2024 ANNUAL HYDROLOGY REPORT

SENECA II-W MINE

PERMIT C-82-057

March 2025

Submitted To: Colorado Division of Reclamation, Mining and Safety
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SENECA Coal Company

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1.0 INTRODUCTION

This Annual Hydrology Report presents the hydrologic monitoring data collected during the 2024 water year (October 2023 – September 2024) at the Seneca Coal Company's (SCC) Seneca II-W Mine (SIIW). The AHR fulfills the reporting requirements under the Colorado Division of Reclamation, Mining, and Safety (CDRMS) Permit No. C-82-057.

1.1 BACKGROUND

SIIW is a surface coal mine located in Routt County, approximately 9 miles south of Hayden, Colorado (Figure 1). Mining began at SIIW in August 1990. Production ceased in 2005 and the last of the coal at SIIW was removed in January 2006. The mine has been reclaimed and vegetated for many years and SCC is actively pursuing bond release. Bond Release application SL-8, which requested Final Bond Release for all remaining areas of the mine, was submitted in the fall of 2024 and is currently under agency review.

In 2014 the Water Quality Control Commission (WQCC) granted a temporary modification of the chronic selenium TVS in Sage Creek to current conditions to allow SCC to collect additional biologic and water quality data needed to develop a site-specific standard. In 2017, the WQCC extended the selenium temporary modification for Sage Creek to 12/31/2023. This temporary modification expired on 12/31/2023. SCC has continued to coordinate with the WQCD, Colorado Parks and Wildlife, and EPA on the development of this standard and intends to propose its site-specific standard during the June 2025 WQCC Regulation 33 Hearing. This AHR will only discuss data relevant to the requirements of the CDRMS permit.

2.0 METEOROLOGICAL

Meteorological data for the 2024 water year is presented in Appendix A. The 2024 data was obtained from the Hayden Weather Station (053867) located in Hayden, Colorado (Colorado Climate Center - Data Access). A total of 20.37 inches of precipitation was measured in 2024, which is 2.12 inches greater than the 1981-2024 average of 18.25 inches. December, January, February, March, and August were wetter than normal, but the remaining months were drier than normal. Potential snowpack runoff, as estimated by totaling November through March precipitation, was 10.96 inches, which was 3.22 inches above the 1981-2024 average of 7.74 inches.

3.0 GROUNDWATER

The SIIW groundwater monitoring program includes 14 monitoring wells. The following table includes the wells monitored, the water bearing unit they are screened in, the frequency of monitoring, and the required parameters list. The monitoring well locations are shown on Figure 1. Groundwater monitoring was completed by experienced personnel using accepted monitoring practices. All samples were analyzed by ACZ Laboratories.

Site	Unit	Monitoring Frequency		Parameter List
		Water Level	Water Quality	
DCAL-02	Dry Creek Alluvium	A	A	GW Long
WHAL7-2	Hubberson Gulch Alluvium	A	A	GW Long
WOV14	Wadge Overburden	A	A	GW Long
WOV17	Wadge Overburden	A	A	GW Short
WOV25	Wadge Overburden	A	A	GW Long
WW14	Wadge Coal	A	A	GW Long
WW17	Wadge Coal	A	A	GW Short
WW25	Wadge Coal	A	A	GW Long
WSOV25	Sage Creek Overburden	A	A	GW Long
WSC25	Sage Creek Coal	A	A	GW Long
WWCOV25	Wolf Creek Overburden	A	A	GW Long
WWC17	Wolf Creek Overburden	A	NR	NR
WWC25	Wolf Creek Coal	A	A	GW Long
WWCU25	Wolf Creek Underburden	A	A	GW Long

Note
A: Annual
NR: Not Required
GW Long: Field conductivity, field pH, field temperature, fluoride, dissolved iron, dissolved manganese, nitrate, nitrite, dissolved selenium, sulfate, total dissolved solids
GW Short: Field conductivity, field pH, field temperature, dissolved iron, dissolved manganese, total dissolved solids

3.1 WATER LEVELS

The static water levels measured during the 2024 water year are included with the groundwater quality data in Appendix B. Water level hydrographs for each of the

wells are also provided in Appendix C. The static water level was measured at all wells except for WSC25, where the well casing was damaged, and a measurement could not be made. The water levels measured at the remaining wells this year were all within their respective historic range.

Water levels in the water bearing units at SIIW exhibit seasonal fluctuations. The water table in the shallow alluvial 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 level 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. Due to the bedrock unit depths and lower hydraulic conductivity the water level fluctuations are typically muted relative to the fluctuations observed in the shallow alluvium.

3.2 Groundwater Quality

Monitoring well DCAL-02 serves as the Groundwater Point of Compliance (GWPOC) for SIIW (see Technical Revision 63). This well is screened within the Dry Creek Alluvium and is located downgradient of the mines permit boundary. Only a small portion of the SIIW mining area is located within the Sage Creek Watershed and a GWPOC for the Sage Creek Alluvium was deemed unnecessary because the spoil groundwater flows to the west along the dipping bedrock, away from the Sage Creek tributaries. GWPOC bedrock wells were also deemed unnecessary because of the limited potential for the mine to negatively impact the quality of bedrock groundwater. The low hydraulic conductivity of the bedrock units inhibits groundwater from migrating away from the mine and low permeable confining layers further isolate groundwater at the mine from the nearest aquifer, the Trout Creek Sandstone. Bedrock groundwater has not historically been used in this area because its ambient quality is marginal to unsuitable for both livestock and irrigation purposes and the yields are low.

Analytical results for the groundwater monitoring conducted in 2024 are provided in Appendix B. Table B.1 provides a comparison of the DCAL-02 sample to the Dry Creek Alluvial GWPOC water quality standards established in TR-63. Table B.2 includes the

analytical results for the remaining monitoring wells, however a comparison to water quality standards is not made as these wells are not GWPOC's. The groundwater quality at well DCAL-02 met all applicable water quality standards.

Predictions were made in the Probable Hydrologic Consequences (PHC, Tab 17) section of the SIIW Permit Application Package (PAP) for the anticipated TDS increase to be observed at several of the mines monitoring wells. The following table outlines these predictions along with this year's observed value.

Well	Predicted TDS (mg/L)	This Years TDS (mg/L)
WHAL7-2	1299	714
WOV14	4385	980
WOV17	4295	4420*
WOV25	-	748
WW14	2630	4450*
WW17	3002	582
WW25	-	608

Note
*Indicates value above prediction

In 2024, the TDS at two of the seven wells exceeded the predicted TDS value. Its important to acknowledge that the TDS predictions were intended to demonstrate the potential average increase in postmining groundwater quality adjacent to the mine pits and were not intended to be compared to a singular well. This is illustrated through the application of the predicted Wadge Overburden TDS value (4295 mg/L) to WOV17. The 4295 mg/L value was calculated by multiplying the predicted 5.5% increase in TDS for this area to the pre-mine TDS average (4072 mg/L) measured at several Wadge Overburden Wells. However, the pre-mine average TDS at WOV17 was 8043 mg/L, which was already significantly greater than the predicted value. In this instance a more appropriate comparison would be to compare the 2024 WOV17 TDS to its baseline average times the estimated 5.5% increase (8043 + 5.5% = 8485 mg/L). This indicates that the 2024 value of 4420 mg/L is a significant improvement and well within the projected value at this location. Regardless, both wells with TDS above the predicted post mine concentration are screened within the bedrock and the low hydraulic conductivity

of these units will continue to limit the extent of these changes to groundwater in close proximity to the mine.

4.0 SURFACE WATER

SIIW lies within the Dry Creek and Sage Creek Watersheds. The majority of the permit area drains to the west towards Hubberson Gulch (a tributary to Dry Creek) and Dry Creek, which flows north to the Yampa River. The remainder of the permit area drains northeast towards Sage Creek, which flows north-northeast to the Yampa River. The following table includes the list of SIIW surface water monitoring points, the watershed they are located in, the frequency of monitoring, and the required parameters list. See Figure 1 for the location of the surface water monitoring points. Surface water monitoring was completed by experienced personnel using accepted monitoring practices. All samples were analyzed by ACZ Laboratories.

Site	Type	Watershed	Monitoring Frequency		Parameter List
			Flow	Water Quality	
WSH9	Surface Water	Dry Creek	June/Sept	June/Sept	SW Short
NPDES17	NPDES	Dry Creek	M	M	NPDES
NPDES16	NPDES	Dry Creek	M	M	NPDES
WSH7*	Surface Water	Dry Creek	NR	NR	NR
NPDES6	NPDES	Dry Creek	M	M	NPDES
WSHF1	Surface Water	Dry Creek	SA	SA	SW Long
NPDES5	NPDES	Dry Creek	M	M	NPDES
WSD5	Surface Water	Dry Creek	SA	SA	SW Long
NPDES15	NPDES	Sage Creek	M	M	NPDES
NPDES9	NPDES	Sage Creek	M	M	NPDES
WSSF3	Surface Water	Sage Creek	SA	SA	SW Long

Note

*Monitoring at WSH7 was suspended per TR-69. However, since samples were collected in 2022 the location is retained on the monitoring list and the results have been reported.

SA: Semiannual during spring snowmelt and summer baseflow

NR: Not Required

M: Monthly

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

SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total suspended solids, total dissolved solids

NPDES: See NPDES permit CO-0000221

The Colorado Water Quality Control Commission (CWQCC) has established segment specific aquatic life water quality standards (CDPHE, Reg. 33) for upper Dry Creek (Yampa River Segment 13d) and Sage Creek (Yampa River Segment 13e). Therefore, the following surface water quality discussion has been organized by drainage basin. The 2024 Water Year surface water quality data is provided in Appendix D. Samples from this year's stream points are compared to both the Colorado Department of Public Health & Environment (CDPHE) surface water agricultural use standards (CDPHE, Reg. 31) and the appropriate segment specific aquatic life water quality standards. 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 Dry Creek

Analytical results for the 2024 surface water monitoring conducted at the four Dry Creek stream points is provided in Table D.1 of Appendix D and the results of the Dry Creek outfalls are included in Tables D.2 through D.5. An exceedance of the 1 mg/L total recoverable iron NPDES monthly average discharge limit occurred at Outfall 016 (NPDES16) and Outfall 017 (NPDES17) in 2024. The iron in the samples collected during the April 23, 2024, event (1.03 mg/L and 1.17 mg/L) was just above the monthly average limit and did not exceed the Yampa Segment 13d chronic aquatic life total recoverable iron spring standard (Mar-Apr) of 3.040 mg/L. The Seneca Mine Complex CPDS permit has been on administrative extension since 2011 and no changes to the permit may occur until it is renewed. At that time, it is anticipated that the monthly average iron limit, which is based on the surface water quality standard, will be updated to reflect the segments seasonal chronic aquatic life standard. There were no other exceedances of the NPDES discharge limits or Yampa Segment 13d water quality standard at the four Dry Creek NPDES Outfalls in 2024.

