0.249	271	20-166	0.819	36	QM-07
o-Xylene	0.147	0.0010	"	0.0333	0.0589	263	33-159	1.60	26	QM-07
Surrogate: 1,2-Dichloroethane-d4	*0.0132*		*"*	*0.0133*		*99.2*	*23-173*			
Surrogate: Toluene-d8	*0.0123*		*"*	*0.0133*		*92.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0147*		*"*	*0.0133*		*110*	*21-167*			



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005292 - EPA 3520B										
Blank (2005292-BLK1)				Prepared & Analyzed: 05/26/20						
C10-C28 (DRO)	ND	0.100	mg/L							
Surrogate: o-Terphenyl	*0.0233*		*"*	*0.0250*		*93.2*	*44.8-129*			
LCS (2005292-BS1)				Prepared & Analyzed: 05/26/20						
C10-C28 (DRO)	0.906	0.100	mg/L	1.00		90.6	70-130			
Surrogate: o-Terphenyl	*0.0233*		*"*	*0.0250*		*93.4*	*44.8-129*			
LCS Dup (2005292-BSD1)				Prepared & Analyzed: 05/26/20						
C10-C28 (DRO)	0.966	0.100	mg/L	1.00		96.6	70-130	6.42	200	
Surrogate: o-Terphenyl	*0.0239*		*"*	*0.0250*		*95.6*	*44.8-129*			

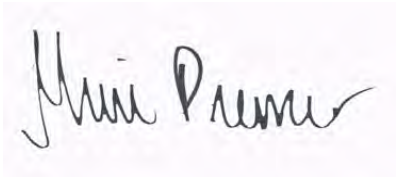
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Dissolved Gases by RSK-175 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005303 - GC										
Blank (2005303-BLK1)				Prepared & Analyzed: 05/26/20						
Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	*0.0426*		*"*	*0.0364*		*117*	*70-130*			
LCS (2005303-BS1)				Prepared & Analyzed: 05/26/20						
Methane	0.033	0.010	mg/L	0.0428		76.7	70-130			
Ethane	0.079	0.010	"	0.0798		98.8	70-130			
Propane	0.11	0.010	"	0.139		81.6	70-130			
Surrogate: Ethene	*0.0839*		*"*	*0.0728*		*115*	*70-130*			
Duplicate (2005303-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/26/20						
Methane	ND	0.010	mg/L		ND				30	
Ethane	ND	0.010	"		ND				30	
Propane	ND	0.010	"		ND				30	
Surrogate: Ethene	*0.0442*		*"*	*0.0364*		*121*	*70-130*			
Matrix Spike (2005303-MS1)		**Source: 2005175-01**		Prepared & Analyzed: 05/26/20						
Methane	0.033	0.010	mg/L	0.0428	ND	76.2	70-130			
Ethane	0.099	0.010	"	0.0798	ND	124	70-130			
Propane	0.14	0.010	"	0.139	ND	104	70-130			
Surrogate: Ethene	*0.103*		*"*	*0.0728*		*141*	*70-130*			*S-03*



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Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005257 - EPA 200.8										
Blank (2005257-BLK1)				Prepared & Analyzed: 05/20/20						
Calcium	ND	0.0500	mg/L							
Iron	ND	0.0100	"							
Magnesium	ND	0.0500	"							
Manganese	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0500	"							
Barium	ND	0.00100	"							
Boron	ND	0.0100	"							
Selenium	ND	0.00100	"							
Strontium	ND	0.0100	"							
LCS (2005257-BS1)				Prepared & Analyzed: 05/20/20						
Calcium	4.61	0.0500	mg/L	5.00		92.3	85-115			
Iron	4.89	0.0100	"	5.00		97.8	85-115			
Magnesium	4.45	0.0500	"	5.00		88.9	85-115			
Manganese	0.480	0.00100	"	0.500		96.1	85-115			
Potassium	4.68	0.0500	"	5.00		93.6	85-115			
Sodium	4.71	0.0500	"	5.00		94.3	85-115			
Barium	0.487	0.00100	"	0.500		97.5	85-115			
Boron	2.62	0.0100	"	2.50		105	85-115			
Selenium	0.0492	0.00100	"	0.0500		98.4	85-115			
Strontium	0.484	0.0100	"	0.500		96.7	85-115			
Duplicate (2005257-DUP1)	**Source: 2005187-01**			Prepared & Analyzed: 05/20/20						
Calcium	104	0.0500	mg/L		103			0.484	20	
Iron	0.123	0.0100	"		0.122			0.858	20	
Magnesium	19.8	0.0500	"		19.9			0.571	20	
Manganese	1.02	0.00100	"		1.02			0.345	20	
Potassium	8.07	0.0500	"		8.17			1.25	20	
Sodium	73.8	0.0500	"		75.0			1.58	20	
Barium	0.156	0.00100	"		0.155			0.872	20	
Boron	0.0491	0.0100	"		0.0573			15.4	20	
Selenium	0.000639	0.00100	"		0.000625			2.24	20	
Strontium	0.933	0.0100	"		0.928			0.546	20	

S2

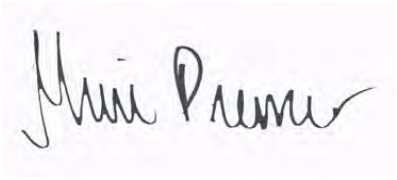
Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported: 05/27/20 16:43

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005257 - EPA 200.8										
Matrix Spike (2005257-MS1)	**Source: 2005187-01**			Prepared & Analyzed: 05/20/20						
Calcium	109	0.0500	mg/L	5.00	103	103	70-130			
Iron	3.91	0.0100	"	5.00	0.122	75.8	70-130			
Magnesium	23.6	0.0500	"	5.00	19.9	74.6	70-130			
Manganese	1.45	0.00100	"	0.500	1.02	85.7	70-130			
Potassium	12.2	0.0500	"	5.00	8.17	79.8	70-130			
Sodium	79.7	0.0500	"	5.00	75.0	94.4	70-130			
Barium	0.604	0.00100	"	0.500	0.155	89.8	70-130			
Boron	1.98	0.0100	"	2.50	0.0573	76.8	70-130			
Selenium	0.0452	0.00100	"	0.0500	0.000625	89.2	70-130			
Strontium	1.41	0.0100	"	0.500	0.928	96.9	70-130			
Matrix Spike Dup (2005257-MSD1)	**Source: 2005187-01**			Prepared & Analyzed: 05/20/20						
Calcium	109	0.0500	mg/L	5.00	103	106	70-130	0.113	25	
Iron	3.94	0.0100	"	5.00	0.122	76.3	70-130	0.660	25	
Magnesium	23.5	0.0500	"	5.00	19.9	73.2	70-130	0.278	25	
Manganese	1.46	0.00100	"	0.500	1.02	87.0	70-130	0.443	25	
Potassium	12.2	0.0500	"	5.00	8.17	80.5	70-130	0.301	25	
Sodium	79.6	0.0500	"	5.00	75.0	92.2	70-130	0.141	25	
Barium	0.609	0.00100	"	0.500	0.155	90.9	70-130	0.938	25	
Boron	2.02	0.0100	"	2.50	0.0573	78.6	70-130	2.19	25	
Selenium	0.0457	0.00100	"	0.0500	0.000625	90.2	70-130	1.19	25	
Strontium	1.39	0.0100	"	0.500	0.928	93.4	70-130	1.23	25	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:43

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005256 - General Preparation										
Blank (2005256-BLK1)				Prepared & Analyzed: 05/20/20						
Bromide	ND	0.200	mg/L							
Chloride	ND	0.100	"							
Fluoride	ND	0.200	"							
Sulfate	ND	0.300	"							
Nitrate as N	ND	0.100	"							
Nitrite as N	ND	0.100	"							
Nitrate/Nitrite as N	ND	0.200	"							
LCS (2005256-BS1)				Prepared & Analyzed: 05/20/20						
Bromide	10.1	0.200	mg/L	10.0		101	90-110			
Chloride	3.13	0.100	"	3.00		104	90-110			
Fluoride	2.10	0.200	"	2.00		105	90-110			
Sulfate	15.8	0.300	"	15.0		105	90-110			
Nitrate as N	3.06	0.100	"	3.00		102	90-110			
Nitrite as N	3.10	0.100	"	3.00		103	90-110			
Duplicate (2005256-DUP1)	**Source: 2005192-01**			Prepared & Analyzed: 05/20/20						
Bromide	6.66	0.200	mg/L		7.63			13.6	20	
Chloride	ND	0.100	"		512				20	QM-01
Fluoride	0.586	0.200	"		0.603			2.86	20	
Sulfate	77.0	0.300	"		63.8			18.8	20	
Nitrate as N	0.444	0.100	"		0.491			10.1	20	
Nitrite as N	ND	0.100	"		ND				20	
Nitrate/Nitrite as N	0.444	0.200	"		0.491			10.1	20	
Matrix Spike (2005256-MS1)	**Source: 2005192-01**			Prepared & Analyzed: 05/20/20						
Bromide	15.8	0.200	mg/L	10.0	7.63	82.0	80-120			
Chloride	ND	0.100	"	3.00	512	NR	80-120			QM-01
Fluoride	2.22	0.200	"	2.00	0.603	80.9	80-120			
Sulfate	87.9	0.300	"	15.0	63.8	161	80-120			QM-01
Nitrate as N	3.00	0.100	"	3.00	0.491	83.5	80-120			
Nitrite as N	2.58	0.100	"	3.00	ND	86.1	80-120			

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005270 - General Preparation										
Blank (2005270-BLK1)				Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	ND	10.0	mg/L as CaCO3							
Carbonate	ND	10.0	"							
Bicarbonate	ND	10.0	"							
LCS (2005270-BS1)				Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	100	10.0	mg/L as CaCO3	100		100	80-120			
Duplicate (2005270-DUP1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	280	10.0	mg/L as CaCO3		280			0.00	20	
Carbonate	ND	10.0	"		ND				20	
Bicarbonate	280	10.0	"		280			0.00	20	
Matrix Spike (2005270-MS1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	380	10.0	mg/L as CaCO3	100	280	100	70-130			
Matrix Spike Dup (2005270-MSD1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	380	10.0	mg/L as CaCO3	100	280	100	70-130	0.00	20	

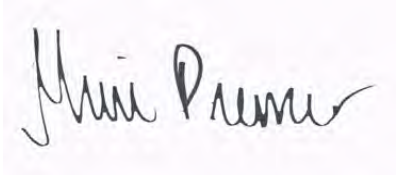
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005285 - General Preparation										
Blank (2005285-BLK1)				Prepared & Analyzed: 05/22/20						
Phosphorus - Total	ND	0.0500	mg/L							
LCS (2005285-BS1)				Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.10	0.0500	mg/L	1.00		110	80-120			
Duplicate (2005285-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	0.0590	0.0500	mg/L		0.0620			4.96	20	
Matrix Spike (2005285-MS1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.05	0.0500	mg/L	1.00	0.0620	98.6	70-130			
Matrix Spike Dup (2005285-MSD1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.10	0.0500	mg/L	1.00	0.0620	104	70-130	4.75	20	



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Specific Conductance by SM2510B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005243 - General Preparation										
Blank (2005243-BLK1)				Prepared & Analyzed: 05/20/20						
Specific Conductance (EC)	ND	1.00	umhos/cm							
Duplicate (2005243-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/20/20						
Specific Conductance (EC)	1260	1.00	umhos/cm		1260			0.0796	20	

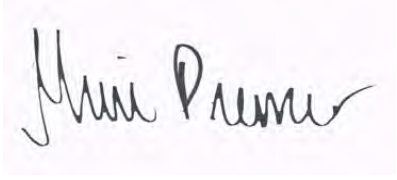
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005244 - General Preparation										
Blank (2005244-BLK1)				Prepared & Analyzed: 05/20/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (2005244-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/20/20						
Total Dissolved Solids	613	10.0	mg/L		609			0.557	20	



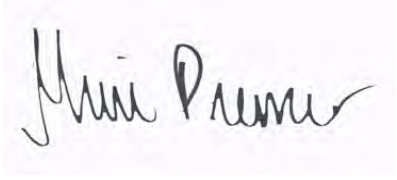
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

pH by SM4500 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005254 - General Preparation										
LCS (2005254-BS1)				Prepared: 05/18/20 Analyzed: 05/20/20						
pH	9.21	1.00	pH Units	9.18		100	90-110			
Duplicate (2005254-DUP1)		**Source: 2005191-01**		Prepared: 05/18/20 Analyzed: 05/20/20						
pH	7.13	1.00	pH Units		7.13			0.00	20	



Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 16:43

Notes and Definitions

S-03	The surrogate recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

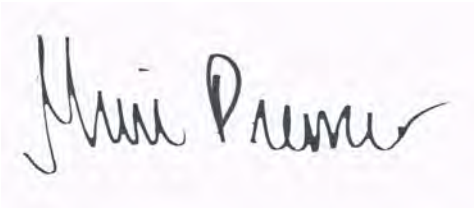
May 27, 2020

Heather Shideman
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Trip_Blank/GWA_District_Six_C6
Work Order #2005193

Enclosed are the results of analyses for samples received by Summit Scientific on 05/18/20 16:50. 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 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_59993_MH_MW_1_Trip_Blank	2005193-01	Water	05/18/20 14:24	05/18/20 16:50

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.

2005193

Summit Scientific

S2

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

Client:	Extraction Oil and Gas (XOG) **Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman
Address:	2234 117th Ave, Ste 106	**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634	**cc:**	bford@extractionog.com
Phone:	(970) 576-3446	**Project Name:**	Trip_Blank/GWA_District_Six_C6
Sampler Name:	Kade MacDougall	**Project No.:**	ALLOC-421 **Facility ID** 762176

					Preservative				**Matrix**				**Analysis Requested**							**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Groundwater**	**Soil**	**Air-Canister Serial #**	**Other (Specify)**	**BTEX**							
1	GW_59993_MH_MW_1_Trip_Blank	20/05/18	1434	2					X				X							**Sample Frequency:** Q2

Relinquished by:	Date/Time: 20/05/18/1650	Received by:	Date/Time: 05-18-2020 16:50	**Turn Around Time** (Check) **Notes:**
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day ___ 72 hours ___ 24 hours ___ Standard X 48 hours ___
Relinquished by:	Date/Time:	Received by:	Date/Time:	**Sample Integrity:** Temperature Upon Receipt: 5.5 Intact: (Yes) No

Sample Receipt Checklist

S2 Work Order 2005193

Client: APEX Companies Client Project ID: TripBlank/GWA District Six CE

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

☒ ☐ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☑ Water ☐ Other:_____ (Describe)

Temp (°C)	5.5

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.	X			
Were all samples received intact [1]?	X			
Was adequate sample volume provided [1]?	X			
If custody seals are present, are they intact [1]?	X			
Are samples with holding times due within 48 hours sample due within 48 hours present?		X		
Is a chain-of-custody (COC) form present and filled out completely [1]?	X			
Does the COC agree with the number and type of sample bottles received [1]?	X			
Do the sample IDs on the bottle labels match the COC [1]?	X			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	X			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		X		
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			X	
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				

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

TC
Custodian Printed Name or Initials

Signature of Custodian

05/18/2020
Date/Time

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:57

GW_59993_MH_MW_1_Trip_Blank

2005193-01 (Water)

Summit Scientific

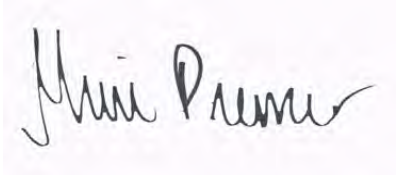
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2005231	05/19/20	05/19/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/18/20 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*137 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*90.5 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:57

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 2005231 - EPA 5030 Water MS										
Blank (2005231-BLK1)				Prepared & Analyzed: 05/19/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*16.4*		"	*13.3*		*123*	*23-173*			
Surrogate: Toluene-d8	*12.5*		"	*13.3*		*93.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.0*		"	*13.3*		*105*	*21-167*			
LCS (2005231-BS1)				Prepared & Analyzed: 05/19/20						
Benzene	41.1	1.0	ug/l	33.3		123	51-132			
Toluene	37.9	1.0	"	33.3		114	51-138			
Ethylbenzene	43.2	1.0	"	33.3		130	58-146			
m,p-Xylene	76.2	2.0	"	66.7		114	57-144			
o-Xylene	38.9	1.0	"	33.3		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	*14.8*		"	*13.3*		*111*	*23-173*			
Surrogate: Toluene-d8	*12.9*		"	*13.3*		*97.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.3*		"	*13.3*		*99.9*	*21-167*			
Matrix Spike (2005231-MS1)	**Source: 2005157-05**			Prepared & Analyzed: 05/19/20						
Benzene	315	1.0	ug/l	33.3	181	404	34-141			QM-07
Toluene	43.2	1.0	"	33.3	ND	130	27-151			
Ethylbenzene	106	1.0	"	33.3	130	NR	29-160			QM-07
m,p-Xylene	434	2.0	"	66.7	249	277	20-166			QM-07
o-Xylene	149	1.0	"	33.3	58.9	270	33-159			QM-07
Surrogate: 1,2-Dichloroethane-d4	*13.1*		"	*13.3*		*98.3*	*23-173*			
Surrogate: Toluene-d8	*11.9*		"	*13.3*		*89.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.6*		"	*13.3*		*110*	*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: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:57

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 2005231 - EPA 5030 Water MS										
Matrix Spike Dup (2005231-MSD1)	**Source: 2005157-05**			Prepared & Analyzed: 05/19/20						
Benzene	321	1.0	ug/l	33.3	181	423	34-141	1.94	32	QM-07
Toluene	45.2	1.0	"	33.3	ND	136	27-151	4.52	25	
Ethylbenzene	104	1.0	"	33.3	130	NR	29-160	1.97	50	QM-07
m,p-Xylene	430	2.0	"	66.7	249	271	20-166	0.819	36	QM-07
o-Xylene	147	1.0	"	33.3	58.9	263	33-159	1.60	26	QM-07
Surrogate: 1,2-Dichloroethane-d4	*13.2*		*"*	*13.3*		*99.2*	*23-173*			
Surrogate: Toluene-d8	*12.3*		*"*	*13.3*		*92.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.7*		*"*	*13.3*		*110*	*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.

