COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

1313 Sherman St. Room 215
Denver, CO 80203

April 25, 2023

Peter Weiland
Weiland Inc.
PO Box 18087
Boulder CO 80308

RE: Permit M2019-025; Amen Aggregate Resource; Technical Revision 1 (TR1) – Groundwater Monitoring Plan and Baseline Data Submittal, Adequacy Review 1

Mr. Weiland:

The Division of Reclamation, Mining and Safety received Technical Revision 1 (TR1) on April 14, 2023. **The decision date for this revision has been set for March 15, 2023. Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, it will be your responsibility to request an extension of the review period.** If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the Division must deny this revision.

The requirement for submittal of TR1 is a result of the Amen Aggregate permit application adequacy review process, conducted in late 2019, during which the following statement was made: "The permittee will commit to submitting a GW quality monitoring plan and completing background sampling prior to exposing GW." Based on the 2022 annual report and available aerial photography from Google Earth, earthwork within the Amen site commenced sometime in mid-2021.

TR1 was submitted by Coulson Excavating on April 14, 2023 with the presumed intent of satisfying the requirement for a groundwater quality monitoring plan as referred to above, providing any baseline water level and water quality data collected by Coulson to-date, and comparing analytical data to the to the Interim Narrative Standards for Groundwater contained in Tables 1-4 of Regulation 41 "The Basic Standards for Ground Water".

DRMS has completed the initial adequacy review of TR1. The provided revision will require clarification of the provided information and submittal of additional information before it can be approved. In addition, based on discussions at the DRMS office on April 25, the permittee also wishes to submit designs for the proposed underdrains on the south and west side of the lined

cells as part of this TR. DRMS will review those designs when submitted as part of TR1 and identify any adequacy issues as needed.

Please provide the following information/clarifications:

1) Although the groundwater contour data presented on Exhibit G-1 appears reasonable, none of the data/dates collected/etc. from the various sources listed on the first page of the TR, from which this contour map has presumably been generated, has been provided. Coulson will be required to provide an updated GW contour map based on recent, on-site data collected when the wells outlined in the Terracon scope have been installed, surveyed, and measured.

2) The only "baseline/background" water quality data provided in TR1 was obtained from COGCC sampling events at a well (spring?) located over ¼ mile SW of the site. Data from several sampling events was provided TR1, however, no comparison to applicable analytes or benchmark values contained in Tables 1-4 of the Interim Narrative Standard for Groundwater has been provided.

   Due to the sample location and incomplete analysis of the sample for the analytes listed in Tables 1-4 of the Interim Narrative Standard for Groundwater, DRMS cannot consider this data acceptable for establishing baseline conditions at the Amen site. Additional data will need to be collected and submitted. Baseline data will need to be collected from DRMS approved locations for 5 consecutive quarters. Please detail how and where baseline analytical data will be collected.

3) The first page of TR1 states 3 wells were/are existing onsite (EW-1, EW-2, and EW-3) as of April 2018. These wells are shown on as located in the SW corner of the site on Exhibit G-1 Groundwater Elevation Contour Map. Are any of these wells still available/appropriate for baseline data and groundwater monitoring?

4) TR1 states that "water quality analysis criteria his (sic) considered Agricultural". This is incorrect – Regulation 41 states that for unclassified areas the interim standard values are the most restrictive values listed for a constituent listed in Tables 1-4. Please provide your groundwater sampling plan and reporting with this in mind.

   The Terracon scope of work provided also states that only analytes listed in Table 3 Agricultural Standards, will be sampled for which is also incorrect. You will need to address all analytes in tables 1-4 of the interim narrative standard unless otherwise approved by DRMS. Please provide a rationale for any analytes you wish to omit from Tables 1-4 as listed in Regulation 41 for DRMS approval.

5) The Terracon scope of work for drilling additional monitoring wells on-site states that new wells will only be advanced five feet into groundwater or to a depth of approximately 20 feet BGS. Does this leave enough water column in the well to allow for sampling without drying the wells during dewatering of the site? DRMS advises that wells be drilled to bedrock contact with at least a 10 foot screened interval so that

water level and quality data may be collected through the life of mine without needing to re-drill additional wells.

6) The Terracon scope of work also states that monitoring wells will be completed with flush-mount covers at ground surface elevation. DRMS will require steel above ground protective casings for all MWs with a concrete pad and bumper posts installed. Flush mount wells are not suitable for an active mining environment.

7) DRMS will require that all locations identified on the Terracon drilling scope be converted to permanent monitoring wells suitable for water level and analytical sample collection. The fact that this site has a river flowing diagonally through the center of it will necessitate additional baseline monitoring and discharge (POC) monitoring wells than might normally be required for a site that has groundwater flow moving through it in only one direction.

8) The Groundwater Monitoring Plan that was submitted as part of TR1 is insufficient and does not comply with the requirements of Regulation 41 - Interim Narrative Standards (I.N.S.) for Groundwater. To ensure compliance with applicable water quality laws and regulations please submit a Sampling and Analysis plan consistent with industry standards and Regulation 41 requirements. An acceptable example of a Sampling and Analysis plan has been attached to illustrate the type of information that should be provided.

   Groundwater level data should be collected at least monthly from all wells on-site, and groundwater quality data should be collected at least annually after the initial 5 consecutive quarters of baseline data have been submitted.

   Groundwater level and quality data should be included with the annual report and compared to I.N.S. Table Value Standards and/or any site specific benchmarks unless benchmark values specified in the approved monitoring plan have been exceeded. Reporting requirements and follow up actions for observed exceedances of either Groundwater level or quality benchmarks should be specified.

9) A component of the provided plan should be the identification of "Points of Compliance" and discussion as to why they have been chosen. Pursuant to Rule 3.1.7(6)(b)(i)(A), points of compliance shall be established at some distance hydrologically down-gradient from the facility or activity that is causing, or which has the potential to cause contamination, and selecting that distance closest to the facility or activity, considering the technological feasibility of meeting the requirements for protecting water quality:
   - (I) a specified distance, as determined by Rule 3.1.7(6)(b)(i)(B);
   - (II) the hydrologically down-gradient limit of the area in which contamination has been identified; or
   - (III) the facility permit boundary.

A baseline data report and updated groundwater contour map should be submitted as a TR when the baseline data collection and analysis is complete. At that time, DRMS will evaluate the 5 quarters of data and constituents identified as exceeding table value standards in baseline data. Permit-specific benchmarks may be set by DRMS for those constituents, and sampling and reporting requirements for continued monitoring proposed by the permittee will be finalized.

This concludes the Division's adequacy review of TR1. This letter shall not be construed to mean that there are no other technical issues with the submittal. Other issues may arise as additional information is supplied.

If you have any questions, please contact me at (303) 229-9414, or by e-mail at eric.scott@state.co.us .

Sincerely,

Eric Scott
Environmental Protection Specialist

APPENDIX G-2: BASELINE GROUNDWATER QUALITY DATA

BASELINE GROUNDWATER QUALITY DATA

1. Groundwater Baseline Quality and Quantity Data

Peak Materials has gathered data from 11 monitoring wells located around the property. This data shows the baseline groundwater condition within the alluvial aquifer of the Blue River. The locations of the sampled and measured wells can be found on Figure 1, below. One is located at each corner of the mining area and one is located near the entrance. In particular, GW-2 and GW-5 as well as P1 through P-6 are located adjacent to the wetlands to allow for monitoring of the water level near the wetlands throughout mining operations. The depth from the top of casing to groundwater for each well is shown in Table 1, below. Water quality data can be seen in Table 2, below. LRE Water developed a water quality monitoring plan (provided in Appendix G-3). The depths shown in Table 1 are based on the static water level from each well that were measured during sampling of the wells except for the depths reported on 6/12/2019, which were collected by HRL Compliance. Quality data sampled is based on typical analytes evaluated by the Colorado Division of Reclamation, Mining, and Safety during their review of Designated Mining Operation permits. These permits are typically metal mines with a risk of toxic or acid producing materials; the Peak Ranch Resource operation does not pose this risk. These sampling was conducted to thoroughly establish the groundwater baseline for the site and to allow for long-term water quality and water level monitoring at the site in order to determine if gravel pit operations have impacted the alluvial aquifer.

Five quarters of water sampling data (Q2-4 2019, Q-4 2020) have been collected. Q1 2020 sampling was unable to occur due to the stay-at-home order mandated by the Governor of Colorado. The groundwater wells will continue to be monitored for water depth to improve the operator's knowledge of the water table onsite during operations.

Monitoring Well Construction and Yield Estimate Reports and the ACZ Labs sample results can be found at the end of Appendix G-3. Figure 1 shows the well locations. Table 2 shows a summary of the well sample results.