The stream points were compliant with all agricultural use standards and all Yampa Segment 13d aquatic life standards except for total recoverable iron at steam point WSH7 and WSHF1. The iron exceedances occurred during the May, June, July, and September (WSHF1 only) monitoring events. WSH7 is located downstream of Outfalls 017 and 016, but upstream of Outfalls 006 and 005. During the May, June, and July

monitoring events the total recoverable iron measured at Outfalls 017 and 016 (≤ 0.231 mg/L) was substantially less than the NPDES limit of 1 mg/L. WSHF1 is located downstream of Outfalls 017, 016, and 006, but upstream of 005. Similarly, during the May, June, July, and September outfall monitoring events the total recoverable iron measured at Outfalls 017, 016, and 006 was an order of magnitude less than the concentration measured at the two stream points and there were no exceedances of the discharge limit or aquatic life surface water standards.

Table D.6 provides a statistical summary of the pre-mine total recoverable iron measured at Dry Creek stream points WSH7 and WSHF1. None of the total recoverable iron concentrations observed in 2024 were outside of the range measured prior to mining. Total recoverable iron is strongly correlated with suspended solids at WSH7 (r^2: 0.92), and WSHF1 (r^2: 0.97) (Appendix D Figure D.1). SIIW has been vegetated and stable for over a decade and TSS in the mine discharges is typically an order of magnitude less than the concentrations observed in stream. This indicates the iron measured in Dry Creek is unrelated to runoff from the reclaimed mine and is the result of natural erosion that is occurring in unaffected portions of the watershed.

The method detection limit for the sulfide analysis (MDL: 0.02 mg/L) conducted by SCC's lab exceeds the 0.002 mg/L CDPHE Yampa Segment 13d aquatic life standard for un-ionized sulfide (H_2S). All of the sulfide samples analyzed in 2024 were non-detect. The analytical method employed by the lab 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 toxic 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. At low pH most of the dissolved sulfide exists as the toxic un-ionized hydrogen sulfide. In alkaline waters, like those present at SIIW, most of the dissolved sulfide is present as non-toxic ionized sulfide. Therefore, it is not expected that these non-detects represent exceedances of the sulfide aquatic life standard.

The method detection limit for the mercury (0.2 ug/L) analysis completed by SCC's lab for stream points WSHF1 and WSD5 is above the 0.01 ug/L aquatic life standard for mercury. None of the samples collected during 2024 exceeded the labs method detection limit. The CDPHE performed a reasonable potential analysis for the Seneca

NPDES outfalls and mercury monitoring was dropped from all outfalls except Outfall 005, which did not have enough sample data for CDPHE to complete the analysis. Based on historic data its not expected that there were true exceedances of the mercury standard.

There was one exceedance of the Yampa Segment 13d agricultural use dissolved manganese standard at stream point WSHF1. The 0.2 mg/L manganese standard is only applicable when irrigation water is applied to acidic soils (<6.0 pH). For alkaline soils, as are found in the SIIW area, a more appropriate standard would be 10 mg/L (EPA, 1976). Therefore, the September WSHF1 sample was not considered to be exceeding the standard. The dissolved manganese in this sample was also significantly less than the Yampa Segment 13i acute and chronic manganese standards.

4.2 Sage Creek

Analytical results for the 2024 surface water monitoring conducted at Sage Creek stream point WSSF3 is provided in Table D.7 of Appendix D and the analytical results for the two outfalls that report to Sage Creek are included in Table D.8. There were no exceedances of the NPDES discharge limits or Yampa Segment 13e aquatic life standards at Outfalls 009 and 015 or the Yampa Segment 13e aquatic life standards and agricultural use standards at WSSF3. As discussed in Section 4.1, the lab used by SCC has a method detection limit for mercury and sulfide that are above the Segment 13e water quality standard. None of the samples collected from WSSF3 in 2024 exceed the labs mercury or sulfide method detection limit and it is not expected that these non-detects represent exceedances of the mercury and sulfide aquatic life standards.

In the Probable Hydrological Consequences (PHC, Tab 17) section of the SIIW PAP, predictions were made for the TDS increases anticipated to be observed at several of the mines stream points. The table below outlines these predictions along with this year's average concentration. The 2024 annual average TDS at Dry Creek monitoring points WSHF1 and WSD5 were below the concentrations predicted in the SIIW PHC. The 2024 annual average TDS at Sage Creek WSSF3 exceeded the SIIW PHC predictions. Although the TDS at Sage Creek monitoring point WSSF3 exceeds the SIIW PHC prediction it's important to recognize that this location also receives drainage

from the Yoast Mine (C-1994-082). The Yoast Mine was permitted approximately 12 years after SIIW and the contributions from Yoast were not considered at the time of the SIIW PHC predictions. Therefore, a more meaningful comparison of the current TDS at WSSF3 would be to the 2118 mg/L value predicted for WSSF3 in the Yoast Mine PHC. The 830 mg/L average TDS measured in 2024 is nearly 1290 mg/L less than the predicted post mine concentration and indicates that neither operation has had a significant impact on the potential use of these surface waters for agriculture or livestock purposes.

Stream Point	Predicted TDS (mg/L)	Mean TDS (mg/L)
WSHF1	2527	2148
WSD5	2451	1757
WSSF3	626**	830*

* Indicates value above prediction

** Predicted TDS value does not account for later contributions from Yoast Mine (C-1994-082). Predicted TDS concentration at WSSF3 in Yoast Mine PHC is 2118 mg/L.

5.0 SPRINGS

The SIIW monitoring program includes nine spring sites. The following table includes the list of springs monitored, the frequency of monitoring, and the required parameters list. See Figure 1 for the location of the spring points. Spring monitoring was completed by experienced personnel using accepted monitoring practices. All samples were analyzed by ACZ Laboratories.

Site	Type	Unit	Monitoring Frequency		Parameter List
			Discharge	Water Quality	
S-46 (WSPG46)	Spring	Native	A	A	SW Long
S-47 (WSPG47)	Spring	Native	A	A	SW Short
S-50 (WSPG50)	Spring	Native	A	A	SW Long
S-7 (WSPG7)	Spring	Native	A	A	SW Long
Spoil Spring 1 (WSSPG1)	Spring	Spoils	A	A	SW Short
Spoil Spring 2 (WSSPG2)	Spring	Spoils	A	A	SW Long
Spoil Spring 3 (WSSPG3)	Spring	Spoils	A	A	SW Long
Spoil Spring 4 (WSSPG4)	Spring	Spoils	A	A	SW Long
Spoil Spring 5 (WSSPG5)	Spring	Spoils	A	A	SW Long

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

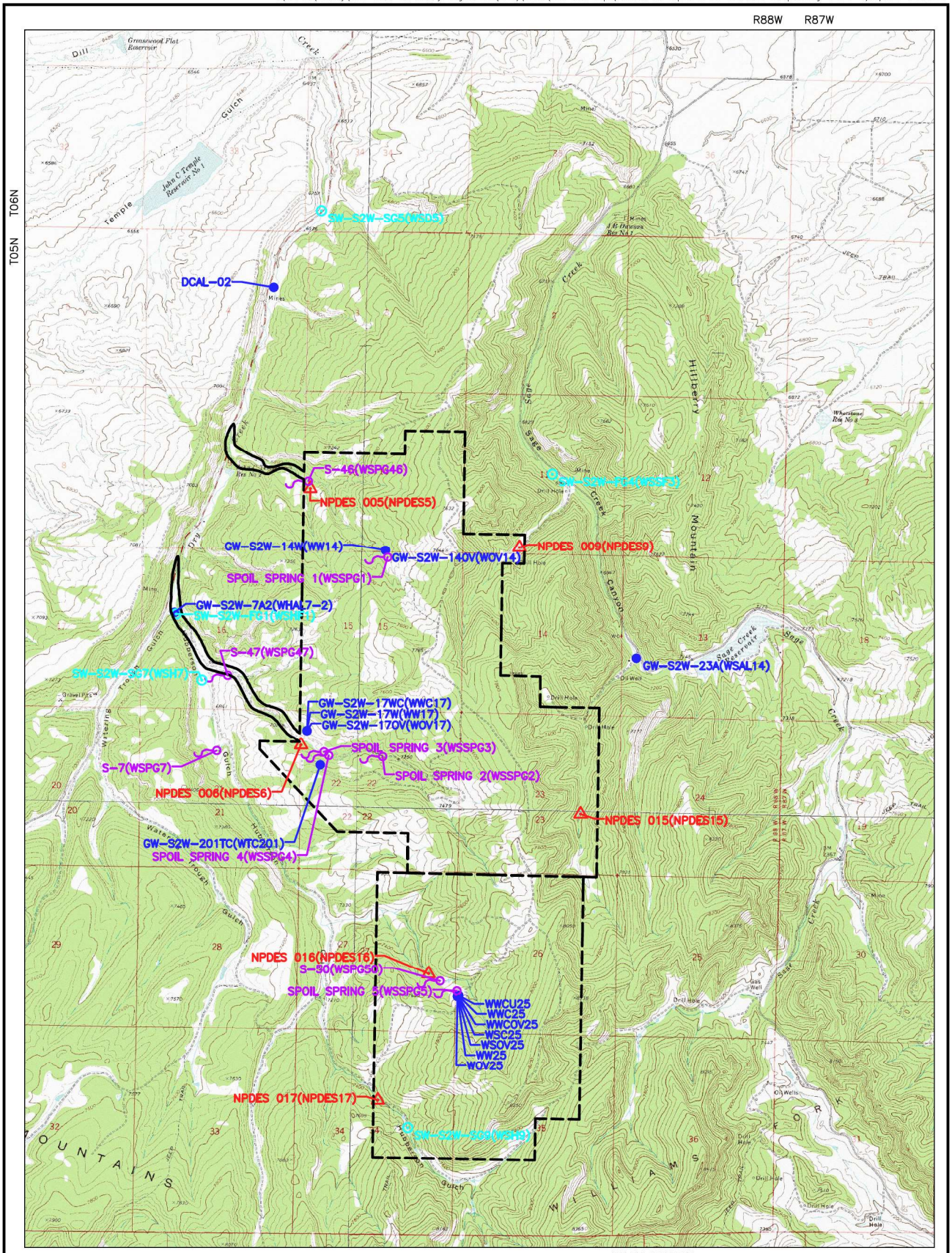
Four native springs and five spoil springs were monitored in 2024. The primary land use in this area, including the reclaimed mine parcels, is livestock grazing and wildlife habitat. Therefore, the water quality data collected from both the native and spoil springs are compared to the CWQCC agricultural use standards established in CDPHE Regulation 31.

Table E.1 in Appendix E includes the analytical results for the spring samples collected in 2024. As is described in the approved SIIW Hydrologic Monitoring Plan (see Tab 15, Appendix 15.3A) springs with flow less than 5 gpm should only be analyzed for field parameters. This is because it is often difficult to collect a

representative sample from diffuse flow without disturbing, and inadvertently collecting, sediments and organic matter that can produce false positive metal results. Water from non-flowing, pooled spring water, should also not be collected as stagnant water is often strongly influenced by bacteria and low oxygen conditions that alter the water chemistry. In 2024 two of the native springs (WSPG7, WSPG46) and one of the spoil springs (WSSPG2) had measured flows less than 5 gpm however water quality samples were inadvertently collected from these locations. Although these results should be considered unrepresentative, all the spring samples were compared to the agricultural use water quality standards for discussion purposes. None of the agricultural use standards were exceeded at the native or spoil springs in 2024. The 0.2 mg/L manganese standard is only applicable when irrigation water is applied to acidic soils (<6.0 pH). For alkaline soils, as are found in the SIIW area, a more appropriate standard would be 10 mg/L (EPA, 1976). Therefore, none of the manganese results above 0.2 mg/L were considered exceedances of the standard.