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/27/20 16:57

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	762323	Job #:	44944	IS-99230	Co. Job#:
Sample Name:	GW_59993_MH_MW_1				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	Plastic Bottle				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	Q2				
Sampling Point:	762176				
Date Sampled:	5/18/2020 14:24	Date Received:	5/21/2020	Date Reported:	6/11/2020

δD of water	----------	-108.3 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-13.80 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	-17.6 ‰ relative to VPDB
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks: ALLOC-421

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	762449	Job #:	44963	IS-99230	Co. Job#:
Sample Name:	GW_59993_MH_MW_1				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	Q2				
Sampling Point:	762176				
Date Sampled:	5/18/2020 14:24	Date Received:	5/21/2020	Date Reported:	7/07/2020

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	0.203					
Oxygen	nd					
Nitrogen	10.79					
Carbon Dioxide	1.63					
Methane	70.18	-46.91	-235.0		42	28
Ethane	11.86	-31.99			7.5	9.4
Ethylene	nd					
Propane	4.14	-27.97			2.5	4.6
Propylene	nd					
Iso-butane	0.368					
N-butane	0.647					
Iso-pentane	0.0883					
N-pentane	0.0485					
Hexanes +	0.0440					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.67
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
ALLOC-421
Insufficient butane and pentane concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 28, 2020

Heather Shideman

Extraction Oil&Gas

370 17th Street Suite 5300

Denver, CO 80202

RE: Ground_Water/GWA_District_Six_C6

Work Order # 2005213

Enclosed are the results of analyses for samples received by Summit Scientific on 05/20/20 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury

President

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number:	Alloc 421	**Reported:**
Denver CO, 80202	Project Manager:	Heather Shideman	05/28/20 11:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_2	2005213-01	Water	05/19/20 15:24	05/20/20 17:00

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

2005213

S2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Client:	Extraction Oil and Gas (XOG)	**Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman	
Address:	2234 117th Ave, Ste 106		**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com	
City/State/Zip:	Greeley, CO 80634		**cc:**	bford@extractionog.com	
Phone:	(970) 576-3446		**Project Name:**	Ground_Water/GWA_District_Six_C6	
Sampler Name:	Kade MacDougall		**Project No.:** Alloc-421 930, 88		**Facility ID**

					Preservative				**Matrix**				**Analysis Requested**							**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)** H2SO4	**Ground Water**	**Soil**	**Air-Canister #**	**Other (Specify)**	**COGCC 609**	**No BART**						
1	GW_60666_MH_MW_2	2020/5/19	1524	12		X		X	X				X	X						**Sample Frequency:**
	NENE_20_5N_65W																			IN
	Temperature, field:	19.4	°C																	
	pH, field:	7.47	s.u.																	
	Conductivity, field:	1123	uS/cm																	
	ORP, field:	96.3	mV																	
	Dissolved Oxygen, field:	6.36	mg/L																	
	Turbidity, field:	61.1	NTU																	

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature]	2020/5/19/1915	[signature]	5/19/20 1915
[signature]	5/20/20 1700	[signature]	5 20 2020 1700
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)

Same Day ___ 72 hours

___ 24 hours (_X_) Standard

___ 48 hours ___

Sample Integrity:

Temperature Upon Receipt: 10.5

Intact: (Yes) No

Notes:

Sample Receipt Checklist

S2 Work Order 2005213

Client: Apex / XOG Client Project ID: Ground-Water/GWA_District_Six-Ce

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

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

Temp (°C)	10.5

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, H_2SO_4, NaOH, HNO_3, ect	✓			H_2SO_4, HNO_3
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.

VT		5-20-2020
Custodian Printed Name or Initials	Signature of Custodian	Date/Time

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

GW_60666_MH_MW_2
NENE_20_5N_65W

2005213-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0010	mg/L	1	2005294	05/26/20	05/27/20	EPA 8260B	
Toluene	ND	0.0010	"	"	"	"	"	"	
Ethylbenzene	ND	0.0010	"	"	"	"	"	"	
m,p-Xylene	**0.0038**	0.0020	"	"	"	"	"	"	
o-Xylene	**0.013**	0.0010	"	"	"	"	"	"	
Xylenes (total)	ND	0.0020	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**0.17**	0.050	"	"	"	"	"	"	

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*92.8 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*90.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*167 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	0.100	mg/L	1	2005292	05/26/20	05/26/20	EPA 8015M	

Date Sampled: **05/19/20 15:24**

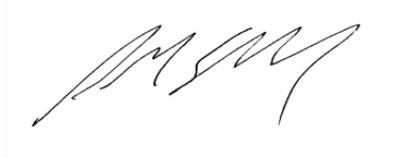
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*89.8 %*	*44.8-129*		"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific



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Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/28/20 11:58

GW_60666_MH_MW_2
NENE_20_5N_65W

2005213-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	**2.3**	1.0	mg/L	100	2005303	05/26/20	05/26/20	RSK-175 mod	
Ethane	**1.4**	1.0	"	"	"	"	"	"	
Propane	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		*118 %*	*70-130*		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**92.3**	0.0500	mg/L	1	2005283	05/22/20	05/22/20	EPA 200.8	
Iron	ND	0.0100	"	"	"	"	"	"	
Magnesium	**38.9**	0.0500	"	"	"	"	"	"	
Manganese	**0.165**	0.00100	"	"	"	"	"	"	
Potassium	**4.58**	0.0500	"	"	"	"	"	"	
Sodium	**97.5**	0.0500	"	"	"	"	"	"	
Barium	**0.0388**	0.00100	"	"	"	"	"	"	
Boron	**0.202**	0.0100	"	"	"	"	"	"	
Selenium	**0.00409**	0.00100	"	"	"	"	"	"	
Strontium	**1.08**	0.0100	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromide	**0.254**	0.200	mg/L	1	2005256	05/20/20	05/20/20	EPA 300.0	
Chloride	**26.4**	10.0	"	100	"	"	"	"	
Fluoride	**0.383**	0.200	"	1	"	"	"	"	
Sulfate	**157**	30.0	"	100	"	"	"	"	
Nitrate as N	ND	0.100	"	1	"	"	"	"	
Nitrite as N	**0.112**	0.100	"	"	"	"	"	"	
Nitrate/Nitrite as N	ND	0.200	"	"	"	"	"	"	

Summit Scientific

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Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/28/20 11:58

GW_60666_MH_MW_2
NENE_20_5N_65W

2005213-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Alkalinity	**280**	10.0	mg/L as CaCO3	1	2005270	05/21/20	05/22/20	SM2320-B	
Carbonate	ND	10.0	"	"	"	"	"	"	
Bicarbonate	**280**	10.0	"	"	"	"	"	"	

Conventional Chemistry Parameters by APHA/EPA Methods

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phosphorus - Total	ND	0.0500	mg/L	1	2005285	05/22/20	05/27/20	SM4500-P-E	

Specific Conductance by SM2510B

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1220**	1.00	umhos/cm	1	2005268	05/21/20	05/21/20	SM2510B	

Total Dissolved Solids by SM2540C

Date Sampled: **05/19/20 15:24**

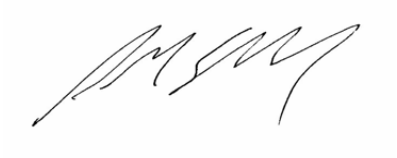
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**602**	10.0	mg/L	1	2005269	05/21/20	05/21/20	SM2540C	

pH by SM4500

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/28/20 11:58

GW_60666_MH_MW_2

NENE_20_5N_65W

2005213-01 (Water)

Summit Scientific

pH by SM4500

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.47**	1.00	pH Units	1	2005308	05/20/20	05/26/20	SM4500-H+ B	

Field Data

Date Sampled: **05/19/20 15:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1123.0**		uS/cm	1	2005262	05/20/20	05/20/20	Field Method	
Temperature	**19.40**		Degrees C	"	"	"	"	"	
Turbidity	**61.1**		NTU	"	"	"	"	"	
Oxidation/Reduction Potential	**96.20**		mv	"	"	"	"	"	
Dissolved Oxygen	**6.36**		mg/L	"	"	"	"	"	
pH	**7.49**		SU	"	"	"	"	"	

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

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 2005294 - EPA 5030 Water MS										
Blank (2005294-BLK1)				Prepared: 05/26/20 Analyzed: 05/27/20						
Benzene	ND	0.0010	mg/L							
Toluene	ND	0.0010	"							
Ethylbenzene	ND	0.0010	"							
m,p-Xylene	ND	0.0020	"							
o-Xylene	ND	0.0010	"							
Xylenes (total)	ND	0.0020	"							
Gasoline Range Hydrocarbons	ND	0.050	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0162*		*"*	*0.0133*		*122*	*23-173*			
Surrogate: Toluene-d8	*0.0126*		*"*	*0.0133*		*94.2*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0144*		*"*	*0.0133*		*108*	*21-167*			
LCS (2005294-BS1)				Prepared: 05/26/20 Analyzed: 05/27/20						
Benzene	0.0478	0.0010	mg/L	0.0417		115	51-132			
Toluene	0.0444	0.0010	"	0.0417		107	51-138			
Ethylbenzene	0.0500	0.0010	"	0.0417		120	58-146			
m,p-Xylene	0.0863	0.0020	"	0.0833		104	57-144			
o-Xylene	0.0447	0.0010	"	0.0417		107	53-146			
Surrogate: 1,2-Dichloroethane-d4	*0.0148*		*"*	*0.0133*		*111*	*23-173*			
Surrogate: Toluene-d8	*0.0130*		*"*	*0.0133*		*97.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0138*		*"*	*0.0133*		*103*	*21-167*			
Matrix Spike (2005294-MS1)		**Source: 2005207-02**		Prepared: 05/26/20 Analyzed: 05/27/20						
Benzene	0.0452	0.0010	mg/L	0.0417	ND	108	34-141			
Toluene	0.0420	0.0010	"	0.0417	ND	101	27-151			
Ethylbenzene	0.0471	0.0010	"	0.0417	ND	113	29-160			
m,p-Xylene	0.0822	0.0020	"	0.0833	ND	98.7	20-166			
o-Xylene	0.0430	0.0010	"	0.0417	ND	103	33-159			
Surrogate: 1,2-Dichloroethane-d4	*0.0156*		*"*	*0.0133*		*117*	*23-173*			
Surrogate: Toluene-d8	*0.0129*		*"*	*0.0133*		*96.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0139*		*"*	*0.0133*		*104*	*21-167*			

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/28/20 11:58

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 2005294 - EPA 5030 Water MS										
Matrix Spike Dup (2005294-MSD1)		**Source: 2005207-02**		Prepared: 05/26/20 Analyzed: 05/27/20						
Benzene	0.0448	0.0010	mg/L	0.0417	ND	107	34-141	0.867	32	
Toluene	0.0416	0.0010	"	0.0417	ND	99.9	27-151	0.933	25	
Ethylbenzene	0.0476	0.0010	"	0.0417	ND	114	29-160	0.971	50	
m,p-Xylene	0.0825	0.0020	"	0.0833	ND	99.0	20-166	0.304	36	
o-Xylene	0.0428	0.0010	"	0.0417	ND	103	33-159	0.606	26	
Surrogate: 1,2-Dichloroethane-d4	*0.0153*		*"*	*0.0133*		*115*	*23-173*			
Surrogate: Toluene-d8	*0.0127*		*"*	*0.0133*		*95.4*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0138*		*"*	*0.0133*		*104*	*21-167*			

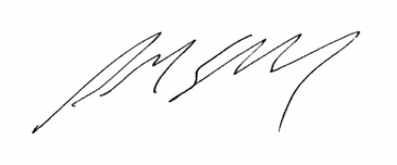
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005292 - EPA 3520B										
Blank (2005292-BLK1)				Prepared & Analyzed: 05/26/20						
C10-C28 (DRO)	ND	0.100	mg/L							
Surrogate: o-Terphenyl	*0.0233*		*"*	*0.0250*		*93.2*	*44.8-129*			
LCS (2005292-BS1)				Prepared & Analyzed: 05/26/20						
C10-C28 (DRO)	0.906	0.100	mg/L	1.00		90.6	70-130			
Surrogate: o-Terphenyl	*0.0233*		*"*	*0.0250*		*93.4*	*44.8-129*			
LCS Dup (2005292-BSD1)				Prepared & Analyzed: 05/26/20						
C10-C28 (DRO)	0.966	0.100	mg/L	1.00		96.6	70-130	6.42	200	
Surrogate: o-Terphenyl	*0.0239*		*"*	*0.0250*		*95.6*	*44.8-129*			



Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/28/20 11:58

Dissolved Gases by RSK-175 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005303 - GC										
Blank (2005303-BLK1)				Prepared & Analyzed: 05/26/20						
Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	*0.0426*		*"*	*0.0364*		*117*	*70-130*			
LCS (2005303-BS1)				Prepared & Analyzed: 05/26/20						
Methane	0.033	0.010	mg/L	0.0428		76.7	70-130			
Ethane	0.079	0.010	"	0.0798		98.8	70-130			
Propane	0.11	0.010	"	0.139		81.6	70-130			
Surrogate: Ethene	*0.0839*		*"*	*0.0728*		*115*	*70-130*			
Duplicate (2005303-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/26/20						
Methane	ND	0.010	mg/L		ND				30	
Ethane	ND	0.010	"		ND				30	
Propane	ND	0.010	"		ND				30	
Surrogate: Ethene	*0.0442*		*"*	*0.0364*		*121*	*70-130*			
Matrix Spike (2005303-MS1)		**Source: 2005175-01**		Prepared & Analyzed: 05/26/20						
Methane	0.033	0.010	mg/L	0.0428	ND	76.2	70-130			
Ethane	0.099	0.010	"	0.0798	ND	124	70-130			
Propane	0.14	0.010	"	0.139	ND	104	70-130			
Surrogate: Ethene	*0.103*		*"*	*0.0728*		*141*	*70-130*			*S-03*

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/28/20 11:58

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

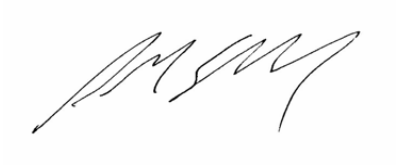
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005283 - EPA 200.8										
Blank (2005283-BLK1)				Prepared & Analyzed: 05/22/20						
Calcium	ND	0.0500	mg/L							
Iron	ND	0.0100	"							
Magnesium	ND	0.0500	"							
Manganese	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0500	"							
Barium	ND	0.00100	"							
Boron	ND	0.0100	"							
Selenium	ND	0.00100	"							
Strontium	ND	0.0100	"							
LCS (2005283-BS1)				Prepared & Analyzed: 05/22/20						
Calcium	4.30	0.0500	mg/L	5.00		86.0	85-115			
Iron	4.57	0.0100	"	5.00		91.5	85-115			
Magnesium	4.74	0.0500	"	5.00		94.9	85-115			
Manganese	0.493	0.00100	"	0.500		98.7	85-115			
Potassium	4.27	0.0500	"	5.00		85.4	85-115			
Sodium	4.54	0.0500	"	5.00		90.8	85-115			
Barium	0.510	0.00100	"	0.500		102	85-115			
Boron	2.22	0.0100	"	2.50		88.7	85-115			
Selenium	0.0477	0.00100	"	0.0500		95.3	85-115			
Strontium	0.502	0.0100	"	0.500		100	85-115			
Duplicate (2005283-DUP1)		**Source: 2005213-01**		Prepared & Analyzed: 05/22/20						
Calcium	102	0.0500	mg/L		92.3			9.87	20	
Iron	0.00450	0.0100	"		ND				20	
Magnesium	41.9	0.0500	"		38.9			7.47	20	
Manganese	0.181	0.00100	"		0.165			9.53	20	
Potassium	4.95	0.0500	"		4.58			7.72	20	
Sodium	105	0.0500	"		97.5			7.45	20	
Barium	0.0411	0.00100	"		0.0388			5.74	20	
Boron	0.216	0.0100	"		0.202			6.82	20	
Selenium	0.00424	0.00100	"		0.00409			3.57	20	
Strontium	1.20	0.0100	"		1.08			10.1	20	

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005283 - EPA 200.8										
Matrix Spike (2005283-MS1)	**Source: 2005213-01**			Prepared & Analyzed: 05/22/20						
Calcium	97.5	0.0500	mg/L	5.00	92.3	102	70-130			
Iron	4.03	0.0100	"	5.00	ND	80.7	70-130			
Magnesium	43.2	0.0500	"	5.00	38.9	86.7	70-130			
Manganese	0.624	0.00100	"	0.500	0.165	92.0	70-130			
Potassium	8.86	0.0500	"	5.00	4.58	85.4	70-130			
Sodium	102	0.0500	"	5.00	97.5	86.6	70-130			
Barium	0.517	0.00100	"	0.500	0.0388	95.7	70-130			
Boron	2.29	0.0100	"	2.50	0.202	83.6	70-130			
Selenium	0.0492	0.00100	"	0.0500	0.00409	90.3	70-130			
Strontium	1.61	0.0100	"	0.500	1.08	105	70-130			
Matrix Spike Dup (2005283-MSD1)	**Source: 2005213-01**			Prepared & Analyzed: 05/22/20						
Calcium	97.3	0.0500	mg/L	5.00	92.3	98.7	70-130	0.191	25	
Iron	3.98	0.0100	"	5.00	ND	79.5	70-130	1.45	25	
Magnesium	42.6	0.0500	"	5.00	38.9	73.7	70-130	1.52	25	
Manganese	0.615	0.00100	"	0.500	0.165	90.1	70-130	1.46	25	
Potassium	8.73	0.0500	"	5.00	4.58	82.8	70-130	1.47	25	
Sodium	101	0.0500	"	5.00	97.5	78.1	70-130	0.418	25	
Barium	0.474	0.00100	"	0.500	0.0388	86.9	70-130	8.86	25	
Boron	2.20	0.0100	"	2.50	0.202	79.9	70-130	4.07	25	
Selenium	0.0490	0.00100	"	0.0500	0.00409	89.8	70-130	0.518	25	
Strontium	1.55	0.0100	"	0.500	1.08	93.1	70-130	3.68	25	



Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005256 - General Preparation										
Blank (2005256-BLK1)				Prepared & Analyzed: 05/20/20						
Bromide	ND	0.200	mg/L							
Chloride	ND	0.100	"							
Fluoride	ND	0.200	"							
Sulfate	ND	0.300	"							
Nitrate as N	ND	0.100	"							
Nitrite as N	ND	0.100	"							
Nitrate/Nitrite as N	ND	0.200	"							
LCS (2005256-BS1)				Prepared & Analyzed: 05/20/20						
Bromide	10.1	0.200	mg/L	10.0		101	90-110			
Chloride	3.13	0.100	"	3.00		104	90-110			
Fluoride	2.10	0.200	"	2.00		105	90-110			
Sulfate	15.8	0.300	"	15.0		105	90-110			
Nitrate as N	3.06	0.100	"	3.00		102	90-110			
Nitrite as N	3.10	0.100	"	3.00		103	90-110			
Duplicate (2005256-DUP1)	**Source: 2005192-01**			Prepared & Analyzed: 05/20/20						
Bromide	6.66	0.200	mg/L		7.63			13.6	20	
Chloride	ND	0.100	"		512				20	QM-01
Fluoride	0.586	0.200	"		0.603			2.86	20	
Sulfate	77.0	0.300	"		63.8			18.8	20	
Nitrate as N	0.444	0.100	"		0.491			10.1	20	
Nitrite as N	ND	0.100	"		ND				20	
Nitrate/Nitrite as N	ND	0.200	"		0.491				20	
Matrix Spike (2005256-MS1)	**Source: 2005192-01**			Prepared & Analyzed: 05/20/20						
Bromide	15.8	0.200	mg/L	10.0	7.63	82.0	80-120			
Chloride	ND	0.100	"	3.00	512	NR	80-120			QM-01
Fluoride	2.22	0.200	"	2.00	0.603	80.9	80-120			
Sulfate	87.9	0.300	"	15.0	63.8	161	80-120			QM-01
Nitrate as N	3.00	0.100	"	3.00	0.491	83.5	80-120			
Nitrite as N	2.58	0.100	"	3.00	ND	86.1	80-120			