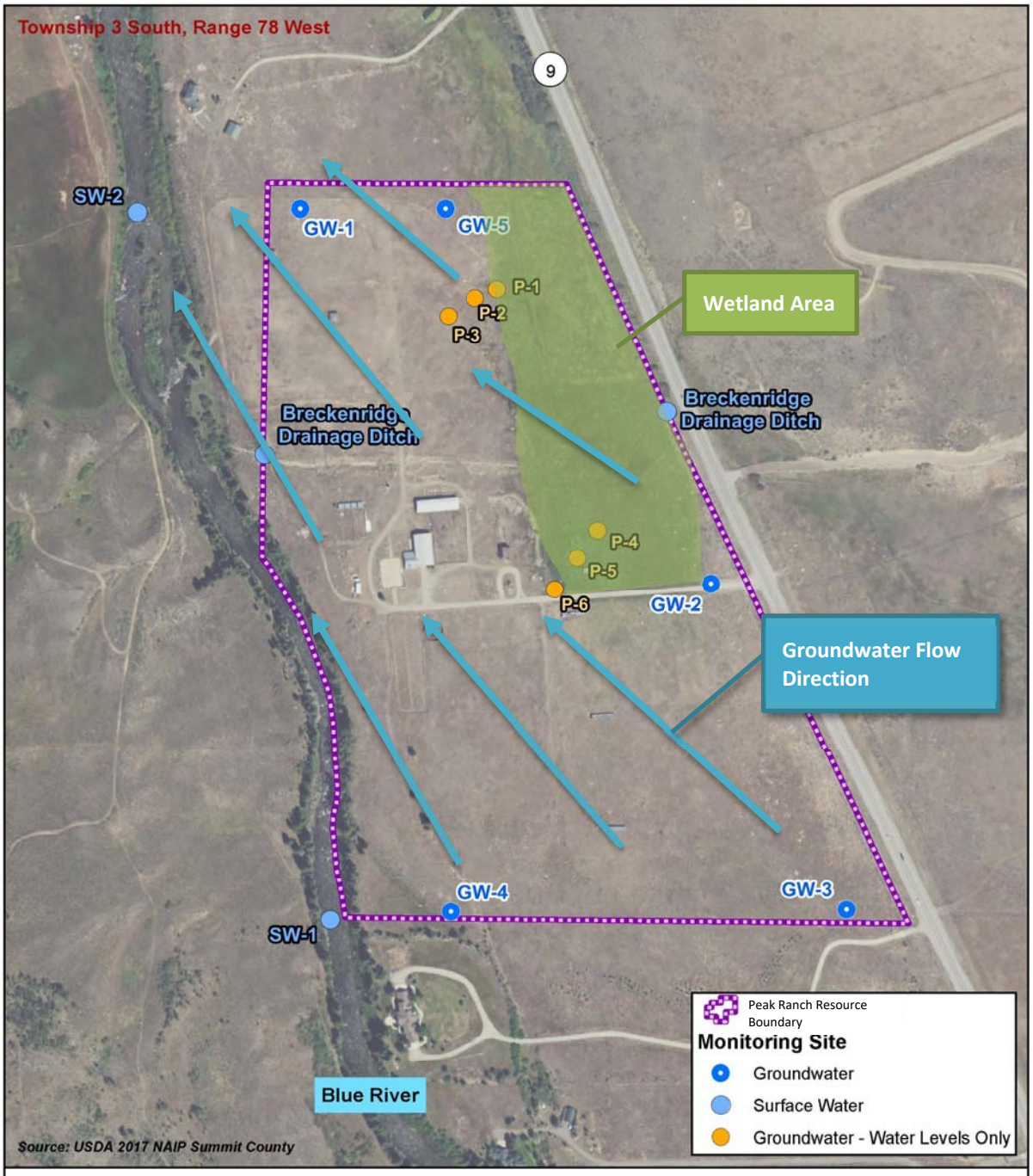


Figure 1
Surface Water and Groundwater Monitoring Well Locations
Peak Materials

1 in = 400 ft
0 200 400 800 Feet

Date: 2020-12-14
File: 1525-2.0
Drawn: ABS
Approved: ABS

2. Depth and Flow of Groundwater

The groundwater levels measured in the on-site wells vary in depth over the course of the year. This is typical of alluvial aquifers of this type. The hydrographs (Figure 2 and Figure 3) show how the water table depth and elevation varied over the measurements in 2019 and 2020. Table 1 shows the specific measurements of groundwater depth taken in each well and their UTM locations. All depth measurements from 06/26/19 through present were collected in accordance with the sampling and monitoring plan outlined in Appendix G-3. Depths measured by HRL Compliance on 06/12/19 predate that plan.

2019 was considered typical of the groundwater regime in this area. It was not a drought year, nor was it considered an out of character high water year. As is expected, the groundwater level of the aquifer is highest during the high flow period of the year in the early summer. As the runoff from spring snow melt tapers off and the amount of water in the alluvial system of the Blue River declines, the depth to groundwater increase.

Table 1 - Groundwater Level from Monitoring Wells & Well Location

Depth (ft)	6/12/2019	06/26/19	08/15/19	10/14/19	5/4/2020	6/12/2020	9/15/2020	11/5/2020
GW-1	15.0	13.8	14.5	15.9	19.2	14.74	16.3	17.6
GW-2	10.0	5.5	5.2	9.7	16.4	9.98	9.5	11.1
GW-3	13.0	17.8	17.5	23.8	28.8	19.91	23.1	24.8
GW-4	12.0	11.1	11.3	14.3	17.6	12.06	14.3	15.2
GW-5	5.5	6.56	6.8	9.0	13.7	7.7	9.4	10.8
P-1		-	-	-	13.8	6.5	8.6	9.9
P-2		-	-	-	16.0	9.0	10.9	12.4
P-3		-	-	-	19.6	13.3	15.0	16.4
P-4		-	-	-	13.4	4.2	6.5	8.0
P-5		-	-	-	14.0	5.0	7.4	8.9
P-6		-	-	-	15.4	9.4	8.8	10.3

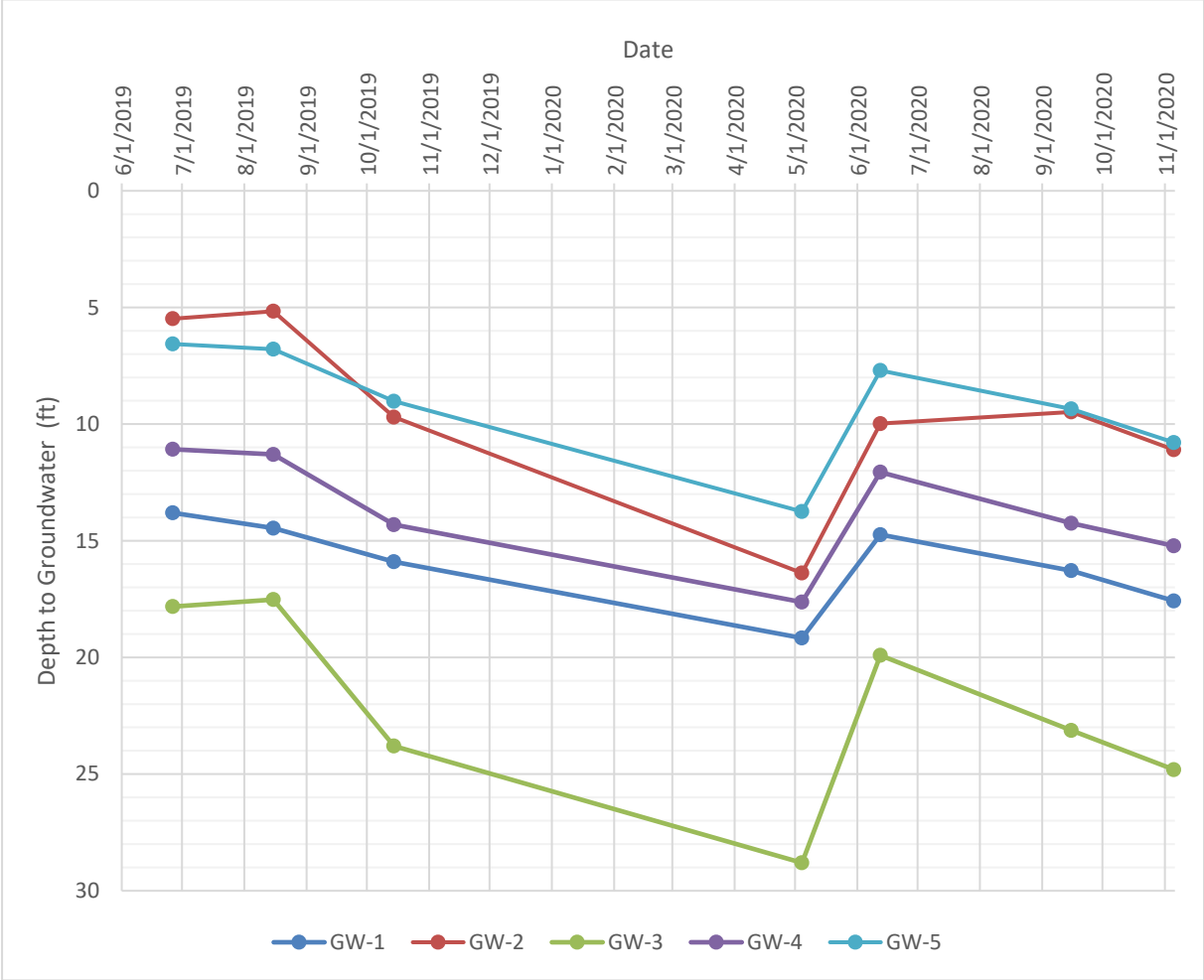
Well Name	UTM X	UTM Y
GW-1	400846.94	4403820.36
GW-2	401280.06	4403468.74
GW-3	401280.64	4403151.85
GW-4	400992.22	4403157.46
GW-5	401036.69	4403838.19
P-1	401058.93	4403742.73
P-2	401038.08	4403734.40
P-3	401011.85	4403716.35
P-4	401155.55	4403510.34
P-5	401136.35	4403483.94
P-6	401114.65	4403452.83

Note: NAD 83, UTM Zone 13N

Groundwater is deepest the farthest from infiltration sources or the river (GW-3) and shallowest near the wetlands in the northeast quadrant of the property (GW-2 & GW-5 and P1 – P-6). The depth to groundwater near the wetland throughout the year is too great for the wetland to be sustained by alluvial groundwater (4.8 ft deep at the shallowest), but given the drainage path passing through the wetland, and that it is a low area for the property (see Map C-1), the wetland area clearly is a source of infiltration to the local alluvium. Surface water enters the wetland area through both seepage through the highway grade and via a culvert under the highway.

Groundwater flow direction is roughly southeast to northwest, towards the Blue River.