6.0 SUMMARY

No significant hydrologic impacts attributable to the activities at the SIIW were noted during 2024. Groundwater levels in all monitoring wells were within their historic range. No exceedances of the groundwater quality standards were observed at the GWPOC. Exceedances of the total recoverable iron chronic aquatic life standard occurred at Dry Creek stream points WSH7 and WSHF1. However, the total recoverable iron measured at the mine outfalls during these events were an order of magnitude less than instream and were compliant with the standard. Total recoverable iron is strongly correlated with suspended solids at stream points WSH7 (r^2: 0.92), and WSHF1 (r^2: 0.97) (Appendix D Figure D.1). SIIW has been vegetated and stable for over a decade and TSS in the mine discharges is also typically an order of magnitude less than the concentrations observed at the stream points. This indicates the iron measured at the Dry Creek stream points is unrelated to runoff from the reclaimed mine and is the result of natural erosion that is occurring in unaffected portions of the watershed. No other exceedances of the surface water quality standards were observed in Dry Creek or Sage Creek in 2024.



GROUNDWATER
SURFACE WATER
NPDES
SPRING
PERMIT BOUNDARY

IMAGE SOURCE:
DIGITAL RASTER GRAPHIC COUNTY MOSAIC BY NRCS OF ROUTT COUNTY, COLORADO FROM GEOSPATIAL DATA GATEWAY (HTTPS://GDG.SC.EGOV.USDA.GOV) DOWNLOADED 10/16

0 3000'
SCALE

DESIGNED BY: JAH	FIGURE 1 MONITORING SITE LOCATIONS
DRAWN BY: SDG	
CHECKED BY: TNS	SENECA II WEST MINE PEABODY SAGE CREEK MINING, LLC PEABODY ENERGY
DATE: 2019	WWC ENGINEERING

APPENDIX A

METEOROLOGICAL DATA

PERIOD OF RECORD PRECIPITATION SUMMARY													
Water Year	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**TOTAL**
2024	1.7	0.73	1.83	2.19	3.34	2.87	1.68	1.49	0.96	0.53	2.14	0.91	20.37
2023	1.23	2.06	4.12	3.79	1.04	3.11	1.37	0.52	1.69	0.29	1.33	0.44	20.99
2022	1.82	0.62	2.79	1.18	0.85	1.43	2.07	3.14	0.61	1.14	0.99	2.1	18.74
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	1.53	1.69	1.62	1.38	1.53	1.91	1.75	1.10	1.23	1.32	1.53	18.25

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.

Monthly temperature range and preciptation collected at the Hayden Colorado Airport Weather Station 053867
Data accessed from: https://climate.colostate.edu/data_access_new.html

Station Metadata

Station Name: HAYDEN
Station ID: 053867
Longitude: -107.2548 Latitude: 40.4926
Elevation: 6467 ft.
Max Temperature: 1909-01-15 - 2025-02-06
Min Temperature: 1909-01-15 - 2025-02-06
Precipitation: 1909-01-15 - 2025-02-06
Snowfall: 1909-01-17 - 2025-02-06

HAYDEN	mly_mean_maxt (F)	mly_mean_mint (F)	mly_sum_pcpn (in)
2023-10	63.2	32.5	1.7
2023-11	47.9	21.9	0.73
2023-12	35.5	14.3	1.83
2024-01	33.3	13.9	2.19
2024-02	37.6	14.1	3.34
2024-03	45.2	20.1	2.87
2024-04	60.7	29.6	1.68
2024-05	65.9	35.9	1.49
2024-06	83.6	48.8	0.96
2024-07	87.1	49.3	0.53
2024-08	84.8	50.9	2.14
2024-09	80.5	43.9	0.91

APPENDIX B

GROUNDWATER QULITY DATA

Table B.1. Groundwater analytical results for Point of Compliance (POC) well DCAL-02 during water year 2024.

Location	Date	Static Water Level FT BTOC	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Fluoride N MG/L	Iron D MG/L	Manganese D MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	TDS, Lab N MG/L
DCAL-02	5/20/2024	9.51	1990	7.5	11.1	0.35	0.824	0.289	1.67	0.015	< 2	579	1400
Seneca II-W GWPOC Standards*		-	-	6.5 - 8.5	-	2	8.06	2.55	10	1	20	1511	3195

Notes

* See Seneca II-W Mine Technical Revision 63 (TR-63) for GWPOC standards

Bold Exceeds groundwater quality standard

Table B.2. Groundwater analytical results for Non-Point of Compliance wells during water year 2024.

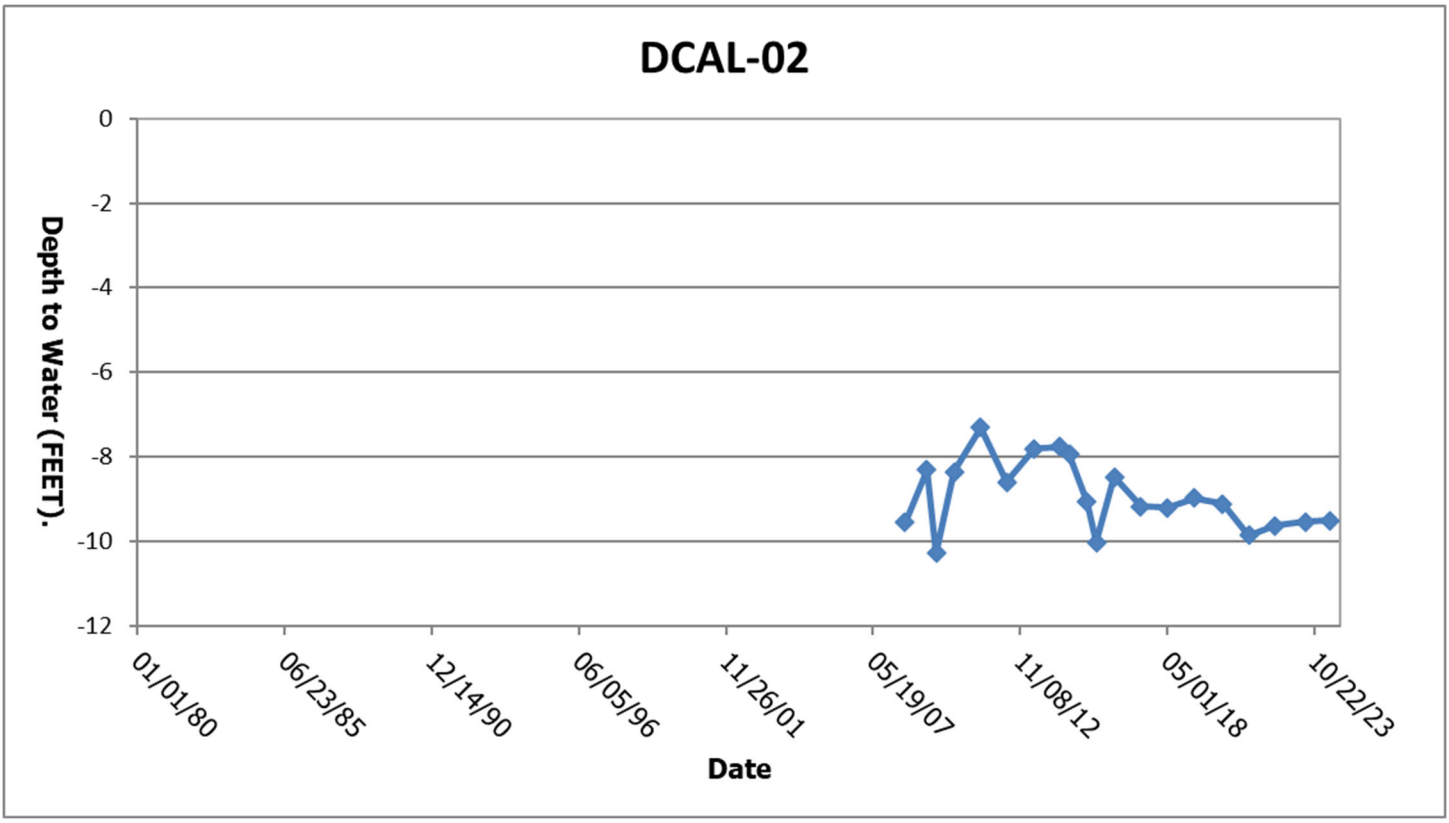
Location	Date	Static Water Level FT BTOC	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Fluoride N MG/L	Iron D MG/L	Manganese D MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	TDS, Lab N MG/L
WHAL7-2	5/20/2024	5.21	1590	7.5	9.9	0.3	0.167	0.067	0.322	< 0.01	< 2	203	714
WOV14	5/20/2024	10.25	3710	7.7	9.8	0.83	1.04	0.025	0.156	< 0.01	< 2	505	980
WOV17	5/20/2024	37.86	4640	7.6	11.1		0.797	0.078					4420
WOV25	5/23/2024	23.11	1720	7.6	10.2	0.44	0.226	< 0.01	2.09	< 0.01	3.1	326	748
WSC25*	5/23/2024		1370	7.2	9.8	0.17	0.553	< 0.01	0.068	< 0.01	< 2	258	712
WSOV25	5/23/2024	6.93	1990	7.1	10	0.18	0.223	0.144	< 0.02	< 0.01	< 2	733	1600
WW14	5/20/2024	7.25	2470	7.3	9.6	1.16	0.67	0.611	1.87	0.055	< 2	2710	4450
WW17	5/20/2024	22.18	960	7.8	10.9		0.357	0.017					582
WW25	5/23/2024	19.59	810	7.8	10.6	0.68	0.155	< 0.01	0.216	< 0.01	< 2	262	608
WWC17	5/20/2024	8.04											
WWC25	5/23/2024	2.31	1460	7.9	9.5	0.56	< 0.06	< 0.01	< 0.02	< 0.01	< 2	208	906
WWCOV25	5/23/2024	87.78	2190	7	9.7	0.26	0.218	0.188	< 0.02	< 0.01	< 2	859	1820
WWCU25	5/23/2024	100.83	1090	8.5	10.4	1.23	0.13	< 0.01	0.037	< 0.01	< 2	69	664