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/28/20 11:58

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

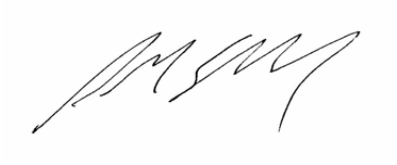
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005270 - General Preparation										
Blank (2005270-BLK1)				Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	ND	10.0	mg/L as CaCO3							
Carbonate	ND	10.0	"							
Bicarbonate	ND	10.0	"							
LCS (2005270-BS1)				Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	100	10.0	mg/L as CaCO3	100		100	80-120			
Duplicate (2005270-DUP1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	280	10.0	mg/L as CaCO3		280			0.00	20	
Carbonate	ND	10.0	"		ND				20	
Bicarbonate	280	10.0	"		280			0.00	20	
Matrix Spike (2005270-MS1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	380	10.0	mg/L as CaCO3	100	280	100	70-130			
Matrix Spike Dup (2005270-MSD1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	380	10.0	mg/L as CaCO3	100	280	100	70-130	0.00	20	

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005285 - General Preparation										
Blank (2005285-BLK1)				Prepared & Analyzed: 05/22/20						
Phosphorus - Total	ND	0.0500	mg/L							
LCS (2005285-BS1)				Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.10	0.0500	mg/L	1.00		110	80-120			
Duplicate (2005285-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	0.0590	0.0500	mg/L		0.0620			4.96	20	
Matrix Spike (2005285-MS1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.05	0.0500	mg/L	1.00	0.0620	98.6	70-130			
Matrix Spike Dup (2005285-MSD1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.10	0.0500	mg/L	1.00	0.0620	104	70-130	4.75	20	



Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/28/20 11:58

Specific Conductance by SM2510B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005268 - General Preparation										
Blank (2005268-BLK1)				Prepared & Analyzed: 05/21/20						
Specific Conductance (EC)	ND	1.00	umhos/cm							
Duplicate (2005268-DUP1)		**Source: 2005182-08**		Prepared & Analyzed: 05/21/20						
Specific Conductance (EC)	288	1.00	umhos/cm		289			0.173	20	

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005269 - General Preparation										
Blank (2005269-BLK1)				Prepared & Analyzed: 05/21/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (2005269-DUP1)		**Source: 2005182-09**		Prepared & Analyzed: 05/21/20						
Total Dissolved Solids	374	10.0	mg/L		374			0.0267	20	

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/28/20 11:58

pH by SM4500 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005308 - General Preparation										
LCS (2005308-BS1)				Prepared: 05/20/20 Analyzed: 05/26/20						
pH	9.22	1.00	pH Units	9.18		100	90-110			
Duplicate (2005308-DUP1)		**Source: 2005219-01**		Prepared: 05/20/20 Analyzed: 05/26/20						
pH	6.84	1.00	pH Units		6.82			0.293	20	

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number:	Alloc 421	**Reported:**
Denver CO, 80202	Project Manager:	Heather Shideman	05/28/20 11:58

Notes and Definitions

S-03	The surrogate recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

June 01, 2020

Heather Shideman

Extraction Oil&Gas

370 17th Street Suite 5300

Denver, CO 80202

RE: Trip_Blank/GWA_District_Six_C6

Work Order # 2005298

Enclosed are the results of analyses for samples received by Summit Scientific on 05/19/20 19:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury

President

Extraction Oil&Gas	Project:	Trip_Blank/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number:	ALLOC-421 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager:	Heather Shideman	06/01/20 08:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_2_Trip_Blank	2005298-01	Water	05/20/20 16:57	05/19/20 19:15

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

2005298

S2

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

Client:	Extraction Oil and Gas (XOG) **Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman
Address:	2234 117th Ave, Ste 106	**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634	**cc:**	bford@extractionog.com
Phone:	(970) 576-3446	**Project Name:**	Trip_Blank/GWA_District_Six_C6
Sampler Name:	Kade MacDougall	**Project No.:**	ALLOC-421 **Facility ID**

					Preservative				**Matrix**				**Analysis Requested**								**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Groundwater**	**Soil**	**Air-Canister Serial #**	**Other (Specify)**	**BTEX**								
1	GW_60666_MH_MW_2_Trip_Blank	20/05/19	1524	2					X				X								Sample Frequency: IN
			16:57																		

Relinquished by:	Date/Time: 20/05/19/1915	Received by:	Date/Time:	**Turn Around Time** (Check) **Notes:**
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day ___ 72 hours ___ 24 hours ___ Standard X 48 hours ___
Relinquished by:	Date/Time:	Received by:	Date/Time: 5/19/20 1915	**Sample Integrity:** Temperature Upon Receipt: 4.9 Intact: (Yes) No

Sample Receipt Checklist

S2 Work Order 2005298

Client: Extraction Oil/Apex Client Project ID: Trip_Blank/GWA_District_Six_C

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

[✓] [ ] [ ] [ ] [ ]

Matrix (check all that apply): [ ] Air [ ] Soil/Solid [✓] Water [ ] Other:_____ (Describe)

Temp (°C)	4.9

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.	✓			
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			✓	
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.

PS — **Custodian Printed Name or Initials**

Signature of Custodian

5/19/20 1915 — **Date/Time**

Extraction Oil&Gas	Project: Trip_Blank/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: ALLOC-421 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	06/01/20 08:27

GW_60666_MH_MW_2_Trip_Blank

2005298-01 (Water)

Summit Scientific

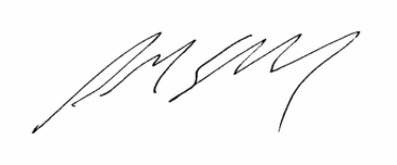
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/20/20 16:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2005357	05/29/20	05/29/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/20/20 16:57**

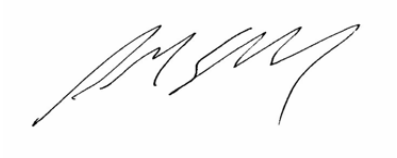
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*128 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*91.4 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*21-167*		"	"	"	"	



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 2005357 - EPA 5030 Water MS										
Blank (2005357-BLK1)				Prepared: 05/29/20 Analyzed: 05/30/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*16.3*		"	*13.3*		*122*	*23-173*			
Surrogate: Toluene-d8	*12.2*		"	*13.3*		*91.7*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.0*		"	*13.3*		*105*	*21-167*			
LCS (2005357-BS1)				Prepared: 05/29/20 Analyzed: 05/30/20						
Benzene	46.1	1.0	ug/l	41.7		111	51-132			
Toluene	42.7	1.0	"	41.7		103	51-138			
Ethylbenzene	49.2	1.0	"	41.7		118	58-146			
m,p-Xylene	86.8	2.0	"	83.3		104	57-144			
o-Xylene	43.6	1.0	"	41.7		105	53-146			
Surrogate: 1,2-Dichloroethane-d4	*14.5*		"	*13.3*		*109*	*23-173*			
Surrogate: Toluene-d8	*12.6*		"	*13.3*		*94.3*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.3*		"	*13.3*		*99.8*	*21-167*			
Matrix Spike (2005357-MS1)	**Source: 2005264-01**			Prepared: 05/29/20 Analyzed: 05/30/20						
Benzene	47.0	1.0	ug/l	41.7	ND	113	34-141			
Toluene	43.2	1.0	"	41.7	ND	104	27-151			
Ethylbenzene	49.1	1.0	"	41.7	ND	118	29-160			
m,p-Xylene	86.1	2.0	"	83.3	ND	103	20-166			
o-Xylene	43.5	1.0	"	41.7	ND	104	33-159			
Surrogate: 1,2-Dichloroethane-d4	*15.8*		"	*13.3*		*118*	*23-173*			
Surrogate: Toluene-d8	*12.3*		"	*13.3*		*92.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.8*		"	*13.3*		*103*	*21-167*			

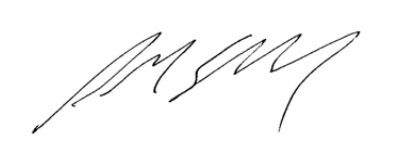


Extraction Oil&Gas	Project: Trip_Blank/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: ALLOC-421 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	06/01/20 08:27

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 2005357 - EPA 5030 Water MS										
Matrix Spike Dup (2005357-MSD1)	**Source: 2005264-01**			Prepared: 05/29/20 Analyzed: 05/30/20						
Benzene	45.7	1.0	ug/l	41.7	ND	110	34-141	2.70	32	
Toluene	41.8	1.0	"	41.7	ND	100	27-151	3.29	25	
Ethylbenzene	48.2	1.0	"	41.7	ND	116	29-160	1.73	50	
m,p-Xylene	84.6	2.0	"	83.3	ND	102	20-166	1.72	36	
o-Xylene	42.5	1.0	"	41.7	ND	102	33-159	2.26	26	
Surrogate: 1,2-Dichloroethane-d4	*15.8*		*"*	*13.3*		*119*	*23-173*			
Surrogate: Toluene-d8	*12.3*		*"*	*13.3*		*92.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.6*		*"*	*13.3*		*102*	*21-167*			



Extraction Oil&Gas	Project: Trip_Blank/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: ALLOC-421 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	06/01/20 08:27

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

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	762324	Job #:	44944	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_2				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	Plastic Bottle				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/19/2020 16:57	Date Received:	5/21/2020	Date Reported:	6/11/2020

δD of water	----------	-105.4 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-13.43 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	-13.4 ‰ relative to VPDB
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks: ALLOC-421

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	762450	Job #:	44963	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_2				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/19/2020 16:57	Date Received:	5/21/2020	Date Reported:	7/07/2020

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	0.0109					
Hydrogen	nd					
Argon	0.817					
Oxygen	18.59					
Nitrogen	68.90					
Carbon Dioxide	0.70					
Methane	9.10	-47.61	-225.9		96	64
Ethane	1.22	-31.76			13	16
Ethylene	nd					
Propane	0.457	-27.98			4.8	8.9
Propylene	nd					
Iso-butane	0.0561					
N-butane	0.0984	-26.76				
Iso-pentane	0.0212					
N-pentane	0.0134					
Hexanes +	0.0122					

Remarks:
ALLOC-421
Insufficient iC4 and pentane concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 27, 2020

Heather Shideman

Extraction Oil&Gas

370 17th Street Suite 5300

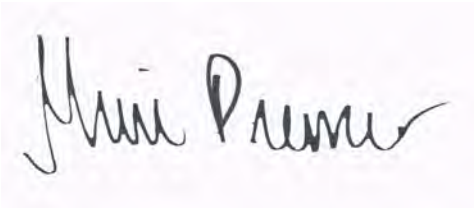
Denver, CO 80202

RE: Ground_Water/GWA_District_Six_C6

Work Order # 2005175

Enclosed are the results of analyses for samples received by Summit Scientific on 05/15/20 15:25. 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: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_3	2005175-01	Water	05/15/20 12:50	05/15/20 15:25

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

2005175

S2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Client:	Extraction Oil and Gas (XOG)	**Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman	
Address:	2234 117th Ave, Ste 106		**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com	
City/State/Zip:	Greeley, CO 80634		**cc:**	bford@extractionog.com	
Phone:	(970) 576-3446		**Project Name:**	Ground_Water/GWA_District_Six_C6	
Sampler Name:	Kade MacDougall		**Project No.:** Alloc-421 930, 88		**Facility ID**

					Preservative				**Matrix**				**Analysis Requested**							**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Ground Water**	**Soil**	**Air-Canister #**	**Other (Specify)**	**COGCC 609**	**No BART**						
1	GW_60666_MH_MW_3	20/05/15	1250	11	X	X			X				X	X						**Sample Frequency:**
	NENE_20_5N_65W																			IN
	Temperature, field:	14.5 °C																		
	pH, field:	7.31 s.u.																		
	Conductivity, field:	1080 uS/cm																		
	ORP, field:	164.5 mV																		
	Dissolved Oxygen, field:	1.95 mg/L																		
	Turbidity, field:	50.2 NTU																		

Relinquished by:	Date/Time:	Received by:	Date/Time:
	20/05/15 1525		05-15-2020 15:25
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)

Same Day ___ 72 hours
___ 24 hours _X_ Standard
___ 48 hours ___

Sample Integrity:
Temperature Upon Receipt: 2.2
Intact: (Yes) No

Notes:

Sample Receipt Checklist

S2 Work Order 2005175

Client: Apex/XOG Client Project ID: GWA_District_Six_C6

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

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☑ Water ☐ Other: _____ (Describe)

Temp (°C)	2.2

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 HNO3 H2SO4
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.**

MP	Muri Premer	5/15/20
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

GW_60666_MH_MW_3

NENE_20_5N_65W

2005175-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0010	mg/L	1	2005231	05/19/20	05/19/20	EPA 8260B	
Toluene	ND	0.0010	"	"	"	"	"	"	
Ethylbenzene	ND	0.0010	"	"	"	"	"	"	
m,p-Xylene	ND	0.0020	"	"	"	"	"	"	
o-Xylene	ND	0.0010	"	"	"	"	"	"	
Xylenes (total)	ND	0.0020	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.050	"	"	"	"	"	"	

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*131 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*90.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	0.100	mg/L	1	2005213	05/18/20	05/18/20	EPA 8015M	

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*48.9 %*	*44.8-129*		"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

GW_60666_MH_MW_3
NENE_20_5N_65W

2005175-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	ND	0.010	mg/L	1	2005303	05/26/20	05/26/20	RSK-175 mod	
Ethane	ND	0.010	"	"	"	"	"	"	
Propane	ND	0.010	"	"	"	"	"	"	

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		*117 %*	*70-130*		"	"	"	"	

Dissolved Metals by EPA Method 200.8

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**109**	0.0500	mg/L	1	2005217	05/18/20	05/18/20	EPA 200.8	
Iron	**0.0316**	0.0100	"	"	"	"	"	"	
Magnesium	**45.0**	0.0500	"	"	"	"	"	"	
Manganese	**0.327**	0.00100	"	"	"	"	"	"	
Potassium	**4.92**	0.0500	"	"	"	"	"	"	
Sodium	**69.3**	0.0500	"	"	"	"	"	"	
Barium	**0.0753**	0.00100	"	"	"	"	"	"	
Boron	**0.167**	0.0100	"	"	"	"	"	"	
Selenium	**0.00246**	0.00100	"	"	"	"	"	"	
Strontium	**1.27**	0.0100	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromide	**0.404**	0.200	mg/L	1	2005176	05/15/20	05/15/20	EPA 300.0	
Chloride	**47.9**	10.0	"	100	"	"	"	"	
Fluoride	**0.637**	0.200	"	1	"	"	"	"	
Sulfate	**98.7**	30.0	"	100	"	"	"	"	
Nitrate as N	**9.62**	0.100	"	1	"	"	"	"	
Nitrite as N	ND	0.100	"	"	"	"	"	"	
Nitrate/Nitrite as N	**9.62**	0.200	"	"	"	"	"	"	

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	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

GW_60666_MH_MW_3
NENE_20_5N_65W

2005175-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Alkalinity	**340**	10.0	mg/L as CaCO3	1	2005270	05/21/20	05/22/20	SM2320-B	
Carbonate	ND	10.0	"	"	"	"	"	"	
Bicarbonate	**340**	10.0	"	"	"	"	"	"	

Conventional Chemistry Parameters by APHA/EPA Methods

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phosphorus - Total	**0.0620**	0.0500	mg/L	1	2005285	05/22/20	05/22/20	SM4500-P-E	

Specific Conductance by SM2510B

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1260**	1.00	umhos/cm	1	2005243	05/20/20	05/20/20	SM2510B	

Total Dissolved Solids by SM2540C

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**609**	10.0	mg/L	1	2005244	05/20/20	05/20/20	SM2540C	

pH by SM4500

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

GW_60666_MH_MW_3

NENE_20_5N_65W

2005175-01 (Water)

Summit Scientific

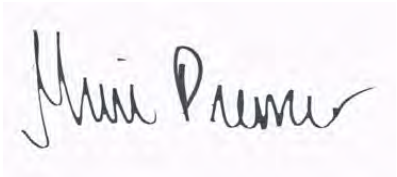
pH by SM4500

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.44**	1.00	pH Units	1	2005253	05/15/20	05/20/20	SM4500-H+ B	

Field Data

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1080**		uS/cm	1	2005212	05/15/20	05/15/20	Field Method	
Temperature	**14.5**		Degrees C	"	"	"	"	"	
Turbidity	**50.2**		NTU	"	"	"	"	"	
Oxidation/Reduction Potential	**164.5**		mv	"	"	"	"	"	
Dissolved Oxygen	**1.95**		mg/L	"	"	"	"	"	
pH	**7.21**		SU	"	"	"	"	"	



S2

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88
Denver CO, 80202	Project Manager:	Heather Shideman
	Reported:	05/27/20 10:59

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 2005231 - EPA 5030 Water MS										
Blank (2005231-BLK1)				Prepared & Analyzed: 05/19/20						
Benzene	ND	0.0010	mg/L							
Toluene	ND	0.0010	"							
Ethylbenzene	ND	0.0010	"							
m,p-Xylene	ND	0.0020	"							
o-Xylene	ND	0.0010	"							
Xylenes (total)	ND	0.0020	"							
Gasoline Range Hydrocarbons	ND	0.050	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0164*		*"*	*0.0133*		*123*	*23-173*			
Surrogate: Toluene-d8	*0.0125*		*"*	*0.0133*		*93.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0140*		*"*	*0.0133*		*105*	*21-167*			
LCS (2005231-BS1)				Prepared & Analyzed: 05/19/20						
Benzene	0.0411	0.0010	mg/L	0.0333		123	51-132			
Toluene	0.0379	0.0010	"	0.0333		114	51-138			
Ethylbenzene	0.0432	0.0010	"	0.0333		130	58-146			
m,p-Xylene	0.0762	0.0020	"	0.0667		114	57-144			
o-Xylene	0.0389	0.0010	"	0.0333		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	*0.0148*		*"*	*0.0133*		*111*	*23-173*			
Surrogate: Toluene-d8	*0.0129*		*"*	*0.0133*		*97.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0133*		*"*	*0.0133*		*99.9*	*21-167*			
Matrix Spike (2005231-MS1)		**Source: 2005157-05**		Prepared & Analyzed: 05/19/20						
Benzene	0.315	0.0010	mg/L	0.0333	0.181	404	34-141			QM-07
Toluene	0.0432	0.0010	"	0.0333	ND	130	27-151			
Ethylbenzene	0.106	0.0010	"	0.0333	0.130	NR	29-160			QM-07
m,p-Xylene	0.434	0.0020	"	0.0667	0.249	277	20-166			QM-07
o-Xylene	0.149	0.0010	"	0.0333	0.0589	270	33-159			QM-07
Surrogate: 1,2-Dichloroethane-d4	*0.0131*		*"*	*0.0133*		*98.3*	*23-173*			
Surrogate: Toluene-d8	*0.0119*		*"*	*0.0133*		*89.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0146*		*"*	*0.0133*		*110*	*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	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88
Denver CO, 80202	Project Manager:	Heather Shideman

