

2021 ANNUAL HYDROLOGY REPORT

SAGE CREEK MINE

PERMIT C-2009-087

March 2022



Submitted To: Colorado Division of Reclamation, Mining and Safety
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TABLE OF CONTENTS

1.0 INTRODUCTION	4
1.1 BACKGROUND	4
2.0 METEOROLOGICAL	5
3.0 GROUNDWATER	6
3.1 WATER LEVELS	6
3.2 GROUNDWATER QUALITY	7
4.0 SURFACE WATER.....	9
4.1 FISH CREEK	10
4.2 GRASSY CREEK.....	11
5.0 SPRINGS.....	14
6.0 SUMMARY	15

FIGURES

1. Monitoring Site Locations

APPENDICES

- A. Meteorological Data
- B. Groundwater Quality Data
- C. Groundwater Hydrographs
- D. Surface Water Quality Data
- E. Spring Water Quality Data

1.0 INTRODUCTION

This Annual Hydrology Report presents the hydrologic monitoring data collected during the 2021 water year (October 2020 - September 2021) at the Peabody Sage Creek Mining, LLC's Peabody Sage Creek Mine (PSCM). The AHR fulfills the reporting requirements under the Colorado Division of Reclamation, Mining, and Safety (CDRMS) Permit No. C-2009-087.

1.1 BACKGROUND

The PSCM is an underground coal mine located in Routt County, approximately nine miles southeast of Hayden, Colorado. PSCM Permit No. C-2009-087 was approved by CDRMS in May 2010. The PSCM permit area encompasses the majority of the former Seneca II Mine (State Permit No. C-1980-005) which is a reclaimed surface mine that extracted coal from 1968 through 1999. Many of the PSCM hydrologic monitoring sites were previously utilized for the Seneca II Mine. Excavation of the PSCM portal began in June 2011 and underground mining proceeded until the fall of 2012 when it was suspended. The PSCM remains in a care and maintenance state. No coal extraction occurred in 2021.

In 2012 the Water Quality Control Division (WQCD) issued PSCM a violation for elevated selenium in the mine discharges. In response, PSCM completed an extensive monitoring effort to evaluate the source and fate of selenium in these watersheds. In 2014 the Water Quality Control Commission (WQCC) granted a temporary modification of the chronic selenium TVS in both Cow Camp Creek and Grassy Creek to current conditions to allow PSCM to collect additional biologic and water quality data needed to develop site-specific standards. In 2017, the WQCC extended the selenium temporary modification for Grassy Creek to 12/31/2022 and the temporary modification to Cow Camp Creek to 12/31/2023. In May 2019 the WQCD incorporated the extension of the selenium temporary modification into NPDES Permit No. CO0048275. PSCM continues to collect the biologic and water quality data necessary for the development of a site-specific selenium standard. This AHR will only discuss data relevant to the requirements of the CDRMS permit.

2.0 METEOROLOGICAL

Meteorological data for the 2021 water year is presented in Appendix A. The 2021 data was obtained from NOAA weather station USC00053867 located in Hayden, Colorado (www.ncdc.noaa.gov/cdo-wb/). A total of 12.44 inches of precipitation was measured in 2021, which is 5.68 inches less than the 1981-2021 average of 18.12 inches. February and March were slightly wetter than normal (≤ 0.24 inches), but the remaining months were drier than normal. Potential snowpack runoff, as estimated by totaling November through March precipitation, was 6.49 inches, which was 1.04 inches below the 1981-2021 average of 7.53 inches.

3.0 GROUNDWATER

The PSCM groundwater monitoring program includes seven monitoring wells. The following table includes the wells monitored, the water bearing unit they are screened in, the frequency they are monitored, and their required parameter list. The monitoring well locations are shown on Figure 1. Groundwater monitoring was completed by experienced personnel in accordance with the practices described in Section 2.04.7 of Permit No. C-2009-087. All samples were analyzed by ACZ Laboratories.

Site	Unit	Monitoring Frequency		Parameter List
		Water Level	Water Quality	
SGAL70	Grassy Creek Alluvium	SA	SA	GW Long
SCAL69	Cow Camp Creek Alluvium	SA	SA	GW Short
SSP61	Spoil	SA	SA	GW Short
SSP62	Spoil	SA	SA	GW Short
COV2702	Wadge Overburden	A	A	GW Long
SOV42	Wadge Overburden	A	A	GW Short
CW2701	Wadge Coal	A	A	GW Long

Note

A: Annual

SA: Semi-Annually

GW Long: Field conductivity, field pH, field temperature, dissolved aluminum, dissolved arsenic, bicarbonate, dissolved boron, dissolved cadmium, calcium, carbonate, chloride, dissolved chromium, dissolved copper, fluoride, hardness, dissolved iron, dissolved lead, magnesium, dissolved manganese, dissolved mercury, dissolved nickel, nitrate, nitrite, potassium, dissolved selenium, sodium, Sodium Adsorption Ratio, sulfide, total suspended solids, dissolved zinc, Cation/Anion Balance, total dissolved solids, total dissolved solids calculated

GW Short: Field conductivity, field pH, field temperature, fluoride, dissolved iron, dissolved manganese, nitrate, nitrite, dissolved selenium, sulfate, total dissolved solids

3.1 WATER LEVELS

The static water levels measured during the 2021 water year are included with the groundwater quality data in Appendix B. Water level hydrographs for each of the wells are provided in Appendix C. The static water levels measured at the bedrock and spoil wells this year were within their respective historic range. This includes

Wadge Overburden Well SOV42 which was dry at the time of the monitoring event. This wells water table has been fluctuating near the base of the well and was previously dry in 2019. Historically low water levels were observed at both alluvium wells in September. The depth to water at Cow Camp Creek alluvium well SCAL69 was 8.82 feet below top of casing, 1.64 feet lower than its prior minimum observed in 2017, and the depth to water at Grassy Creek alluvium well SGAL70 was 12.58 feet below top of casing, 0.89 feet lower than its prior minimum observed in 2017. There were no changes to the alluvial groundwater use in these reaches and the drop in the water table was likely a reflection of the drought conditions experienced in this region. The area only received 12.44 inches of precipitation during the 2021 water year, approximately 5.68 inches less than the annual average observed during the last 40 years (1981-2021).

Water levels in most of the water bearing units at PSCM exhibit seasonal fluctuations. The water table in the shallow alluvial and spoil wells fluctuates in response to seasonal precipitation events, with the water table typically at its highest during the spring snowmelt seasons and then declining through late summer/early fall in response to the dry conditions. The water levels in the bedrock overburden and coal seams also fluctuate in response to recharge from seasonal precipitation but are partially influenced by interactions with groundwater in the reclaimed mine spoil. The water level in spoil wells SSP61 and SSP62 indicate only the downslope highwall portions of the spoil are significantly saturated.

3.2 GROUNDWATER QUALITY

The PSCM Groundwater Point of Compliance (GWPOC) is SGAL70. SGAL70 was previously used as the GWPOC at the Seneca II Mine and has a long historical record of water level and water quality data. SGAL70 is screened within the Grassy Creek alluvium downgradient of the PSCM surface effects. Bedrock GWPOC wells were deemed unnecessary due to the low hydraulic conductivity of the bedrock units, their low yields which are insufficient to support domestic or agricultural use, and because downgradient attenuation and dilution will further limit water quality impacts only to bedrock in close proximity to the mine. See Section

2.04, pg 103 of Permit No. C-2009-087 and Technical Revision 47 (TR-47) of Seneca II Permit No. C-1980-005 for further justification for the GWPOC.

Table B.1 of Appendix B includes the analytical results for the samples collected from GWPOC well SGAL70 during the 2020 water year and provides a comparison to the Grassy Creek Alluvial GWPOC water quality standards. Technical Revision 47 (TR-47) of Seneca II Permit No. C-1980-005 describes how the standards were established. Table B.2 provides the analytical results for the remaining monitoring wells however no comparisons to water quality standards were made as these wells are not GWPOC. Water quality samples were collected from all wells except for SOV42 which was dry and could not be sampled. The groundwater quality at SGAL70 complies with all TR-47 water quality standards except for dissolved cadmium and dissolved zinc. The dissolved cadmium exceedances were not associated with a measurable value of cadmium but are the result of the lab detection limit exceeding the water quality standard. Water quality samples analyzed at commercial labs are often run in groups that include samples from unrelated locations and the detection limit for the batch of samples can be increased above the normal detection threshold in response to high concentrations in one or more samples within the batch or from unrelated instrument interference. Cadmium has not been detected at SGAL70 since 2001 and the measured value was 3 µg/L. Since cadmium has not historically been a chemical of concern at this well its unlikely that that the elevated detection limit is censoring a concentration above the water quality standard. The dissolved zinc in the September sample was 2.97 mg/L. SGAL70 has been monitored since 1988 and there has never been a measured value above 0.1 mg/L. The mine has been in a care and maintenance state and there were no changes in activities at the site during the 2021 water year. This result appears to be an anomaly and it is expected that the dissolved zinc will be in line with historic levels in next years monitoring event.

4.0 SURFACE WATER

The PSCM lies within the headwaters of Grassy Creek and Fish Creek. The following table lists the PSCM surface water monitoring points from upstream to downstream, the stream they are associated with, the frequency they are monitored, and their required parameter list. See Figure 1 for the location of the surface water monitoring points. Surface water monitoring was completed by experienced personnel in accordance with the practices described in Section 2.04.7 of Permit No. C-2009-087. All samples were analyzed by ACZ Laboratories.

Site	Type	Stream	Monitoring Frequency		Parameter List
			Flow	Water Quality	
NPDES5	NPDES	Fish Creek	SM	SM	NPDES
NPDES6	NPDES	Fish Creek	SM	SM	NPDES
SSC10	Surface Water	Fish Creek	SA	SA	SW Short
YSGF5	Surface Water	Grassy Creek	TA	TA	SW Short
SSG1	Surface Water	Grassy Creek	TA	TA	SW Short
SSLG5	Surface Water	Little Grassy Creek	TA	TA	SW Short
NPDES2	NPDES	Little Grassy Creek	SM	SM	NPDES
NPDES3	NPDES	Grassy Creek	SM	SM	NPDES
NPDES7	NPDES	Grassy Creek	SM	SM	NPDES
SSG2	Surface Water	Grassy Creek	TA	TA	SW Short
YSG5	Surface Water	Grassy Creek	TA	TA	SW Long

Note

TA: Triannually during snowmelt runoff, post runoff, and baseflow (usually April, June, and September)

SA: Semiannually in June and July

SM: Semimonthly

SW Long: Field conductivity, field pH, field temperature, total recoverable arsenic, bicarbonate, dissolved boron, dissolved cadmium, calcium, carbonate, chloride, dissolved chromium, dissolved copper, hardness, total recoverable iron, dissolved lead, magnesium, dissolved manganese, total mercury, dissolved nickel, ammonia, nitrate, nitrite, potassium, dissolved selenium, dissolved silver, sodium, Sodium Adsorption Ratio, sulfate, sulfide, total suspended solids, dissolved zinc, Cation/Anion Balance, total dissolved solids, total dissolved solids calculated

SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total mercury, ammonia, nitrate, nitrite, dissolved selenium, sulfate, sulfide, total suspended solids, total dissolved solids

NPDES: See NPDES Permit No. CO-0048275

The Colorado WQCC has established segment specific aquatic life water quality standards for Grassy Creek (Segment 13i and 13j) and Fish Creek (Segment 13g) of the Yampa River. The water quality standards for these segments are included in Colorado Department of Public Health & Environment (CDPHE) Regulation 33. Therefore, the following surface water quality discussion has been organized by drainage basin and then segment. The 2021 Water Year surface water quality data is provided in Appendix D. Samples from this year's stream points are compared to both the CDPHE surface water agricultural use standards (CDPHE, Reg. 31) and the appropriate segment specific aquatic life water quality standards (CDPHE, Reg. 33). Samples from NPDES outfalls are compared to NPDES discharge limits as well as the segment specific aquatic life standards. Additional discussion of the water quality in each stream segment follows.

4.1 FISH CREEK

Analytical results for the 2021 surface water monitoring completed at Cow Camp Creek (tributary to Fish Creek) stream point SSC10 is provided in Table D.1 of Appendix D. Analytical results for Outfalls 005 and 006, which report to Cow Camp Creek, are included in Table D.2 and D.3. The temporary modification of the chronic aquatic life selenium standard to current conditions has been extended through 12/31/2022 for Yampa Segment 13g, which includes Cow Camp Creek down to its confluence with Fish Creek (CDPHE, Reg. 33). A report only monthly average limit at Outfalls 005 and 006 was also incorporated into NPDES Permit No. CO0048275. Surprisingly when WQCD extended the selenium temporary modification in the NPDES permit they did not extend the flow limit compliance schedule despite the direct relationship between the seasonal flow limits and seasonal selenium limits at the site. The flow limits became effective on 10/1/2019.

There were no exceedances of the water quality based NPDES permit limits or the Yampa Segment 13g water quality standards at Outfalls 005 or 006 in 2021. However, there was one monthly average flow limit exceedance in March (at Outfall 006). Outfalls 005 and 006 are associated with spoil spring discharges and the flows are the result of natural hydrologic processes which can not be practically controlled.