Figure 2 – Groundwater Hydrographs (Depth)



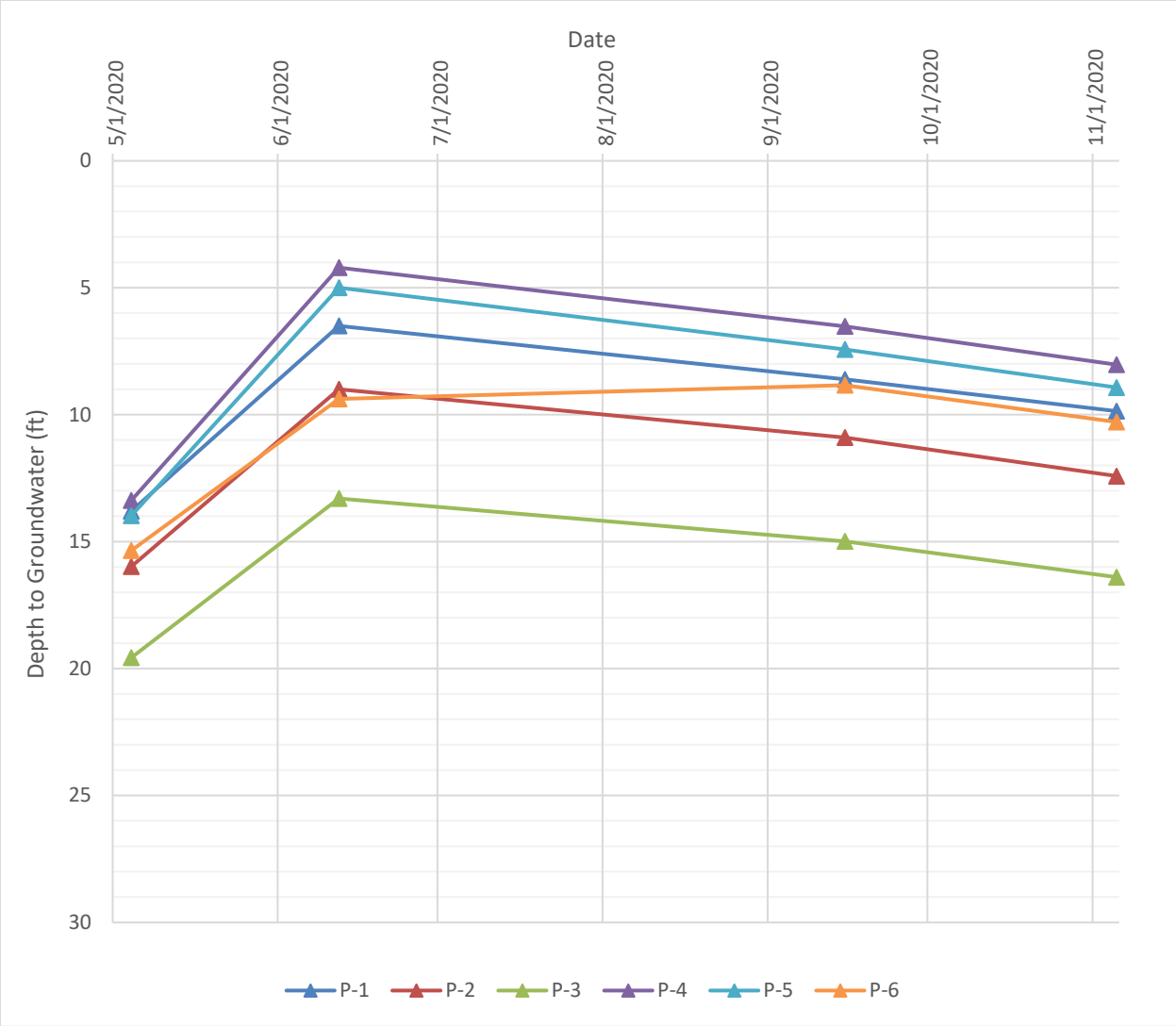
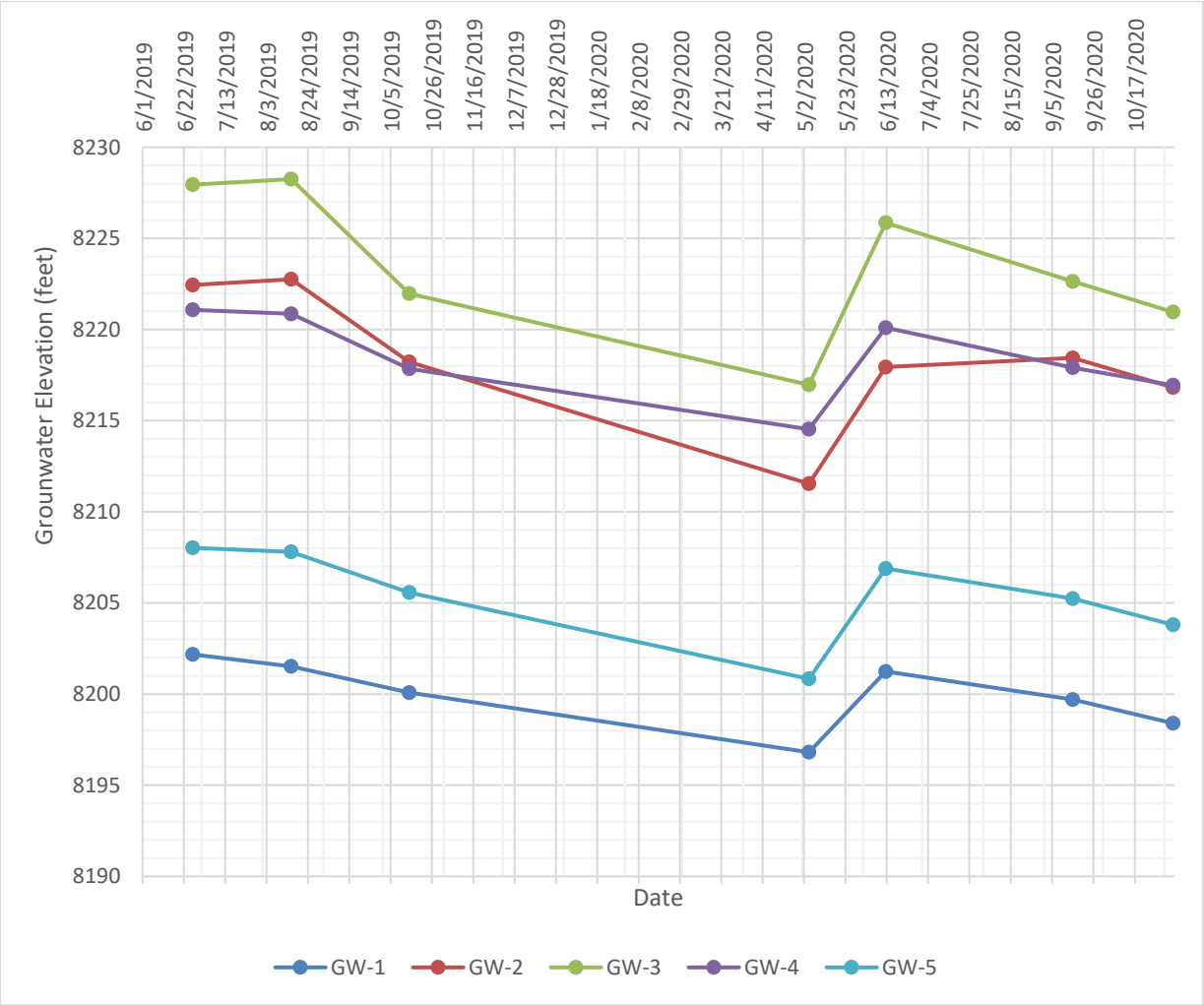

Date
5/1/2020
6/1/2020
7/1/2020
8/1/2020
9/1/2020
10/1/2020
11/1/2020
Depth to Groundwater (ft)
0
5
10
15
20
25
30
P-1
P-2
P-3
P-4
P-5
P-6

Figure 3 – Groundwater Hydrographs (Elevation)



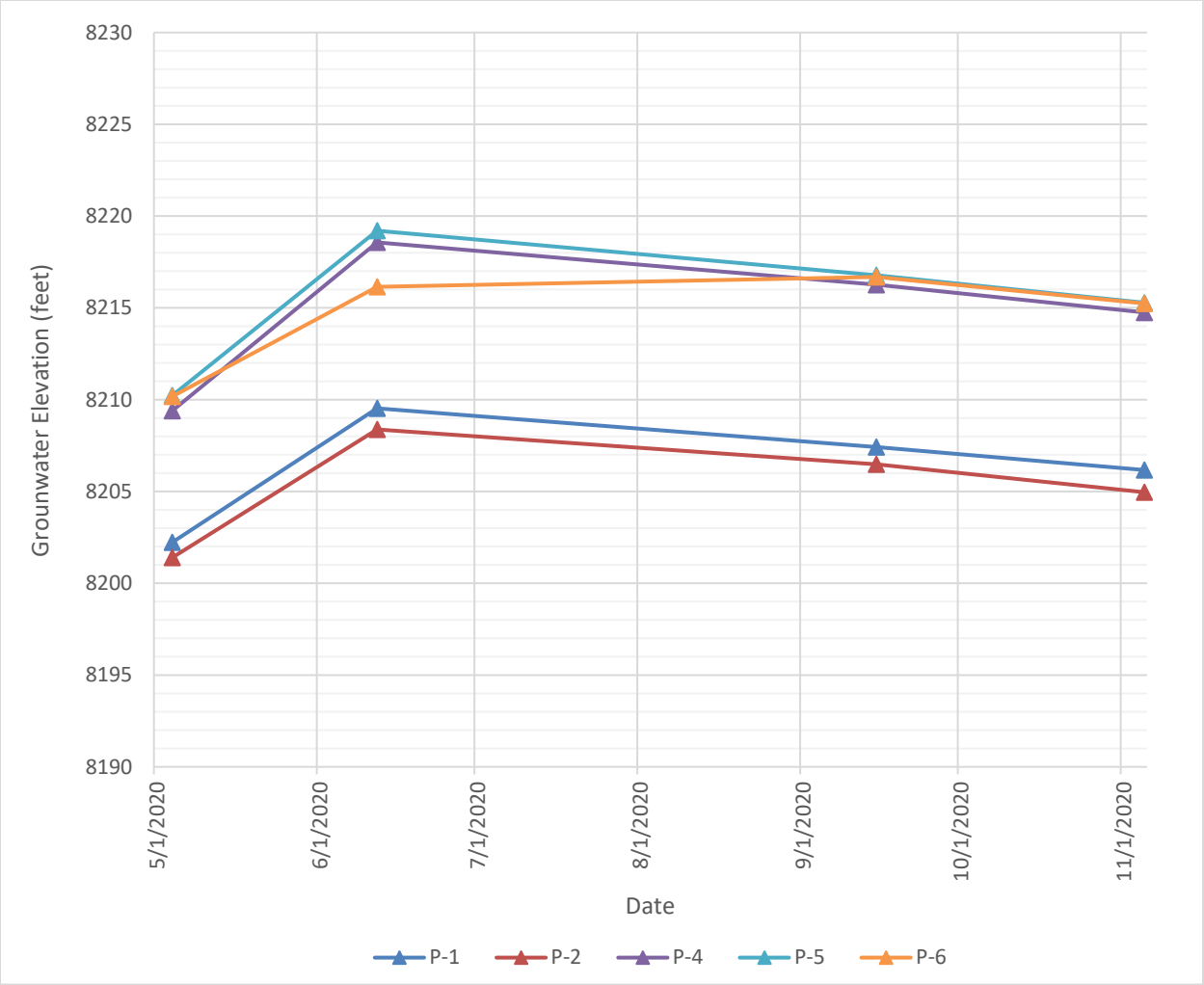

8230
8225
8220
8215
8210
8205
8200
8195
8190
Grounwater Elevation (feet)
5/1/2020
6/1/2020
7/1/2020
8/1/2020
9/1/2020
10/1/2020
11/1/2020
Date
P-1
P-2
P-4
P-5
P-6