Reported: 05/27/20 10:59

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 2005231 - EPA 5030 Water MS										
Matrix Spike Dup (2005231-MSD1)	**Source: 2005157-05**			Prepared & Analyzed: 05/19/20						
Benzene	0.321	0.0010	mg/L	0.0333	0.181	423	34-141	1.94	32	QM-07
Toluene	0.0452	0.0010	"	0.0333	ND	136	27-151	4.52	25	
Ethylbenzene	0.104	0.0010	"	0.0333	0.130	NR	29-160	1.97	50	QM-07
m,p-Xylene	0.430	0.0020	"	0.0667	0.249	271	20-166	0.819	36	QM-07
o-Xylene	0.147	0.0010	"	0.0333	0.0589	263	33-159	1.60	26	QM-07
Surrogate: 1,2-Dichloroethane-d4	*0.0132*		*"*	*0.0133*		*99.2*	*23-173*			
Surrogate: Toluene-d8	*0.0123*		*"*	*0.0133*		*92.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0147*		*"*	*0.0133*		*110*	*21-167*			

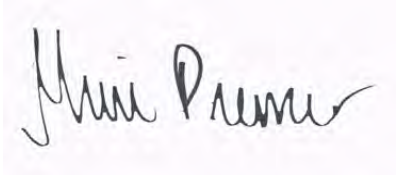
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005213 - EPA 3520B										
Blank (2005213-BLK1)				Prepared & Analyzed: 05/18/20						
C10-C28 (DRO)	ND	0.100	mg/L							
Surrogate: o-Terphenyl	*0.0191*		*"*	*0.0250*		*76.3*	*44.8-129*			
LCS (2005213-BS1)				Prepared & Analyzed: 05/18/20						
C10-C28 (DRO)	0.750	0.100	mg/L	1.00		75.0	70-130			
Surrogate: o-Terphenyl	*0.0205*		*"*	*0.0250*		*81.9*	*44.8-129*			
LCS Dup (2005213-BSD1)				Prepared & Analyzed: 05/18/20						
C10-C28 (DRO)	0.711	0.100	mg/L	1.00		71.1	70-130	5.27	200	
Surrogate: o-Terphenyl	*0.0200*		*"*	*0.0250*		*79.9*	*44.8-129*			



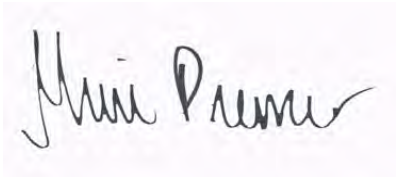
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Dissolved Gases by RSK-175 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005303 - GC										
Blank (2005303-BLK1)				Prepared & Analyzed: 05/26/20						
Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	*0.0426*		*"*	*0.0364*		*117*	*70-130*			
LCS (2005303-BS1)				Prepared & Analyzed: 05/26/20						
Methane	0.033	0.010	mg/L	0.0428		76.7	70-130			
Ethane	0.079	0.010	"	0.0798		98.8	70-130			
Propane	0.11	0.010	"	0.139		81.6	70-130			
Surrogate: Ethene	*0.0839*		*"*	*0.0728*		*115*	*70-130*			
Duplicate (2005303-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/26/20						
Methane	ND	0.010	mg/L		ND				30	
Ethane	ND	0.010	"		ND				30	
Propane	ND	0.010	"		ND				30	
Surrogate: Ethene	*0.0442*		*"*	*0.0364*		*121*	*70-130*			
Matrix Spike (2005303-MS1)		**Source: 2005175-01**		Prepared & Analyzed: 05/26/20						
Methane	0.033	0.010	mg/L	0.0428	ND	76.2	70-130			
Ethane	0.099	0.010	"	0.0798	ND	124	70-130			
Propane	0.14	0.010	"	0.139	ND	104	70-130			
Surrogate: Ethene	*0.103*		*"*	*0.0728*		*141*	*70-130*			*S-03*



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005217 - EPA 200.8										
Blank (2005217-BLK1)				Prepared & Analyzed: 05/18/20						
Calcium	ND	0.0500	mg/L							
Iron	ND	0.0100	"							
Magnesium	ND	0.0500	"							
Manganese	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0500	"							
Barium	ND	0.00100	"							
Boron	ND	0.0100	"							
Selenium	ND	0.00100	"							
Strontium	ND	0.0100	"							
LCS (2005217-BS1)				Prepared & Analyzed: 05/18/20						
Calcium	5.52	0.0500	mg/L	5.00		110	85-115			
Iron	5.36	0.0100	"	5.00		107	85-115			
Magnesium	5.52	0.0500	"	5.00		110	85-115			
Manganese	0.945	0.00100	"	1.00		94.5	85-115			
Potassium	5.48	0.0500	"	5.00		110	85-115			
Sodium	5.59	0.0500	"	5.00		112	85-115			
Barium	0.940	0.00100	"	1.00		94.0	85-115			
Boron	2.88	0.0100	"	2.50		115	85-115			
Selenium	0.0961	0.00100	"	0.100		96.1	85-115			
Strontium	0.924	0.0100	"	1.00		92.4	85-115			
Duplicate (2005217-DUP1)	**Source: 2005156-02**			Prepared & Analyzed: 05/18/20						
Calcium	23.1	0.0500	mg/L		23.4			1.33	20	
Iron	0.517	0.0100	"		0.528			2.04	20	
Magnesium	4.86	0.0500	"		4.70			3.35	20	
Manganese	0.00493	0.00100	"		0.00472			4.35	20	
Potassium	4.69	0.0500	"		4.56			2.72	20	
Sodium	12.1	0.0500	"		11.7			2.71	20	
Barium	0.0926	0.00100	"		0.0951			2.70	20	
Boron	0.0151	0.0100	"		0.0178			16.3	20	
Selenium	0.000422	0.00100	"		0.000401			4.99	20	
Strontium	0.188	0.0100	"		0.190			1.26	20	

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.

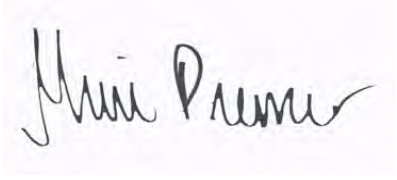
S2

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88
Denver CO, 80202	Project Manager:	Heather Shideman
		Reported: 05/27/20 10:59

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005217 - EPA 200.8										
Matrix Spike (2005217-MS1)	**Source: 2005156-02**			Prepared & Analyzed: 05/18/20						
Calcium	27.9	0.0500	mg/L	5.00	23.4	90.3	70-130			
Iron	5.84	0.0100	"	5.00	0.528	106	70-130			
Magnesium	10.2	0.0500	"	5.00	4.70	110	70-130			
Manganese	0.522	0.00100	"	0.500	0.00472	104	70-130			
Potassium	9.63	0.0500	"	5.00	4.56	101	70-130			
Sodium	16.1	0.0500	"	5.00	11.7	88.0	70-130			
Barium	0.609	0.00100	"	0.500	0.0951	103	70-130			
Boron	2.74	0.0100	"	2.50	0.0178	109	70-130			
Selenium	0.0538	0.00100	"	0.0500	0.000401	107	70-130			
Strontium	0.694	0.0100	"	0.500	0.190	101	70-130			
Matrix Spike Dup (2005217-MSD1)	**Source: 2005156-02**			Prepared & Analyzed: 05/18/20						
Calcium	28.7	0.0500	mg/L	5.00	23.4	107	70-130	2.90	25	
Iron	5.94	0.0100	"	5.00	0.528	108	70-130	1.80	25	
Magnesium	10.7	0.0500	"	5.00	4.70	120	70-130	4.90	25	
Manganese	0.515	0.00100	"	0.500	0.00472	102	70-130	1.41	25	
Potassium	10.1	0.0500	"	5.00	4.56	112	70-130	5.21	25	
Sodium	16.6	0.0500	"	5.00	11.7	98.3	70-130	3.15	25	
Barium	0.630	0.00100	"	0.500	0.0951	107	70-130	3.33	25	
Boron	2.95	0.0100	"	2.50	0.0178	117	70-130	7.68	25	
Selenium	0.0532	0.00100	"	0.0500	0.000401	106	70-130	1.08	25	
Strontium	0.724	0.0100	"	0.500	0.190	107	70-130	4.16	25	



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005176 - General Preparation										
Blank (2005176-BLK1)				Prepared & Analyzed: 05/14/20						
Bromide	ND	0.200	mg/L							
Chloride	ND	0.100	"							
Fluoride	ND	0.200	"							
Sulfate	ND	0.300	"							
Nitrate as N	ND	0.100	"							
Nitrite as N	ND	0.100	"							
Nitrate/Nitrite as N	ND	0.200	"							
LCS (2005176-BS1)				Prepared & Analyzed: 05/14/20						
Bromide	9.37	0.200	mg/L	10.0		93.7	90-110			
Chloride	3.11	0.100	"	3.00		104	90-110			
Fluoride	2.00	0.200	"	2.00		99.9	90-110			
Sulfate	14.7	0.300	"	15.0		97.7	90-110			
Nitrate as N	2.87	0.100	"	3.00		95.8	90-110			
Nitrite as N	2.82	0.100	"	3.00		93.8	90-110			
Duplicate (2005176-DUP1)	**Source: 2005123-01**			Prepared & Analyzed: 05/14/20						
Bromide	ND	20.0	mg/L		ND				20	
Chloride	175	10.0	"		173			1.21	20	
Fluoride	ND	20.0	"		ND				20	
Sulfate	75.3	30.0	"		74.5			1.07	20	
Nitrate as N	3.00	10.0	"		3.20			6.45	20	
Nitrite as N	ND	10.0	"		ND				20	
Nitrate/Nitrite as N	3.00	20.0	"		3.25			6.45	20	
Matrix Spike (2005176-MS1)	**Source: 2005123-01**			Prepared & Analyzed: 05/14/20						
Bromide	1180	20.0	mg/L	1000	ND	118	80-120			
Chloride	503	10.0	"	300	173	110	80-120			
Fluoride	184	20.0	"	200	ND	91.8	80-120			
Sulfate	1870	30.0	"	1500	74.5	120	80-120			
Nitrate as N	319	10.0	"	300	3.20	105	80-120			
Nitrite as N	326	10.0	"	300	ND	109	80-120			

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005270 - General Preparation										
Blank (2005270-BLK1)				Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	ND	10.0	mg/L as CaCO3							
Carbonate	ND	10.0	"							
Bicarbonate	ND	10.0	"							
LCS (2005270-BS1)				Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	100	10.0	mg/L as CaCO3	100		100	80-120			
Duplicate (2005270-DUP1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	280	10.0	mg/L as CaCO3		280			0.00	20	
Carbonate	ND	10.0	"		ND				20	
Bicarbonate	280	10.0	"		280			0.00	20	
Matrix Spike (2005270-MS1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	380	10.0	mg/L as CaCO3	100	280	100	70-130			
Matrix Spike Dup (2005270-MSD1)		**Source: 2005213-01**		Prepared: 05/21/20 Analyzed: 05/22/20						
Total Alkalinity	380	10.0	mg/L as CaCO3	100	280	100	70-130	0.00	20	

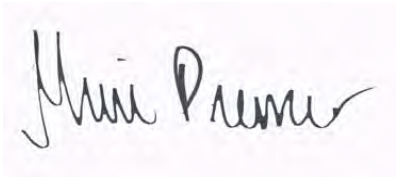
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005285 - General Preparation										
Blank (2005285-BLK1)				Prepared & Analyzed: 05/22/20						
Phosphorus - Total	ND	0.0500	mg/L							
LCS (2005285-BS1)				Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.10	0.0500	mg/L	1.00		110	80-120			
Duplicate (2005285-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	0.0590	0.0500	mg/L		0.0620			4.96	20	
Matrix Spike (2005285-MS1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.05	0.0500	mg/L	1.00	0.0620	98.6	70-130			
Matrix Spike Dup (2005285-MSD1)		**Source: 2005175-01**		Prepared & Analyzed: 05/22/20						
Phosphorus - Total	1.10	0.0500	mg/L	1.00	0.0620	104	70-130	4.75	20	



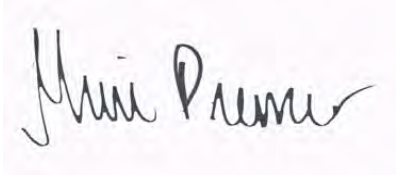
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Specific Conductance by SM2510B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005243 - General Preparation										
Blank (2005243-BLK1)				Prepared & Analyzed: 05/20/20						
Specific Conductance (EC)	ND	1.00	umhos/cm							
Duplicate (2005243-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/20/20						
Specific Conductance (EC)	1260	1.00	umhos/cm		1260			0.0796	20	



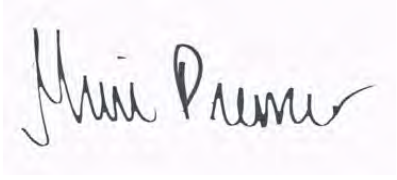
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005244 - General Preparation										
Blank (2005244-BLK1)				Prepared & Analyzed: 05/20/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (2005244-DUP1)		**Source: 2005175-01**		Prepared & Analyzed: 05/20/20						
Total Dissolved Solids	613	10.0	mg/L		609			0.557	20	



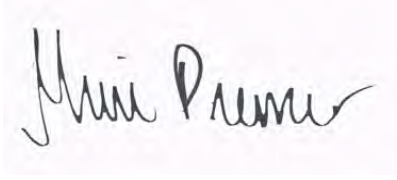
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

pH by SM4500 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005253 - General Preparation										
LCS (2005253-BS1)				Prepared: 05/15/20 Analyzed: 05/20/20						
pH	9.19	1.00	pH Units	9.18		100	90-110			
Duplicate (2005253-DUP1)		**Source: 2005175-01**		Prepared: 05/15/20 Analyzed: 05/20/20						
pH	7.46	1.00	pH Units		7.44			0.268	20	



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/27/20 10:59

Notes and Definitions

S-03	The surrogate recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

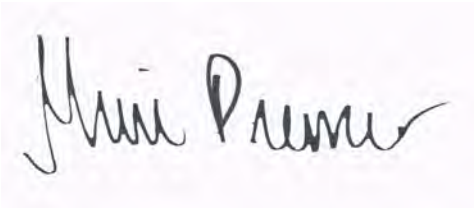
May 27, 2020

Heather Shideman
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Trip_Blank/GWA_District_Six_C6
Work Order #2005176

Enclosed are the results of analyses for samples received by Summit Scientific on 05/15/20 15:25. 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: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Project Manager: Heather Shideman	**Reported:** 05/27/20 11:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_3_Trip_Blank	2005176-01	Water	05/15/20 12:50	05/15/20 15:25

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

2005176

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

Client:	Extraction Oil and Gas (XOG)	**Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman	
Address:	2234 117th Ave, Ste 106		**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com	
City/State/Zip:	Greeley, CO 80634		**cc:**	bford@extractionog.com	
Phone:	(970) 576-3446		**Project Name:**	Trip_Blank/GWA_District_Six_C6	
Sampler Name:	Kade MacDougall		**Project No.:**	ALLOC-421	**Facility ID**

					Preservative				Matrix				Analysis Requested							Special Instructions
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Groundwater**	**Soil**	**Air-Canister Serial #**	**Other (Specify)**	**BTEX**							
1	GW_60666_MH_MW_3_Trip_Blank	20/05/15	1250	2					X				X							**Sample Frequency:** IN

Relinquished by:	Date/Time: 20/05/15 1525	Received by: 05-15-2020 15:25	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard _X_
48 hours ___

Notes:

Sample Integrity:
Temperature Upon Receipt: 2.2
Intact: (Yes) No

Sample Receipt Checklist

S2 Work Order 2005176

Client: Apex/XOG Client Project ID: Trip-Blank GWA_District_Six_C6

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

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☑ Water ☐ Other: _____ (Describe)

Temp (°C)	2.2

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.**

MP	Muri Premer	5/15/20
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Project Manager: Heather Shideman	**Reported:** 05/27/20 11:09

GW_60666_MH_MW_3_Trip_Blank

2005176-01 (Water)

Summit Scientific

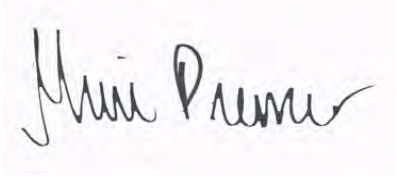
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2005231	05/19/20	05/19/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/15/20 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*134 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*90.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Project Manager: Heather Shideman	**Reported:** 05/27/20 11:09

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 2005231 - EPA 5030 Water MS										
Blank (2005231-BLK1)				Prepared & Analyzed: 05/19/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*16.4*		*"*	*13.3*		*123*	*23-173*			
Surrogate: Toluene-d8	*12.5*		*"*	*13.3*		*93.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.0*		*"*	*13.3*		*105*	*21-167*			
LCS (2005231-BS1)				Prepared & Analyzed: 05/19/20						
Benzene	41.1	1.0	ug/l	33.3		123	51-132			
Toluene	37.9	1.0	"	33.3		114	51-138			
Ethylbenzene	43.2	1.0	"	33.3		130	58-146			
m,p-Xylene	76.2	2.0	"	66.7		114	57-144			
o-Xylene	38.9	1.0	"	33.3		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	*14.8*		*"*	*13.3*		*111*	*23-173*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*97.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.3*		*"*	*13.3*		*99.9*	*21-167*			
Matrix Spike (2005231-MS1)		**Source: 2005157-05**		Prepared & Analyzed: 05/19/20						
Benzene	315	1.0	ug/l	33.3	181	404	34-141			QM-07
Toluene	43.2	1.0	"	33.3	ND	130	27-151			
Ethylbenzene	106	1.0	"	33.3	130	NR	29-160			QM-07
m,p-Xylene	434	2.0	"	66.7	249	277	20-166			QM-07
o-Xylene	149	1.0	"	33.3	58.9	270	33-159			QM-07
Surrogate: 1,2-Dichloroethane-d4	*13.1*		*"*	*13.3*		*98.3*	*23-173*			
Surrogate: Toluene-d8	*11.9*		*"*	*13.3*		*89.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.6*		*"*	*13.3*		*110*	*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: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Project Manager: Heather Shideman	**Reported:** 05/27/20 11:09

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 2005231 - EPA 5030 Water MS										
Matrix Spike Dup (2005231-MSD1)	**Source: 2005157-05**			Prepared & Analyzed: 05/19/20						
Benzene	321	1.0	ug/l	33.3	181	423	34-141	1.94	32	QM-07
Toluene	45.2	1.0	"	33.3	ND	136	27-151	4.52	25	
Ethylbenzene	104	1.0	"	33.3	130	NR	29-160	1.97	50	QM-07
m,p-Xylene	430	2.0	"	66.7	249	271	20-166	0.819	36	QM-07
o-Xylene	147	1.0	"	33.3	58.9	263	33-159	1.60	26	QM-07
Surrogate: 1,2-Dichloroethane-d4	*13.2*		*"*	*13.3*		*99.2*	*23-173*			
Surrogate: Toluene-d8	*12.3*		*"*	*13.3*		*92.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.7*		*"*	*13.3*		*110*	*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.