The 2021 water year was extremely dry. Although downstream monitoring point SSC10, within Cow Camp Creek, was monitored in April, June, and July no water was present in the stream channel during any of these events and samples could not be collected. Cow Camp Creek loses water to the alluvium in its lower reach and the stream is often dry near its outlet even when discharge persists in the upper reaches.

4.2 GRASSY CREEK

Analytical results for the monitoring conducted at upper Grassy Creek Segment 13i stream points SSLG5, YSGF5, SSG1, and SSG2 are provided in Tables D.4 through D.7 of Appendix D and the analytical results for downstream monitoring point YSG5 located in lower Grassy Creek Segment 13j are found in Table D.8. Analytical results for PSCM Outfalls 002, 003, and 007, which report to upper Grassy Creek Segment 13i, are found in Table D.9 through D.11. The PSCM does not have any outfalls that discharge directly to Grassy Creek Segment 13j. As is described in CDPHE Regulation 33, a current conditions temporary modification of the chronic total recoverable iron and chronic dissolved selenium standard are in place for Yampa Segment 13i which includes Grassy Creek from its headwaters to immediately above the confluence with Scotchmans Gulch. A current conditions temporary modification of the chronic dissolved selenium standard is also in place for Yampa River Segment 13j however the chronic iron standard in this segment is 1 mg/L.

Two exceedances of the NPDES permit limits at the PSCM upper Grassy Creek Outfalls occurred in 2021. Both exceedances occurred at Outfall 002 in July. The sample collected on July 6th contained 145 mg/L of suspended solids, which resulted in an exceedance of both the monthly average and daily maximum total suspended solids limit. The total suspended solids had returned to compliance levels by the next monitoring event (7/20/2021: 12 mg/L). The flow during the July 6th event was very low (~ 3 gallons per minute) and its likely that the base of the spillway was inadvertently disturbed during sample collection. No other exceedances of the NPDES limits or Segment 13i standards occurred at the upper Grassy Creek outfalls during 2021.

Stream points SSLG5, YSGF5, SSG1, and SSG2, located in Yampa Segment 13i, were compliant with all aquatic life standards and agriculture use standards except for sulfide and mercury. Both exceedances were related to the laboratories method detection limit being greater than the standard. The method detection limit for the sulfide analysis (MDL: 0.02 mg/L) conducted by PSCM's lab exceeds the water quality standard for un-ionized sulfide (H_2S : 0.002 mg/L) by an order of magnitude. This method detects both dissolved sulfides and acid-soluble metallic sulfides that are present in suspended matter and provides a single cumulative concentration. Dissolved sulfide includes both the ionized (HS^-) and un-ionized forms of hydrogen sulfide (H_2S). The distribution of sulfide between the un-ionized hydrogen sulfide and ionized form is dependent on the temperature and pH. The toxic un-ionized hydrogen sulfide is dominant at low pH however in alkaline waters, like those present at PSCM, most of the dissolved sulfide is present as non-toxic ionized sulfide. Dissolved sulfide is also rarely present in oxygenated surface waters as it typically oxidizes to sulfate very quickly. Therefore, it is unlikely that the elevated detection limit is censoring a concentration above the water quality standard and this result is an actual exceedance of the standard.

The method detection limit for mercury (0.02 $\mu\text{g/L}$) used by PSCM's lab is above the 0.01 $\mu\text{g/L}$ aquatic life standard. PSCM's lab follows EPA method 245.1 which utilizes cold vapor atomic adsorption and follows the CDRMS Guidelines for the Collection of Water Quality and Overburden Geochemistry Data. At the time that the PSCM NPDES permit was established the WQCD performed a reasonable potential analysis and determined that there was no potential for the discharges to exceed the mercury standard and the monitoring requirements were removed. There is no reason to believe that the mercury detection limit is censoring a measurable value above the water quality standard.

Stream point YSG5 located in lower Grassy Creek (Yampa Segment 13i) was also compliant with all aquatic life standards and agriculture use standards except for sulfide and mercury in 2021. As discussed above for the upper Grassy Creek stream points, these exceedances are the result of the labs method detection limits being above the standards. A measured value of sulfide and mercury did not occur at YSG5 in 2021.

CDPHE Regulation 31 specifies that the manganese agricultural use standard of 0.2 mg/L standard is only applicable when irrigation water is applied to soils with pH lower than 6.0. The soils at PSCM are alkaline and the 0.2 mg/L standard is therefore not applicable for any of the surface water points. Dissolved manganese is significantly less than the CDPHE Yampa Segment 13i and 13j acute and chronic aquatic life standards.

5.0 SPRINGS

The PSCM monitoring program includes five springs. The following table includes the springs, the frequency they are monitored, and the parameter list. See Figure 1 for the location of the spring points. Spring monitoring was completed by experienced personnel and samples were collected in accordance with the practices described in Section 2.04.7 of Permit No. C-2009-087. All samples were analyzed by ACZ Laboratories.

Site	Type	Unit	Monitoring Frequency		Parameter List
			Discharge	Water Quality	
SSSPG3	Spring	Spoils	A	A	SW Short
SSSPG4	Spring	Spoils	A	A	SW Short
SSSPG5	Spring	Spoils	A	A	SW Short
SSSPG6A	Spring	Spoils	A	A	SW Long
SSSPG10	Spring	Spoils	A	A	SW Short

Note

A: Annual

SW Long: Field conductivity, field pH, field temperature, total recoverable arsenic, bicarbonate, dissolved boron, dissolved cadmium, calcium, carbonate, chloride, dissolved chromium, dissolved copper, hardness, total recoverable iron, dissolved lead, magnesium, dissolved manganese, total mercury, dissolved nickel, ammonia, nitrate, nitrite, potassium, dissolved selenium, dissolved silver, sodium, Sodium Adsorption Ratio, sulfate, sulfide, total suspended solids, dissolved zinc, Cation/Anion Balance, total dissolved solids, total dissolved solids calculated

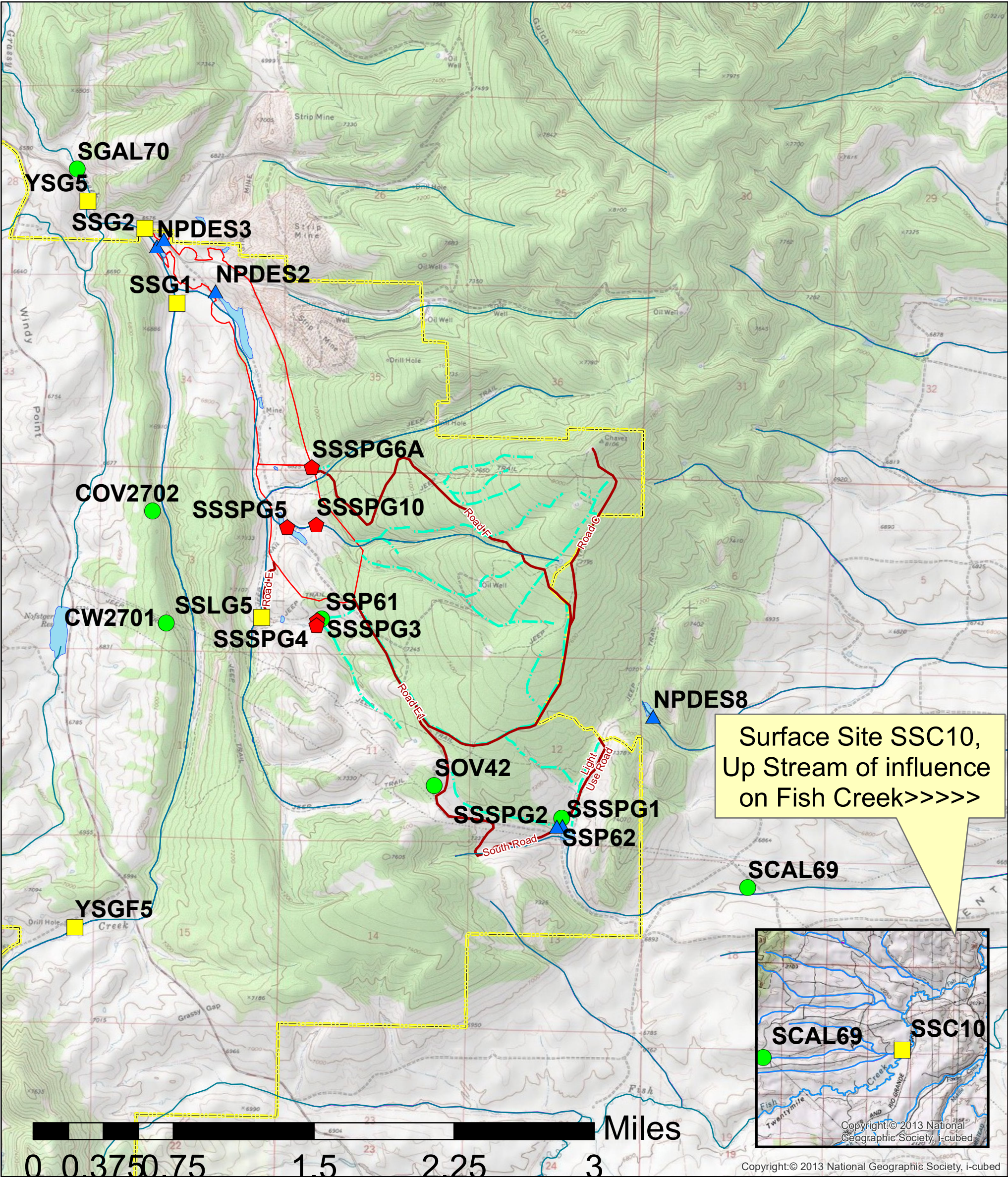
SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total mercury, ammonia, nitrate, nitrite, dissolved selenium, sulfate, sulfide, total suspended solids, total dissolved solids

Table E.1 in Appendix E includes the analytical results for samples collected from the spoil springs in 2021. Samples were collected from all springs except for SSSPG10 and SSSPG6A which were dry. The primary post-mine land use in this area is livestock grazing and wildlife habitat. Therefore, the water quality collected from the spoil springs is compared to the CWQCC agricultural use standards established in CDPHE Regulation 31. There were no exceedances of the agricultural use surface water quality standards at the springs in 2021.

6.0 SUMMARY

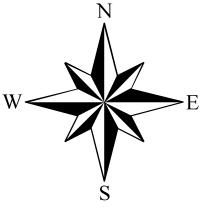
No significant hydrologic impacts attributable to activities at PSCM were noted during 2021. Groundwater levels in all bedrock and spoil monitoring wells were within the historic range observed at these locations. Historically low water levels were observed at both alluvium wells in September. There were no changes to the alluvial groundwater use in these reaches and the lower water table was likely a reflection of the drought conditions experienced during 2021. The groundwater quality at the GWPOC complied with all TR-47 water quality standards except for dissolved cadmium and dissolved zinc. The dissolved cadmium exceedances were not associated with a measurable value of cadmium but were the result of the lab detection limit exceeding the water quality standard. The GWPOC has been monitored since 1988 and there has never been a measured value of dissolved zinc above 0.1 mg/L. The mine has been in a care and maintenance state and there were no changes in activities at the site during the 2021 water year. It is expected that this result is an anomaly.

A single monitoring event in July resulted in a daily max and monthly average exceedance of total suspended solids at Outfall 002. Additional samples collected later in the month indicated that the solids had returned to compliance levels and that the exceedance was likely the result of the inadvertent disturbance of the base of the spillway during a low discharge event. No other NPDES exceedances occurred at the mine in 2021. There were no measured exceedances of the applicable Yampa Segment 13g, 13i, or 13j aquatic life standards or agricultural use standards in Cow Camp Creek or upper and lower Grassy Creek during 2021.