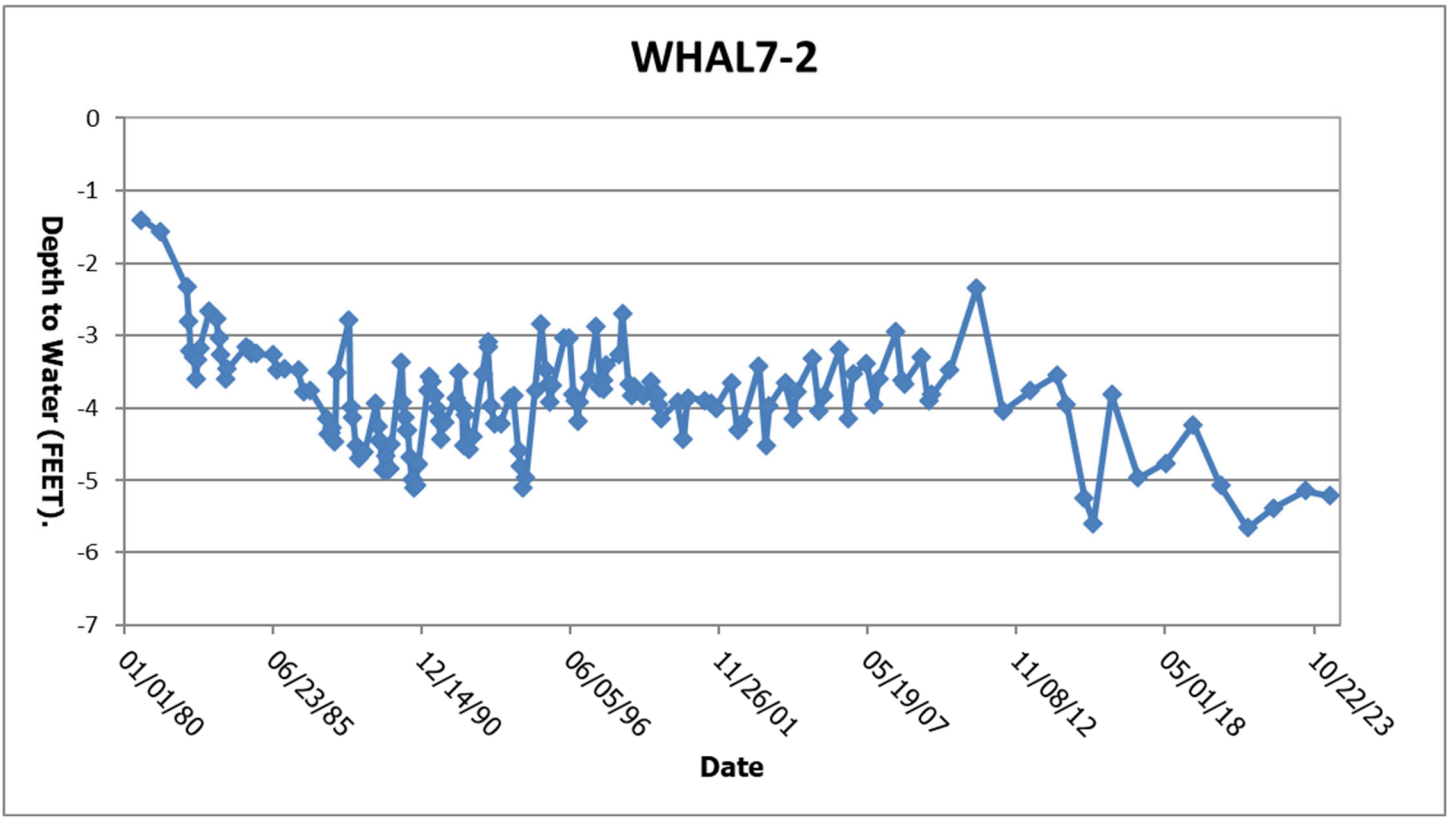
Note

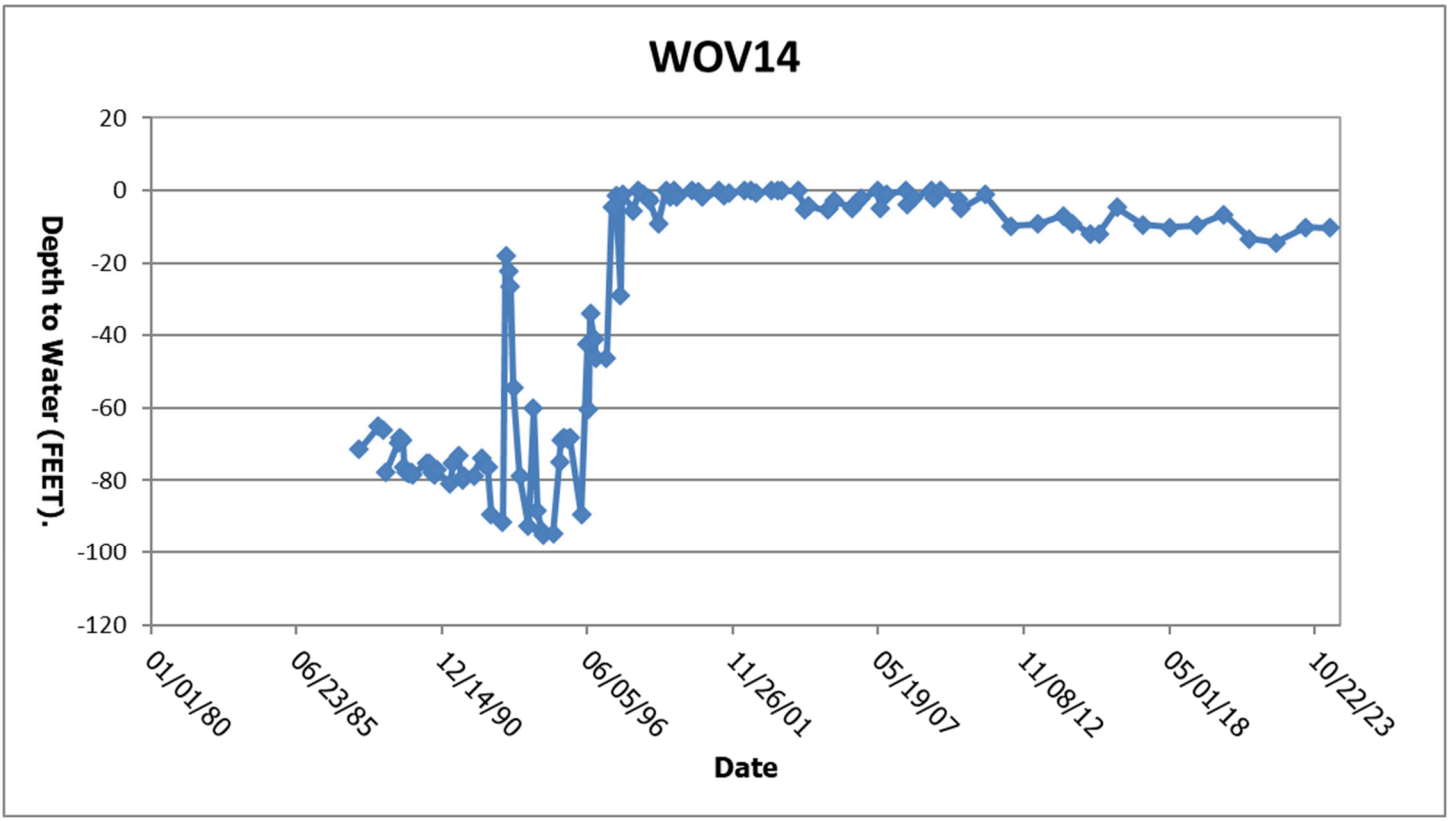
* The well casing at WSC25 is damaged and the static water level could not be measured