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: ALLOC-421 Project Manager: Heather Shideman	**Reported:** 05/27/20 11:09

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	762225	Job #:	44933	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_3				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	Plastic Bottle				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/15/2020 12:50	Date Received:	5/18/2020	Date Reported:	6/09/2020

δD of water	----------	-102.9 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-13.21 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	-13.1 ‰ relative to VPDB
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks: ALLOC-421

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 17, 2020

Heather Shideman

Extraction Oil&Gas

370 17th Street Suite 5300

Denver, CO 80202

RE: Ground_Water/GWA_District_Six_C6

Work Order # 2005036

Enclosed are the results of analyses for samples received by Summit Scientific on 05/05/20 16:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury

President

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/17/20 21:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_4	2005036-01	Water	05/05/20 13:26	05/05/20 16:55

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

2005036

S2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Client:	Extraction Oil and Gas (XOG)	**Report to:** Apex Companies, LLC	**Project Manager:** Heather Shideman
Address:	2234 117th Ave, Ste 106		**E-Mail:** Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634		**cc:** bford@extractionog.com
Phone:	(970) 576-3446		**Project Name:** Ground_Water/GWA_District_Six_C6
Sampler Name:	Kade MacDougall		**Project No.:** Alloc-421 930, 88 **Facility ID**

					Preservative				**Matrix**				**Analysis Requested**								**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Ground Water**	**Soil**	**Air-Canister #**	**Other (Specify)**	**COGCC 609**	**No BART**							
1	GW_60666_MH_MW_4	20/05/05	1326						X				X	X							**Sample Frequency**
	NENE_20_5N_65W																				IN
	Temperature, field:	14.6	°C																		
	pH, field:	7.37	s.u.																		
	Conductivity, field:	1072	uS/cm																		
	ORP, field:	-73.7	mV																		
	Dissolved Oxygen, field:	0.22	mg/L																		
	Turbidity, field:	71.5	NTU																		

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature]	20/05/05 / 1655	[signature]	05-05-2020 16:55
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)

Same Day ___ 72 hours

___ 24 hours _X_ Standard

___ 48 hours ___

Sample Integrity:

Temperature Upon Receipt: 5.6

Intact: (Yes) No

Notes:

ON ICE

Sample Receipt Checklist

S2 Work Order 2005036

Client: Apex/XOG Client Project ID: Ground_Water /GWA_District_Six_C6

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

☑ ☐ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☑ Water ☐ Other:_____ (Describe)

Temp (°C)	5.6

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?	✓			pH, anions
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	✓			H2SO4 HNO3
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.	✓			1
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.**

MP	Muri Premer	5/5/20
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/17/20 21:59

GW_60666_MH_MW_4
NENE_20_5N_65W
2005036-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0010	mg/L	1	2005054	05/06/20	05/08/20	EPA 8260B	
Toluene	ND	0.0010	"	"	"	"	"	"	
Ethylbenzene	ND	0.0010	"	"	"	"	"	"	
m,p-Xylene	ND	0.0020	"	"	"	"	"	"	
o-Xylene	**0.0033**	0.0010	"	"	"	"	"	"	
Xylenes (total)	**0.0033**	0.0020	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**0.067**	0.050	"	"	"	"	"	"	

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*92.8 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	0.100	mg/L	1	2005069	05/07/20	05/07/20	EPA 8015M	

Date Sampled: **05/05/20 13:26**

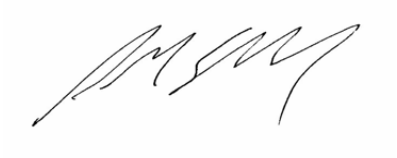
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*79.0 %*	*44.8-129*		"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

GW_60666_MH_MW_4
NENE_20_5N_65W

2005036-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Methane	**5.6**	1.0	mg/L	100	2005088	05/07/20	05/11/20	RSK-175 mod
Ethane	**7.6**	1.0	"	"	"	"	"	"
Propane	**0.033**	0.010	"	1	"	"	"	"

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		*9.07 %*	*70-130*		"	"	"	"	*S-04*

Dissolved Metals by EPA Method 200.8

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**93.2**	0.0500	mg/L	1	2005086	05/07/20	05/07/20	EPA 200.8	
Iron	**0.0170**	0.0100	"	"	"	"	"	"	
Magnesium	**38.9**	0.0500	"	"	"	"	"	"	
Manganese	**0.253**	0.00100	"	"	"	"	"	"	
Potassium	**2.47**	0.0500	"	"	"	"	"	"	
Sodium	**86.4**	0.0500	"	"	"	"	"	"	
Barium	**0.0430**	0.00100	"	"	"	"	"	"	
Boron	**0.221**	0.0100	"	"	"	"	"	"	
Selenium	ND	0.00100	"	"	"	"	"	"	
Strontium	**1.19**	0.0100	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromide	**0.872**	0.200	mg/L	1	2005068	05/07/20	05/07/20	EPA 300.0	
Chloride	**72.1**	10.0	"	100	"	"	"	"	
Fluoride	**0.900**	0.200	"	1	"	"	"	"	
Sulfate	**282**	30.0	"	100	"	"	"	"	
Nitrate as N	**3.54**	0.100	"	1	"	"	"	"	
Nitrite as N	**0.114**	0.100	"	"	"	"	"	"	
Nitrate/Nitrite as N	**3.65**	0.200	"	"	"	"	"	"	

Summit Scientific

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Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

GW_60666_MH_MW_4
NENE_20_5N_65W

2005036-01 (Water)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Alkalinity	**280**	10.0	mg/L as CaCO3	1	2005075	05/07/20	05/08/20	SM2320-B	
Carbonate	ND	10.0	"	"	"	"	"	"	
Bicarbonate	**280**	10.0	"	"	"	"	"	"	

Conventional Chemistry Parameters by APHA/EPA Methods

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phosphorus - Total	ND	0.0500	mg/L	1	2005133	05/12/20	05/12/20	SM4500-P-E	

Specific Conductance by SM2510B

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1220**	1.00	umhos/cm	1	2005052	05/06/20	05/06/20	SM2510B	

Total Dissolved Solids by SM2540C

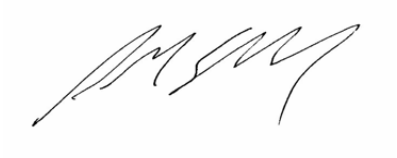
Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**608**	10.0	mg/L	1	2005051	05/06/20	05/06/20	SM2540C	

pH by SM4500

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.69**	1.00	pH Units	1	2005074	05/05/20	05/07/20	SM4500-H+ B	



Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/17/20 21:59

GW_60666_MH_MW_4
NENE_20_5N_65W

2005036-01 (Water)

Summit Scientific

Field Data

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1072.0**		uS/cm	1	2005046	05/05/20	05/05/20	Field Method	
Temperature	**14.60**		Degrees C	"	"	"	"	"	
Turbidity	**71.5**		NTU	"	"	"	"	"	
Oxidation/Reduction Potential	**-73.70**		mv	"	"	"	"	"	
Dissolved Oxygen	**0.220**		mg/L	"	"	"	"	"	
pH	**7.37**		SU	"	"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

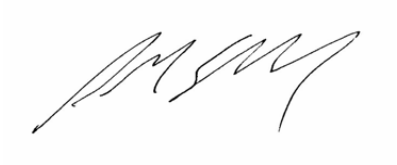
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005054 - EPA 5030 Water MS										
Blank (2005054-BLK1)				Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	ND	0.0010	mg/L							
Toluene	ND	0.0010	"							
Ethylbenzene	ND	0.0010	"							
m,p-Xylene	ND	0.0020	"							
o-Xylene	ND	0.0010	"							
Xylenes (total)	ND	0.0020	"							
Gasoline Range Hydrocarbons	ND	0.050	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0119*		*"*	*0.0133*		*89.0*	*23-173*			
Surrogate: Toluene-d8	*0.0138*		*"*	*0.0133*		*104*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0138*		*"*	*0.0133*		*103*	*21-167*			
LCS (2005054-BS1)				Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	0.0183	0.0010	mg/L	0.0333		55.0	51-132			
Toluene	0.0283	0.0010	"	0.0333		84.8	51-138			
Ethylbenzene	0.0221	0.0010	"	0.0333		66.4	58-146			
m,p-Xylene	0.0433	0.0020	"	0.0667		64.9	57-144			
o-Xylene	0.0227	0.0010	"	0.0333		68.1	53-146			
Surrogate: 1,2-Dichloroethane-d4	*0.0120*		*"*	*0.0133*		*89.7*	*23-173*			
Surrogate: Toluene-d8	*0.0144*		*"*	*0.0133*		*108*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0142*		*"*	*0.0133*		*106*	*21-167*			
Matrix Spike (2005054-MS1)		**Source: 2005036-01**		Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	0.0296	0.0010	mg/L	0.0333	ND	88.6	34-141			
Toluene	0.0279	0.0010	"	0.0333	ND	83.6	27-151			
Ethylbenzene	0.0255	0.0010	"	0.0333	ND	76.6	29-160			
m,p-Xylene	0.0639	0.0020	"	0.0667	0.00102	94.3	20-166			
o-Xylene	0.0259	0.0010	"	0.0333	0.00330	67.7	33-159			
Surrogate: 1,2-Dichloroethane-d4	*0.0123*		*"*	*0.0133*		*92.0*	*23-173*			
Surrogate: Toluene-d8	*0.0143*		*"*	*0.0133*		*107*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0140*		*"*	*0.0133*		*105*	*21-167*			

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/17/20 21:59

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 2005054 - EPA 5030 Water MS										
Matrix Spike Dup (2005054-MSD1)		**Source: 2005036-01**		Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	0.0294	0.0010	mg/L	0.0333	ND	88.1	34-141	0.577	32	
Toluene	0.0271	0.0010	"	0.0333	ND	81.2	27-151	2.95	25	
Ethylbenzene	0.0220	0.0010	"	0.0333	ND	66.0	29-160	14.8	50	
m,p-Xylene	0.0629	0.0020	"	0.0667	0.00102	92.8	20-166	1.51	36	
o-Xylene	0.0252	0.0010	"	0.0333	0.00330	65.8	33-159	2.47	26	
Surrogate: 1,2-Dichloroethane-d4	*0.0128*		*"*	*0.0133*		*95.8*	*23-173*			
Surrogate: Toluene-d8	*0.0132*		*"*	*0.0133*		*98.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0144*		*"*	*0.0133*		*108*	*21-167*			



Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/17/20 21:59

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005069 - EPA 3520B										
Blank (2005069-BLK1)				Prepared & Analyzed: 05/07/20						
C10-C28 (DRO)	ND	0.100	mg/L							
Surrogate: o-Terphenyl	*0.0195*		*"*	*0.0250*		*78.0*	*44.8-129*			
LCS (2005069-BS1)				Prepared & Analyzed: 05/07/20						
C10-C28 (DRO)	0.705	0.100	mg/L	1.00		70.5	70-130			
Surrogate: o-Terphenyl	*0.0175*		*"*	*0.0250*		*70.0*	*44.8-129*			
LCS Dup (2005069-BSD1)				Prepared & Analyzed: 05/07/20						
C10-C28 (DRO)	0.731	0.100	mg/L	1.00		73.1	70-130	3.72	200	
Surrogate: o-Terphenyl	*0.0197*		*"*	*0.0250*		*78.9*	*44.8-129*			

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

Dissolved Gases by RSK-175 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005088 - GC										
Blank (2005088-BLK1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	*0.0381*		*"*	*0.0364*		*105*	*70-130*			
LCS (2005088-BS1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Methane	0.032	0.010	mg/L	0.0428		73.7	70-130			
Ethane	0.087	0.010	"	0.0798		109	70-130			
Propane	0.13	0.010	"	0.139		92.3	70-130			
Surrogate: Ethene	*0.0719*		*"*	*0.0728*		*98.8*	*70-130*			
Duplicate (2005088-DUP1)		**Source: 2005036-01**		Prepared: 05/07/20 Analyzed: 05/11/20						
Methane	0.24	0.010	mg/L		5.6			183	30	QR-03
Ethane	ND	0.010	"		7.6				30	
Propane	ND	0.010	"		0.033				30	
Surrogate: Ethene	*0.0125*		*"*	*0.0364*		*34.3*	*70-130*			*S-04*
Matrix Spike (2005088-MS1)		**Source: 2005036-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Methane	0.56	0.10	mg/L	0.0428	5.6	NR	70-130			QR-03
Ethane	0.12	0.010	"	0.0798	7.6	NR	70-130			QR-03
Propane	0.14	0.010	"	0.139	0.033	76.1	70-130			
Surrogate: Ethene	*0.0796*		*"*	*0.0728*		*109*	*70-130*			

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

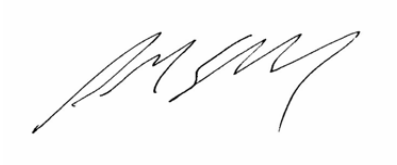
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005086 - EPA 200.8										
Blank (2005086-BLK1)				Prepared & Analyzed: 05/07/20						
Calcium	ND	0.0500	mg/L							
Iron	ND	0.0100	"							
Magnesium	ND	0.0500	"							
Manganese	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0500	"							
Barium	ND	0.00100	"							
Boron	ND	0.0100	"							
Selenium	ND	0.00100	"							
Strontium	ND	0.0100	"							
LCS (2005086-BS1)				Prepared & Analyzed: 05/07/20						
Calcium	5.40	0.0500	mg/L	5.00		108	85-115			
Iron	5.11	0.0100	"	5.00		102	85-115			
Magnesium	5.35	0.0500	"	5.00		107	85-115			
Manganese	0.512	0.00100	"	0.500		102	85-115			
Potassium	5.02	0.0500	"	5.00		100	85-115			
Sodium	4.97	0.0500	"	5.00		99.3	85-115			
Barium	0.525	0.00100	"	0.500		105	85-115			
Boron	2.74	0.0100	"	2.50		110	85-115			
Selenium	0.0530	0.00100	"	0.0500		106	85-115			
Strontium	0.530	0.0100	"	0.500		106	85-115			
Duplicate (2005086-DUP1)		**Source: 2005036-01**		Prepared & Analyzed: 05/07/20						
Calcium	94.6	0.0500	mg/L		93.2			1.48	20	
Iron	0.0169	0.0100	"		0.0170			0.612	20	
Magnesium	40.1	0.0500	"		38.9			3.11	20	
Manganese	0.256	0.00100	"		0.253			1.23	20	
Potassium	2.54	0.0500	"		2.47			2.94	20	
Sodium	89.4	0.0500	"		86.4			3.34	20	
Barium	0.0410	0.00100	"		0.0430			4.81	20	
Boron	0.216	0.0100	"		0.221			2.39	20	
Selenium	0.000482	0.00100	"		ND				20	
Strontium	1.20	0.0100	"		1.19			1.17	20	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005086 - EPA 200.8										
Matrix Spike (2005086-MS1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Calcium	99.2	0.0500	mg/L	5.00	93.2	118	70-130			
Iron	5.24	0.0100	"	5.00	0.0170	105	70-130			
Magnesium	43.2	0.0500	"	5.00	38.9	86.7	70-130			
Manganese	0.768	0.00100	"	0.500	0.253	103	70-130			
Potassium	7.70	0.0500	"	5.00	2.47	105	70-130			
Sodium	92.1	0.0500	"	5.00	86.4	114	70-130			
Barium	0.573	0.00100	"	0.500	0.0430	106	70-130			
Boron	2.78	0.0100	"	2.50	0.221	103	70-130			
Selenium	0.0514	0.00100	"	0.0500	ND	103	70-130			
Strontium	1.69	0.0100	"	0.500	1.19	100	70-130			
Matrix Spike Dup (2005086-MSD1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Calcium	97.4	0.0500	mg/L	5.00	93.2	83.4	70-130	1.77	25	
Iron	5.32	0.0100	"	5.00	0.0170	106	70-130	1.52	25	
Magnesium	44.1	0.0500	"	5.00	38.9	104	70-130	2.00	25	
Manganese	0.755	0.00100	"	0.500	0.253	101	70-130	1.63	25	
Potassium	7.78	0.0500	"	5.00	2.47	106	70-130	1.07	25	
Sodium	91.6	0.0500	"	5.00	86.4	103	70-130	0.621	25	
Barium	0.539	0.00100	"	0.500	0.0430	99.3	70-130	5.97	25	
Boron	2.81	0.0100	"	2.50	0.221	103	70-130	0.723	25	
Selenium	0.0500	0.00100	"	0.0500	ND	100	70-130	2.73	25	
Strontium	1.71	0.0100	"	0.500	1.19	105	70-130	1.46	25	



Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/17/20 21:59

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005068 - General Preparation										
Blank (2005068-BLK1)				Prepared & Analyzed: 05/07/20						
Bromide	ND	0.200	mg/L							
Chloride	ND	0.100	"							
Fluoride	ND	0.200	"							
Sulfate	ND	0.300	"							
Nitrate as N	ND	0.100	"							
Nitrite as N	ND	0.100	"							
Nitrate/Nitrite as N	ND	0.200	"							
LCS (2005068-BS1)				Prepared & Analyzed: 05/07/20						
Bromide	10.5	0.200	mg/L	10.0		105	90-110			
Chloride	3.20	0.100	"	3.00		107	90-110			
Fluoride	2.19	0.200	"	2.00		109	90-110			
Sulfate	15.5	0.300	"	15.0		104	90-110			
Nitrate as N	3.18	0.100	"	3.00		106	90-110			
Nitrite as N	3.15	0.100	"	3.00		105	90-110			
Duplicate (2005068-DUP1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Bromide	0.866	0.200	mg/L		0.872			0.690	20	
Chloride	46.9	0.100	"		72.1			42.4	20	QM-01
Fluoride	0.907	0.200	"		0.900			0.775	20	
Sulfate	206	0.300	"		282			31.2	20	QM-01
Nitrate as N	3.52	0.100	"		3.54			0.538	20	
Nitrite as N	0.116	0.100	"		0.114			1.74	20	
Nitrate/Nitrite as N	ND	0.200	"		3.65				20	
Matrix Spike (2005068-MS1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Bromide	10.1	0.200	mg/L	10.0	0.872	92.7	80-120			
Chloride	48.2	0.100	"	3.00	72.1	NR	80-120			QM-01
Fluoride	2.81	0.200	"	2.00	0.900	95.6	80-120			
Sulfate	225	0.300	"	15.0	282	NR	80-120			QM-01
Nitrate as N	6.63	0.100	"	3.00	3.54	103	80-120			
Nitrite as N	3.24	0.100	"	3.00	0.114	104	80-120			