Legend

- NPDES
- Surface Water
- SPRING
- Ground Water
- Segment_13g Bond Creek
- Segment_13i Grassy Creek
- Sage Creek Mine Permit Boundary
- PSCM Current Disturbance



<div>Peabody Sage Creek Mine</div> <div> 36600 RCR #27 Hayden, CO 81639</div>	
Annual Hydrology Report 2021	
DESIGNED BY: MLK DRAWN BY: MLK APPROVED BY:	COUNTRY: USA STATE/PROVINCE: COLORADO GSC: 5N 86W, 6N 86W
DATE: 2020-06-24	DRAWING/SHEET: 1 of 1 C.I.: 0'

Figure 1

APPENDIX A
METEOROLOGICAL DATA

PERIOD OF RECORD PRECIPITATION SUMMARY													
Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
2021	0.87	0.74	1.46	1.03	1.59	1.67	0.5	1.02	0.15	0.86	1.09	1.46	12.44
2020	1.90	1.37	2.60	2.53	2.40	1.67	1.75	1.63	0.77	0.71	0.43	0.43	18.19
2019	2.14	1.81	1.62	2.45	1.46	2.89	1.66	1.88	3.57	0.38	0.44	1.53	21.83
2018	2.45	1.31	1.36	1.65	1.92	1.90	2.95	0.85	0.15	0.15	1.33	0.17	16.19
2017	1.29	0.91	2.06	2.70	1.47	0.84	2.06	1.85	0.13	1.68	0.46	1.74	17.19
2016	1.39	1.90	2.55	2.65	1.16	1.40	3.02	1.94	0.40	0.81	0.19	1.02	18.43
2015	1.60	2.10	1.84	0.55	1.02	1.30	1.60	4.36	0.61	2.36	1.53	0.90	19.77
2014	2.69	1.75	1.42	2.02	0.78	1.96	1.19	2.58	0.72	1.50	3.77	0.87	21.25
2013	0.86	0.46	3.21	1.02	0.73	1.29	3.58	1.67	0.06	0.46	1.48	2.76	17.58
2012	1.41	1.65	0.36	0.87	1.97	0.50	1.13	0.22	0.15	2.43	0.55	1.56	12.80
2011	2.18	1.91	2.98	1.59	2.09	2.52	4.50	3.56	0.85	1.82	0.65	1.14	25.79
2010	1.22	0.77	1.24	0.75	0.90	0.73	1.98	2.80	1.34	1.19	1.56	0.62	15.10
2009	0.53	1.16	1.38	2.80	0.60	1.32	1.40	1.89	2.08	0.51	1.04	0.48	15.19
2008	1.41	0.13	3.36	2.51	1.70	1.64	0.94	1.68	0.37	0.57	0.75	0.91	15.97
2007	2.64	0.76	0.86	1.04	1.34	1.46	0.62	0.87	0.33	0.52	1.12	2.72	14.28
2006	2.27	2.04	2.01	1.78	0.58	1.06	0.95	0.93	0.24	1.48	2.71	2.75	18.80
2005	1.34	1.68	0.50	1.49	0.84	0.99	1.97	1.41	3.36	0.57	1.57	1.30	17.02
2004	0.44	2.90	1.58	0.74	1.64	0.40	1.57	1.26	0.86	1.00	1.44	2.76	16.59
2003	1.88	1.09	1.28	0.74	1.95	0.99	2.57	1.15	1.33	0.47	0.62	1.83	15.90
2002	1.14	1.17	0.54	0.88	0.92	1.06	1.39	0.40	0.37	0.78	1.26	1.94	11.85
2001	0.67	1.60	1.16	0.96	1.41	1.07	1.28	1.15	0.85	1.11	2.06	1.66	14.98
2000	0.43	0.61	1.66	1.66	1.68	1.46	1.84	1.94	0.54	0.75	2.38	2.00	16.95
1999	1.85	0.81	1.13	2.13	0.99	0.57	3.21	2.00	1.39	2.10	1.85	0.78	18.81
1998	2.37	1.08	0.95	1.34	1.93	1.77	1.77	0.62	2.51	1.50	0.48	1.50	17.82
1997	1.79	2.39	1.69	2.88	0.97	0.48	3.19	2.75	1.60	1.05	3.57	5.48	27.84
1996	1.32	2.20	1.26	3.60	2.19	0.99	1.34	2.10	1.00	1.33	0.35	1.37	19.05
1995	0.95	2.09	0.68	1.47	0.97	0.82	3.36	4.48	1.54	1.23	0.73	2.69	21.01
1994	3.02	1.61	1.16	0.69	1.13	0.56	1.85	1.07	0.43	0.24	0.98	0.72	13.46
1993	1.46	1.48	1.33	2.28	1.66	1.53	2.55	1.14	1.29	0.65	1.37	1.39	18.13
1992	1.18	2.79	0.85	0.88	1.16	1.20	1.66	3.08	1.15	4.38	0.95	0.98	20.26
1991	3.20	1.71	1.18	1.75	0.86	2.42	1.09	0.96	1.74	1.59	2.00	1.32	19.82
1990	0.77	1.38	2.08	0.65	1.64	1.54	1.36	1.12	1.38	1.14	0.51	1.22	14.79
1989	0.13	2.79	1.13	1.02	2.50	1.38	0.45	1.39	0.53	1.82	1.33	1.52	15.99
1988	1.27	1.22	2.32	2.80	0.70	1.31	0.83	1.85	1.93	0.60	1.03	2.31	18.17
1987	2.65	1.00	0.56	1.28	1.35	1.50	1.60	1.92	0.64	1.78	1.35	0.46	16.09
1986	3.51	4.19	1.34	0.79	3.01	1.59	2.70	0.99	1.00	1.65	1.96	2.12	24.85
1985	2.61	1.68	1.80	2.40	1.01	2.40	3.77	1.40	0.68	1.28	0.64	1.17	20.84
1984	2.16	2.82	5.03	0.59	0.43	2.31	2.68	1.33	2.36	1.84	2.61	1.31	25.47
1983	1.64	1.52	1.03	1.10	1.66	2.17	2.28	1.57	2.76	1.88	1.08	0.79	19.48
1982	3.76	0.78	2.51	1.71	0.62	2.64	1.92	0.97	0.46	1.60	1.19	2.64	20.80
1981	1.09	0.33	0.43	0.53	0.45	2.50	0.69	3.97	1.65	2.24	1.12	1.33	16.33
AVG	1.69	1.55	1.60	1.57	1.35	1.46	1.92	1.75	1.10	1.27	1.31	1.55	18.12

Note

Data from October 1980 to February 1982, and 2011 Water Year and later, from U.S. Department of Commerce - NOAA - Hayden Station. All other data from Seneca II Mine Meteorological Station with Belfort Weighing Bucket Rain Gage. Site relocated to USGS site on August 31, 1991. Precipitation recorded in inches.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
Observations**
These data are quality controlled and may not
be identical to the original observations.
Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	10	01	68	26	61	0.00		0.0		0.0								
2020	10	02	63	29	61	0.00		0.0		0.0								
2020	10	03	66	25	64	0.00		0.0		0.0								
2020	10	04	77	33	71	0.00		0.0		0.0								
2020	10	05	78	28	70	0.00		0.0		0.0								
2020	10	06	77	31	69	0.00		0.0		0.0								
2020	10	07	80	33	70	0.00		0.0		0.0								
2020	10	08	79	32	69	0.00		0.0		0.0								
2020	10	09	78	33	72	0.00		0.0		0.0								
2020	10	10	79	39	68	0.00		0.0		0.0								
2020	10	11	68	31	45	0.22		1.0		0.0								
2020	10	12	63	24	56	0.00		0.0		0.0								
2020	10	13	71	28	63	0.00		0.0		0.0								
2020	10	14	65	35	55	0.00		0.0		0.0								
2020	10	15	55	28	44	0.00		0.0		0.0								
2020	10	16	61	19	57	0.00		0.0		0.0								
2020	10	17	64	33	61	0.00		0.0		0.0								
2020	10	18	66	39	62	0.00		0.0		0.0								
2020	10	19	63	33	57	0.00		0.0		0.0								
2020	10	20	63	33	56	0.00		0.0		0.0								
2020	10	21	72	30	67	0.00		0.0		0.0								
2020	10	22	67	41	41	0.00		0.0		0.0								
2020	10	23	41	9	36	0.00		0.0		0.0								
2020	10	24	50	19	48	0.00		0.0		0.0								
2020	10	25	48	11	11	0.54		7.0		7.0								
2020	10	26	15	2	7	0.11		2.0		8.0								
2020	10	27	28	-10	19	0.00		0.0		7.0								
2020	10	28	34	6	31	0.00		0.0		6.0								
2020	10	29	50	17	45	0.00		0.0		4.0								
2020	10	30	57	25	50	0.00		0.0		1.0								
2020	10	31	57	23	49	0.00		0.0		0.0								
Summary			61	25		0.87		10.0										

Empty, or blank, cells indicate that a data observation was not reported.
*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.
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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
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**These data are quality controlled and may not
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Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	11	01	64	25	47	0.00		0.0		0.0								
2020	11	02	66	27	49	0.00		0.0		0.0								
2020	11	03	68	28	52	0.00		0.0		0.0								
2020	11	04	66	30	52	0.00		0.0		0.0								
2020	11	05	68	28	50	0.00		0.0		0.0								
2020	11	06	58	30	51	0.00		0.0		0.0								
2020	11	07	65	30	57	0.00		0.0		0.0								
2020	11	08	57	27	31	0.12		0.5		0.0								
2020	11	09	39	23	26	0.09		1.5		1.0								
2020	11	10	32	18	25	0.15		3.0		2.0								
2020	11	11	38	20	30	0.00		0.0		1.0								
2020	11	12	34	17	23	0.10		2.5		2.0								
2020	11	13	48	9	38	0.00		0.0		0.0								
2020	11	14	42	23	24	0.22		2.0		1.0								
2020	11	15	34	12	33	0.00		0.0		1.0								
2020	11	16	56	27	42	0.00		0.0		0.0								
2020	11	17	59	26	46	0.00		0.0		0.0								
2020	11	18	63	29	55	0.00		0.0		0.0								
2020	11	19	55	37	37	0.00		0.0		0.0								
2020	11	20	45	25	34	0.00		0.0		0.0								
2020	11	21	45	20	32	0.00		0.0		0.0								
2020	11	22	45	12	35	0.00		0.0		0.0								
2020	11	23	48	25	37	0.04		0.0		0.0								
2020	11	24	38	27	29	0.00		0.0		0.0								
2020	11	25	43	17	34	0.00		0.0		0.0								
2020	11	26	35	16	22	0.02		T		0.0								
2020	11	27	36	6	21	0.00		0.0		0.0								
2020	11	28	34	8	22	0.00		0.0		0.0								
2020	11	29	42	8	26	0.00		0.0		0.0								
2020	11	30	46	10	30	0.00		0.0		0.0								
Summary			49	21		0.74		9.5										

Empty, or blank, cells indicate that a data observation was not reported.
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"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.
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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
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Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	12	01	30	16	24	0.05		0.5		1.0								
2020	12	02	28	7	13	0.00		0.0		1.0								
2020	12	03	33	-1	18	0.00		0.0		1.0								
2020	12	04	41	7	26	0.00		0.0		T								
2020	12	05	41	5	27	0.00		0.0		0.0								
2020	12	06	50	10	30	0.00		0.0		0.0								
2020	12	07	45	9	26	0.00		0.0		0.0								
2020	12	08	51	9	29	0.00		0.0		0.0								
2020	12	09	54	13	33	0.00		0.0		0.0								
2020	12	10	39	16	29	0.00		0.0		0.0								
2020	12	11	32	18	22	0.07		1.0		1.0								
2020	12	12	27	16	19	0.07		1.0		2.0								
2020	12	13	25	-7	13	0.00		0.0		2.0								
2020	12	14	25	8	20	0.19		3.0		4.0								
2020	12	15	24	12	13	T		0.5		4.0								
2020	12	16	25	8	22	0.14		4.0		6.0								
2020	12	17	27	6	25	0.00		0.0		6.0								
2020	12	18	29	22	23	0.13		1.5		6.0								
2020	12	19	29	10	23	0.00		0.0		5.0								
2020	12	20	31	6	28	T		T		4.0								
2020	12	21	44	27	30	0.00		0.0		2.0								
2020	12	22	36	1	15	0.10		1.0		2.0								
2020	12	23	19	1	12	0.04		0.5		2.0								
2020	12	24	26	-6	15	0.00		0.0		2.0								
2020	12	25	35	2	25	0.00		0.0		2.0								
2020	12	26	34	6	31	0.00		0.0		2.0								
2020	12	27	33	22	25	0.01		T		2.0								
2020	12	28	26	8	20	0.07		1.5		3.0								
2020	12	29	23	6	6	0.59		7.0		10.0								
2020	12	30	19	-9	9	0.00		0.0		9.0								
2020	12	31	27	7	20	0.00		0.0		9.0								
Summary			33	8		1.46		21.5										

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"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation
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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
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National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	01	01	23	2	10	0.00		0.0		9.0								
2021	01	02	22	-5	17	0.00		0.0		8.0								
2021	01	03	25	0	23	0.05		0.5		8.0								
2021	01	04	33	13	22	0.00		0.0		7.0								
2021	01	05	31	18	27	0.38		6.0		13.0								
2021	01	06	27	1	16	0.00		0.0		12.0								
2021	01	07	27	4	18	0.00		0.0		12.0								
2021	01	08	29	2	13	0.00		0.0		10.0								
2021	01	09	20	-1	14	0.00		0.0		9.0								
2021	01	10	22	10	10	T		T		9.0								
2021	01	11	24	-8	6	0.00		0.0		9.0								
2021	01	12	24	0	12	0.00		0.0		9.0								
2021	01	13	32	10	24	0.00		0.0		9.0								
2021	01	14	29	14	20	0.00		0.0		9.0								
2021	01	15	25	-1	21	0.00		0.0		9.0								
2021	01	16	35	15	23	0.01		0.5		9.0								
2021	01	17	36	15	31	0.00		0.0		9.0								
2021	01	18	35	18	18	0.00		0.0		9.0								
2021	01	19	25	-6	13	0.00		0.0		9.0								
2021	01	20	34	3	18	0.00		0.0		9.0								
2021	01	21	37	9	26	0.00		0.0		9.0								
2021	01	22	38	24	32	T		T		9.0								
2021	01	23	37	26	26	0.16		2.0		11.0								
2021	01	24	33	12	21	0.00		0.0		11.0								
2021	01	25	28	11	19	0.13		2.0		12.0								
2021	01	26	20	1	15	0.02		0.5		12.0								
2021	01	27	25	-1	20	0.00		0.0		12.0								
2021	01	28	37	19	25	0.00		0.0		11.0								
2021	01	29	48	17	41	0.00		0.0		10.0								
2021	01	30	41	26	26	0.28		3.0		13.0								
2021	01	31	28	7	19	T		T		13.0								
Summary			30	8		1.03		14.5										

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Station: **HAYDEN, CO US USC00053867**