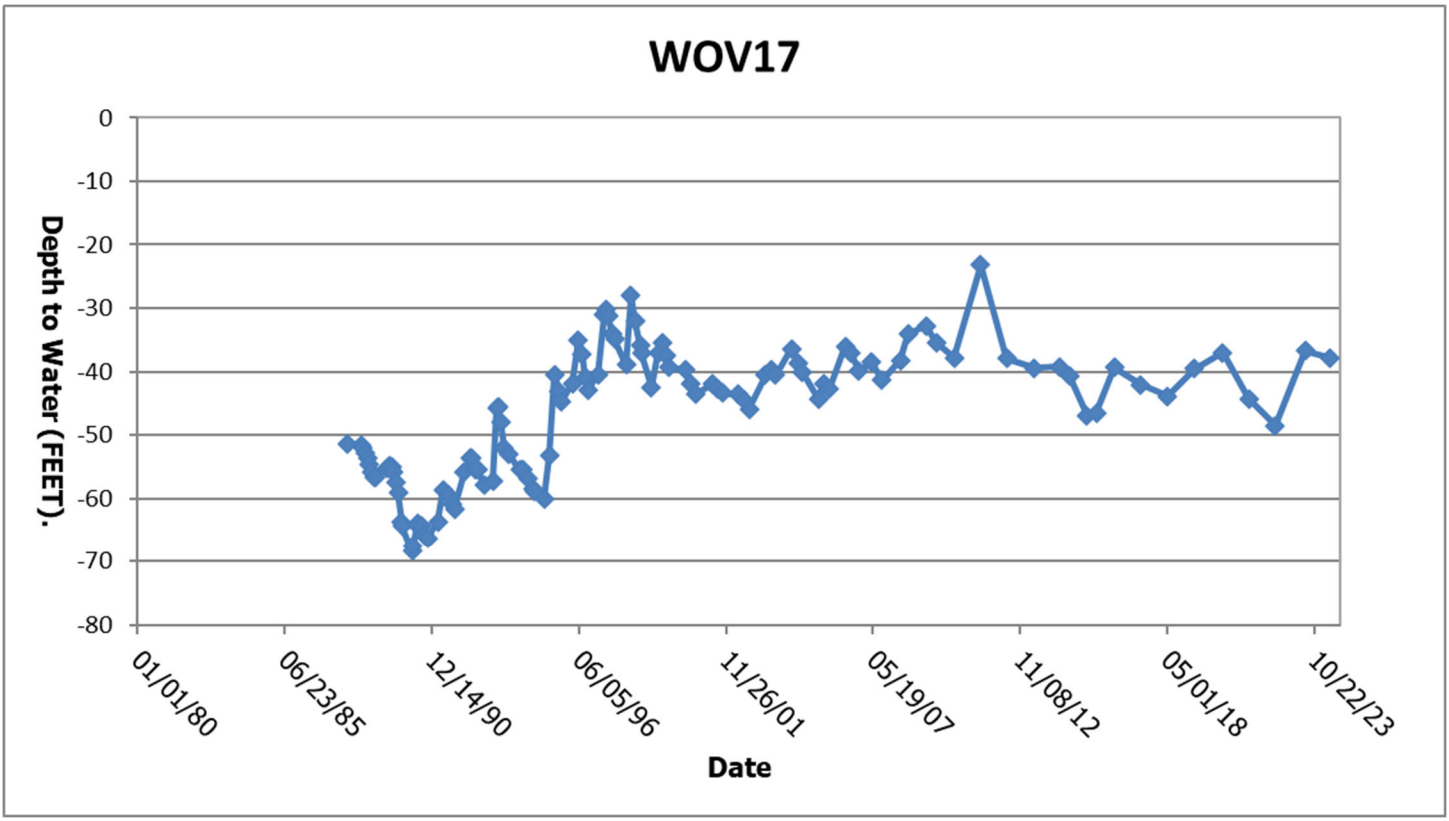
APPENDIX C

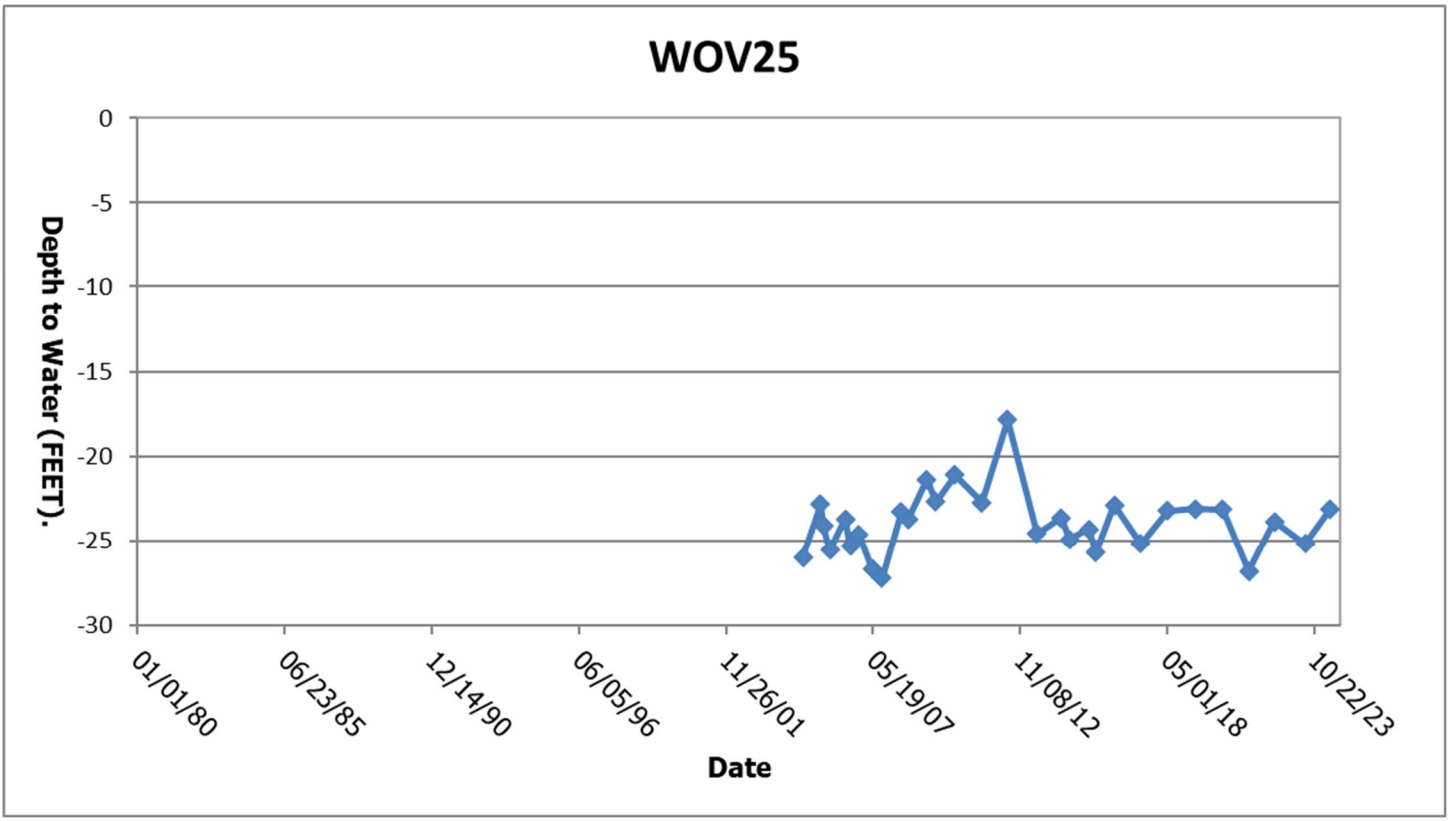
GROUNDWATER HYDROGRAPHS

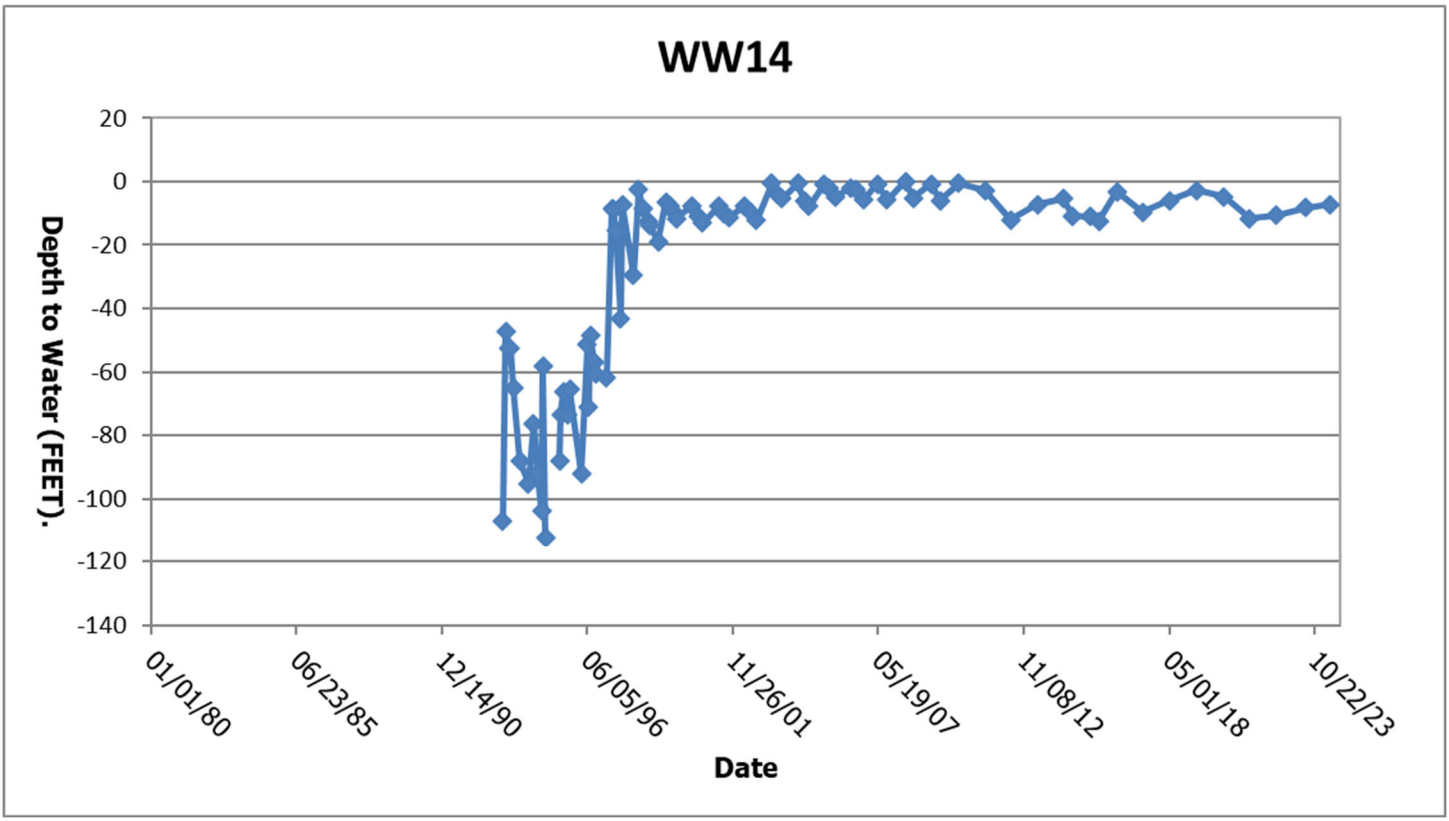

DCAL-02
Depth to Water (FEET).
0
-2
-4
-6
-8
-10
-12
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

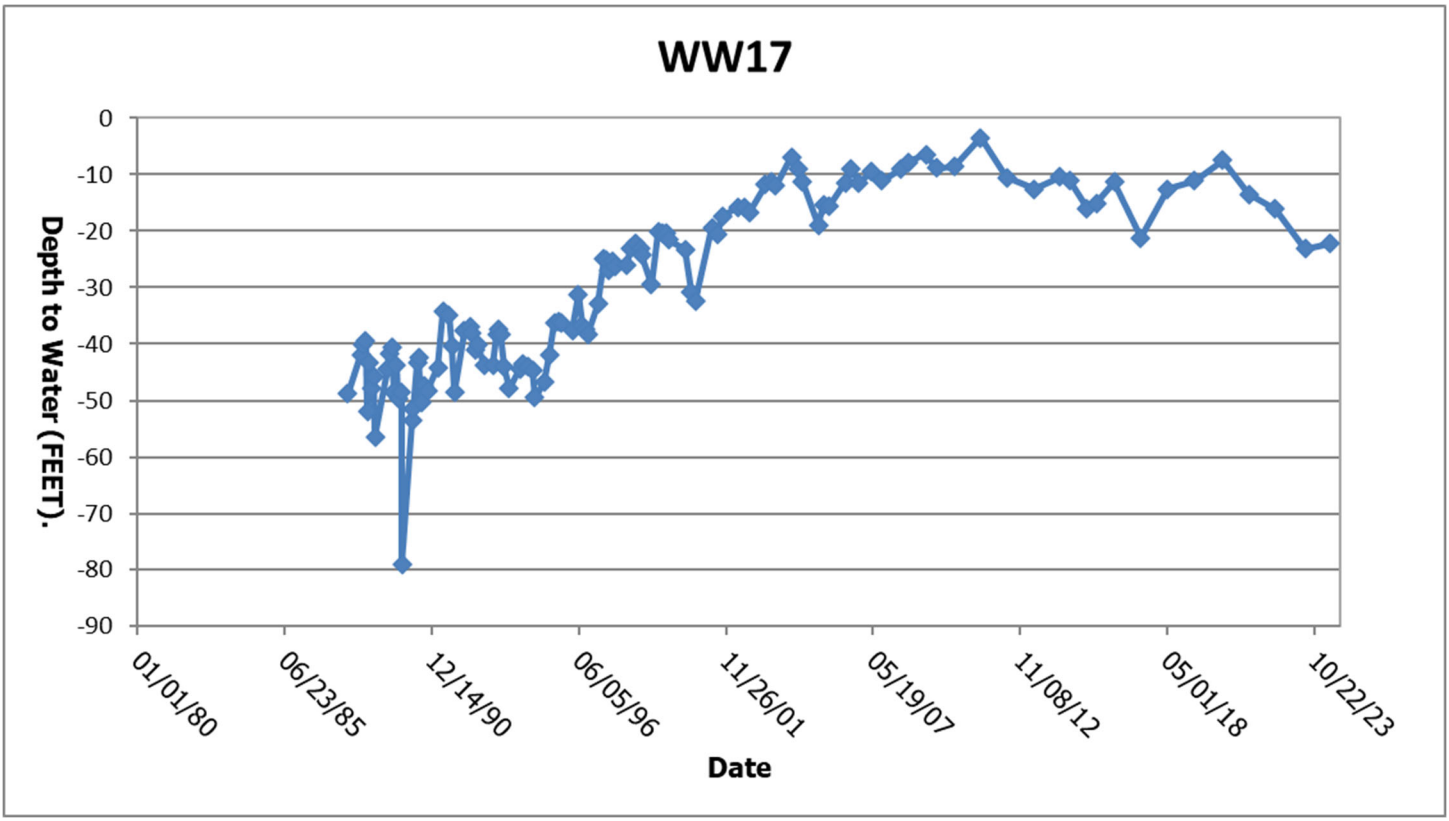

WHAL7-2
Depth to Water (FEET).
0
-1
-2
-3
-4
-5
-6
-7
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