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Ground_Water/GWA_District_Six_C6 Project Number: Alloc 421 930.88 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/17/20 21:59

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005075 - General Preparation										
Blank (2005075-BLK1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	ND	10.0	mg/L as CaCO3							
Carbonate	ND	10.0	"							
Bicarbonate	ND	10.0	"							
LCS (2005075-BS1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	100	10.0	mg/L as CaCO3	100		100	80-120			
Duplicate (2005075-DUP1)		**Source: 2005007-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	230	10.0	mg/L as CaCO3		220			4.44	20	
Carbonate	ND	10.0	"		ND				20	
Bicarbonate	230	10.0	"		220			4.44	20	
Matrix Spike (2005075-MS1)		**Source: 2005007-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	330	10.0	mg/L as CaCO3	100	220	110	70-130			
Matrix Spike Dup (2005075-MSD1)		**Source: 2005007-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	330	10.0	mg/L as CaCO3	100	220	110	70-130	0.00	20	

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005133 - General Preparation										
Blank (2005133-BLK1)				Prepared & Analyzed: 05/12/20						
Phosphorus - Total	ND	0.0500	mg/L							
LCS (2005133-BS1)				Prepared & Analyzed: 05/12/20						
Phosphorus - Total	1.05	0.0500	mg/L	1.00		105	80-120			
Duplicate (2005133-DUP1)		**Source: 2005036-01**		Prepared & Analyzed: 05/12/20						
Phosphorus - Total	ND	0.0500	mg/L		ND				20	
Matrix Spike (2005133-MS1)		**Source: 2005036-01**		Prepared & Analyzed: 05/12/20						
Phosphorus - Total	1.06	0.0500	mg/L	1.00	ND	106	70-130			
Matrix Spike Dup (2005133-MSD1)		**Source: 2005036-01**		Prepared & Analyzed: 05/12/20						
Phosphorus - Total	1.07	0.0500	mg/L	1.00	ND	107	70-130	0.939	20	

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/17/20 21:59

Specific Conductance by SM2510B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005052 - General Preparation										
Blank (2005052-BLK1)				Prepared & Analyzed: 05/06/20						
Specific Conductance (EC)	ND	1.00	umhos/cm							
Duplicate (2005052-DUP1)		**Source: 2005007-01**		Prepared & Analyzed: 05/06/20						
Specific Conductance (EC)	606	1.00	umhos/cm		607			0.0824	20	

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/17/20 21:59

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005051 - General Preparation										
Blank (2005051-BLK1)				Prepared & Analyzed: 05/06/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (2005051-DUP1)		**Source: 2005007-01**		Prepared & Analyzed: 05/06/20						
Total Dissolved Solids	299	10.0	mg/L		301			0.567	20	

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88 Fac ID 762176
Denver CO, 80202	Project Manager:	Heather Shideman

Reported:
05/17/20 21:59

pH by SM4500 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005074 - General Preparation										
LCS (2005074-BS1)				Prepared: 05/05/20 Analyzed: 05/07/20						
pH	9.19	1.00	pH Units	9.18		100	90-110			
Duplicate (2005074-DUP1)		**Source: 2005045-01**		Prepared: 05/05/20 Analyzed: 05/07/20						
pH	7.90	1.00	pH Units		7.69			2.69	20	

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88 Fac ID 762176	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/17/20 21:59

Notes and Definitions

S-04	A sample matrix effect prevented complete surrogate recovery.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

May 12, 2020

Heather Shideman
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Trip_Blank/GWA_District_Six_C6
Work Order #2005037

Enclosed are the results of analyses for samples received by Summit Scientific on 05/05/20 16:55. 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: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/12/20 12:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_4_Trip_Blank	2005037-01	Water	05/05/20 13:26	05/05/20 16:55

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

S_2

2005037

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

Client:	Extraction Oil and Gas (XOG) **Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman
Address:	2234 117th Ave, Ste 106	**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634	**cc:**	bford@extractionog.com
Phone:	(970) 576-3446	**Project Name:**	Trip_Blank/GWA_District_Six_C6
Sampler Name:	Kade MacDougall	**Project No.:**	ALLOC-421 **Facility ID** 762176

					Preservative				**Matrix**				**Analysis Requested**								**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Groundwater**	**Soil**	**Air-Canister Serial #**	**Other (Specify)**	**BTEX**								
1	GW_60666_MH_MW_4_Trip_Blank	20/05/05	1326	2					X				X								**Sample Frequency:** IN

Relinquished by:	Date/Time:	Received by:	Date/Time:	**Turn Around Time** (Check) **Notes:**
	20/05/05 1655	05-05-2020	16:55	Same Day ___ 72 hours ___
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours ___ Standard X
				48 hours ___
Relinquished by:	Date/Time:	Received by:	Date/Time:	**Sample Integrity:**
				Temperature Upon Receipt: 5.6
				Intact: (Yes) No

Sample Receipt Checklist

S2 Work Order 2005037

Client: Apex/XOG Client Project ID: Trip_Blank/GWA_District_Six_C6

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

[✓] [ ] [ ] [ ] [ ]

Matrix (check all that apply): [ ] Air [ ] Soil/Solid [✓] Water [ ] Other:_____ (Describe)

Temp (°C)	5.6

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			✓	
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.**				

MP	Muri Premer	5/5/20
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/12/20 12:06

GW_60666_MH_MW_4_Trip_Blank

2005037-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/20 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2005054	05/06/20	05/08/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/05/20 13:26**

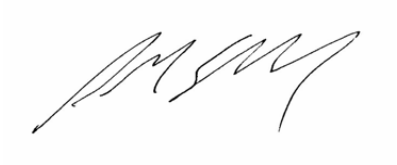
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*91.1 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*21-167*		"	"	"	"	

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/12/20 12:06

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 2005054 - EPA 5030 Water MS										
Blank (2005054-BLK1)				Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*11.9*		*"*	*13.3*		*89.0*	*23-173*			
Surrogate: Toluene-d8	*13.8*		*"*	*13.3*		*104*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.8*		*"*	*13.3*		*103*	*21-167*			
LCS (2005054-BS1)				Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	18.3	1.0	ug/l	33.3		55.0	51-132			
Toluene	28.3	1.0	"	33.3		84.8	51-138			
Ethylbenzene	22.1	1.0	"	33.3		66.4	58-146			
m,p-Xylene	43.3	2.0	"	66.7		64.9	57-144			
o-Xylene	22.7	1.0	"	33.3		68.1	53-146			
Surrogate: 1,2-Dichloroethane-d4	*12.0*		*"*	*13.3*		*89.7*	*23-173*			
Surrogate: Toluene-d8	*14.4*		*"*	*13.3*		*108*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.2*		*"*	*13.3*		*106*	*21-167*			
Matrix Spike (2005054-MS1)	**Source: 2005036-01**			Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	29.6	1.0	ug/l	33.3	ND	88.7	34-141			
Toluene	27.9	1.0	"	33.3	ND	83.6	27-151			
Ethylbenzene	25.5	1.0	"	33.3	ND	76.6	29-160			
m,p-Xylene	63.9	2.0	"	66.7	1.02	94.3	20-166			
o-Xylene	25.9	1.0	"	33.3	3.30	67.7	33-159			
Surrogate: 1,2-Dichloroethane-d4	*12.3*		*"*	*13.3*		*92.0*	*23-173*			
Surrogate: Toluene-d8	*14.3*		*"*	*13.3*		*107*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.0*		*"*	*13.3*		*105*	*21-167*			

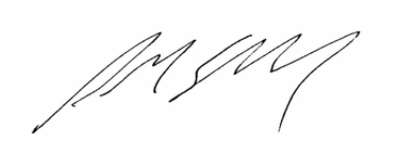


Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/12/20 12:06

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 2005054 - EPA 5030 Water MS										
Matrix Spike Dup (2005054-MSD1)	**Source: 2005036-01**			Prepared: 05/06/20 Analyzed: 05/08/20						
Benzene	29.4	1.0	ug/l	33.3	ND	88.1	34-141	0.577	30	
Toluene	27.1	1.0	"	33.3	ND	81.2	27-151	2.95	30	
Ethylbenzene	22.0	1.0	"	33.3	ND	66.0	29-160	14.8	30	
m,p-Xylene	62.9	2.0	"	66.7	1.02	92.8	20-166	1.51	30	
o-Xylene	25.2	1.0	"	33.3	3.30	65.8	33-159	2.47	30	
Surrogate: 1,2-Dichloroethane-d4	*12.8*		*"*	*13.3*		*95.8*	*23-173*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*98.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.4*		*"*	*13.3*		*108*	*21-167*			



Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Fac ID 762176 Project Manager: Heather Shideman	**Reported:** 05/12/20 12:06

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

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	761687	Job #:	44880	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_4				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	Plastic Bottle				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/05/2020 13:26	Date Received:	5/08/2020	Date Reported:	5/26/2020

δD of water	----------	-107.4 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-13.69 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	-11.1 ‰ relative to VPDB
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks: ALLOC-421

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	761795	Job #:	44892	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_4				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/05/2020 13:26	Date Received:	5/08/2020	Date Reported:	6/24/2020

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	0.392					
Oxygen	1.49					
Nitrogen	20.17					
Carbon Dioxide	3.80					
Methane	62.02	-47.62	-228.7		28	19
Ethane	8.79	-31.79			4.2	5.3
Ethylene	nd					
Propane	2.54	-27.10			1.2	2.1
Propylene	nd					
Iso-butane	0.297					
N-butane	0.391					
Iso-pentane	0.0686					
N-pentane	0.0272					
Hexanes +	0.0168					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.72
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
ALLOC-421
Insufficient butane and pentane concentrations for isotopic analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 13, 2020

Heather Shideman

Extraction Oil&Gas

370 17th Street Suite 5300

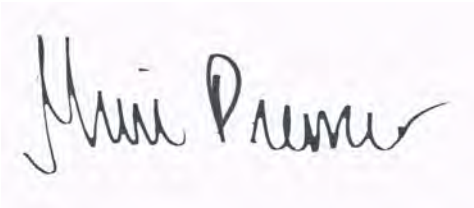
Denver, CO 80202

RE: Ground_Water/GWA_District_Six_C6

Work Order # 2005054

Enclosed are the results of analyses for samples received by Summit Scientific on 05/06/20 16:05. 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: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_5	2005054-01	Water	05/06/20 13:48	05/06/20 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

2005054

S2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Client:	Extraction Oil and Gas (XOG)	**Report to:** Apex Companies, LLC	**Project Manager:** Heather Shideman
Address:	2234 117th Ave, Ste 106		**E-Mail:** Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634		**cc:** bford@extractionog.com
Phone:	(970) 576-3446		**Project Name:** Ground_Water/GWA_District_Six_C6
Sampler Name:	Kade MacDougall		**Project No.:** Alloc-421 930, 88 **Facility ID**

					Preservative				**Matrix**				**Analysis Requested**							**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Ground Water**	**Soil**	**Air-Canister #**	**Other (Specify)**	**COGCC 609**	**No BART**						
1	GW_60666_MH_MW_5	20/05/06	1348						X				X	X						**Sample Frequency:**
	NENE_20_5N_65W																			IN
	Temperature, field:	15.0 °C																		
	pH, field:	7.36 s.u.																		
	Conductivity, field:	2542 uS/cm																		
	ORP, field:	154.6 mV																		
	Dissolved Oxygen, field:	1.04 mg/L																		
	Turbidity, field:	7.32 NTU																		

Relinquished by: Kade MacDougall	Date/Time: 20/05/06 1605	Received by:	Date/Time: 05-06-2020
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours
___ 24 hours _X_ Standard
___ 48 hours ___

Notes: ON ICE

Sample Integrity:
Temperature Upon Receipt: 10.4
Intact: (Yes) No

Sample Receipt Checklist

S2 Work Order 2005054

Client: Apex Companies Client Project ID: GWA - District Six Cle

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

Matrix (check all that apply): [ ] Air [ ] Soil/Solid [X] Water [ ] Other: _____ (Describe)

Temp (°C)	10.4

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.	X			on ice
Were all samples received intact (1)?	X			
Was adequate sample volume provided (1)?	X			
If custody seals are present, are they intact (1)?			X	
Are samples with holding times due within 48 hours sample due within 48 hours present?		X		
Is a chain-of-custody (COC) form present and filled out completely (1)?	X			
Does the COC agree with the number and type of sample bottles received (1)?	X			
Do the sample IDs on the bottle labels match the COC (1)?	X			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	X			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		X		
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	Y			HNO_3
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.	X			pH 1
If dissolved metals are requested, were samples field filtered?		X		No
Additional Comments (if any):				

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

TCG — **Custodian Printed Name or Initials**

Signature of Custodian

05/06/2026 — **Date/Time**

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

GW_60666_MH_MW_5

NENE_20_5N_65W

2005054-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0010	mg/L	1	2005128	05/12/20	05/12/20	EPA 8260B	
Toluene	ND	0.0010	"	"	"	"	"	"	
Ethylbenzene	ND	0.0010	"	"	"	"	"	"	
m,p-Xylene	ND	0.0020	"	"	"	"	"	"	
o-Xylene	ND	0.0010	"	"	"	"	"	"	
Xylenes (total)	ND	0.0020	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.050	"	"	"	"	"	"	

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*136 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.6 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	0.100	mg/L	1	2005069	05/07/20	05/07/20	EPA 8015M	

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*87.5 %*	*44.8-129*		"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

GW_60666_MH_MW_5

NENE_20_5N_65W

2005054-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	**0.19**	0.010	mg/L	1	2005088	05/07/20	05/11/20	RSK-175 mod	
Ethane	ND	0.010	"	"	"	"	"	"	
Propane	ND	0.010	"	"	"	"	"	"	

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		*24.5 %*	*70-130*		"	"	"	"	*S-04*

Dissolved Metals by EPA Method 200.8

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**227**	0.0500	mg/L	1	2005086	05/07/20	05/07/20	EPA 200.8	
Iron	ND	0.0100	"	"	"	"	"	"	
Magnesium	**94.9**	0.0500	"	"	"	"	"	"	
Manganese	**0.252**	0.00100	"	"	"	"	"	"	
Potassium	**4.19**	0.0500	"	"	"	"	"	"	
Sodium	**156**	0.0500	"	"	"	"	"	"	
Barium	**0.0641**	0.00100	"	"	"	"	"	"	
Boron	**0.181**	0.0100	"	"	"	"	"	"	
Selenium	**0.00240**	0.00100	"	"	"	"	"	"	
Strontium	**2.96**	0.0100	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromide	**8.38**	0.200	mg/L	1	2005068	05/07/20	05/07/20	EPA 300.0	
Chloride	**740**	10.0	"	100	"	"	"	"	
Fluoride	**0.678**	0.200	"	1	"	"	"	"	
Sulfate	**216**	30.0	"	100	"	"	"	"	
Nitrate as N	**8.47**	0.100	"	1	"	"	"	"	
Nitrite as N	ND	0.100	"	"	"	"	"	"	
Nitrate/Nitrite as N	**8.47**	0.200	"	"	"	"	"	"	

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	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

GW_60666_MH_MW_5
NENE_20_5N_65W

2005054-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Alkalinity	**230**	10.0	mg/L as CaCO3	1	2005075	05/07/20	05/08/20	SM2320-B	
Carbonate	ND	10.0	"	"	"	"	"	"	
Bicarbonate	**230**	10.0	"	"	"	"	"	"	

Conventional Chemistry Parameters by APHA/EPA Methods

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Phosphorus - Total	**0.0770**	0.0500	mg/L	1	2005133	05/12/20	05/12/20	SM4500-P-E	

Specific Conductance by SM2510B

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2960**	1.00	umhos/cm	1	2005065	05/07/20	05/07/20	SM2510B	

Total Dissolved Solids by SM2540C

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**1460**	10.0	mg/L	1	2005066	05/07/20	05/07/20	SM2540C	

pH by SM4500

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

GW_60666_MH_MW_5

NENE_20_5N_65W

2005054-01 (Water)

Summit Scientific

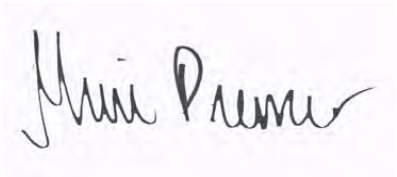
pH by SM4500

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.41**	1.00	pH Units	1	2005076	05/06/20	05/07/20	SM4500-H+ B	

Field Data

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2542**		uS/cm	1	2005060	05/05/20	05/05/20	Field Method	
Temperature	**15.0**		Degrees C	"	"	"	"	"	
Turbidity	**7.32**		NTU	"	"	"	"	"	
Oxidation/Reduction Potential	**154.6**		mv	"	"	"	"	"	
Dissolved Oxygen	**1.04**		mg/L	"	"	"	"	"	
pH	**7.26**		SU	"	"	"	"	"	



S2

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88
Denver CO, 80202	Project Manager:	Heather Shideman
	Reported:	05/13/20 12:39

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 2005128 - EPA 5030 Water MS										
Blank (2005128-BLK1)				Prepared & Analyzed: 05/12/20						
Benzene	ND	0.0010	mg/L							
Toluene	ND	0.0010	"							
Ethylbenzene	ND	0.0010	"							
m,p-Xylene	ND	0.0020	"							
o-Xylene	ND	0.0010	"							
Xylenes (total)	ND	0.0020	"							
Gasoline Range Hydrocarbons	ND	0.050	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0165*		"	*0.0133*		*124*	*23-173*			
Surrogate: Toluene-d8	*0.0129*		"	*0.0133*		*96.7*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0145*		"	*0.0133*		*109*	*21-167*			
LCS (2005128-BS1)				Prepared & Analyzed: 05/12/20						
Benzene	0.0432	0.0010	mg/L	0.0333		129	51-132			
Toluene	0.0385	0.0010	"	0.0333		115	51-138			
Ethylbenzene	0.0397	0.0010	"	0.0333		119	58-146			
m,p-Xylene	0.0719	0.0020	"	0.0667		108	57-144			
o-Xylene	0.0365	0.0010	"	0.0333		110	53-146			
Surrogate: 1,2-Dichloroethane-d4	*0.0152*		"	*0.0133*		*114*	*23-173*			
Surrogate: Toluene-d8	*0.0134*		"	*0.0133*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0147*		"	*0.0133*		*110*	*21-167*			
Matrix Spike (2005128-MS1)	**Source: 2005054-01**			Prepared & Analyzed: 05/12/20						
Benzene	0.0376	0.0010	mg/L	0.0333	ND	113	34-141			
Toluene	0.0370	0.0010	"	0.0333	ND	111	27-151			
Ethylbenzene	0.0393	0.0010	"	0.0333	ND	118	29-160			
m,p-Xylene	0.0686	0.0020	"	0.0667	ND	103	20-166			
o-Xylene	0.0360	0.0010	"	0.0333	ND	108	33-159			
Surrogate: 1,2-Dichloroethane-d4	*0.0154*		"	*0.0133*		*115*	*23-173*			
Surrogate: Toluene-d8	*0.0134*		"	*0.0133*		*100*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0144*		"	*0.0133*		*108*	*21-167*			