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151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	02	01	33	6	25	0.00		0.0		12.0								
2021	02	02	42	14	35	0.00		0.0		11.0								
2021	02	03	45	25	26	0.10		1.5		13.0								
2021	02	04	28	9	24	0.02		0.5		11.0								
2021	02	05	27	17	27	0.35		6.0		16.0								
2021	02	06	33	20	32	0.00		0.0		14.0								
2021	02	07	41	22	33	0.00		0.0		12.0								
2021	02	08	41	19	33	0.00		0.0		12.0								
2021	02	09	35	14	29	0.04		1.0		13.0								
2021	02	10	41	27	34	0.07		0.5		13.0								
2021	02	11	40	18	36	T		T		12.0								
2021	02	12	37	29	33	0.19		2.0		12.0								
2021	02	13	35	22	22	0.19		2.0		14.0								
2021	02	14	22	-8	-6	0.19		2.5		16.0								
2021	02	15	21	-7	18	0.04		0.5		15.0								
2021	02	16	34	14	23	0.20		3.0		17.0								
2021	02	17	28	14	20	0.04		1.0		17.0								
2021	02	18	22	-5	16	0.00		0.0		16.0								
2021	02	19	28	0	24	0.00		0.0		16.0								
2021	02	20	31	12	26	T		T		16.0								
2021	02	21	30	14	27	0.00		0.0		16.0								
2021	02	22	37	17	27	0.00		0.0		16.0								
2021	02	23	42	7	32	0.00		0.0		15.0								
2021	02	24	36	3	25	0.00		0.0		15.0								
2021	02	25	27	6	18	0.00		0.0		15.0								
2021	02	26	32	5	25	0.00		0.0		14.0								
2021	02	27	26	14	15	0.16		2.0		16.0								
2021	02	28	22	-6	12	0.00		0.0		16.0								
Summary			33	12		1.59		22.5										

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151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	03	01	31	0	23	0.00		0.0		15.0								
2021	03	02	39	9	30	0.00		0.0		15.0								
2021	03	03	43	12	36	0.00		0.0		14.0								
2021	03	04	36	22	34	0.07		1.0		14.0								
2021	03	05	42	20	37	0.00		0.0		13.0								
2021	03	06	50	25	40	0.00		0.0		13.0								
2021	03	07	56	26	44	0.00		0.0		11.0								
2021	03	08	49	27	44	0.00		0.0		10.0								
2021	03	09	57	27	44	0.00		0.0		8.0								
2021	03	10	44	23	23	0.38		3.0		10.0								
2021	03	11	40	20	27	0.12		1.0		10.0								
2021	03	12	42	22	36	0.05		1.0		9.0								
2021	03	13	40	17	30	0.11		1.0		9.0								
2021	03	14	40	27	34	0.06		0.5		8.0								
2021	03	15	43	22	40	0.14		2.5		9.0								
2021	03	16	40	22	35	0.10		1.0		9.0								
2021	03	17	42	27	42	0.00		0.0		9.0								
2021	03	18	44	22	42	0.00		0.0		8.0								
2021	03	19	53	22	50	0.00		0.0		3.0								
2021	03	20	60	32	54	0.00		0.0		0.0								
2021	03	21	54	26	38	0.12		1.5		0.0								
2021	03	22	45	22	42	0.00		0.0		0.0								
2021	03	23	43	36	39	T		T		0.0								
2021	03	24	45	16	42	0.00		0.0		0.0								
2021	03	25	42	18	32	T		T		0.0								
2021	03	26	44	28	36	0.45		2.5		2.0								
2021	03	27	43	36	40	0.07		0.5		1.0								
2021	03	28	53	22	51	0.00		0.0		0.0								
2021	03	29	58	36	36	0.00		0.0		0.0								
2021	03	30	40	32	38	0.00		0.0		0.0								
2021	03	31	48	20	46	0.00		0.0		0.0								
Summary			45	23		1.67		15.5										

Empty, or blank, cells indicate that a data observation was not reported.
*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.
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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
Observations**
**These data are quality controlled and may not
be identical to the original observations.**
Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	04	01	60		58	0.00		0.0		0.0								
2021	04	02	68	24	64	0.00		0.0		0.0								
2021	04	03	72	28	70	0.00		0.0		0.0								
2021	04	04	70	34	68	0.00		0.0		0.0								
2021	04	05	73	32	68	0.00		0.0		0.0								
2021	04	06	68	32	40	0.01		T		0.0								
2021	04	07	54	33	52	0.05		0.5		0.0								
2021	04	08	63	21	61	0.00		0.0		0.0								
2021	04	09	61	32	46	0.00		0.0		0.0								
2021	04	10	61	22	56	0.00		0.0		0.0								
2021	04	11	56	20	50	0.00		0.0		0.0								
2021	04	12	50	25	44	0.00		0.0		0.0								
2021	04	13	60	22	54	0.00		0.0		0.0								
2021	04	14	54	30	46	0.23		2.0		0.0								
2021	04	15	50	30	38	0.07		T		0.0								
2021	04	16	42	22	40	0.04		0.5		0.0								
2021	04	17	51	16	46	0.00		0.0		0.0								
2021	04	18	59	30	56	0.00		0.0		0.0								
2021	04	19	58	24	38	0.00		0.0		0.0								
2021	04	20	45	8	45	0.00		0.0		0.0								
2021	04	21	45	16	42	T		T		0.0								
2021	04	22	56	28	55	T		T		0.0								
2021	04	23	58	36	54	0.00		0.0		0.0								
2021	04	24	64	28	61	0.00		0.0		0.0								
2021	04	25	72	39	70	0.00		0.0		0.0								
2021	04	26	70	36	57	0.00		0.0		0.0								
2021	04	27	58	32	43	0.06		0.0		0.0								
2021	04	28	62	32	60	0.04		0.0		0.0								
2021	04	29	72	28	70	0.00		0.0		0.0								
2021	04	30	80	39	78	0.00		0.0		0.0								
Summary			60	28		0.50		3.0										

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"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation
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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
Observations**
These data are quality controlled and may not
be identical to the original observations.
Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	05	01	78	38	72	0.00		0.0		0.0								
2021	05	02	74	32	50	0.02		0.0		0.0								
2021	05	03	50	39	40	0.40		0.0		0.0								
2021	05	04	54	32	46	0.03		0.0		0.0								
2021	05	05	64	34	64	0.03		0.0		0.0								
2021	05	06	76	27	76	0.00		0.0		0.0								
2021	05	07	80	40	76	0.00		0.0		0.0								
2021	05	08	76	41	60	T		0.0		0.0								
2021	05	09	60	24	54	0.00		0.0		0.0								
2021	05	10	56	32	48	0.02		0.0		0.0								
2021	05	11	48	32	40	0.44		2.5		0.0								
2021	05	12	66	22	62	0.00		0.0		0.0								
2021	05	13	76	30	72	0.00		0.0		0.0								
2021	05	14	79	34	64	0.00		0.0		0.0								
2021	05	15	77	39	70	0.02		0.0		0.0								
2021	05	16	76	34	66	0.00		0.0		0.0								
2021	05	17	72	40	58	0.00		0.0		0.0								
2021	05	18	76	34	74	0.00		0.0		0.0								
2021	05	19	80	34	78	0.00		0.0		0.0								
2021	05	20	80	42	76	0.00		0.0		0.0								
2021	05	21	76	46	68	0.00		0.0		0.0								
2021	05	22	82	39	56	T		0.0		0.0								
2021	05	23	64	38	60	0.05		0.0		0.0								
2021	05	24	66	29	66	0.00		0.0		0.0								
2021	05	25	74	26	70	0.00		0.0		0.0								
2021	05	26	79	40	70	0.00		0.0		0.0								
2021	05	27	78	30	75	T		0.0		0.0								
2021	05	28	82	32	78	0.00		0.0		0.0								
2021	05	29	80	36	68	T		0.0		0.0								
2021	05	30	80	46	54	0.01		0.0		0.0								
2021	05	31	74	34	66	0.00		0.0		0.0								
Summary			72	35		1.02		2.5										

Empty, or blank, cells indicate that a data observation was not reported.

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"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
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Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	06	01	77	38	76	0.00		0.0		0.0								
2021	06	02	80	42	80	0.00		0.0		0.0								
2021	06	03	89	46	83	0.00		0.0		0.0								
2021	06	04	93	42	91	0.00		0.0		0.0								
2021	06	05	92	46	62	0.00		0.0		0.0								
2021	06	06	87	52	77	0.00		0.0		0.0								
2021	06	07	88	54	84	0.00		0.0		0.0								
2021	06	08	84	46	75	0.00		0.0		0.0								
2021	06	09	82	39	80	0.00		0.0		0.0								
2021	06	10	80	46	74	0.00		0.0		0.0								
2021	06	11	74	31	71	0.00		0.0		0.0								
2021	06	12	80	37	79	0.00		0.0		0.0								
2021	06	13	85	46	84	0.00		0.0		0.0								
2021	06	14	92	46	91	0.00		0.0		0.0								
2021	06	15	91	46	91	0.00		0.0		0.0								
2021	06	16	92	56	92	0.00		0.0		0.0								
2021	06	17	92	55	91	0.00		0.0		0.0								
2021	06	18	91	54	86	0.00		0.0		0.0								
2021	06	19	87	64	80	0.01		0.0		0.0								
2021	06	20	86	44	83	0.00		0.0		0.0								
2021	06	21	84	45	84	0.00		0.0		0.0								
2021	06	22	90	44	88	0.00		0.0		0.0								
2021	06	23	88	52	78	0.00		0.0		0.0								
2021	06	24	81	52	60	0.03		0.0		0.0								
2021	06	25	72	52	64	0.03		0.0		0.0								
2021	06	26	74	44	66	0.05		0.0		0.0								
2021	06	27	76	42	75	0.00		0.0		0.0								
2021	06	28	80	43	78	0.00		0.0		0.0								
2021	06	29	78	50	77	0.00		0.0		0.0								
2021	06	30	78	49	73	0.03		0.0		0.0								
Summary			84	47		0.15		0.0										

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
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Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	07	01	82	52	82	0.17		0.0		0.0								
2021	07	02	88	54	80	0.00		0.0		0.0								
2021	07	03	93	52	85	T		0.0		0.0								
2021	07	04	92	52	81	0.00		0.0		0.0								
2021	07	05	92	52	82	0.00		0.0		0.0								
2021	07	06	92	51	86	0.03		0.0		0.0								
2021	07	07	92	56	91	0.00		0.0		0.0								
2021	07	08	96	57	88	0.00		0.0		0.0								
2021	07	09	97	62	92	0.00		0.0		0.0								
2021	07	10	92	44	89	0.00		0.0		0.0								
2021	07	11	90	52	86	0.00		0.0		0.0								
2021	07	12	97	54	94	0.00		0.0		0.0								
2021	07	13	94	62	72	0.00		0.0		0.0								
2021	07	14	84	54	68	0.00		0.0		0.0								
2021	07	15	91	52	82	0.00		0.0		0.0								
2021	07	16	90	52	84	0.00		0.0		0.0								
2021	07	17	92	52	89	0.00		0.0		0.0								
2021	07	18	97	54	96	0.00		0.0		0.0								
2021	07	19	96	62	94	0.00		0.0		0.0								
2021	07	20	94	54	82	0.01		0.0		0.0								
2021	07	21	94	62	88	0.00		0.0		0.0								
2021	07	22	92	62	84	0.00		0.0		0.0								
2021	07	23	88	62	86	0.00		0.0		0.0								
2021	07	24	87	54	83	0.00		0.0		0.0								
2021	07	25	96	62	68	0.23		0.0		0.0								
2021	07	26	94	52	90	0.06		0.0		0.0								
2021	07	27	94	54	93	0.00		0.0		0.0								
2021	07	28	97	54	90	0.00		0.0		0.0								
2021	07	29	90	62	82	0.20		0.0		0.0								
2021	07	30	86	64	78	0.16		0.0		0.0								
2021	07	31	86	54	74	0.00		0.0		0.0								
Summary			92	56		0.86		0.0										

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Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

**Record of Climatological
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Generated on 02/17/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	08	01	83	58	72	0.02		0.0		0.0								
2021	08	02	78	54	78	0.00		0.0		0.0								
2021	08	03	80	57	70	0.30		0.0		0.0								
2021	08	04	84	51	80	0.07		0.0		0.0								
2021	08	05	87	52	87	0.00		0.0		0.0								
2021	08	06	87	54	81	0.02		0.0		0.0								
2021	08	07	81	45	76	0.00		0.0		0.0								
2021	08	08	88	44	87	0.00		0.0		0.0								
2021	08	09	87	50	84	0.00		0.0		0.0								
2021	08	10	87	47	84	0.00		0.0		0.0								
2021	08	11	86	46	86	0.00		0.0		0.0								
2021	08	12	93	52	90	0.00		0.0		0.0								
2021	08	13	90	54	87	0.00		0.0		0.0								
2021	08	14	90	52	88	0.00		0.0		0.0								
2021	08	15	88	54	80	0.00		0.0		0.0								
2021	08	16	88	54	86	0.02		0.0		0.0								
2021	08	17	87	53	82	0.00		0.0		0.0								
2021	08	18	89	56	76	0.00		0.0		0.0								
2021	08	19	76	56	60	0.45		0.0		0.0								
2021	08	20	76	44	76	0.00		0.0		0.0								
2021	08	21	80	46	77	0.00		0.0		0.0								
2021	08	22	82	46	80	0.00		0.0		0.0								
2021	08	23	84	44	84	0.00		0.0		0.0								
2021	08	24	85	46	83	0.00		0.0		0.0								
2021	08	25	83	46	82	0.00		0.0		0.0								
2021	08	26	82	54	66	0.10		0.0		0.0								
2021	08	27	83	44	83	0.11		0.0		0.0								
2021	08	28	84	44	84	0.00		0.0		0.0								
2021	08	29	86	45	83	0.00		0.0		0.0								
2021	08	30	86	42	85	0.00		0.0		0.0								
2021	08	31	85	45	80	0.00		0.0		0.0								
Summary			85	50		1.09		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