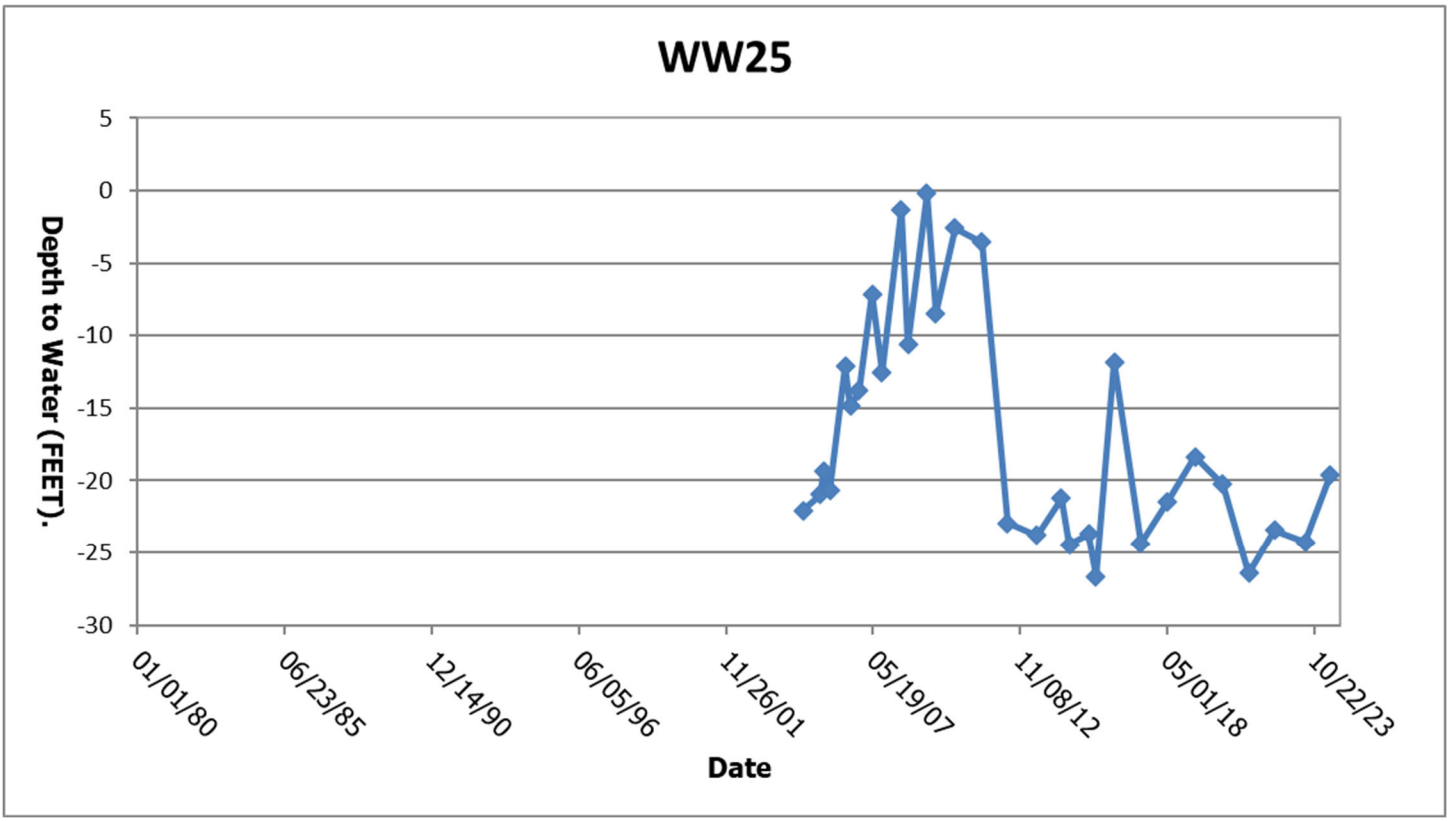

WOV14
Depth to Water (FEET).
20
0
-20
-40
-60
-80
-100
-120
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

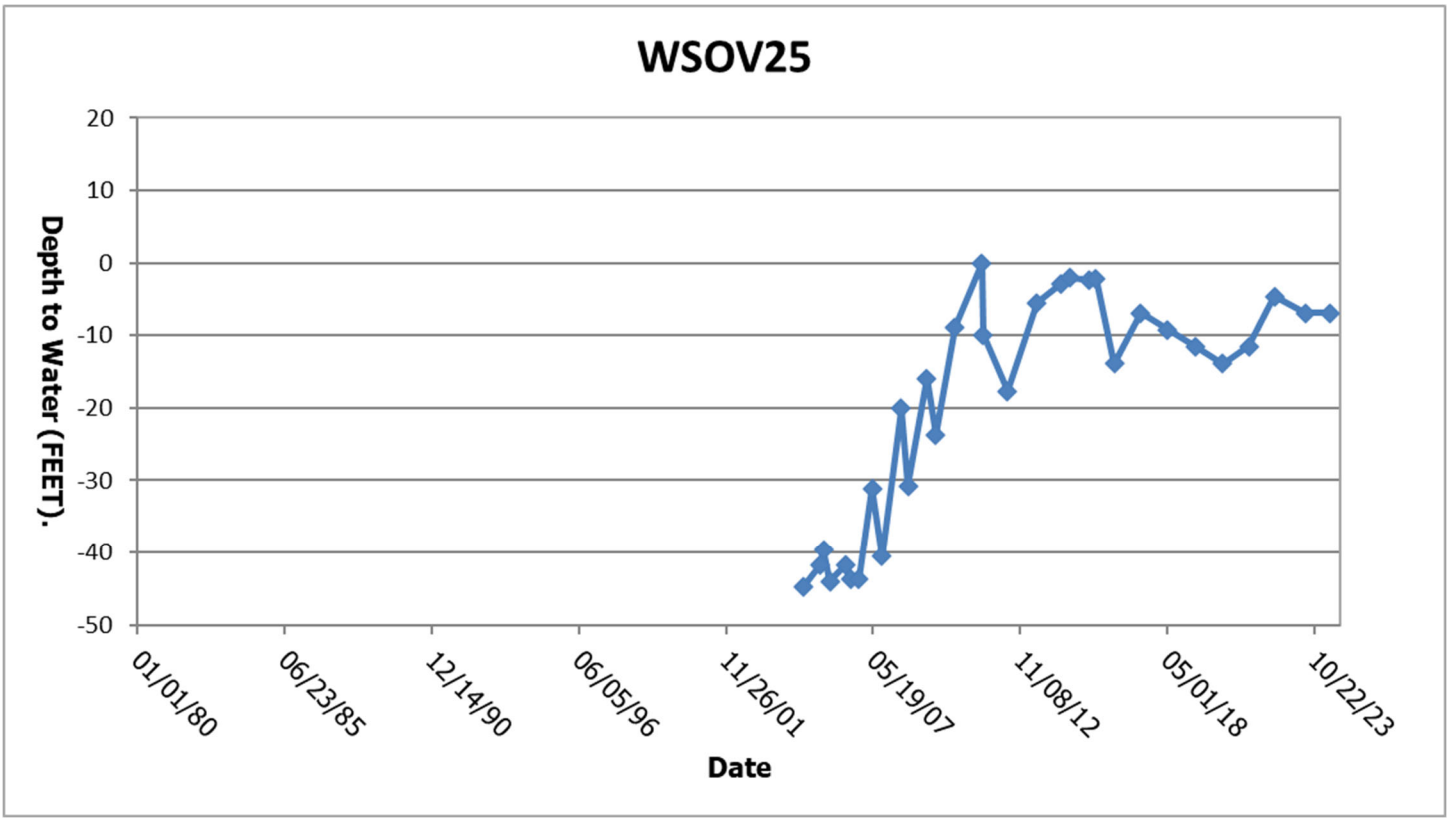

WOV17
Depth to Water (FEET).
0
-10
-20
-30
-40
-50
-60
-70
-80
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

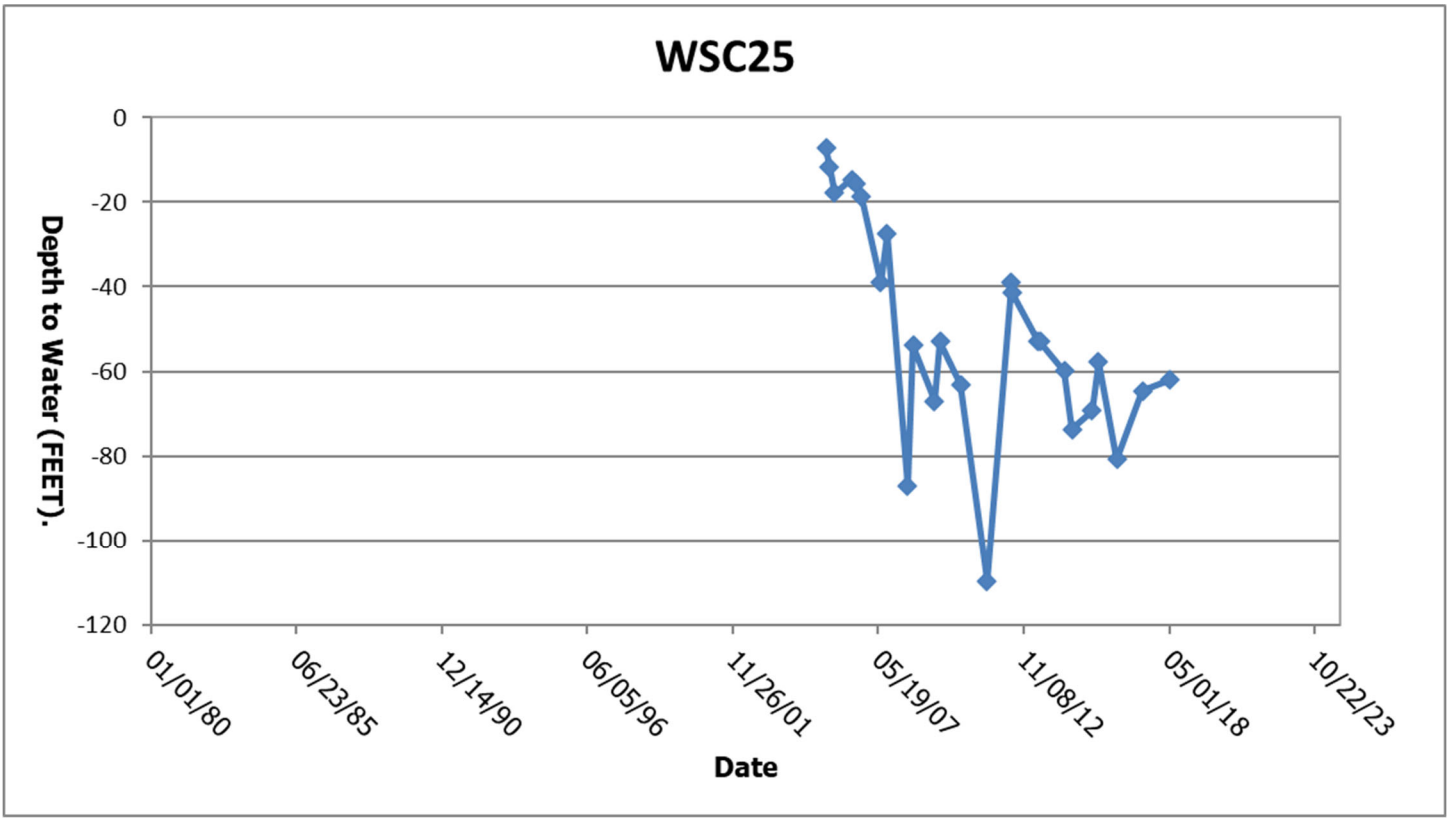

WOV25
0
-5
-10
-15
-20
-25
-30
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