Table 2 - Groundwater Baseline Quality Data

	GW-1						GW-2						GW-3					Compiled Standards[1]
Parameter, Limit	6/26/2019	8/15/2019	10/14/2019	5/4/2020	9/15/2020	11/5/2020	6/26/2019	8/15/2019	10/14/2019	5/4/2020	9/15/2020	11/5/2020	6/26/2019	8/15/2019	10/14/2019	9/15/2020	11/5/2020	
Aluminum, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Aluminum, total	1.37	0.19	0.19	0.17	19.8	0.339	0.75	0.14	0.08	0.43	0.27	0.3	0.09	0.11	ND	1.19	0.523	
Antimony, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.006
Arsenic, dissolved	ND	0.0002	ND	ND	0.0002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01
Arsenic, total	0.0006	0.0003	0.0003	0.0003	0.0045	0.00038	0.0004	0.0003	0.0002	0.0003	0.0004	0.00025	ND	0.0002	ND	0.0004	0.00028	
Barium, dissolved	0.11	0.104	0.107	0.098	0.097	0.119	0.172	0.15	0.178	0.153	0.168	0.181	0.196	0.176	0.181	0.172	0.28	2
Beryllium, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004
Bicarbonate as CaCO3	122	132	137	133	138	130	165	146	181	136	179	164	137	130	135	141	130	
Boron, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.75
Cadmium, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005
Cadmium, total	ND	ND	ND	ND	0.00036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Calcium, dissolved	60	59.6	54.9	52.8	50.5	52.6	62.5	55	60.2	54.5	58	62.4	54.8	52.8	51.3	48.8	52.2	
Carbonate as CaCO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cation-Anion Balance	2.6	2.6	0	-1.4	-4.3	1.4	-1.2	0	-2.4	-2.7	-7.3	0	0	1.4	0	-5.9	2.8	
Chloride	16.2	11.8	6.8	6.7	8.6	6.24	16	5.1	3.1	12.2	4.3	4.78	14	7.9	4.3	4.9	7.77	250
Chromium, total	0.002	ND	0.0007	0.0006	0.0188	0.00061	0.0012	ND	ND	0.0009	0.0006	0.00055	ND	ND	ND	0.0014	0.00064	0.1
Chromium, Trivalent Total	ND	ND	ND	ND	0.019	0	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	0	
Conductivity @25C	380	353	343	338	336	293	392	343	366	341	380	297	358	331	318	321	260	
Copper, dissolved	0.0086	ND	0.0023	ND	0.0011	0.00085	0.0073	ND	0.0013	0.0009	0.0011	ND	0.0078	ND	ND	0.0011	ND	0.2
Copper, total	0.0022	ND	ND	ND	0.0218	ND	ND	ND	ND	0.0009	ND	0.00082	ND	ND	ND	0.0018	0.00088	
Cyanide, total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
Cyanide, WAD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dissolved Chromium, Hexavalent	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Field Conductivity @25C	376.8	206.3	316	7.35	330.9	351.8	381.3	288.4	347.4	359.6	397.3	389.9	340	305.8	264.6	336.7	345.2	

Parameter, Limit	GW-1 6/26/2019	GW-1 8/15/2019	GW-1 10/14/2019	GW-1 5/4/2020	GW-1 9/15/2020	GW-1 11/5/2020	GW-2 6/26/2019	GW-2 8/15/2019	GW-2 10/14/2019	GW-2 5/4/2020	GW-2 9/15/2020	GW-2 11/5/2020	GW-3 6/26/2019	GW-3 8/15/2019	GW-3 10/14/2019	GW-3 9/15/2020	GW-3 11/5/2020	Compiled Standards[1]
Field Dissolved Oxygen	**7.36**	**7.73**	**5.68**	**7.35**	**6.98**	**6.42**	**7.98**	**7.81**	**6.61**	**7.5**	**10.79**	**8.36**	**6.28**	**5.52**	**6.21**	**9.64**	**6.82**	
Field pH	**7.25**	**7.41**	**7.54**	**7.79**	**8**	**8.01**	**6.83**	**7.48**	**7.55**	**7.62**	**7.91**	**7.78**	**7.17**	**7.59**	**7.65**	**7.37**	**8.07**	**6.5 - 8.5**
Field Temperature	**6.9**	**8.5**	**10.3**	**7.6**	**11.8**	**10.7**	**7.4**	**9.1**	**10.4**	**7.9**	**11.7**	**10.4**	**8.2**	**7.6**	**7.4**	**9**	**8.6**	
Field Turbidity	**15.30**	**5.49**	**6.99**	**10.10**	**121.00**	**2.55**	**3.99**	**2.69**	**2.24**	**2.51**	**3.74**	**1.15**	**1.60**	**1.89**	**1.04**	**2.60**	**2.94**	
Fluoride	**0.3**	**0.3**	**0.2**	**0.3**	**ND**	**0.28**	**0.2**	**0.4**	**0.2**	**0.3**	**0.2**	**0.22**	**0.3**	**0.4**	**0.2**	**0.2**	**0.23**	**2**
Hardness as CaCO3 (dissolved)	**176**	**175**	**162**	**156**	**148**	**155**	**189**	**166**	**182**	**166**	**175**	**189**	**162**	**157**	**152**	**145**	**156**	
Hydroxide as CaCO3	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Iron, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.3**
Iron, total	**1.41**	**0.16**	**0.23**	**0.14**	**17.3**	**0.29**	**0.82**	**0.14**	**0.1**	**0.37**	**0.21**	**0.246**	**0.12**	**0.09**	**ND**	**0.84**	**0.399**	
Lead, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.05**
Lead, total	**0.0013**	**0.0002**	**0.0001**	**0.0001**	**0.016**	**0.00027**	**0.0008**	**0.0001**	**ND**	**0.0003**	**0.0002**	**0.00024**	**0.0001**	**ND**	**ND**	**0.0008**	**0.00036**	
Magnesium, dissolved	**6.4**	**6.4**	**6**	**5.9**	**5.4**	**5.76**	**7.9**	**7**	**7.7**	**7.2**	**7.3**	**8.06**	**6.2**	**6**	**5.9**	**5.7**	**6.13**	
Manganese, dissolved	**0.0013**	**ND**	**ND**	**ND**	**0.0005**	**ND**	**0.0012**	**ND**	**0.0011**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.0023**	**ND**	**0.05**
Manganese, total	**0.0235**	**0.0028**	**0.0035**	**0.0023**	**0.315**	**0.00466**	**0.0172**	**0.003**	**0.0017**	**0.0077**	**0.004**	**0.0042**	**0.002**	**0.0016**	**ND**	**0.0132**	**0.00543**	
Mercury, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.002**
Mercury, total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Molybdenum, dissolved	**0.03**	**0.02**	**0.03**	**ND**	**0.02**	**0.025**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.02**	**ND**	**0.02**	**ND**	**ND**	**0.21**
Molybdenum, total	**ND**	**0.03**	**0.03**	**0.03**	**ND**	**0.031**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.02**	**ND**	**ND**	**0.021**	
Nickel, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.1**
Nitrate/Nitrite as N	**4.14**	**1.25**	**0.61**	**2.77**	**0.72**	**0.526**	**1.35**	**0.8**	**0.44**	**0.73**	**0.53**	**0.379**	**0.5**	**0.62**	**0.42**	**0.47**	**0.398**	**10**
Nitrogen, ammonia	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Phosphorus, ortho dissolved	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.015**	**0.02**	**ND**	**0.01**	**0.01**	**ND**	**0.012**	**ND**	**ND**	**ND**	**ND**	**ND**	
Potassium, dissolved	**1.6**	**1.8**	**1.7**	**1.5**	**1.7**	**1.79**	**1.2**	**1.3**	**1.3**	**1**	**1.4**	**1.39**	**1.4**	**1.4**	**1.3**	**1.3**	**1.4**	
Residue, Filterable (TDS) @180C	**238**	**214**	**196**	**218**	**226**	**204**	**218**	**194**	**212**	**202**	**222**	**240**	**206**	**198**	**190**	**212**	**198**	**400**
Residue, Non-Filterable (TSS) @105C	**25**	**ND**	**7**	**ND**	**54**	**5**	**19**	**ND**	**ND**	**25**	**9**	**5**	**ND**	**ND**	**ND**	**41**	**5**	