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Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
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National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	09	01	80	50	60	0.31		0.0		0.0								
2021	09	02	78	54	74	0.15		0.0		0.0								
2021	09	03	80	46	72	0.00		0.0		0.0								
2021	09	04	78	44	76	0.00		0.0		0.0								
2021	09	05	80	35	76	0.00		0.0		0.0								
2021	09	06	84	40	84	0.00		0.0		0.0								
2021	09	07	88	42	80	0.00		0.0		0.0								
2021	09	08	88	44	86	0.00		0.0		0.0								
2021	09	09	88	44	86	0.00		0.0		0.0								
2021	09	10	89	45	87	0.00		0.0		0.0								
2021	09	11	87	50	65	0.03		0.0		0.0								
2021	09	12	80	44	77	0.00		0.0		0.0								
2021	09	13	82	50	74	0.00		0.0		0.0								
2021	09	14	80	37	74	0.03		0.0		0.0								
2021	09	15	80	42	77	0.00		0.0		0.0								
2021	09	16	82	44	79	0.00		0.0		0.0								
2021	09	17	79	42	78	0.00		0.0		0.0								
2021	09	18	83	44	75	0.00		0.0		0.0								
2021	09	19	77	44	72	0.02		0.0		0.0								
2021	09	20	72	36	52	0.38		0.0		0.0								
2021	09	21	63	28	56	0.00		0.0		0.0								
2021	09	22	74	31	70	0.00		0.0		0.0								
2021	09	23	75	36	73	0.00		0.0		0.0								
2021	09	24	74	36	64	0.00		0.0		0.0								
2021	09	25	78	37	74	0.00		0.0		0.0								
2021	09	26	82	37	73	0.00		0.0		0.0								
2021	09	27	83	36	76	0.00		0.0		0.0								
2021	09	28	82	40	54	0.15		0.0		0.0								
2021	09	29	54	44	48	0.37		0.0		0.0								
2021	09	30	58	44	57	0.02		0.0		0.0								
Summary			79	42		1.46		0.0										

Empty, or blank, cells indicate that a data observation was not reported.
*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

APPENDIX B
GROUNDWATER QULITY DATA

Table B.1. Groundwater analytical results for Point of Compliance (POC) well SGAL70 during water year 2021.

Well	Date	Depth to Water ft btoc	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Aluminum D MG/L	Arsenic D UG/L	Boron D UG/L	Cadmium D UG/L	Chloride N MG/L	Chromium D UG/L	Copper D UG/L	Fluoride N MG/L
SGAL70	5/13/2021	10.33	3270	7.28	8.8	< 0.1	< 0.4	96	< 16	30.7	< 40	< 20	0.22
SGAL70	9/25/2021	12.58	3050	7.25	10.4	< 0.1	< 0.4	137	< 16	29	< 40	< 20	0.34
GWPOC Water Quality Standards*			-	6.5 - 8.5	-	5	50	750	5	250	100	200	2

Well	Date	Iron D MG/L	Lead D UG/L	Manganese D MG/L	Mercury D UG/L	Nickel D UG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	Zinc D MG/L
SGAL70	5/13/2021	< 0.12	< 60	0.082	< 0.2	< 16	< 0.02	< 0.01	< 2	1980	< 0.02	3300	< 0.04
SGAL70	9/25/2021	< 0.12	< 60	0.354	< 0.2	< 16	< 0.02	< 0.01	< 2	1940	< 0.02	3160	2.97
GWPOC Water Quality Standards*		14.1	70	2.44	2	100	10	1	20	2517	-	5038	2

Well	Date	Alkalinity, Bicarbonate N MG/L	Alkalinity, Carbonate N MG/L	Calcium D MG/L	SpC, Lab N UMS/CM	Hardness N MG/L	Magnesium D MG/L	Potassium D MG/L	Sodium D MG/L	SAR N NONE	Cation / Anion %	TDS (Calc) N MG/L	TSS N MG/L
SGAL70	5/13/2021	353	< 0.2	376	3390	1940	242	5.56	181	1.8	-3.1	3030	16
SGAL70	9/25/2021	374	< 0.2	394	3530	2020	251	6.04	190	1.9	0	3040	< 5
GWPOC Water Quality Standards*		-	-	-	-	-	-	-	-	-	-	-	-

Notes

* See Part 2.04 page 103 of Permit C-2009-087 and TR-47 of Permit C-1980-005.

Bold Analyte exceeds GWPOC Standard

Table B.2. Groundwater analytical results for Non-Point of Compliance wells during water year 2021.

Well	Date	Depth to Water ft btoc	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Aluminum D MG/L	Arsenic D UG/L	Boron D UG/L	Cadmium D UG/L	Chloride N MG/L	Chromium D UG/L	Copper D UG/L	Fluoride N MG/L
SCAL69	5/13/2021	5.94	2340	7.42	7.6								0.23
SCAL69	9/25/2021	8.82	2280	7.46	11.7								0.33
SSP61	5/13/2021	11.97	3750	7.04	11.9								0.32
SSP61	9/25/2021	13.06	3630	7.02	12								0.42
SSP62	5/13/2021	17.49	3590	7.01	11.5								0.28
SSP62	9/25/2021	17.67	3550	7.04	11								0.42
COV2702	5/14/2021	144.19	1470	9.27	10.8	< 0.05	0.3	142	< 8	4.15	< 20	< 10	1.72
SOV42*	5/13/2021	-											
CW2701	5/14/2021	158.44	1470	9.57	10.9	< 0.05	< 0.2	263	< 8	6.05	< 20	< 10	2.39

Well	Date	Iron D MG/L	Lead D UG/L	Manganese D MG/L	Mercury D UG/L	Nickel D UG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	Zinc D MG/L
SCAL69	5/13/2021	< 0.06		0.077			0.05	< 0.01	< 2	1210		2130	
SCAL69	9/25/2021	< 0.12		0.079			< 0.02	< 0.01	< 2	1240		2090	
SSP61	5/13/2021	< 0.06		0.54			2.68	0.092	< 2	2580		4160	
SSP61	9/25/2021	< 0.3		0.726			2.27	0.106	< 2	2500		4050	
SSP62	5/13/2021	< 0.06		0.906			0.15	< 0.01	< 2	2570		3970	
SSP62	9/25/2021	< 0.12		9.37			0.11	< 0.01	< 2	1950		3490	
COV2702	5/14/2021	< 0.06	< 30	< 0.01	< 0.2	< 8	< 0.02	< 0.01	< 2	< 20	0.171	604	0.374
SOV42*	5/13/2021												
CW2701	5/14/2021	0.178	< 30	< 0.01	< 0.2	< 8	< 0.02	0.028	< 2	81	17.9	882	0.495

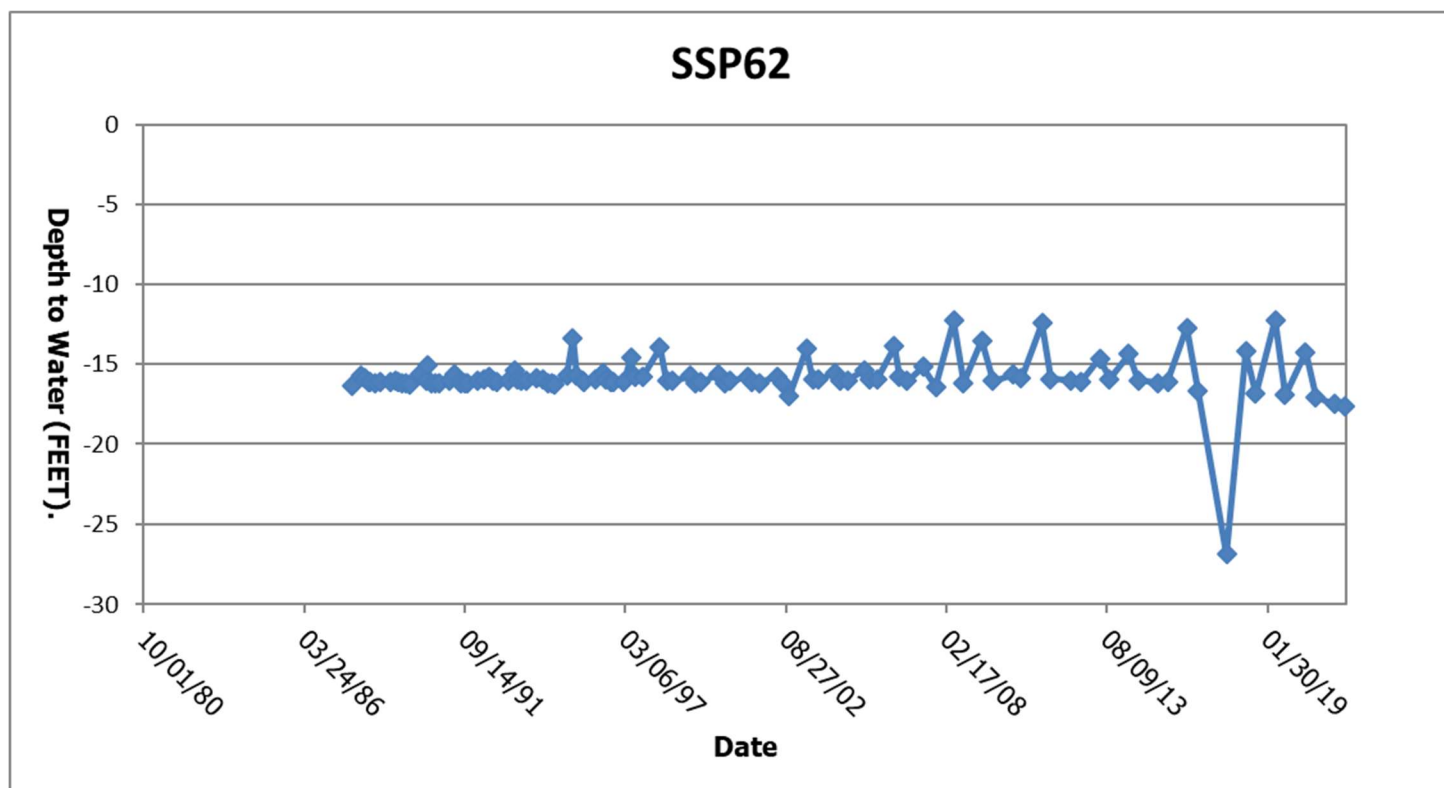
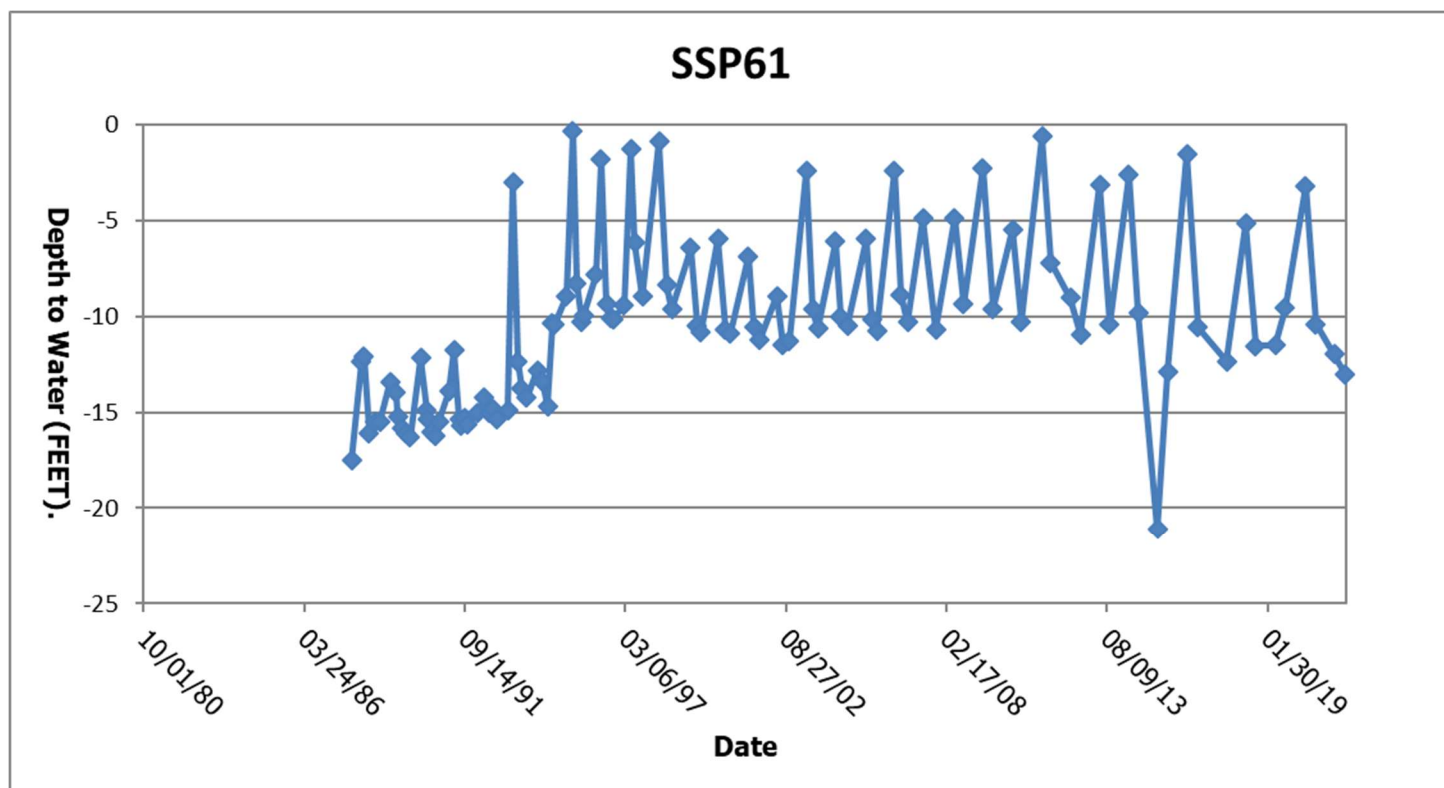
Well	Date	Alkalinity, Bicarbonate N MG/L	Alkalinity, Carbonate D MG/L	Calcium D MG/L	SpC, Lab N UMS/CM	Hardness N MG/L	Magnesium D MG/L	Potassium D MG/L	Sodium D MG/L	SAR N NONE	Cation / Anion %	TDS (Calc) N MG/L	TSS N MG/L
SCAL69	5/13/2021												
SCAL69	9/25/2021												
SSP61	5/13/2021												
SSP61	9/25/2021												
SSP62	5/13/2021												
SSP62	9/25/2021												
COV2702	5/14/2021	351	207	0.96	1020	3.7	0.31	1.76	239	55	0	587	21
SOV42*	5/13/2021												
CW2701	5/14/2021	447	264	1.11	1470	4.1	0.33	2.8	344	74	-3.2	869	109