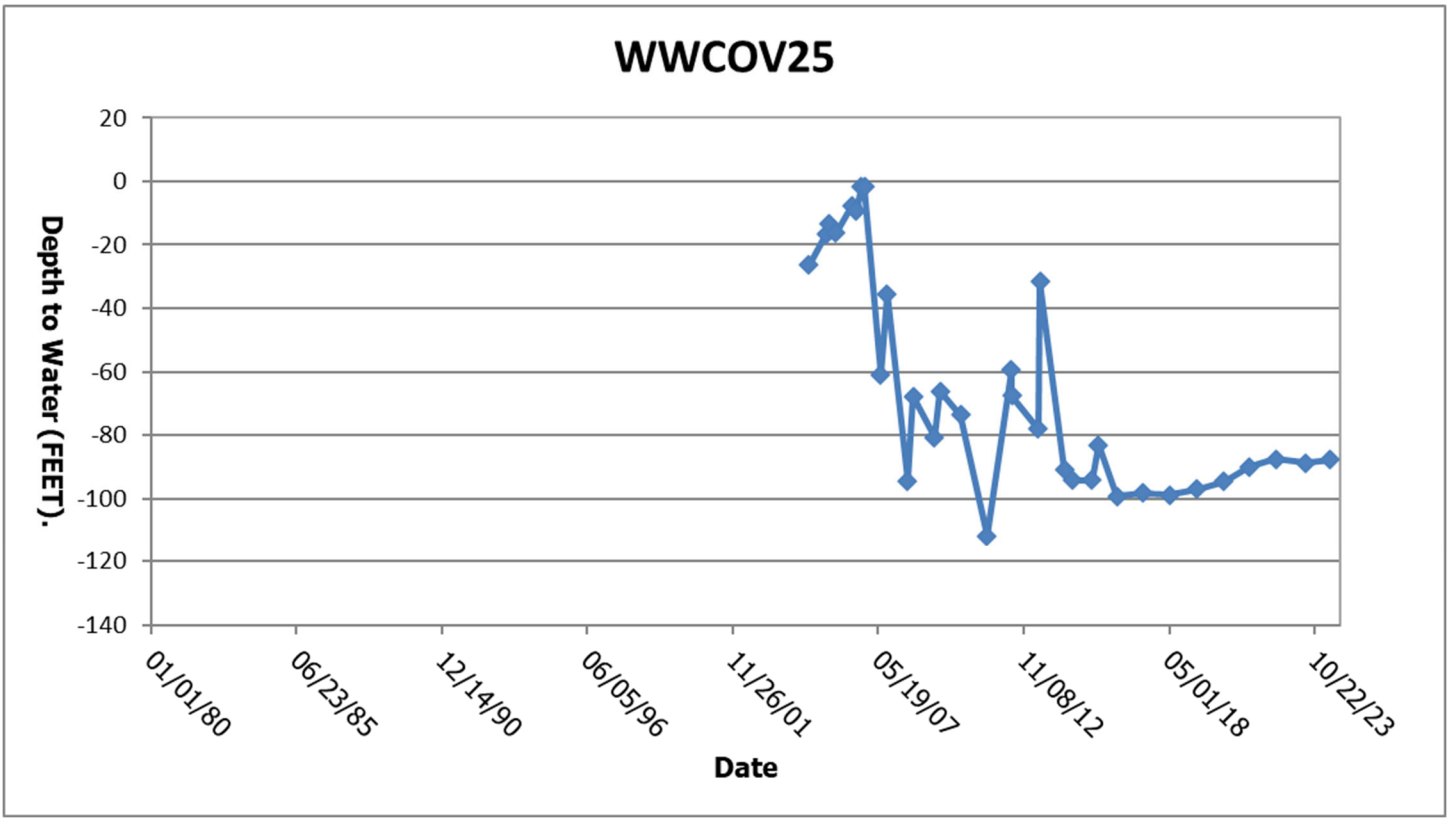

WW14
20
0
-20
-40
-60
-80
-100
-120
-140
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

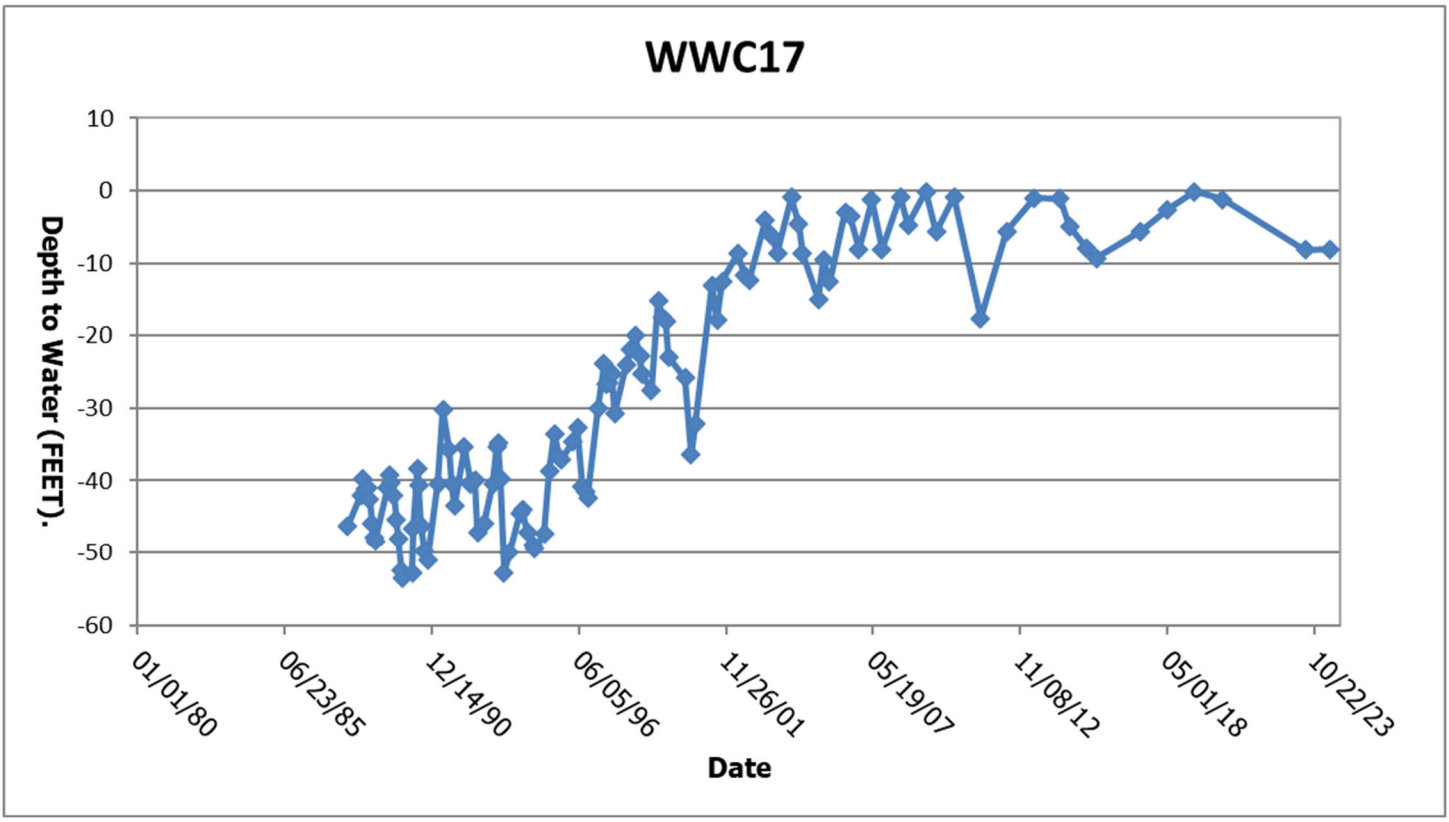

WW17
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

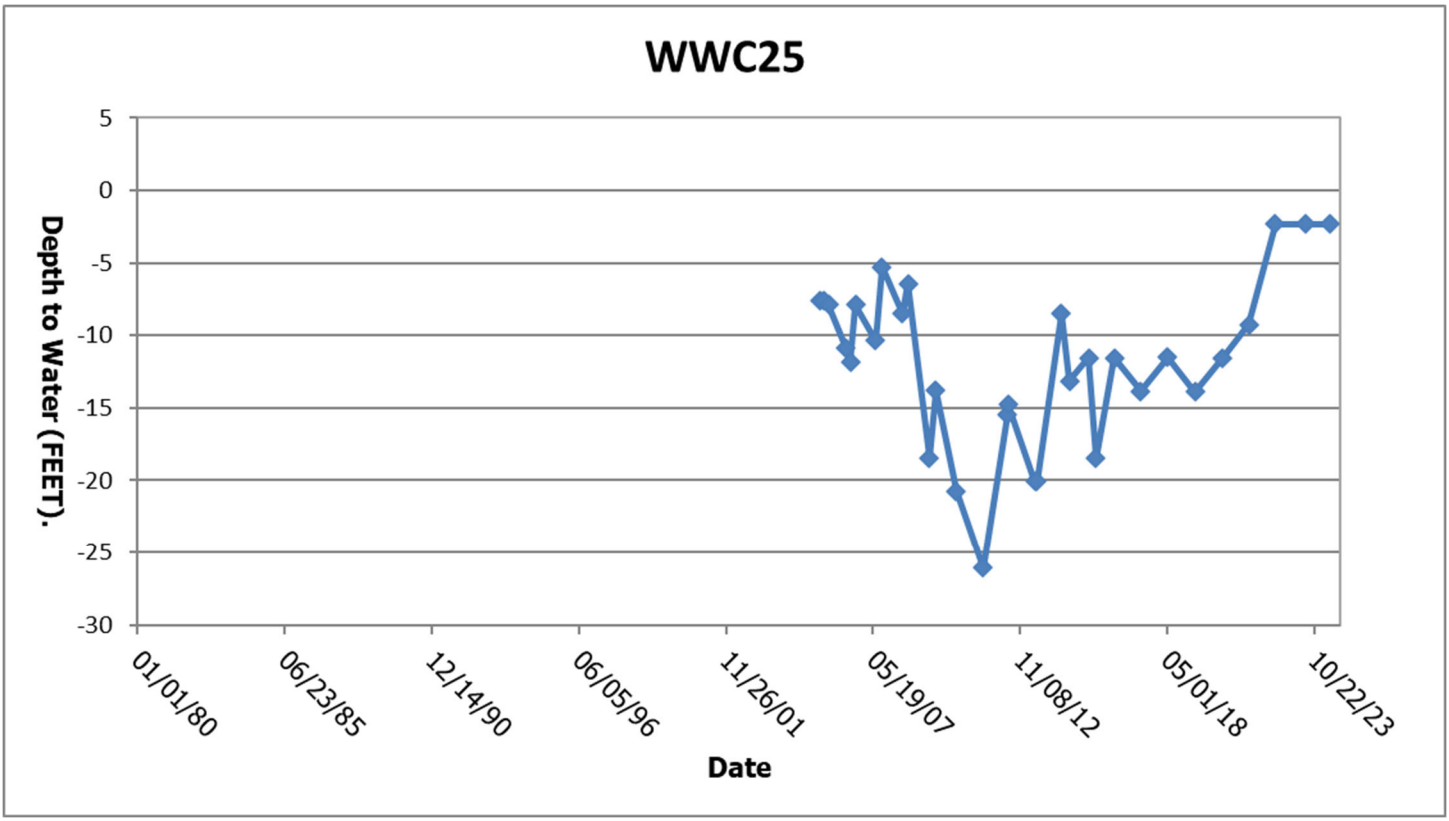

WW25
5
0
-5
-10
-15
-20
-25
-30
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