Parameter, Limit	GW-1 6/26/2019	GW-1 8/15/2019	GW-1 10/14/2019	GW-1 5/4/2020	GW-1 9/15/2020	GW-1 11/5/2020	GW-2 6/26/2019	GW-2 8/15/2019	GW-2 10/14/2019	GW-2 5/4/2020	GW-2 9/15/2020	GW-2 11/5/2020	GW-3 6/26/2019	GW-3 8/15/2019	GW-3 10/14/2019	GW-3 9/15/2020	GW-3 11/5/2020	Compiled Standards[1]
Selenium, dissolved	**0.0006**	**0.0005**	**0.0004**	**0.0008**	**0.0004**	**0.00052**	**0.0006**	**0.0007**	**0.0004**	**0.0007**	**0.0005**	**0.00044**	**0.0004**	**0.0004**	**0.0005**	**0.0007**	**0.00062**	**0.02**
Silica, dissolved	**8.5**	**9.3**	**9.4**	**8.6**	**8.9**	**9.2**	**9.6**	**9.6**	**10.4**	**9.6**	**10**	**10.6**	**8.7**	**8.6**	**8.7**	**8.2**	**8.5**	
Silver, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.05**
Sodium, dissolved	**6.5**	**6.9**	**6.6**	**6.4**	**6.4**	**7.12**	**8.1**	**7.3**	**6.5**	**4.8**	**6.2**	**5.68**	**9.7**	**9.5**	**6.1**	**5.7**	**11.5**	
Sulfate	**35.2**	**34.5**	**29.4**	**31**	**29.5**	**28.8**	**27.7**	**31.2**	**22.8**	**32.8**	**30.9**	**32**	**28.1**	**29.3**	**25.7**	**27.8**	**30.5**	**250**
Sulfide as S	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.02**	**ND**	
Sum of Anions	**3.7**	**3.7**	**3.6**	**3.5**	**3.6**	**3.4**	**4.3**	**3.7**	**4.2**	**3.8**	**4.4**	**4.1**	**3.7**	**3.5**	**3.4**	**3.6**	**3.5**	
Sum of Cations	**3.9**	**3.9**	**3.6**	**3.4**	**3.3**	**3.5**	**4.2**	**3.7**	**4**	**3.6**	**3.8**	**4.1**	**3.7**	**3.6**	**3.4**	**3.2**	**3.7**	
Thallium, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.002**
Total Alkalinity	**122**	**132**	**137**	**133**	**138**	**130**	**165**	**146**	**181**	**136**	**179**	**164**	**137**	**130**	**135**	**141**	**130**	
Uranium, dissolved	**0.0013**	**0.0014**	**0.0014**	**0.0014**	**0.0015**	**0.00146**	**0.002**	**0.0019**	**0.0021**	**0.0017**	**0.0023**	**0.00231**	**0.0014**	**0.0013**	**0.0013**	**0.0014**	**0.0014**	**0.03**
Vanadium, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.1**
Zinc, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.005**	**0.02**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**2**
Zinc, total	**0.009**	**0.006**	**0.007**	**ND**	**0.08**	**ND**	**0.005**	**0.005**	**0.007**	**ND**	**ND**	**ND**	**ND**	**0.006**	**0.005**	**0.007**	**ND**	

[1]Compiled Standards: Water Quality Control Commission, Regulation 41, Interim Narrative Standards, Tables 1-4, compiled to show the most stringent standard for each analyte.
ND = Not detectable. See the attached ACZ Lab Reports for detection limits.
NM = Not measured

Parameter, Limit	GW-4 6/26/2019	GW-4 8/15/2019	GW-4 10/14/2019	GW-4 5/4/2020	GW-4 9/15/2020	GW-4 11/5/2020	GW-5 6/26/2019	GW-5 8/15/2019	GW-5 10/14/2019	GW-5 5/4/2020	GW-5 9/15/2020	GW-5 11/5/2020	Compiled Standards[1]
Aluminum, dissolved	ND	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Aluminum, total	1.3	0.41	0.25	0.19	0.33	1.59	3.33	0.6	0.41	0.47	3.43	1.41	
Antimony, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.006
Arsenic, dissolved	ND	ND	ND	ND	ND	ND	ND	0.0002	ND	ND	ND	ND	0.01
Arsenic, total	0.0005	0.0003	ND	ND	0.0002	0.00075	0.0011	0.0004	0.0003	0.0003	0.0008	0.00045	
Barium, dissolved	0.117	0.116	0.131	0.124	0.11	0.118	0.089	0.093	0.105	0.078	0.096	0.0925	2
Beryllium, dissolved	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004
Bicarbonate as CaCO3	86.2	93.3	102	96.3	105	99.9	160	195	192	171	200	187	
Boron, dissolved	ND	ND	ND	ND	ND	ND	ND	0.03	ND	ND	ND	ND	0.75
Cadmium, dissolved	ND	0.00011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005
Cadmium, total	0.00011	0.00007	ND	ND	0.00007	0.000154	0.0001	0.00006	ND	ND	0.00008	0.000058	
Calcium, dissolved	45.9	46.5	45.8	47.9	40.3	43.1	68.9	71.2	73.1	66.2	70.8	73.4	
Carbonate as CaCO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cation-Anion Balance	-1.5	1.5	0	1.5	-4.9	0	2.2	0	2.1	-2.2	-3.1	2.1	
Chloride	22.3	20.3	14.4	18.8	14.7	13	11.4	13.3	4.2	11.5	5.4	3.99	250
Chromium, total	0.0018	0.0006	ND	0.0007	0.0006	0.00191	0.0046	0.0008	0.0006	0.0012	0.0031	0.00168	0.1
Chromium, Trivalent Total	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	ND	0	
Conductivity @25C	328	323	324	331	307	249	423	429	442	425	464	352	
Copper, dissolved	0.0077	0.0012	ND	ND	ND	0.00086	0.0076	0.001	0.0022	0.0009	0.001	0.00111	0.2
Copper, total	0.0026	0.0011	ND	ND	0.0009	0.0026	0.0075	0.0019	0.0013	0.0012	0.0047	0.00231	
Cyanide, total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
Cyanide, WAD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dissolved Chromium, Hexavalent	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Field Conductivity @25C	305.9	302.8	299.5	344	314.9	321.1	411.4	292.8	419.9	435	471.6	462.3	
Field Dissolved Oxygen	4.12	4.21	3.7	9.9	7.2	5.53	5.59	2.55	3.45	7.41	6.97	6.36	
Field pH	6.71	6.99	7.06	7.3	7.16	7.55	7.22	7.06	7.05	7.61	6.84	7.59	6.5 - 8.5

Parameter, Limit	GW-4 6/26/2019	GW-4 8/15/2019	GW-4 10/14/2019	GW-4 5/4/2020	GW-4 9/15/2020	GW-4 11/5/2020	GW-5 6/26/2019	GW-5 8/15/2019	GW-5 10/14/2019	GW-5 5/4/2020	GW-5 9/15/2020	GW-5 11/5/2020	Compiled Standards[1]
Field Temperature	**7.5**	**7.9**	**9.4**	**6.1**	**11.2**	**9.4**	**8.6**	**12.4**	**10.3**	**7.7**	**11.8**	**10.5**	
Field Turbidity	**14.80**	**6.19**	**8.60**	**10.00**	**2.16**	**13.17**	**5.74**	**9.84**	**13.40**	**16.00**	**13.03**	**18.47**	
Fluoride	**0.3**	**0.3**	**0.2**	**0.3**	**0.2**	**0.26**	**0.4**	**0.4**	**0.2**	**0.3**	**ND**	**0.38**	**2**
Hardness as CaCO3 (dissolved)	**138**	**142**	**138**	**146**	**121**	**130**	**212**	**219**	**225**	**204**	**217**	**227**	
Hydroxide as CaCO3	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Iron, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.3**
Iron, total	**1.34**	**0.42**	**0.27**	**0.18**	**0.25**	**1.51**	**3.63**	**0.54**	**0.38**	**0.43**	**2.43**	**1.24**	
Lead, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.05**
Lead, total	**0.0012**	**0.0004**	**0.0002**	**0.0002**	**0.0003**	**0.00135**	**0.0035**	**0.0005**	**0.0003**	**0.0004**	**0.0023**	**0.00115**	
Magnesium, dissolved	**5.8**	**6.3**	**5.8**	**6.3**	**5**	**5.49**	**9.7**	**10**	**10.4**	**9.5**	**9.8**	**10.5**	
Manganese, dissolved	**0.0016**	**0.0394**	**ND**	**ND**	**ND**	**0.00527**	**0.0009**	**0.0017**	**0.0182**	**ND**	**ND**	**ND**	**0.05**
Manganese, total	**0.0893**	**0.0486**	**0.0184**	**0.0237**	**0.0341**	**0.129**	**0.0661**	**0.0097**	**0.0056**	**0.0081**	**0.0393**	**0.0208**	
Mercury, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.002**
Mercury, total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Molybdenum, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.21**
Molybdenum, total	**ND**	**ND**	**ND**	**ND**	**ND**	**0.021**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Nickel, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.1**
Nitrate/Nitrite as N	**0.35**	**0.38**	**0.24**	**0.34**	**0.31**	**0.296**	**0.33**	**0.17**	**0.53**	**0.49**	**0.64**	**0.404**	**10**
Nitrogen, ammonia	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Phosphorus, ortho dissolved	**0.02**	**ND**	**0.03**	**0.01**	**ND**	**0.012**	**0.01**	**0.02**	**0.02**	**0.01**	**0.03**	**0.012**	
Potassium, dissolved	**1.5**	**1.6**	**1.6**	**1.4**	**1.6**	**1.68**	**1.5**	**1.8**	**1.6**	**1.6**	**1.6**	**1.49**	
Residue, Filterable (TDS) @180C	**198**	**194**	**192**	**202**	**186**	**196**	**254**	**262**	**256**	**258**	**298**	**270**	**400**
Residue, Non-Filterable (TSS) @105C	**29**	**18**	**ND**	**ND**	**ND**	**41**	**78**	**7**	**5**	**ND**	**12**	**20**	
Selenium, dissolved	**0.0002**	**0.0003**	**0.0002**	**0.0003**	**0.0002**	**0.00026**	**0.0023**	**0.0004**	**0.0011**	**0.0027**	**0.0019**	**0.00154**	**0.02**
Silica, dissolved	**9.6**	**10.4**	**10.6**	**9.6**	**10.3**	**10.6**	**10.2**	**12.6**	**11.7**	**10.5**	**11.1**	**10.9**	