Notes

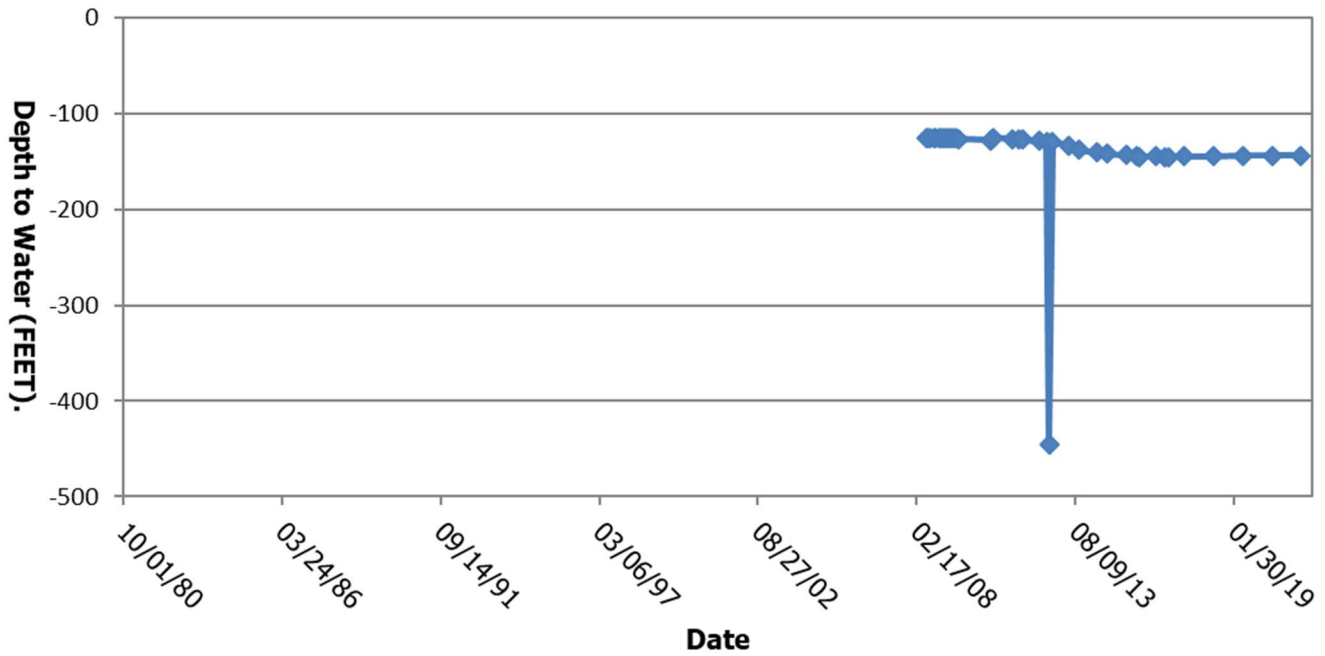
*Well was dry. Sample could not be collected

APPENDIX C

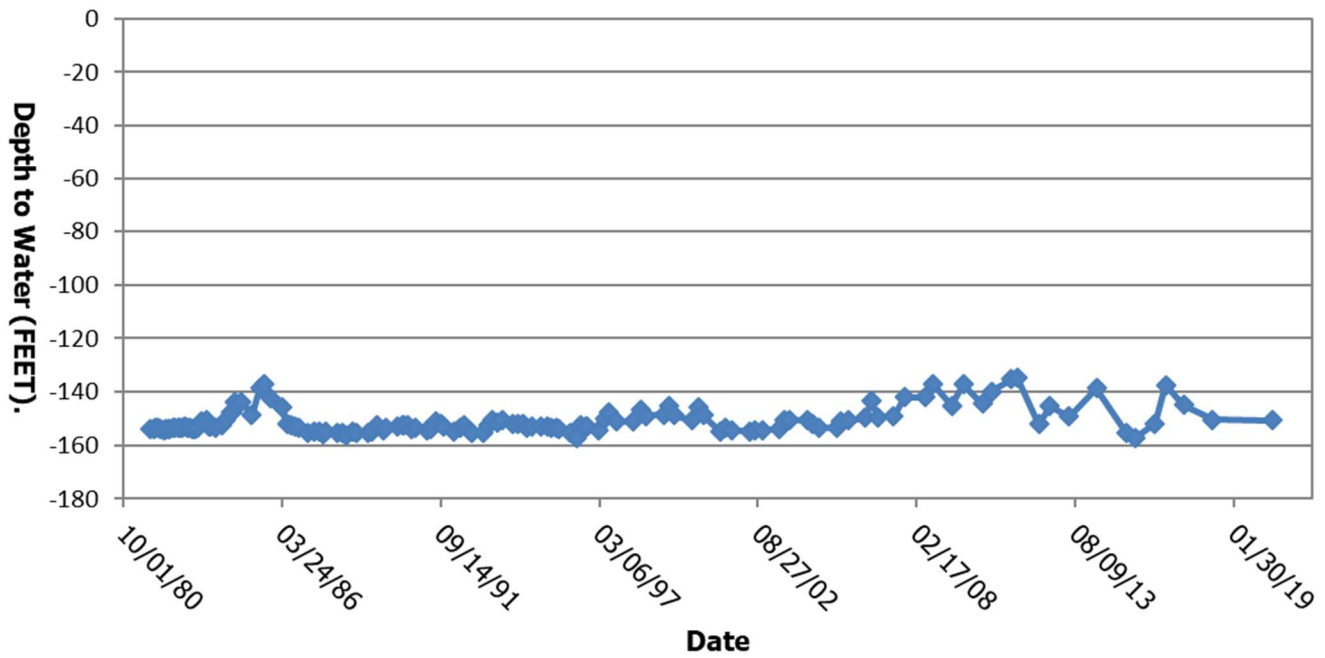
GROUNDWATER HYDROGRAPHS



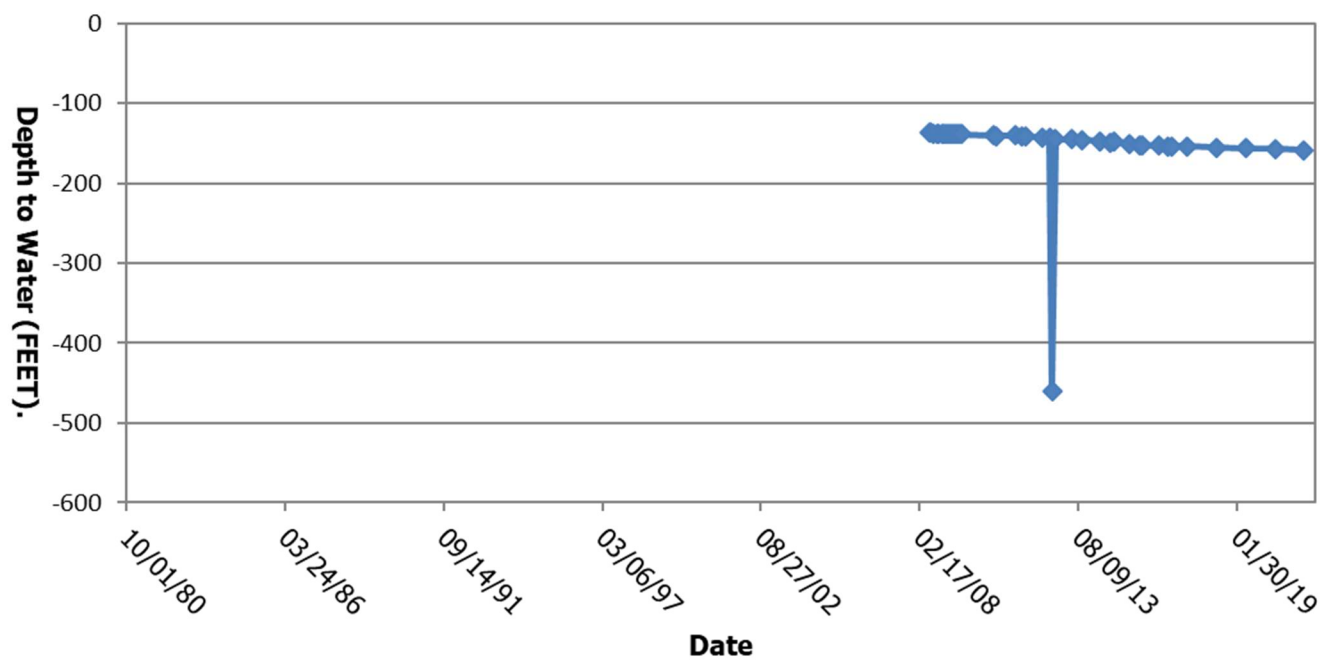
COV2702



SOV42



CW2701



APPENDIX D

SURFACE WATER QUALITY DATA

Table D.1 Fish Creek Yampa Segment 13g stream point analytical data for water year 2021.

Location	Date	Flow N GPM	SpC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N N MG/L	Nitrate N N MG/L	Nitrite N N MG/L	Selenium D UG/L
SSC10	4/21/2021	0												
SSC10	6/15/2021	0												
SSC10	7/20/2021	0												
Yampa Segment 13g Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	0.5	100	0.05	18.4
Yampa Segment 13g Standards - Chronic		-	-	-	-	-	-	1	2.618	-	-	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
SSC10	4/21/2021						
SSC10	6/15/2021						
SSC10	7/20/2021						
Yampa Segment 13g Standards - Acute		-	-	-	0.002***	-	-
Yampa Segment 13g Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

* A current conditions temporary modification is in place for the Segment 13g chronic selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The standard is an order of magnitude less than the laboratories detection limit.