S2

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88
Denver CO, 80202	Project Manager:	Heather Shideman

Reported: 05/13/20 12:39

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 2005128 - EPA 5030 Water MS										
Matrix Spike Dup (2005128-MSD1)	**Source: 2005054-01**			Prepared & Analyzed: 05/12/20						
Benzene	0.0446	0.0010	mg/L	0.0333	ND	134	34-141	16.8	32	
Toluene	0.0406	0.0010	"	0.0333	ND	122	27-151	9.30	25	
Ethylbenzene	0.0446	0.0010	"	0.0333	ND	134	29-160	12.5	50	
m,p-Xylene	0.0766	0.0020	"	0.0667	ND	115	20-166	11.1	36	
o-Xylene	0.0411	0.0010	"	0.0333	ND	123	33-159	13.5	26	
Surrogate: 1,2-Dichloroethane-d4	*0.0161*		*"*	*0.0133*		*120*	*23-173*			
Surrogate: Toluene-d8	*0.0132*		*"*	*0.0133*		*98.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0145*		*"*	*0.0133*		*109*	*21-167*			

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005069 - EPA 3520B										
Blank (2005069-BLK1)				Prepared & Analyzed: 05/07/20						
C10-C28 (DRO)	ND	0.100	mg/L							
Surrogate: o-Terphenyl	*0.0195*		*"*	*0.0250*		*78.0*	*44.8-129*			
LCS (2005069-BS1)				Prepared & Analyzed: 05/07/20						
C10-C28 (DRO)	0.705	0.100	mg/L	1.00		70.5	70-130			
Surrogate: o-Terphenyl	*0.0175*		*"*	*0.0250*		*70.0*	*44.8-129*			
LCS Dup (2005069-BSD1)				Prepared & Analyzed: 05/07/20						
C10-C28 (DRO)	0.731	0.100	mg/L	1.00		73.1	70-130	3.72	200	
Surrogate: o-Terphenyl	*0.0197*		*"*	*0.0250*		*78.9*	*44.8-129*			

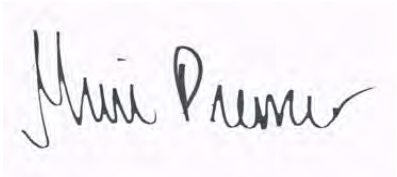
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Dissolved Gases by RSK-175 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005088 - GC										
Blank (2005088-BLK1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	*0.0381*		*"*	*0.0364*		*105*	*70-130*			
LCS (2005088-BS1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Methane	0.032	0.010	mg/L	0.0428		73.7	70-130			
Ethane	0.087	0.010	"	0.0798		109	70-130			
Propane	0.13	0.010	"	0.139		92.3	70-130			
Surrogate: Ethene	*0.0719*		*"*	*0.0728*		*98.8*	*70-130*			
Duplicate (2005088-DUP1)		**Source: 2005036-01**		Prepared: 05/07/20 Analyzed: 05/11/20						
Methane	0.24	0.010	mg/L		5.6			183	30	QR-03
Ethane	ND	0.010	"		7.6				30	
Propane	ND	0.010	"		0.033				30	
Surrogate: Ethene	*0.0125*		*"*	*0.0364*		*34.3*	*70-130*			*S-04*
Matrix Spike (2005088-MS1)		**Source: 2005036-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Methane	0.56	0.10	mg/L	0.0428	5.6	NR	70-130			QR-03
Ethane	0.12	0.010	"	0.0798	7.6	NR	70-130			QR-03
Propane	0.14	0.010	"	0.139	0.033	76.1	70-130			
Surrogate: Ethene	*0.0796*		*"*	*0.0728*		*109*	*70-130*			



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005086 - EPA 200.8										
Blank (2005086-BLK1)				Prepared & Analyzed: 05/07/20						
Calcium	ND	0.0500	mg/L							
Iron	ND	0.0100	"							
Magnesium	ND	0.0500	"							
Manganese	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0500	"							
Barium	ND	0.00100	"							
Boron	ND	0.0100	"							
Selenium	ND	0.00100	"							
Strontium	ND	0.0100	"							
LCS (2005086-BS1)				Prepared & Analyzed: 05/07/20						
Calcium	5.40	0.0500	mg/L	5.00		108	85-115			
Iron	5.11	0.0100	"	5.00		102	85-115			
Magnesium	5.35	0.0500	"	5.00		107	85-115			
Manganese	0.512	0.00100	"	0.500		102	85-115			
Potassium	5.02	0.0500	"	5.00		100	85-115			
Sodium	4.97	0.0500	"	5.00		99.3	85-115			
Barium	0.525	0.00100	"	0.500		105	85-115			
Boron	2.74	0.0100	"	2.50		110	85-115			
Selenium	0.0530	0.00100	"	0.0500		106	85-115			
Strontium	0.530	0.0100	"	0.500		106	85-115			
Duplicate (2005086-DUP1)		**Source: 2005036-01**		Prepared & Analyzed: 05/07/20						
Calcium	94.6	0.0500	mg/L		93.2			1.48	20	
Iron	0.0169	0.0100	"		0.0170			0.612	20	
Magnesium	40.1	0.0500	"		38.9			3.11	20	
Manganese	0.256	0.00100	"		0.253			1.23	20	
Potassium	2.54	0.0500	"		2.47			2.94	20	
Sodium	89.4	0.0500	"		86.4			3.34	20	
Barium	0.0410	0.00100	"		0.0430			4.81	20	
Boron	0.216	0.0100	"		0.221			2.39	20	
Selenium	0.000482	0.00100	"		ND				20	
Strontium	1.20	0.0100	"		1.19			1.17	20	

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.

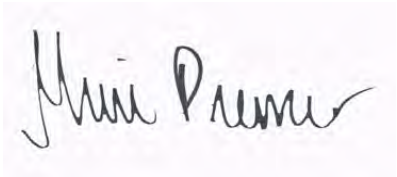
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Dissolved Metals by EPA Method 200.8 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005086 - EPA 200.8										
Matrix Spike (2005086-MS1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Calcium	99.2	0.0500	mg/L	5.00	93.2	118	70-130			
Iron	5.24	0.0100	"	5.00	0.0170	105	70-130			
Magnesium	43.2	0.0500	"	5.00	38.9	86.7	70-130			
Manganese	0.768	0.00100	"	0.500	0.253	103	70-130			
Potassium	7.70	0.0500	"	5.00	2.47	105	70-130			
Sodium	92.1	0.0500	"	5.00	86.4	114	70-130			
Barium	0.573	0.00100	"	0.500	0.0430	106	70-130			
Boron	2.78	0.0100	"	2.50	0.221	103	70-130			
Selenium	0.0514	0.00100	"	0.0500	ND	103	70-130			
Strontium	1.69	0.0100	"	0.500	1.19	100	70-130			
Matrix Spike Dup (2005086-MSD1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Calcium	97.4	0.0500	mg/L	5.00	93.2	83.4	70-130	1.77	25	
Iron	5.32	0.0100	"	5.00	0.0170	106	70-130	1.52	25	
Magnesium	44.1	0.0500	"	5.00	38.9	104	70-130	2.00	25	
Manganese	0.755	0.00100	"	0.500	0.253	101	70-130	1.63	25	
Potassium	7.78	0.0500	"	5.00	2.47	106	70-130	1.07	25	
Sodium	91.6	0.0500	"	5.00	86.4	103	70-130	0.621	25	
Barium	0.539	0.00100	"	0.500	0.0430	99.3	70-130	5.97	25	
Boron	2.81	0.0100	"	2.50	0.221	103	70-130	0.723	25	
Selenium	0.0500	0.00100	"	0.0500	ND	100	70-130	2.73	25	
Strontium	1.71	0.0100	"	0.500	1.19	105	70-130	1.46	25	



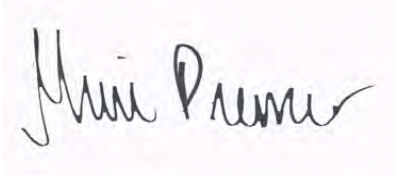
S2

Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88
Denver CO, 80202	Project Manager:	Heather Shideman
		Reported: 05/13/20 12:39

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005068 - General Preparation										
Blank (2005068-BLK1)				Prepared & Analyzed: 05/07/20						
Bromide	ND	0.200	mg/L							
Chloride	ND	0.100	"							
Fluoride	ND	0.200	"							
Sulfate	ND	0.300	"							
Nitrate as N	ND	0.100	"							
Nitrite as N	ND	0.100	"							
Nitrate/Nitrite as N	ND	0.200	"							
LCS (2005068-BS1)				Prepared & Analyzed: 05/07/20						
Bromide	10.5	0.200	mg/L	10.0		105	90-110			
Chloride	3.20	0.100	"	3.00		107	90-110			
Fluoride	2.19	0.200	"	2.00		109	90-110			
Sulfate	15.5	0.300	"	15.0		104	90-110			
Nitrate as N	3.18	0.100	"	3.00		106	90-110			
Nitrite as N	3.15	0.100	"	3.00		105	90-110			
Duplicate (2005068-DUP1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Bromide	0.866	0.200	mg/L		0.872			0.690	20	
Chloride	46.9	0.100	"		72.1			42.4	20	QM-01
Fluoride	0.907	0.200	"		0.900			0.775	20	
Sulfate	206	0.300	"		282			31.2	20	QM-01
Nitrate as N	3.52	0.100	"		3.54			0.538	20	
Nitrite as N	0.116	0.100	"		0.114			1.74	20	
Nitrate/Nitrite as N	3.65	0.200	"		3.65			0.00	20	
Matrix Spike (2005068-MS1)	**Source: 2005036-01**			Prepared & Analyzed: 05/07/20						
Bromide	10.1	0.200	mg/L	10.0	0.872	92.7	80-120			
Chloride	48.2	0.100	"	3.00	72.1	NR	80-120			QM-01
Fluoride	2.81	0.200	"	2.00	0.900	95.6	80-120			
Sulfate	225	0.300	"	15.0	282	NR	80-120			QM-01
Nitrate as N	6.63	0.100	"	3.00	3.54	103	80-120			
Nitrite as N	3.24	0.100	"	3.00	0.114	104	80-120			



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005075 - General Preparation										
Blank (2005075-BLK1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	ND	10.0	mg/L as CaCO3							
Carbonate	ND	10.0	"							
Bicarbonate	ND	10.0	"							
LCS (2005075-BS1)				Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	100	10.0	mg/L as CaCO3	100		100	80-120			
Duplicate (2005075-DUP1)		**Source: 2005007-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	230	10.0	mg/L as CaCO3		220			4.44	20	
Carbonate	ND	10.0	"		ND				20	
Bicarbonate	230	10.0	"		220			4.44	20	
Matrix Spike (2005075-MS1)		**Source: 2005007-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	330	10.0	mg/L as CaCO3	100	220	110	70-130			
Matrix Spike Dup (2005075-MSD1)		**Source: 2005007-01**		Prepared: 05/07/20 Analyzed: 05/08/20						
Total Alkalinity	330	10.0	mg/L as CaCO3	100	220	110	70-130	0.00	20	

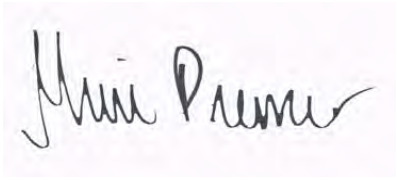
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005133 - General Preparation										
Blank (2005133-BLK1)				Prepared & Analyzed: 05/12/20						
Phosphorus - Total	ND	0.0500	mg/L							
LCS (2005133-BS1)				Prepared & Analyzed: 05/12/20						
Phosphorus - Total	1.05	0.0500	mg/L	1.00		105	80-120			
Duplicate (2005133-DUP1)		**Source: 2005036-01**		Prepared & Analyzed: 05/12/20						
Phosphorus - Total	ND	0.0500	mg/L		ND				20	
Matrix Spike (2005133-MS1)		**Source: 2005036-01**		Prepared & Analyzed: 05/12/20						
Phosphorus - Total	1.06	0.0500	mg/L	1.00	ND	106	70-130			
Matrix Spike Dup (2005133-MSD1)		**Source: 2005036-01**		Prepared & Analyzed: 05/12/20						
Phosphorus - Total	1.07	0.0500	mg/L	1.00	ND	107	70-130	0.939	20	



S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Specific Conductance by SM2510B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005065 - General Preparation										
Blank (2005065-BLK1)				Prepared & Analyzed: 05/07/20						
Specific Conductance (EC)	ND	1.00	umhos/cm							
Duplicate (2005065-DUP1)		**Source: 2005054-01**		Prepared & Analyzed: 05/07/20						
Specific Conductance (EC)	2960	1.00	umhos/cm		2960			0.101	20	

S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005066 - General Preparation										
Blank (2005066-BLK1)				Prepared & Analyzed: 05/07/20						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (2005066-DUP1)		**Source: 2005054-01**		Prepared & Analyzed: 05/07/20						
Total Dissolved Solids	1460	10.0	mg/L		1460			0.00	20	

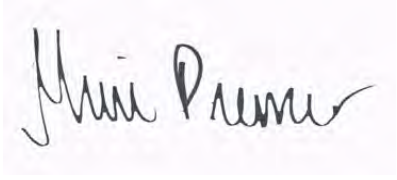
S2

Extraction Oil&Gas	Project: Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number: Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager: Heather Shideman	05/13/20 12:39

pH by SM4500 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2005076 - General Preparation										
LCS (2005076-BS1)				Prepared: 05/06/20 Analyzed: 05/07/20						
pH	9.14	1.00	pH Units	9.18		99.6	90-110			
Duplicate (2005076-DUP1)		**Source: 2005059-01**		Prepared: 05/06/20 Analyzed: 05/07/20						
pH	7.01	1.00	pH Units		7.03			0.285	20	



Extraction Oil&Gas	Project:	Ground_Water/GWA_District_Six_C6	
370 17th Street Suite 5300	Project Number:	Alloc 421 930.88	**Reported:**
Denver CO, 80202	Project Manager:	Heather Shideman	05/13/20 12:39

Notes and Definitions

S-04	A sample matrix effect prevented complete surrogate recovery.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

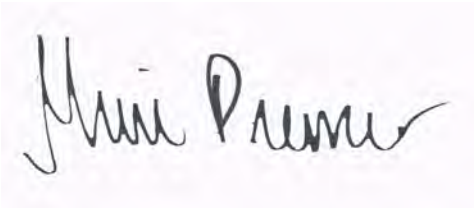
May 13, 2020

Heather Shideman
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202

RE: Trip_Blank/GWA_District_Six_C6
Work Order #2005055

Enclosed are the results of analyses for samples received by Summit Scientific on 05/06/20 16:05. 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: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/13/20 12:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW_60666_MH_MW_5_Trip_Blank	2005055-01	Water	05/06/20 13:48	05/06/20 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

2005055

S2

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

Client:	Extraction Oil and Gas (XOG) **Report to:** Apex Companies, LLC	**Project Manager:**	Heather Shideman
Address:	2234 117th Ave, Ste 106	**E-Mail:**	Rochelle.Carlisle@apexcos.com, Heather.Shideman@apexcos.com
City/State/Zip:	Greeley, CO 80634	**cc:**	bford@extractionog.com
Phone:	(970) 576-3446	**Project Name:**	Trip_Blank/GWA_District_Six_C6
Sampler Name:	Kade MacDougall	**Project No.:**	ALLOC-421 **Facility ID**

					Preservative				**Matrix**				**Analysis Requested**								**Special Instructions**
ID	**Field ID / Point of Collection**	**Date Sampled**	**Time Sampled**	**# of containers**	**HCl**	**HNO3**	**None**	**Other (Specify)**	**Groundwater**	**Soil**	**Air-Canister Serial #**	**Other (Specify)**	**BTEX**								
1	GW_60666_MH_MW_5_Trip_Blank	20/05/06	1348	2					X				X								**Sample Frequency:** IN

Relinquished by: Kade MacDougall	Date/Time: 20/05/06/1605	Received by:	Date/Time: 05-06-2020	**Turn Around Time** (Check) **Notes:**
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day ___ 72 hours ___ 24 hours ___ Standard X 48 hours ___
Relinquished by:	Date/Time:	Received by:	Date/Time:	**Sample Integrity:** ON ICE Temperature Upon Receipt: 10.4 Intact: (Yes) No

Sample Receipt Checklist

S2 Work Order 2005055

Client: Apex Companies Client Project ID: Trip Blank / GWA District Six & 6e

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

[X] [ ] [ ] [ ] [ ]

Matrix (check all that apply): [ ] Air [ ] Soil/Solid [X] Water [ ] Other:_____ (Describe)

Temp (°C)	10.4

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.	X			on ice
Were all samples received intact (1)?	X			
Was adequate sample volume provided (1)?	X			
If custody seals are present, are they intact (1)?	X			
Are samples with holding times due within 48 hours sample due within 48 hours present?		X		
Is a chain-of-custody (COC) form present and filled out completely (1)?	X			
Does the COC agree with the number and type of sample bottles received (1)?	X			
Do the sample IDs on the bottle labels match the COC (1)?	X			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	X			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		X		
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			X	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
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
		05/06/2020

S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/13/20 12:56

GW_60666_MH_MW_5_Trip_Blank

2005055-01 (Water)

Summit Scientific

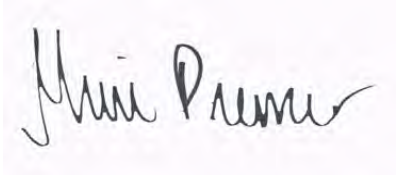
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2005128	05/12/20	05/12/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/06/20 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*143 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.0 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*21-167*		"	"	"	"	



S2

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/13/20 12:56

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 2005128 - EPA 5030 Water MS										
Blank (2005128-BLK1)				Prepared & Analyzed: 05/12/20						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*16.5*		*"*	*13.3*		*124*	*23-173*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*96.7*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.5*		*"*	*13.3*		*109*	*21-167*			
LCS (2005128-BS1)				Prepared & Analyzed: 05/12/20						
Benzene	43.2	1.0	ug/l	33.3		129	51-132			
Toluene	38.5	1.0	"	33.3		115	51-138			
Ethylbenzene	39.7	1.0	"	33.3		119	58-146			
m,p-Xylene	71.9	2.0	"	66.7		108	57-144			
o-Xylene	36.5	1.0	"	33.3		110	53-146			
Surrogate: 1,2-Dichloroethane-d4	*15.2*		*"*	*13.3*		*114*	*23-173*			
Surrogate: Toluene-d8	*13.4*		*"*	*13.3*		*101*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.7*		*"*	*13.3*		*110*	*21-167*			
Matrix Spike (2005128-MS1)	**Source: 2005054-01**			Prepared & Analyzed: 05/12/20						
Benzene	37.6	1.0	ug/l	33.3	ND	113	34-141			
Toluene	37.0	1.0	"	33.3	ND	111	27-151			
Ethylbenzene	39.3	1.0	"	33.3	ND	118	29-160			
m,p-Xylene	68.6	2.0	"	66.7	ND	103	20-166			
o-Xylene	36.0	1.0	"	33.3	ND	108	33-159			
Surrogate: 1,2-Dichloroethane-d4	*15.4*		*"*	*13.3*		*115*	*23-173*			
Surrogate: Toluene-d8	*13.4*		*"*	*13.3*		*100*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.4*		*"*	*13.3*		*108*	*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: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/13/20 12:56

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 2005128 - EPA 5030 Water MS										
Matrix Spike Dup (2005128-MSD1)	**Source: 2005054-01**			Prepared & Analyzed: 05/12/20						
Benzene	44.6	1.0	ug/l	33.3	ND	134	34-141	16.8	30	
Toluene	40.6	1.0	"	33.3	ND	122	27-151	9.30	30	
Ethylbenzene	44.6	1.0	"	33.3	ND	134	29-160	12.5	30	
m,p-Xylene	76.6	2.0	"	66.7	ND	115	20-166	11.1	30	
o-Xylene	41.1	1.0	"	33.3	ND	123	33-159	13.5	30	
Surrogate: 1,2-Dichloroethane-d4	*16.1*		*"*	*13.3*		*120*	*23-173*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*98.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*14.5*		*"*	*13.3*		*109*	*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.