Parameter, Limit	GW-4 6/26/2019	GW-4 8/15/2019	GW-4 10/14/2019	GW-4 5/4/2020	GW-4 9/15/2020	GW-4 11/5/2020	GW-5 6/26/2019	GW-5 8/15/2019	GW-5 10/14/2019	GW-5 5/4/2020	GW-5 9/15/2020	GW-5 11/5/2020	Compiled Standards[1]
Silver, dissolved	**ND**	**ND**	**0.0009**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.05**
Sodium, dissolved	**9.7**	**10.2**	**10.1**	**9.3**	**9.5**	**10.3**	**6.4**	**7.7**	**7.1**	**6.4**	**6.7**	**6.7**	
Sulfate	**43.3**	**39.9**	**39.7**	**39**	**30.3**	**35.8**	**42.8**	**23.8**	**35.8**	**38.5**	**41.6**	**36.9**	**250**
Sulfide as S	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	
Sum of Anions	**3.3**	**3.3**	**3.3**	**3.3**	**3.2**	**3.1**	**4.4**	**4.8**	**4.7**	**4.6**	**5**	**4.7**	
Sum of Cations	**3.2**	**3.4**	**3.3**	**3.4**	**2.9**	**3.1**	**4.6**	**4.8**	**4.9**	**4.4**	**4.7**	**4.9**	
Thallium, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.002**
Total Alkalinity	**86.2**	**93.3**	**102**	**96.3**	**105**	**99.9**	**160**	**195**	**192**	**171**	**200**	**187**	
Uranium, dissolved	**0.0011**	**0.0019**	**0.0015**	**0.0017**	**0.0014**	**0.0015**	**0.0027**	**0.0024**	**0.0024**	**0.0025**	**0.0028**	**0.00299**	**0.03**
Vanadium, dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.1**
Zinc, dissolved	**ND**	**0.012**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.004**	**ND**	**ND**	**ND**	**2**
Zinc, total	**0.008**	**0.006**	**0.006**	**ND**	**ND**	**0.0092**	**0.019**	**0.008**	**0.007**	**ND**	**0.015**	**0.0095**	

[1]Compiled Standards: Water Quality Control Commission, Regulation 41, Interim Narrative Standards, Tables 1-4, compiled to show the most stringent standard for each analyte.
ND = Not detectable. See the attached ACZ Lab Reports for detection limits.
NM = Not measured

APPENDIX G-3: WATER QUALITY MONITORING PLAN

WATER QUALITY MONITORING PLAN
Peak Materials Hillyard Site

Prepared for:
Peak Materials, LLC
28755 CO-9
Silverthorne CO 80498

Prepared by:
LRE Water.
909 Colorado Avenue
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August 12, 2019
Revised December 16, 2020

Job No. 1525-2.0

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LIST OF FIGURES & TABLES

1.0 INTRODUCTION

This water quality monitoring plan (Plan) will to be implemented at the Peak Ranch gravel pit project located in Summit County, approximately 11 miles northwest of Silverthorne, Colorado. The purpose of this plan is to protect the integrity of the region's surface and groundwater quality and to meet the requirements set forth in Division of Reclamation, Mining and Safety (DRMS) rules and regulations and the Colorado Department of Public Health and Environment (CDPHE) Regulation No. 33.

The monitoring plan provides for the collection of pre-operational water quality data (baseline data) that will ultimately be used to compare with results from continuing long-term water quality monitoring. Collection of pre-operational groundwater levels will also occur as part of the plan. Results generated will be used to evaluate whether any adverse impacts on water quality has occurred from Peak Ranch gravel pit project operation. The Plan is discussed in more detail below.

This plan was revised in December 2020 to incorporate recommendations by the DRMS. Monitoring of the water quality in the Phase II unlined pond and the Breckenridge Drainage Ditch will occur under the revised plan as well as collection of water quality samples from adjacent residential well owners within 600 feet.

2.0 WATER QUALITY MONITORING PLAN

The goal of the water quality Monitoring plan is to provide baseline and long-term water quality data for surface and groundwater conditions at the site. Long-term monitoring results will be compared to baseline conditions to determine if gravel pit operations have impacted water quality either from mining activity or from trucks moving mined material offsite.

2.1 Sampling Methodology

This section identifies the surface and groundwater sampling locations, selected parameters, frequency of tests, analytical techniques, the method of interpreting the results of the tests, and general program operation.

2.1.1 Sample Locations

Nine sampling locations have been identified to evaluate pre-operation water quality and potential impacts to surface and groundwater. The location of the monitoring stations are shown in **Figure 1**, and summarized in **Table 1** below. The Well Construction and Yield Estimate Reports for the monitoring wells are provided in Attachment 1. Additionally, Peak Materials will offer to take a water quality sample from the adjacent residential well owners within 600 feet, prior to commencement of mining operations.

Table 1
Surface and Groundwater Monitoring Stations

Station	Type	Location	Purpose
SW-1	Surface Water	Blue River, upstream from the Gravel Pit	To monitor the Blue River upstream of the mining operation. Defines the condition of the river prior to any possible impact from gravel pit.
SW-2	Surface Water	Blue River, downstream from the Gravel Pit	To monitor the Blue River downstream of the gravel pit. Can compare results to the upstream station results to determine what offsite impacts, if any, the river is seeing.
GW-1	Groundwater	On-site to the northwest of the mining envelope	To monitor the groundwater downgradient of the gravel pit. Can compare results to the up-gradient station results to determine if any impacts to groundwater have occurred.
GW-2	Groundwater	On-site to the west by the entrance of the gravel pit	To monitor the groundwater in the vicinity of the entrance of the gravel pit.
GW-3	Groundwater	On-site to the southeast of the mining envelope	To monitor the groundwater up-gradient of the mining operation. Defines the condition of the groundwater prior to any possible impact from gravel pit.
GW-4	Groundwater	On-site to the southwest of the mining envelope	To monitor the groundwater up-gradient of the mining operation. Defines the condition of the groundwater prior to any possible impact from gravel pit.
GW-5	Groundwater	On-site to the northwest of the mining envelope	To monitor the groundwater downgradient of the gravel pit. Can compare results to the up-gradient station results to determine if any impacts to groundwater have occurred.
Breckenridge Drainage Ditch	Surface Water	On-site ditch transecting Peak Ranch	To monitor the surface water passing across the Peak Ranch site via an east-west drainage ditch.
Phase II Unlined Pond	Surface Water / Groundwater	Unlined pond within the mining envelope.	To monitor the surface water and groundwater within the mining excavations below groundwater.

Stations SW-1 and SW-2, located on the Blue River upstream and downstream of the mining envelope, will allow investigators to determine if the mining operation is adversely impacting the quality of the Blue River. Similarly, Stations GW-4/GW-3 and GW-1/GW-5 will facilitate a comparison of groundwater water quality above and below the mining envelope. This paired sampling will allow investigators to determine if the mining operation is adversely impacting the quality of the surface water or groundwater within the vicinity of the mining operation.

Groundwater samples will be collected and analyzed from one additional groundwater monitoring well (Station GW-2) and the Phase II unlined pond. Surface water samples will be collected from the Breckenridge Drainage Ditch where the ditch enters and exits the Peak Ranch property and when there is flow present in the ditch.

2.1.2 Monitoring Frequency

The water quality monitoring plan has two time periods: Baseline Phase consists of sample collection that will occur prior to mining activity occurring on the site. Operational Phase will occur on an ongoing basis once the gravel pit is operational and continue until mining ceases.

1. Baseline Phase, Prior to Mining Activity. Peak Ranch has initiated its pre-operational water quality sampling program. Water samples will be collected and groundwater levels will be measured on June 26, 2019. Samples will continue to be collected quarterly with a goal of having five pre-operational samples to characterize the baseline condition.

2. Operational Phase, Long Term Operation. Samples will be collected four times per year. The monitoring will take place in the following months: March, June, August and early October. The frequency of sampling for long-term monitoring can be reduced in the future if no adverse water quality impacts are detected.

2.1.3 Monitoring Parameters

Peak Materials will conduct field and laboratory analysis on 50 different water quality parameters at each site. A list of the 50 parameters are shown in **Table 2**. All analysis of "non-field" measurements will be performed by ACZ Laboratories, Inc a State of Colorado certified laboratory that follows accepted industry standards and quality assurance/quality control (QA/QC) procedures. An alternate certified laboratory may be used if there are unforeseen circumstances that require a change in the laboratory.

2.1.4 Sampling Protocol

The following protocol will be used to collect water samples:

1. Specific bottles will be ordered from ACZ Laboratories, Inc to collect the water samples.
2. Static water levels in the wells will be measured and recorded using a water level well sounder prior to any pumping of the well. The measurement location at the top edge

of the casing will be marked with permanent ink pen and should be touched up with fresh ink at each sampling event.

3. Monitoring wells will be purged prior to sample collection. A low flow submersible pump will be cleaned prior to being placed in the well. Removal of a least three well volumes will occur prior to sampling. The static volume of water in the well will be calculated using the following equation:

$$V = r^2 h(0.163)$$

Where

V = static volume of water in well (in gallons)

r = inner radius of well casing (in inches)

h = length of water column (in feet) which is equal to the total well depth minus depth to water.

0.163 = a constant conversion factor that compensates for the conversion of the casing radius from inches to feet for 2-inch diameter wells and the conversion of cubic feet to gallons, and pi (A). This factor would change for different diameter wells.

The purged volume of water will be measured using a gallon bucket in order to verify that the static volumes in the wells are evacuated prior to sample collection.

4. Measurements of pH, temperature, dissolved oxygen, turbidity, and conductivity will be collected in the field. The meters will be cleaned and calibrated prior to measurements.
5. Water will be pumped or collected into a clean pitcher or bottle and then the individual bottles will be filled and the date and time the samples were collected will be marked on the bottle along with who collected the sample and the site location. If a pump controller system is used, the sample bottles can be filled directly. Samples will then be placed in a cooler with ice.
6. A chain of custody form will be completed and will indicate what analysis needs to be run, the date and time collected, sample identification and who assembled the sample. The samples will be shipped via overnight delivery to the lab.

2.2 Analytical Procedures

The analytical water quality results will be evaluated by results will be comparing results to State water quality standards.

2.2.1 Comparison to State Water Quality Standards

The analytical results will be compared to the regulatory limits established by the Colorado Water Quality Control Commission (WQCC). These limits are published by the State in The Basic Standards for the Upper Colorado, Planning Region 12, which includes the Blue River. Surface water data will be compared to the Stream Segment Standards for Segment 17: Mainstem of the Blue River from the outlet of Dillon Reservoir to the confluence with the Colorado River. The groundwater water quality data will be compared to standard values in Tables 1-4 of Regulation 41. If exceedances of any of the water quality standards are detected, the DRMS will be notified in accordance with Rule 3.1.7(9) and Peak Materials will initiate a water quality mitigation plan as discussed in more detail in Section 2.2.3 below.