Bold Analyte exceeds the Yampa Segment 13g or Agricultural Use Standards

Table D.2 Fish Creek Yampa Segment 13g NPDES Outfall 005 analytical data for water year 2021.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron TR MG/L	Selenium* D UG/L	Selenium PD UG/L	Selenium* TR UG/L	TDS, Lab N MG/L	Manganese PD MG/L
SSSPG2 (NPDES5)	1/11/2021	0.0000								
SSSPG2 (NPDES5)	1/20/2021	0.0000								
SSSPG2 (NPDES5)	2/8/2021	0.0000								
SSSPG2 (NPDES5)	2/22/2021	0.0000								
SSSPG2 (NPDES5)	3/7/2021	0.0000								
SSSPG2 (NPDES5)	3/22/2021	0.0000								
SSSPG2 (NPDES5)	4/6/2021	0.0016	8.15	N	0.127		0.92	0.87	3860	0.067
SSSPG2 (NPDES5)	4/21/2021	0.0253	8.37	N		0.95		0.83	4620	
SSSPG2 (NPDES5)	4/21/2021	0.0253	8.37	N	< 0.06		0.79	0.9	4700	
SSSPG2 (NPDES5)	5/6/2021	0.0060	8.29	N	< 0.3		0.74	0.73	4880	
SSSPG2 (NPDES5)	5/17/2021	0.0052	8.23	N	0.067		0.73	0.69	4840	
SSSPG2 (NPDES5)	6/1/2021	0.0016	8.07	N	0.088		0.74	0.63	4960	
SSSPG2 (NPDES5)	6/15/2021	0.0009	8.06	N						
SSSPG2 (NPDES5)	6/15/2021	0.0009	8.06	N	1.25		0.63	0.81	5120	
SSSPG2 (NPDES5)	7/6/2021	0.0009	7.83	N	0.522		0.54	0.55	5190	1.74
SSSPG2 (NPDES5)	7/20/2021	0.0014	7.86	N	0.261		0.29	0.82	5780	
SSSPG2 (NPDES5)	7/20/2021	0.0014	7.86	N		< 0.5		0.83	5820	
SSSPG2 (NPDES5)	8/3/2021	0.0010	7.9	N	0.157		0.65	0.82	5440	
SSSPG2 (NPDES5)	8/30/2021	0.0006	8	N	0.143		0.47	0.63	5570	
SSSPG2 (NPDES5)	9/9/2021	0.0004	7.98	N	0.801		0.4	< 0.5	5560	
SSSPG2 (NPDES5)	9/24/2021	0.0000								
SSSPG2 (NPDES5)	10/11/2021	0.0000								
SSSPG2 (NPDES5)	10/27/2021	0.0000								
SSSPG2 (NPDES5)	11/8/2021	0.0000								
SSSPG2 (NPDES5)	11/17/2021	0.0000								
SSSPG2 (NPDES5)	12/1/2021	0.0000								
SSSPG2 (NPDES5)	12/13/2021	0.0000								
NPDES Limit	Daily Max	Report	6.5 - 9.0	Report	-	-	18.4	-	-	Report
	Monthly Avg.	Varies**	-	-	1	-	Report	-	Varies**	Report
Yampa Segment 13g Standards - Acute		-	6.5 - 9.0	-	-	18.4	-	-	-	4.738
Yampa Segment 13g Standards - Chronic		-	-	-	1	TM***	-	-	-	2.618
Agricultural Use Standards		-	-	-	-	20	-	-	-	0.2****

Notes

An NPDES permit renewal application sample was collected on 6/11/2020 for an extended list of paramaters that are not required for the permits standard discharge monitoring requirements. See Table D.12 for the analytical results from this sample.

* Outfall 005 does not have a dissolved selenium or total recoverable selenium monitoring requirement.

** See permit C00048275 for variable monthly average flow and TDS limits. Note that the TDS limits are only applicable when cattle are present.

*** A current conditions temporary modification is in place for the Segment 13g chronic selenium standard.

**** The manganese agricultural use standard is only applicable to areas with acidic soils. These are not present at Sage Creek Mine.

Bold Analyte exceeds the NPDES Daily Max limit, Segment 13g aquatic life standard, or Agricultural Use standard

Bold Analyte exceeds the NPDES Monthly Average limit

Table D.3 Fish Creek Yampa Segment 13g NPDES Outfall 006 analytical data for water year 2021.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron TR MG/L	Selenium* D UG/L	Selenium PD UG/L	Selenium* TR UG/L	TDS, Lab N MG/L	TSS* N MG/L	Manganese* D MG/L
SSSPG1 (NPDES6)	1/11/2021	0.0539	7.41	N	< 0.06		2.74	2.5	3880		
SSSPG1 (NPDES6)	1/20/2021	0.0549	7.54	N	< 0.3		2.75	2.54	4100		
SSSPG1 (NPDES6)	2/8/2021	0.0553	7.59	N	< 0.12		2.41	2.52	3910		
SSSPG1 (NPDES6)	2/22/2021	0.0552	7.47	N	< 0.06		2.26	2.49	4190		
SSSPG1 (NPDES6)	3/7/2021	0.0593	7.41	N	< 0.3		2.38	2.52	4060		
SSSPG1 (NPDES6)	3/22/2021	0.0609	7.54	N	< 0.12		2.71	2.16	3930		
SSSPG1 (NPDES6)	4/6/2021	0.0628	7.51	N	< 0.06		2.62	2.8	3820		
SSSPG1 (NPDES6)	4/21/2021	0.1292	7.44	N		3.83		2.93	3950		
SSSPG1 (NPDES6)	4/21/2021	0.1292	7.44	N	< 0.06		3.58	3.3	4080		
SSSPG1 (NPDES6)	5/6/2021	0.1074	7.43	N	< 0.3		2.83	3.1	4050		
SSSPG1 (NPDES6)	5/17/2021	0.1067	7.39	N	< 0.06		3.22	3.05	3990		
SSSPG1 (NPDES6)	6/1/2021	0.0644	7.18	N	< 0.06		2.58	2.53	3980		
SSSPG1 (NPDES6)	6/15/2021	0.0625	7.05	N	< 0.3		2.75	2.34	4110		
SSSPG1 (NPDES6)	6/15/2021	0.0625	7.05	N	< 0.06	2.18	2.63	2.48	4080	7	0.0048
SSSPG1 (NPDES6)	7/6/2021	0.0384	7.06	N	< 0.06		2.33	1.87	4030		
SSSPG1 (NPDES6)	7/20/2021	0.0321	7.04	N	< 0.06		1.95	2.07	4110		
SSSPG1 (NPDES6)	7/20/2021	0.0321	7.04	N		2.51		2.35	4090		
SSSPG1 (NPDES6)	8/3/2021	0.0397	7.1	N	< 0.06		2.2	2.18	4030		
SSSPG1 (NPDES6)	8/30/2021	0.0485	7.17	N	< 0.06		1.96	2.01	4010		
SSSPG1 (NPDES6)	9/9/2021	0.0609	7.24	N	< 0.06		1.83	1.79	3970		
SSSPG1 (NPDES6)	9/24/2021	0.0595	7.3	N	< 0.06		1.19	1.85	4140		
SSSPG1 (NPDES6)	10/11/2021	0.0710	7.36	N	< 0.06		1.45	1.41	4110		
SSSPG1 (NPDES6)	10/27/2021	0.0685	7.38	N	< 0.06		1.54	1.56	4110		
SSSPG1 (NPDES6)	11/8/2021	0.0701	7.42	N	< 0.3		1.35	1.61	3980		
SSSPG1 (NPDES6)	11/17/2021	0.0696	7.42	N	< 0.06		1.6	1.45	4020		
SSSPG1 (NPDES6)	12/1/2021	0.0629	7.5	N	< 0.06		1.66	1.71		< 5	
SSSPG1 (NPDES6)	12/13/2021	0.0521	7.47	N	< 0.06		1.55	1.61	4090		
NPDES Limit	Daily Max	Report	6.5 - 9.0	Report	-	-	18.4	-	-	-	-
	Monthly Avg.	Varies**	-	-	1	-	Report	-	Varies**	-	-
Yampa Segment 13g Standards - Acute		-	6.5 - 9.0	-	-	18.4	-	-	-	-	4.738
Yampa Segment 13g Standards - Chronic		-	-	-	1	TM***	-	-	-	-	2.618
Agricultural Use Standards		-	-	-	-	20	-	-	-	-	0.2****

Notes

An NPDES permit renewal application sample was collected on 6/11/2020 for an extended list of parameters that are not required for the permits standard discharge monitoring requirements. See Table D.12 for the analytical results from this sample.

* Outfall 006 does not have a dissolved selenium, total recoverable selenium, TSS, or manganese monitoring requirement

** See permit CO0048275 for variable monthly average flow and TDS limits. Note that TDS limits only apply when cattle are present.

*** A current conditions temporary modification is in place for the Segment 13g chronic selenium standard.

**** The manganese agricultural use standard is only applicable to areas with acidic soils. These are not present at Sage Creek Mine.

Bold Analyte exceeds the NPDES Daily Max limit, Segment 13g aquatic life standard, or Agricultural Use standard

Bold Analyte exceeds the NPDES Monthly Average limit

Table D.4 Upper Grassy Creek Yampa Segment 13i stream point SSLG5 analytical data for water year 2021.

Location	Date	Flow N GPM	SpC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
SSLG5	4/21/2021	0												
SSLG5	6/15/2021	0												
SSLG5	7/20/2021	0												
SSLG5	9/9/2021	0												
Yampa Segment 13i Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	0.5	100	0.05	18.4
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-	TM*	2.618	-	-	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
SSLG5	4/21/2021						
SSLG5	6/15/2021						
SSLG5	7/20/2021						
SSLG5	9/9/2021						
Yampa Segment 13i Standards - Acute		-	-	-	0.002***	-	-
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

* A current conditions temporary modification is in place for the Segment 13i chronic iron and selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The standard is an order of magnitude less than the laboratories detection limit.

Bold Analyte exceeds the Yampa Segment 13i or Agricultural Use Standards

Table D.5 Upper Grassy Creek Yampa Segment 13i stream point YSGF5 analytical data for water year 2021.

Location	Date	Flow N GPM	SpC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
YSGF5	4/21/2021	727	1315	8.5	5.3	< 0.06	0.241	0.434						
YSGF5	4/21/2021	727	1315	8.5	5.3			0.406	0.209	< 0.2	< 0.05	< 0.02	< 0.01	0.81
YSGF5	6/15/2021	17.6	1527	7.32	13.5			3.69	0.272	< 0.2	< 0.05	< 0.02	< 0.01	0.26
YSGF5	7/20/2021	0												
YSGF5	9/9/2021	0												
Yampa Segment 13i Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	0.5	100	0.05	18.4
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-	TM*	2.618	-	-	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
YSGF5	4/21/2021					1030	8
YSGF5	4/21/2021	0.72	0.67	529	< 0.02	1020	11
YSGF5	6/15/2021	0.26	0.43	667	< 0.02	1150	141
YSGF5	7/20/2021						
YSGF5	9/9/2021						
Yampa Segment 13i Standards - Acute		-	-	-	0.002***	-	-
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

* A current conditions temporary modification is in place for the Segment 13i chronic iron and selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The standard is an order of magnitude less than the laboratories detection limit.

Bold Analyte exceeds the Yampa Segment 13i or Agricultural Use Standards

Table D.6 Upper Grassy Creek Yampa Segment 13i stream point SSG1 analytical data for water year 2021.

Location	Date	Flow N GPM	SpC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
SSG1	4/21/2021	213	1066	7.6	8.7	< 0.06	0.189	0.2						
SSG1	4/21/2021	213	1066	7.6	8.7			0.187	0.178	< 0.2	< 0.05	0.04	< 0.01	0.85
SSG1	6/15/2021	0												
SSG1	7/20/2021	0												
SSG1	9/9/2021	0												
Yampa Segment 13i Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	0.5	100	0.05	18.4
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-	TM*	2.618	-	-	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
SSG1	4/21/2021					1050	6
SSG1	4/21/2021	0.9	0.76	524	< 0.02	1060	< 5
SSG1	6/15/2021						
SSG1	7/20/2021						
SSG1	9/9/2021						
Yampa Segment 13i Standards - Acute		-	-	-	0.002***	-	-
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

* A current conditions temporary modification is in place for the Segment 13i chronic iron and selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The standard is an order of magnitude less than the laboratories detection limit.

Bold Analyte exceeds the Yampa Segment 13i or Agricultural Use Standards

Table D.7 Upper Grassy Creek Yampa Segment 13i stream point SSG2 analytical data for water year 2021.

Location	Date	Flow N GPM	SpC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
SSG2	4/21/2021	976	2895	8.29	5.6	< 0.06	1.18	3.85						0.97
SSG2	4/21/2021	976	2895	8.29	5.6			1.01	0.193	< 0.2	< 0.05	0.05	< 0.01	0.98
SSG2	6/15/2021	16.3	3273	8.04	20.8			3.02	0.686	< 0.2	0.068	< 0.02	< 0.01	0.58
SSG2	7/20/2021	0												
SSG2	9/9/2021	0												
Yampa Segment 13i Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	0.5	100	0.05	18.4
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-	TM*	2.618	-	-	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
SSG2	4/21/2021		1.15	1780		2880	239
SSG2	4/21/2021	0.92	0.95	1790	< 0.02	2880	40
SSG2	6/15/2021	0.65	0.78	1980	< 0.02	3030	76
SSG2	7/20/2021						
SSG2	9/9/2021						
Yampa Segment 13i Standards - Acute		-	-	-	0.002***	-	-
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

* A current conditions temporary modification is in place for the Segment 13i chronic iron and selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The standard is an order of magnitude less than the laboratories detection limit.

Bold Analyte exceeds the Yampa Segment 13i or Agricultural Use Standards

Table D.8 Lower Grassy Creek Yampa Segment 13j stream point YSG5 analytical data for water year 2021.