Extraction Oil&Gas 370 17th Street Suite 5300 Denver CO, 80202	Project: Trip_Blank/GWA_District_Six_C6 Project Number: Alloc 421 Project Manager: Heather Shideman	**Reported:** 05/13/20 12:56

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

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	761688	Job #:	44880	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_5				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	Plastic Bottle				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/06/2020 13:48	Date Received:	5/08/2020	Date Reported:	5/26/2020

δD of water	----------	-105.8 ‰ relative to VSMOW
$\delta^{18}O$ of water	----------	-13.43 ‰ relative to VSMOW
Tritium content of water	----------	na
$\delta^{13}C$ of DIC	----------	-9.8 ‰ relative to VPDB
^{14}C content of DIC	----------	na
$\delta^{15}N$ of nitrate	----------	na
$\delta^{18}O$ of nitrate	----------	na
$\delta^{34}S$ of sulfate	----------	na
$\delta^{18}O$ of sulfate	----------	na
Vacuum Distilled? *	----------	No

Remarks: ALLOC-421

nd = not detected. na = not analyzed.
*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	761796	Job #:	44892	IS-99230	Co. Job#:
Sample Name:	GW_60666_MH_MW_5				Co. Lab#:
Company:	Extraction Oil and Gas				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	Ground_Water/GWA_District_Six_C6				
Location:	NENE_20_5N_65W				
Formation/Depth:	IN				
Sampling Point:					
Date Sampled:	5/06/2020 13:48	Date Received:	5/08/2020	Date Reported:	6/24/2020

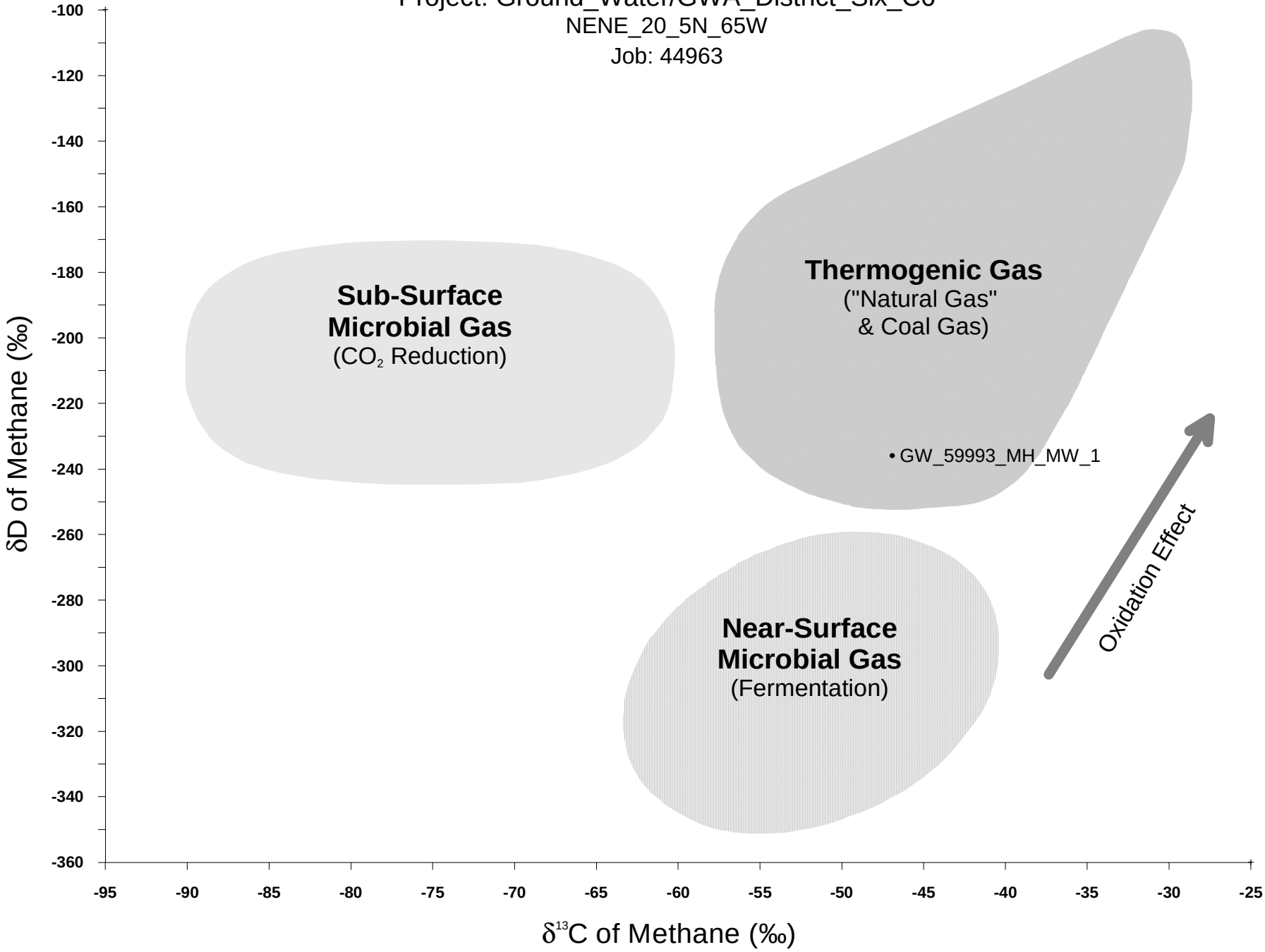
Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide	nd					
Helium	na					
Hydrogen	nd					
Argon	1.39					
Oxygen	6.31					
Nitrogen	72.58					
Carbon Dioxide	6.66					
Methane	11.83	-46.79	-219.7		2.8	1.9
Ethane	0.949	-25.4			0.25	0.31
Ethylene	nd					
Propane	0.232	-26.8			0.056	0.10
Propylene	nd					
Iso-butane	0.0238					
N-butane	0.0238					
Iso-pentane	0.0046					
N-pentane	0.0006					
Hexanes +	0.0006					

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.83
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
ALLOC-421
Ethane and propane carbon isotope data obtained online via GC-C-IRMS.
Insufficient butane and pentane concentrations for isotopic analysis.

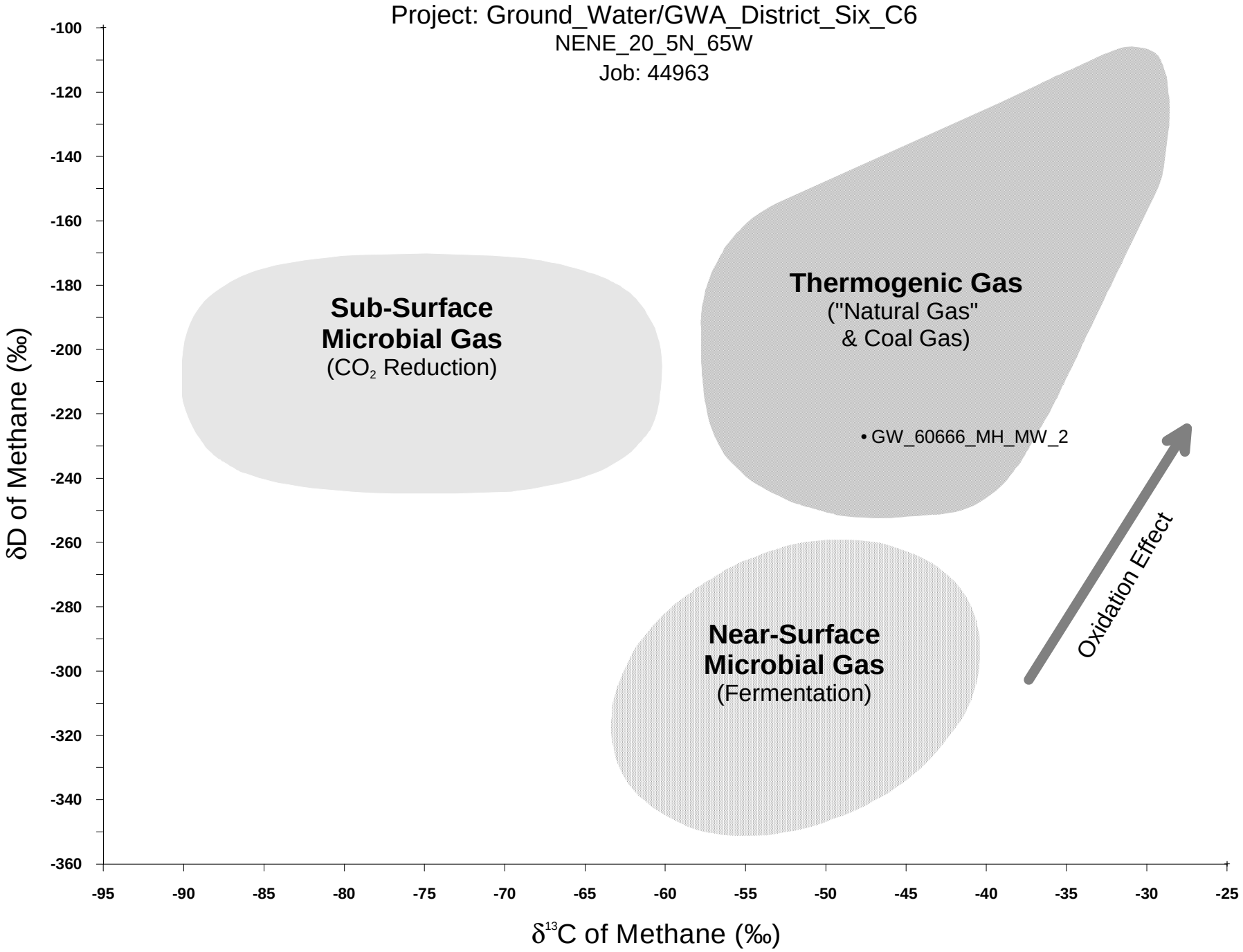
nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ATTACHMENT G

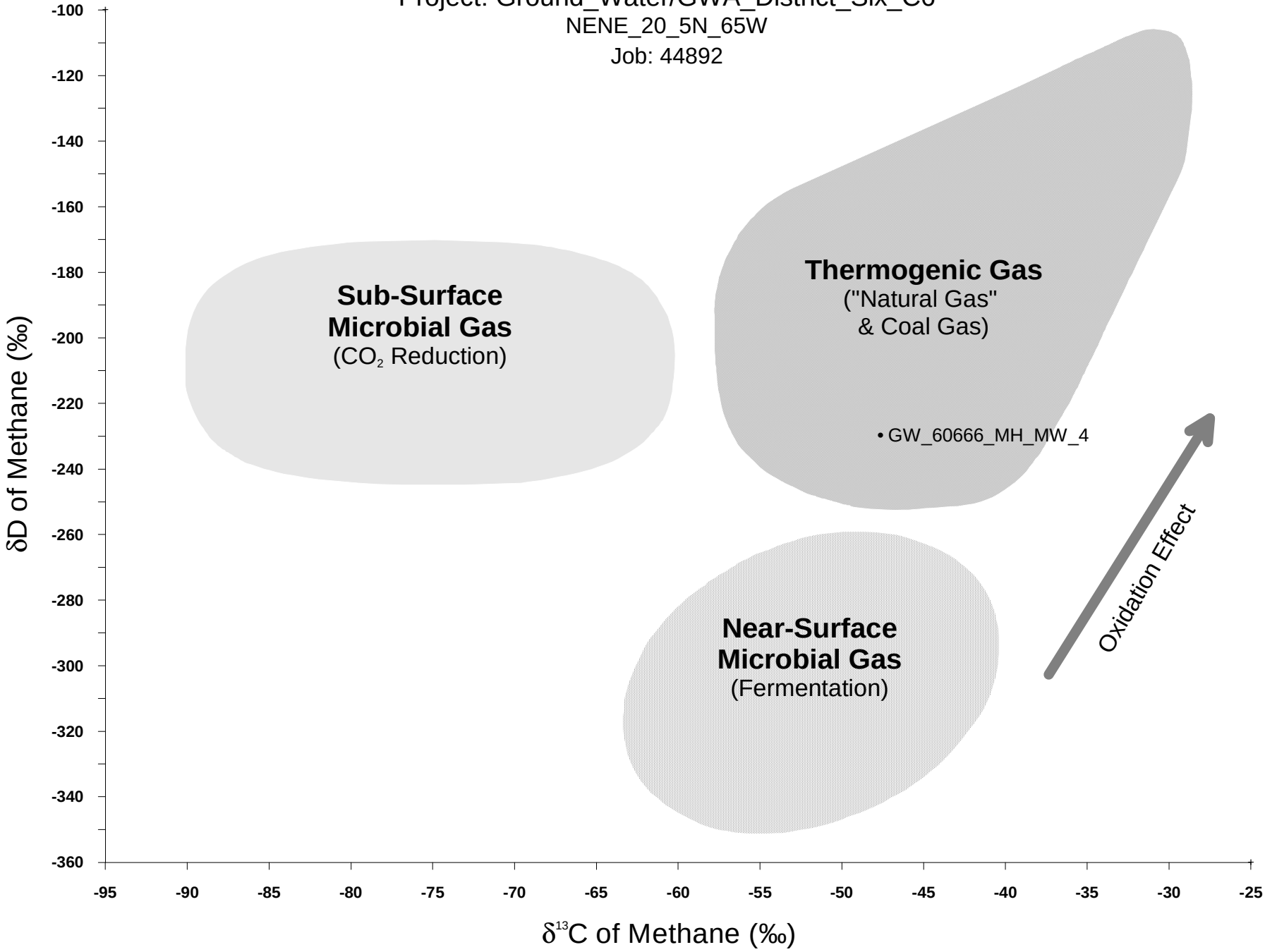
Groundwater Isotope Ratio Plots



This plot is a visual representation of data and not intended to be an interpretation of results.



This plot is a visual representation of data and not intended to be an interpretation of results.



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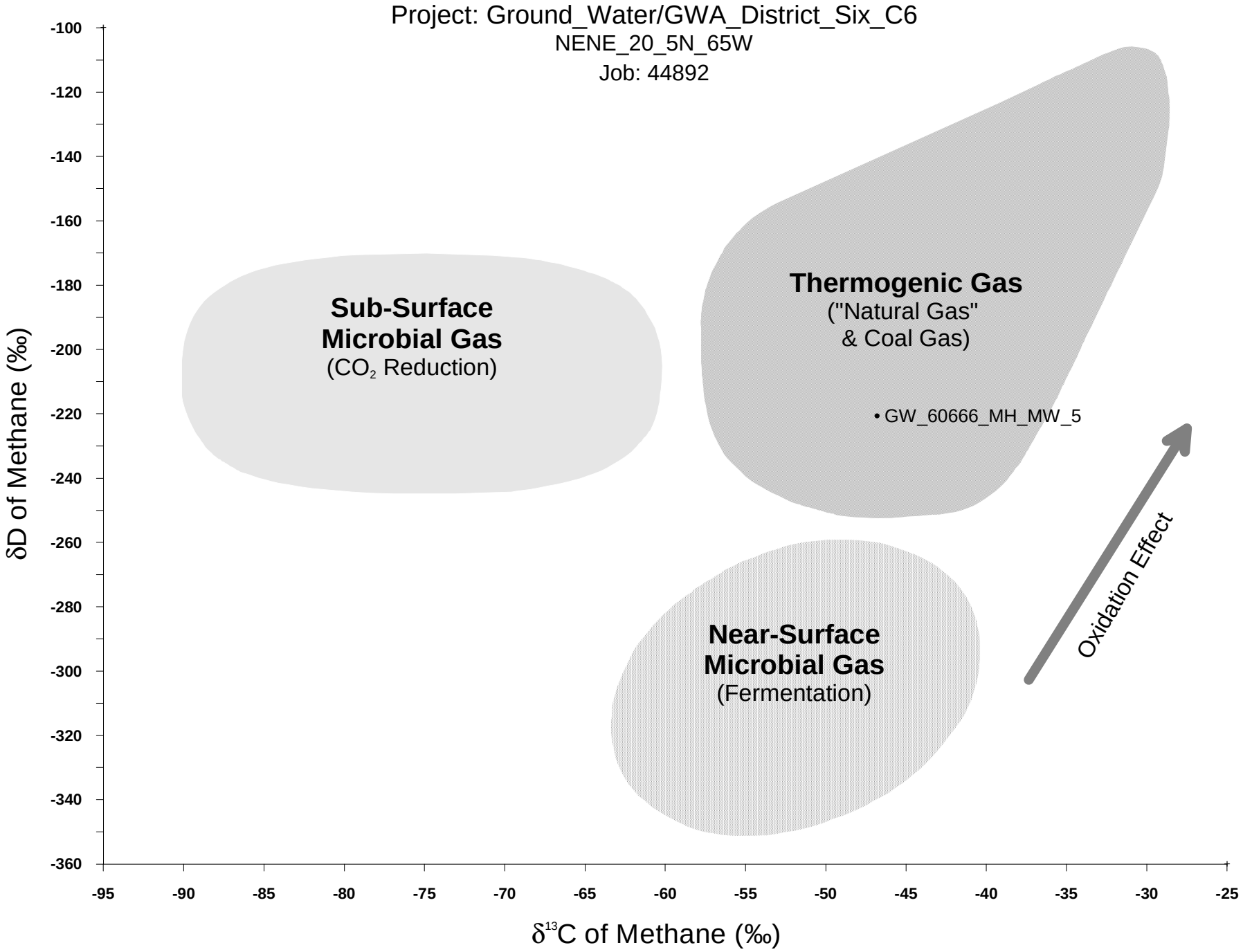

This plot is a visual representation of data and not intended to be an interpretation of results.