2.2.2 Gravel Pit Exceedance Mitigation Plan

If limits are exceeded under either of the two analytical protocols discussed above, Peak Materials will implement the following mitigation procedures.

- Notify the DRMS of the exceedance within five days of either, receiving the analytical report from the laboratory or completing the described regression analysis.
- Identify the potential causes/sources of the exceedance parameters.
- Implement supplemental water quality sampling. If exceedances are detected, Peak Materials will implement a supplemental monitoring program that will involve weekly sampling of the stations where the exceedance was detected. Only parameter(s) which exceeded the regulatory limits will be analyzed weekly and will continue to be monitored until the parameter(s) drop below the allowable limit.
- Consult with the Summit County Department of Environmental Health regarding appropriate mitigation action(s). Such action might include reducing or eliminating the use of the compound(s) in question.
- A supplementary report will be filed with the County detailing the exceedance, mitigation measures, and results.

2.3 Annual Report

A water quality summary report will be prepared annually by December 31st of each year. The report will present summaries of the data collected during the previous year and will compare such data to State water quality standards and the baseline monitoring results.

Currently, five quarters of water sampling data have been collected. Sample results from ACZ Labs can be found in Attachment 2.

Table 2

Baseline and Operational Water Quality Parameters

Surface and Groundwater Stations

	Analyte	Phase	EPA Method	Units
1	Aluminum	Diss. & Total	M200.7 ICP	mg/L
2	Nitrogen, Ammonia		M350.1 Auto Salicylate w/gas diffusion	mg/L
3	Antimony	dissolved	M200.8 ICP-MS	mg/L
4	Arsenic	Diss. & Total	M200.8 ICP-MS	mg/L
5	Barium	dissolved	M200.7 ICP	mg/L
6	Beryllium	dissolved	M200.8 ICP-MS	mg/L
7	Bicarbonate as CaCO3		SM2320B - Titration	mg/L
8	Boron		M200.7 ICP	mg/L
9	Cadmium	Diss. & Total	M200.8 ICP-MS	mg/L
10	Calcium	dissolved	M200.7 ICP	mg/L
11	Carbonate as CaCO3		SM2320B - Titration	mg/L
12	Cation-Anion Balance		Calculation	mg/L
13	Chloride		SM4500Cl-E	mg/L
14	Chromium III	Diss. & Total	M200.7 ICP, Calculation (Total - Hexavalent)	mg/L
15	Chromium VI	dissolved	SM3500Cr-B	mg/L
16	Conductivity @25C	Field & Lab	SM2510B	umhos/cm
17	Copper	Diss. & Total	M200.8 ICP-MS	mg/L
18	Cyanide	Total & WAD	SM4500-CN I,Ecolorimetric w/ distillation	mg/L
19	Fluoride		SM4500F-C	mg/L
20	Hardness as CaCO3	dissolved	SM2340B - Calculation	mg/L
21	Hydroxide as CaCO3		SM2320B - Titration	mg/L
22	Iron	Diss. & Total	M200.7 ICP	mg/L
23	Lead	Diss. & Total	M200.8 ICP-MS	mg/L
24	Magnesium	dissolved	M200.7 ICP	mg/L
25	Manganese	dissolved	M200.8 ICP-MS	mg/L
26	Mercury	Diss. & Total	M245.1 CVAA	mg/L
27	Molybdenum	Diss. & Total	M200.7 ICP	mg/L
28	Nickel	dissolved	M200.7 ICP	mg/L
29	Nitrate/Nitrite as N		M353.2 - H2SO4 preserved	mg/L
30	pH	Field & Lab	SM4500H+ B	Units
31	Phosphorus		M365.1 - Automated Ascorbic Acid	mg/L
32	Potassium	dissolved	M200.7 ICP	mg/L
33	Residue	Filterable (TDS) @180C	SM2540C	mg/L
34	Residue	Non-Filterable (TSS) @105C	SM2540D	mg/L
35	Selenium	dissolved	M200.8 ICP-MS	mg/L
36	Silica	dissolved	M200.7 ICP	mg/L
37	Silver	dissolved	M200.8 ICP-MS	mg/L
38	Sodium	dissolved	M200.7 ICP	mg/L
39	Sulfate		D516-02/-07 - Turbidimetric	mg/L
40	Sulfide		SM4500S2-D	mg/L
41	Sum of Anions			meq/L
42	Sum of Cations			meq/L
43	Temperature	Field		ºC
44	Thallium	dissolved	M200.8 ICP-MS	mg/L
45	Total Alkalinity		SM2320B - Titration	mg/L
46	Turbidity	Field		NTU
47	Uranium	dissolved	M200.8 ICP-MS	mg/L
48	Vanadium	dissolved	M200.8 ICP-MS	mg/L
49	Zinc	Diss. & Total	M200.8 ICP-MS	mg/L
50	Dissolved Oxygen	Field		mg/L

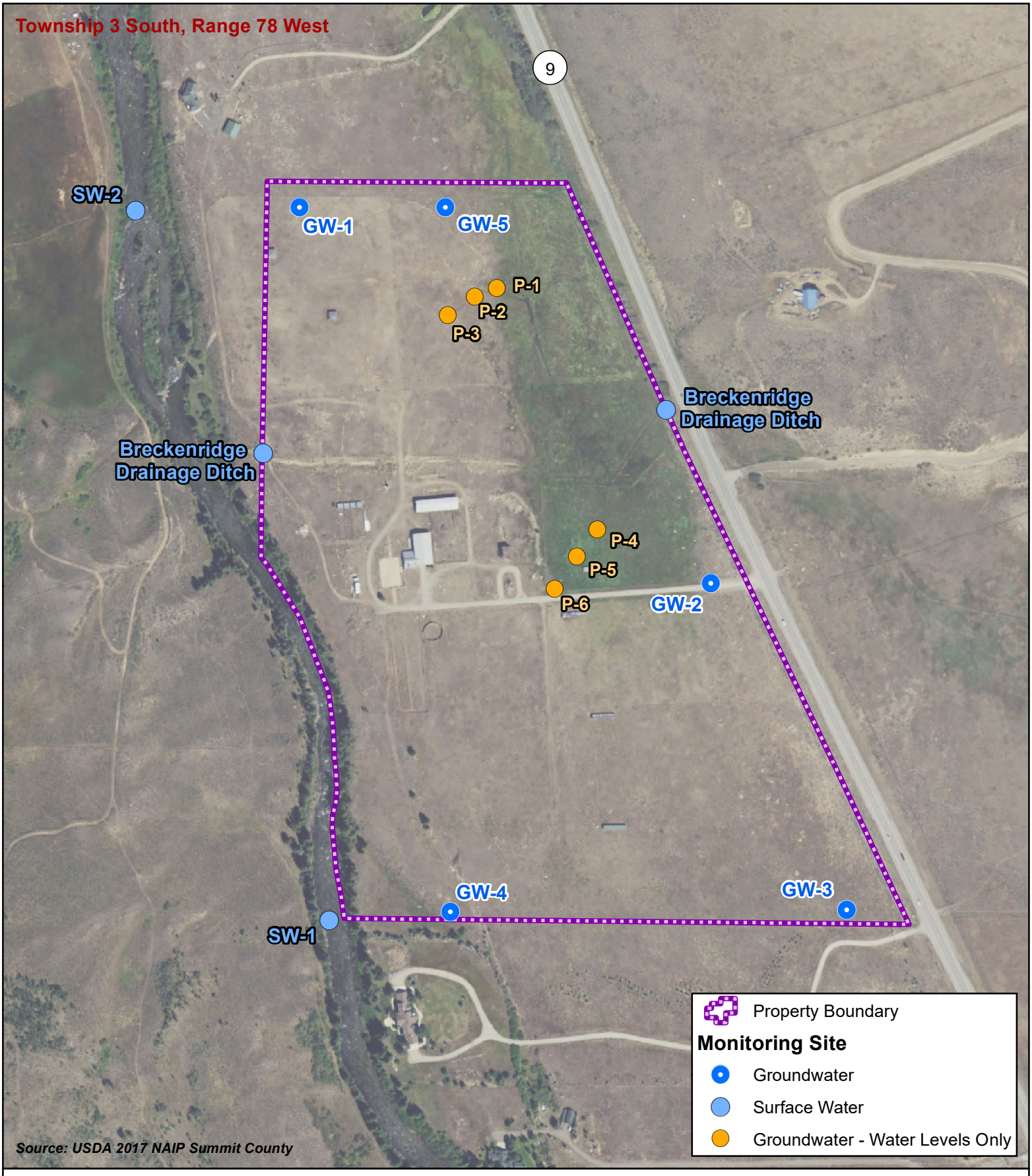

Figure 1
Surface Water and Groundwater Monitoring Well Locations
Peak Materials

LRE WATER

1 in = 400 ft

0 200 400 800 Feet

Date: 2020-12-14
File: 1525-2.0
Drawn: ABS
Approved: ABS

Attachment 1

Well Construction and Yield Estimate Reports

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: **Receipt Number:** 59658-MH

2. Owner's Well Designation: GW-1

3. Well Owner Name: Kilgore Companies (7057 West 2100 South, Salt Lake City, Utah)

4. Well Location Street Address: 35405 State HWY 9 Silverthorne, CO 80498

5. GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 400869.2 Northing: 4403820.78

6. Legal Well Location: ____ 1/4, ____ 1/4, Sec., 20 Twp. 3.0 ☐ N or S ☒, Range 78.0 ☐ E or W ☒, Sixth P.M.
County: Summit County
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 8251 feet **Date Completed:** 06/12/2019 **Drilling Method:** ODEX

8. Completed Aquifer Name : _____ **Total Depth:** 25 feet **Depth Completed:** 25 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: _____

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.
0-1.3'	Topsoil	0.002-0.1mm	Brown	No
1.3-4.5'	Gravelly Sand	0.05-2mm	Brown	No
4.5-5.5'	Gravel	2-75mm	Tan	No
5.5-10'	Sand Pebbles	0.05-64mm	Brown	No
10-15'	Gravelly Sand	0.05-75mm	Light brown	Yes
15-17'	Pebbles	4-64mm	Grey	Yes
17-25'	Gravelly Sand	0.05-2mm	Tan	Yes

12. Hole Diameter (in.)

	From (ft)	To (ft)
5"	0	25

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	.154	0	10

Perforated Casing Screen Slot Size (in): _____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	0.10	10	25

14. Filter Pack:
Material: Silica sand
Size: 10-20
Interval: 9-25'

15. Packer Placement:
Type: _____
Depth: _____

16. Grouting Record

Material	Amount	Density	Interval	Method
Bentonite		100%	1-9'	Pour

Remarks: Cemented to surface with lockable steel stickup cover.