Location	Date	Flow N GPM	SpC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Arsenic TR UG/L	Alkalinity, Bicarbonate N MG/L	Boron D UG/L	Cadmium D UG/L	Calcium D MG/L	Carbonate as CO3 N MG/L	Chloride N MG/L	Chromium D UG/L	Copper D UG/L
YSG5	4/21/2021	1237	2990	8.37	5.2	0.65	360	184	< 0.1	310	4.3	22.8	< 1	< 1.6
YSG5	4/21/2021	1237	2990	8.37	5.2									
YSG5	6/15/2021	7.3	3618	7.9	17.6	2	483	248	< 0.1	371	< 2	26.3	< 1	< 1.6
YSG5	7/20/2021	0												
YSG5	9/9/2021	0												
Yampa Segment 13j Standards - Acute		-	-	6.5 - 9.0	-	340	-	750	9.2	-	-	-	1773	50
Yampa Segment 13j Standards - Chronic		-	-	-	-	7.6	-		1.2	-	-	-	231	29
Agricultural Use Standards		-	-	-	-	100	-	750	10	-	-	-	100	200

Location	Date	Hardness N MG/L	Iron TR MG/L	Lead D UG/L	Magnesium D MG/L	Manganese D MG/L	Mercury T UG/L	Nickel D UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Potassium D MG/L	Selenium D UG/L	Selenium TR UG/L
YSG5	4/21/2021	1960	0.421	< 0.2	287	0.507	< 0.2	< 16	< 0.05	0.11	< 0.01	7.95	2.15	1.99
YSG5	4/21/2021												2.22	1.97
YSG5	6/15/2021	2230	0.897	< 0.2	316	1.69	< 0.2	< 16	0.091	0.03	< 0.01	8.88	0.59	0.58
YSG5	7/20/2021													
YSG5	9/9/2021													
Yampa Segment 13j Standards - Acute		-	-	281	-	4.738	0.01***	1513	0.5	100	0.05	-	18.4	-
Yampa Segment 13j Standards - Chronic		-	1	11	-	2.618	-	168	-	-	-	-	TM*	-
Agricultural Use Standards		-	-	100	-	0.2**	-	200	-	100	10	-	20	-

Location	Date	Silver D UG/L	Sodium D MG/L	SAR N RATIO	Sulfates N MG/L	Sulfide N MG/L	Zinc D MG/L	Cation / Anion Balance N %	TDS, Lab N MG/L	TDS Calc. N MG/L	TSS N MG/L
YSG5	4/21/2021	< 0.2	123	1.2	1910	< 0.02	< 0.04	-2.2	3020	2850	5
YSG5	4/21/2021				1840				3010		
YSG5	6/15/2021	< 0.2	124	1.2	1990	< 0.03	< 0.04	0	3310	3080	28
YSG5	7/20/2021										
YSG5	9/9/2021										
Yampa Segment 13j Standards - Acute		22	-	-	-	0.002***	0.565	-	-	-	-
Yampa Segment 13j Standards - Chronic		3.5	-	-	-	-	0.428	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	2	-	-	-	-

Notes

* A current conditions temporary modification is in place for the Segment 13j chronic selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The standard is an order of magnitude less than the laboratories detection limit.

Bold Analyte exceeds the Yampa Segment 13i or Agricultural Use Standards

Table D.9. Upper Grassy Creek Segment 13i NPDES Outfall 002 analytical data for water year 2021.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron* D MG/L	Iron* PD MG/L	Iron TR MG/L	Selenium* D UG/L	Selenium PD UG/L	Selenium* TR UG/L	TDS, Lab N MG/L	TSS N MG/L	Copper PD UG/L
NPDES2	1/11/2021	0.0557	8.04	N			0.091		1.08	0.86	4350	13	< 50
NPDES2	1/20/2021	0.0560	8.15	N					0.97	1.24		7	
NPDES2	2/8/2021	0.0628	8.11	N			0.207		1.45	1.73		< 5	
NPDES2	2/22/2021	0.0629	8.04	N					1.17	0.98		< 5	
NPDES2	3/8/2021	0.1047	7.98	N					0.71	1.18		< 5	
NPDES2	3/22/2021	0.1128	8.15	N			0.196		2.43	2.29		< 5	
NPDES2	4/6/2021	0.2256	8.2	N			< 0.06		1.09	1.2	4160	6	< 4
NPDES2	4/21/2021	0.2654	8.47	N	< 0.3	< 0.3	< 0.06	1.13		0.91	4060	7	
NPDES2	4/21/2021	0.2654	8.47	N					1.36	1.04		8	
NPDES2	5/6/2021	0.1549	8.45	N			< 0.06		1.42	1		8	
NPDES2	5/17/2021	0.1459	8.45	N					1	0.97		< 5	
NPDES2	6/1/2021	0.0658	8.04	N					0.93	1.18		35	
NPDES2	6/15/2021	0.0628	8.13	N			0.661		0.96	1.21		34	
NPDES2	7/6/2021	0.0048	8.16	N			2.06		0.9	0.93	4230	145	1.18
NPDES2	7/20/2021	0.0024	8.19	N	< 0.3	< 0.06	< 0.06	0.9		0.92	4480	12	
NPDES2	7/21/2021	0.0026	8.17	N			< 0.06		0.46	0.91		12	
NPDES2	7/22/2021	0.0023	8.19	N			< 0.06		0.9	0.86		11	
NPDES2	8/3/2021	0.0033	8.05	N			< 0.12		0.8	0.82		6	
NPDES2	8/30/2021	0.0010	8.29	N					0.77	0.87		17	
NPDES2	9/9/2021	0.0020	8.3	N			< 0.06		0.64	0.79		8	
NPDES2	9/24/2021	0.0024	8.06	N					0.3	0.77		20	
NPDES2	10/11/2021	0.0138	7.91	N			0.115		0.45	0.57	4450	9	< 10
NPDES2	10/27/2021	0.0341	7.76	N					0.38	0.36		8	
NPDES2	11/8/2021	0.0685	8.06	N			0.099		0.5	0.58		5	
NPDES2	11/17/2021	0.0638	8.09	N					0.71	0.44		< 5	
NPDES2	12/1/2021	0.0611	8.24	N			0.094		0.55	0.73		< 5	
NPDES2	12/13/2021	0.0500	8.2	N					0.58	0.76		< 5	
NPDES Limit	Daily Max	Report	6.5 - 9.0	Report	-	-	6	-	18.4	-	Report	70	Report
	Monthly Avg.	Varies**	-	-	-	-	1	-	Report	-	Report	35	Report
Yampa Segment 13i Standards - Acute		-	6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	50
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	TM***	TM***	-	-	-	-	29
Agricultural Use Standards		-	-	-	-	-	-	20	-	-	-	-	200

Notes

* Outfall 002 does not have a dissolved iron, potentially dissolved iron, dissolved selenium, or total recoverable selenium monitoring requirement

** See permit CO0048275 for variable monthly average flow limit. Note that the flow limits were revised effective July 1 2020

*** A current conditions temporary modification is in place for the Segment 13i chronic iron and chronic selenium standards.

Bold Analyte exceeds the NPDES Daily Max limit, Segment 13i aquatic life standard, or Agricultural Use standard
Bold Analyte exceeds the NPDES Monthly Average limit

Table D.10. Upper Grassy Creek Segment 13i NPDES Outfall 003 analytical data for water year 2021.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron* D MG/L	Iron* PD MG/L	Iron TR MG/L	Selenium* D UG/L	Selenium PD UG/L	Selenium* TR UG/L	TDS, Lab* N MG/L	TSS N MG/L	Manganese PD MG/L
NPDES3	1/11/2021	0.0019	7.71	N			0.297		1.21	1.18		8	0.748
NPDES3	1/20/2021	0.0017	7.58	N			1.08		1.21	1.39		31	
NPDES3	2/8/2021	0.0020	7.6	N			0.228		1.92	1.89		< 5	
NPDES3	2/22/2021	0.0024	7.57	N			0.284		2.29	2.14		< 5	
NPDES3	3/8/2021	0.0048	7.5	N			0.473		2.69	2.54		11	
NPDES3	3/22/2021	0.0055	7.59	N			0.277		1.82	2.16		< 5	
NPDES3	4/6/2021	0.0063	7.81	N			0.214		1.29	1.28		11	
NPDES3	4/21/2021	0.0075	8.25	N	< 0.06	0.21	0.326	1.32		1.21	1980	12	
NPDES3	4/21/2021	0.0075	8.25	N			0.32		1.4	1.22		14	
NPDES3	5/6/2021	0.0053	8.33	N			0.16		1.31	1.15		< 5	
NPDES3	5/17/2021	0.0050	8.32	N			0.245		1.14	1.16		8	
NPDES3	6/1/2021	0.0035	8.09	N			0.204		1.13	1.1		9	
NPDES3	6/15/2021	0.0030	8.14	N			0.681		0.98	1.06		28	
NPDES3	7/6/2021	0.0017	8.15	N			0.528		0.8	0.71		31	0.446
NPDES3	7/20/2021	0.0000											
NPDES3	8/3/2021	0.0000											
NPDES3	8/30/2021	0.0000											
NPDES3	9/9/2021	0.0000											
NPDES3	9/24/2021	0.0000											
NPDES3	10/11/2021	0.0000											
NPDES3	10/27/2021	0.0000											
NPDES3	11/8/2021	0.0014	8.2	N			0.161		0.52	0.47		< 5	
NPDES3	11/17/2021	0.0016	8.34	N			0.086		0.44	0.38		< 5	
NPDES3	12/1/2021	0.0014	8.36	N			0.125		0.37	0.51		6	
NPDES3	12/13/2021	0.0014	8.27	N			0.069		0.4	0.34		< 5	
NPDES Limit	Daily Max	Report	6.5 - 9.0	Report	-	-	6	-	18.4	-	-	70	Report
	Monthly Avg.	0.1195	-	-	-	-	1	-	Report	-	-	35	Report
Yampa Segment 13i Standards - Acute		-	6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	4.738
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	TM**	TM**	-	-	-	-	2.618
Agricultural Use Standards		-	-	-	-	-	-	20	-	-	-	-	0.2***

Notes

* Outfall 003 does not have a dissolved iron, potentially dissolved iron, dissolved selenium, total recoverable selenium, or TDS monitoring requirement

** A current conditions temporary modification is in place for the Segment 13i chronic iron and chronic selenium standards.

*** The manganese agricultural use standard is only applicable to areas with acidic soils. These are not present at Sage Creek Mine.

Bold Analyte exceeds the NPDES Daily Max limit, Segment 13i aquatic life standard, or Agricultural Use standard

Bold Analyte exceeds the NPDES Monthly Average limit

Table D.11. Upper Grassy Creek Segment 13i NPDES Outfall 007 analytical data for water year 2021.

Location	Date	Flow N GPM	pH, Field N S.U.	Oil & Grease Y / N	Iron TR MG/L	Selenium PD UG/L	Selenium* TR UG/L	TSS N MG/L	Manganese PD MG/L
NPDES7	1/11/2021	0.0000							
NPDES7	1/20/2021	0.0000							
NPDES7	2/8/2021	0.0000							
NPDES7	2/22/2021	0.0000							
NPDES7	3/8/2021	0.0000							
NPDES7	3/22/2021	0.0000							
NPDES7	4/6/2021	0.0019	8.05	N	0.179	0.24	0.19	5	0.153
NPDES7	4/21/2021	0.0033	8.26	N	1.61	0.17	0.16	43	
NPDES7	5/6/2021	0.0000							
NPDES7	5/17/2021	0.0000							
NPDES7	6/1/2021	0.0000							
NPDES7	6/15/2021	0.0000							
NPDES7	7/6/2021	0.0000							
NPDES7	7/20/2021	0.0000							
NPDES7	8/3/2021	0.0000							
NPDES7	8/30/2021	0.0000							
NPDES7	9/9/2021	0.0000							
NPDES7	9/24/2021	0.0000							
NPDES7	10/11/2021	0.0000							
NPDES7	10/27/2021	0.0000							
NPDES7	11/8/2021	0.0000							
NPDES7	11/17/2021	0.0000							
NPDES7	12/1/2021	0.0000							
NPDES7	12/13/2021	0.0000							
NPDES Limit	Daily Max	Report	6.5 - 9.0	Report	6	Report	-	70	Report
	Monthly Avg.	Report	-	-	1	Report	-	35	Report
Yampa Segment 13i Standards - Acute		-	6.5 - 9.0	-	-	18.4	-	-	4.738
Yampa Segment 13i Standards - Chronic		-	-	-	TM**	TM**	-	-	2.618
Agricultural Use Standards		-	-	-	-	20	-	-	0.2***

Notes

* Outfall 007 does not have a total recoverable selenium monitoring requirement

** A current conditions temporary modification is in place for the Segment 13i chronic iron and chronic selenium standards.

*** The manganese agricultural use standard is only applicable to areas with acidic soils. These are not present at Sage Creek Mine.

Bold Analyte exceeds the NPDES Daily Max limit, Segment 13i aquatic life standard, or Agricultural Use standard

Bold Analyte exceeds the NPDES Monthly Average limit

APPENDIX E
SPRING WATER QUALITY DATA

Table E.1. Analytical data for spoil springs sampled during the 2021 water year.

Location	Date	Flow N GPM	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L
SSSPG10	6/16/2021	0									
SSSPG3	6/16/2021	17.6	4418	7.62	18.6	0.291	0.172	< 0.2	0.058	3.86	< 0.01
SSSPG4	6/16/2021	87.2	4588	7.72	15.7	0.338	0.0817	< 0.2	0.064	11	0.012
SSSPG5	6/16/2021	64.7	4170	7.88	23.2	0.065	0.00724	< 0.2	0.068	< 0.02	< 0.01
SSSPG6A	6/15/2021	0									
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10

Location	Date	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
SSSPG10	6/16/2021							
SSSPG3	6/16/2021	1.87	2.29	2.1	2840	< 0.02	4560	13
SSSPG4	6/16/2021	5.83	6.87	6.85	2950	< 0.02	4730	20
SSSPG5	6/16/2021	0.9	0.95	1.08	2870	< 0.02	4260	11
SSSPG6A	6/15/2021							
Agricultural Use Standards		20	-	-	-	-	-	-

Notes

* The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

Bold Analyte exceeds the Agricultural Use Standards