17. Disinfection: Type NA Amt. Used NA

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: _____
Static Level: 15 feet
Date/Time measured: 6.12.19
Estimated Yield (gpm) _____
Estimate Length (hrs) _____

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:
HRL Compliance Solutions	mmumby@hrlcomp.com	(970) 243-3271	UT 5212206-2250

Mailing Address: 2385 F 1/2 Road, Grand Junction, CO 81505

Sign (or enter name if filing online)	Print Name and Title	Date:
Mark Mumby	Mark Mumby, P.G.	06/21/2019

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: **Receipt Number:** 59658-MH

2. Owner's Well Designation: GW-2

3. Well Owner Name: Kilgore Companies (7057 West 2100 South, Salt Lake City, Utah)

4. Well Location Street Address: 35405 State HWY 9 Silverthorne, CO 80498

5. GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 401265.2 Northing: 4403458.834

6. Legal Well Location: ____ 1/4, ____ 1/4, Sec., 20 Twp. 3.0 ☐ N or S ☒, Range 78.0 ☐ E or W ☒, Sixth P.M.
County: Summit County
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 8266 feet **Date Completed:** 06/14/2019 **Drilling Method:** ODEX

8. Completed Aquifer Name : _____ **Total Depth:** 20 feet **Depth Completed:** 20 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: _____

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.
0-4'	Topsoil	0.002-0.1mm	Brown	No
4-6'	Gravelly Sand	0.05-75mm	Brown	No
6-8'	Sand	0.05-2mm	Tan	No
8-10'	Gravel	2-75mm	Grey	Yes
10-14'	Gravelly Sand	0.05-75mm	Light brown	Yes
14-20'	Pebbles	75-125mm	Grey	Yes

12. Hole Diameter (in.)

	From (ft)	To (ft)
5"	0	20

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	.154	0	5.0

Perforated Casing Screen Slot Size (in): _____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	0.10	5.0	20.0

14. Filter Pack:
Material: Silica sand
Size: 10-20
Interval: 4-20'

15. Packer Placement:
Type: _____
Depth: _____

16. Grouting Record

Material	Amount	Density	Interval	Method
Bentonite		100%	1-4'	Pour

Remarks: Cemented to surface with lockable steel stickup cover.

17. Disinfection: Type NA Amt. Used NA

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: _____
Static Level: 10 feet
Date/Time measured: 6.12.19
Estimated Yield (gpm) _____
Estimate Length (hrs) _____

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:
HRL Compliance Solutions	mmumby@hrlcomp.com	(970) 243-3271	UT 5212206-2250

Mailing Address: 2385 F 1/2 Road, Grand Junction, CO 81505

Sign (or enter name if filing online)	Print Name and Title	Date:
Mark Mumby	Mark Mumby, P.G.	06/21/2019

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: **Receipt Number:** 59658-MH

2. Owner's Well Designation: GW-3

3. Well Owner Name: Kilgore Companies (7057 West 2100 South, Salt Lake City, Utah)

4. Well Location Street Address: 35405 State HWY 9 Silverthorne, CO 80498

5. GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 401395.8 Northing: 4403143.96

6. Legal Well Location: ____ 1/4, ____ 1/4, Sec., 20 Twp. 3.0 ☐ N or S ☒, Range 78.0 ☐ E or W ☒, Sixth P.M.
County: Summit County
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 8255 feet **Date Completed:** 06/13/2019 **Drilling Method:** ODEX

8. Completed Aquifer Name : _____ **Total Depth:** 26 feet **Depth Completed:** 26 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: _____

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.
0-1'	Topsoil	0.002-0.1mm	Brown	No
1-8'	Cobbles	20-200mm	Grey	No
8-13'	Gravelly Sand	0.05-75mm	Tan	No
13-14'	Sand	0.02-2mm	Brown	Yes
14-17'	Gravelly Sand	0.05-75mm	Light brown	Yes
17-26'	Gravel	2.0-60mm	Tan	Yes

12. Hole Diameter (in.)

	From (ft)	To (ft)
5"	0	26

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	.154	0	11

Perforated Casing Screen Slot Size (in): _____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	0.10	11	26

14. Filter Pack:
Material: Silica sand
Size: 10-20
Interval: 10-26'

15. Packer Placement:
Type: _____
Depth: _____

16. Grouting Record

Material	Amount	Density	Interval	Method
Bentonite		100%	1-10'	Pour

Remarks: Cemented to surface with lockable steel stickup cover.

17. Disinfection: Type NA Amt. Used NA

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: _____
Static Level: 13 feet
Date/Time measured: 6.13.19
Estimated Yield (gpm) _____
Estimate Length (hrs) _____

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:
HRL Compliance Solutions	mmumby@hrlcomp.com	(970) 243-3271	UT 5212206-2250

Mailing Address: 2385 F 1/2 Road, Grand Junction, CO 81505

Sign (or enter name if filing online)	Print Name and Title	Date:
Mark Mumby	Mark Mumby, P.G.	06/21/2019

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: **Receipt Number:** 59658-MH

2. Owner's Well Designation: GW-4

3. Well Owner Name: Kilgore Companies (7057 West 2100 South, Salt Lake City, Utah)

4. Well Location Street Address: 35405 State HWY 9 Silverthorne, CO 80498

5. GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 401014.41 Northing: 4403142.239

6. Legal Well Location: ____ 1/4, ____ 1/4, Sec., 20 Twp. 3.0 ☐ N or S ☒, Range 78.0 ☐ E or W ☒, Sixth P.M.
County: Summit County
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 8261 feet **Date Completed:** 06/13/2019 **Drilling Method:** ODEX

8. Completed Aquifer Name : _____ **Total Depth:** 22 feet **Depth Completed:** 22 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: _____

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.
0-0.5'	Topsoil	0.002-0.1mm	Brown	No
0.5-2'	Cobbles	20-200mm	Grey	No
2-8'	Gravelly Sand	0.05-75mm	Tan	No
8-12.5'	Cobbles	20-200mm	Grey	No
12.5-17'	Gravelly Sand	0.05-75mm	Light brown	Yes
17-22'	Sandy Silt	0.002-0.1mm	Tan	Yes

12. Hole Diameter (in.)

	From (ft)	To (ft)
5"	0	22

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	.154	0	7

Perforated Casing Screen Slot Size (in): _____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	0.10	7	22

14. Filter Pack:
Material: Silica sand
Size: 10-20
Interval: 6-22'

15. Packer Placement:
Type: _____
Depth: _____

16. Grouting Record

Material	Amount	Density	Interval	Method
Bentonite		100%	1-6'	Pour

Remarks: Cemented to surface with lockable steel stickup cover.

17. Disinfection: Type NA Amt. Used NA

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: _____
Static Level: 12 feet
Date/Time measured: 6.13.19
Estimated Yield (gpm) _____
Estimate Length (hrs) _____

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:
HRL Compliance Solutions	mmumby@hrlcomp.com	(970) 243-3271	UT 5212206-2250

Mailing Address: 2385 F 1/2 Road, Grand Junction, CO 81505

Sign (or enter name if filing online)	Print Name and Title	Date:
Mark Mumby	Mark Mumby, P.G.	06/21/2019

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: **Receipt Number:** 59658-MH

2. Owner's Well Designation: GW-5

3. Well Owner Name: Kilgore Companies (7057 West 2100 South, Salt Lake City, Utah)

4. Well Location Street Address: 35405 State HWY 9 Silverthorne, CO 80498

5. GPS Well Location (required): ☐ Zone 12 ☒ Zone 13 Easting: 401009.6 Northing: 4403820.78

6. Legal Well Location: ____ 1/4, ____ 1/4, Sec., 20 Twp. 3.0 ☐ N or S ☒, Range 78.0 ☐ E or W ☒, Sixth P.M.
County: Summit County
Subdivision: _____, Lot ____, Block ____, Filing (Unit) ____

7. Ground Surface Elevation: 8249 feet **Date Completed:** 06/13/2019 **Drilling Method:** ODEX

8. Completed Aquifer Name : _____ **Total Depth:** 20 feet **Depth Completed:** 20 feet

9. Advance Notification: Was Notification Required Prior to Construction? ☒ Yes ☐ No, Date Notification Given: _____

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.
0-1.5'	Topsoil	0.002-0.1mm	Brown	No
1.5-5'	Gravelly Sand	0.05-2mm	Brown	No
5-7'	Sandy Silt	0.002-.05mm	Tan	Yes
7-20'	Gravelly Sand	0.05-75mm	Light Brown	Yes

12. Hole Diameter (in.)

	From (ft)	To (ft)
5"	0	20

13. Plain Casing

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	.154	0	5

Perforated Casing Screen Slot Size (in): _____

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2	Sch40PVC	0.10	5	20

14. Filter Pack:
Material: Silica sand
Size: 10-20
Interval: 4-20'

15. Packer Placement:
Type: _____
Depth: _____

16. Grouting Record

Material	Amount	Density	Interval	Method
Bentonite		100%	1-4"	Pour

Remarks: Cemented to surface with lockable steel stickup cover.

17. Disinfection: Type NA Amt. Used NA

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: _____
Static Level: 5.5 feet
Date/Time measured: 6.13.19
Estimated Yield (gpm) _____
Estimate Length (hrs) _____

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:
HRL Compliance Solutions	mmumby@hrlcomp.com	(970) 243-3271	UT 5212206-2250

Mailing Address: 2385 F 1/2 Road, Grand Junction, CO 81505

Sign (or enter name if filing online)	Print Name and Title	Date:
Mark Mumby	Mark Mumby, P.G.	06/21/2019