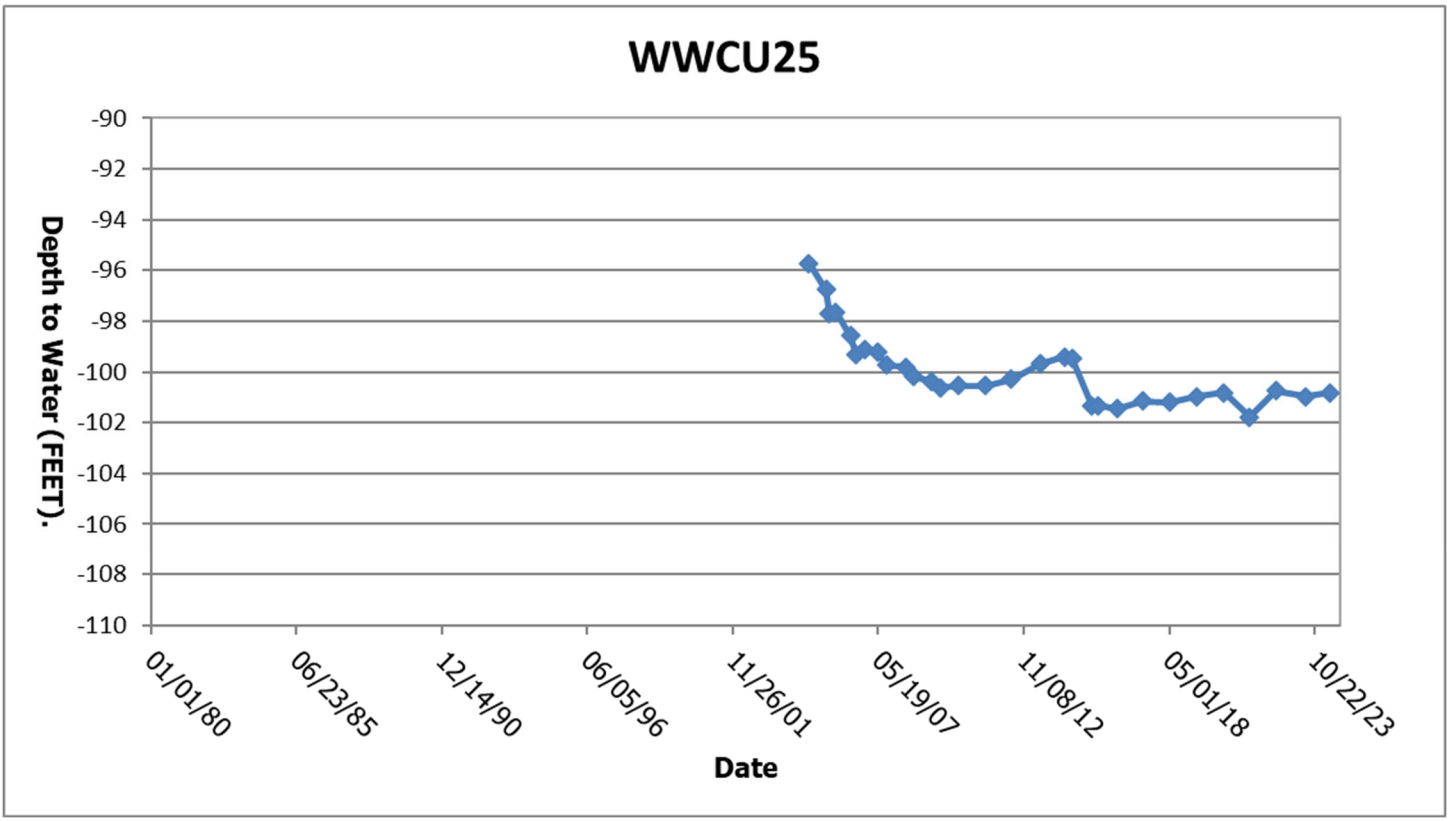

WSOV25
Depth to Water (FEET).
20
10
0
-10
-20
-30
-40
-50
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date


WSC25
Depth to Water (FEET).
0
-20
-40
-60
-80
-100
-120
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date


WWCOV25
20
0
-20
-40
-60
-80
-100
-120
-140
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date


WWC17
10
0
-10
-20
-30
-40
-50
-60
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date


WWC25
5
0
-5
-10
-15
-20
-25
-30
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date


WWCU25
-90
-92
-94
-96
-98
-100
-102
-104
-106
-108
-110
Depth to Water (FEET).
01/01/80
06/23/85
12/14/90
06/05/96
11/26/01
05/19/07
11/08/12
05/01/18
10/22/23
Date

APPENDIX D

SURFACE WATER QUALITY DATA

Table D.1 Dry Creek Yampa Segment 13d stream point analytical data for water year 2024.

Location	Date	Flow N MGD	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
WSH9	5/28/2024	0.135	443	8.2	12.1	< 0.06	0.158	0.22						
WSH9	6/12/2024	0.062	736	8.1	15.3	0.115	0.496	0.695	0.0353					0.29
WSH9	7/9/2024	0.011	786	7.8	15.4	< 0.06	0.832	0.924						
WSH9	9/3/2024	0												
WSH7	5/28/2024	2.1	1158	8.5	16.6	0.0228	0.353	**1.49**	0.0622					0.63
WSH7	6/12/2024	0.092	1396	8.1	16.4	0.126	0.725	**2.25**	0.0815					0.54
WSH7	7/9/2024	0.004	1713	8.1	16.7	0.12	1.16	**2.64**						
WSH7	9/3/2024	0												
WSHF1	5/28/2024	0.96	1623	8.4	17.7	0.0268	0.441	**1.54**	0.124	< 0.2	< 0.1	0.081	< 0.01	0.58
WSHF1	6/12/2024	0.146	1905	8.3	14.3	0.0835	1.08	**2.55**	0.0637	< 0.2	< 0.1	0.143	< 0.01	0.4
WSHF1	7/9/2024	0.04	1878	8.2	17.4	< 0.12	0.701	**1.75**						0.47
WSHF1	9/3/2024	0.013	2677	8.4	18.7	0.0782	1.52	**3.88**	0.237					< 0.2
WSD5	5/28/2024	1.97	1630	8.3	18.6	0.0838	0.211	0.476	0.19	< 0.2	< 0.1	< 0.02	< 0.01	0.34
WSD5	6/12/2024	0.139	1984	8.2	14.9	0.089	0.369	0.544	0.141	< 0.2	< 0.1	< 0.02	< 0.01	0.25
WSD5	7/9/2024	0.003	2687	7.7	17.7	< 0.12	0.443	0.676						< 0.2
WSD5	9/3/2024	0												
Yampa Segment 13d Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01**	Varies***	100	0.05	18.4
Yampa Segment 13d Standards - Chronic		-	-	-	-	-	-	1.11 (May-Feb) 3.04 (Mar-Apr)	2.618	-	-	-	-	4.6
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
WSH9	5/28/2024					264	< 5
WSH9	6/12/2024	0.26	0.36			342	14
WSH9	7/9/2024					446	12
WSH9	9/3/2024						
WSH7	5/28/2024	0.6	0.67			908	48
WSH7	6/12/2024	0.47	0.51			1100	62
WSH7	7/9/2024					1220	77
WSH7	9/3/2024						
WSHF1	5/28/2024	0.52	0.66	756	< 0.02	1360	52
WSHF1	6/12/2024	0.39	0.51	970	< 0.02	1750	92
WSHF1	7/9/2024		0.4	1240		2150	41
WSHF1	9/3/2024	0.23	0.41			3330	134
WSD5	5/28/2024	0.33	0.33	780	< 0.02	1450	13
WSD5	6/12/2024	0.24	0.26	956	< 0.02	1770	13
WSD5	7/9/2024		< 0.2	1110		2050	12
WSD5	9/3/2024						
Yampa Segment 13d Standards - Acute		-	-	-	0.002****	-	-
Yampa Segment 13d Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

* The manganese agricultural use standard is only applicable where irrigation water is applied to soils with a pH value less than 6.0. The soils in this area are alkaline.

** Analytic detection limit is an order of magnitude greater than the 0.01 mg/L mercury standard.

*** Table value standard (TVS) for ammonia varies based on temperature and pH. See WQCC Regulation 33 for equation.

**** Analytic detection limit is an order of magnitude greater than 0.002 mg/L sulfide standard.

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

Table D.2. Dry Creek Segment 13d NPDES Outfall 017 analytical data for water year 2024.

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	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES17	10/27/2023	0											
NPDES17	11/6/2023	0.003	8.8	N			0.219		1.05	1.15		1340	< 0.1
NPDES17	12/5/2023	0.003	8.8	N			0.166		0.88	0.74		1240	< 0.1
NPDES17	1/10/2024	0.003	8.8	N			0.151		0.73	0.79		1120	< 0.1
NPDES17	2/1/2024	0.003	8.7	N			0.122		0.67	0.51		1570	< 0.1
NPDES17	3/26/2024	0											
NPDES17	4/23/2024	0.126	8.2	N			**1.03**		0.87	0.8		338	< 0.1
NPDES17	5/28/2024	0.129	8.4	N	0.179	0.134	0.231	0.54	0.45	0.62	5	308	< 0.1
NPDES17	6/10/2024	0.084	8.7	N			0.218		0.46	0.41		344	< 0.1
NPDES17	7/9/2024	0.02	8.7	N	< 0.06	0.097	0.161	0.99		0.83	< 5	626	< 0.1
NPDES17	8/19/2024	0.007	8.6	N			0.215		0.84	0.93		730	< 0.1
NPDES17	9/3/2024	0.003	8.7	N			0.472		0.97	0.98		872	< 0.1
NPDES Limit	Daily Max		6.5 - 9.0	10*	-	-	Report	-	Report	-	-	Report	0.5
	Monthly Avg.		NA	NA	-	-	1	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	4.6	-	-	-	-	

Note

* Limit only applicable if presence of oil or grease is detected

** This outfall does not have an NPDES discharge monitoring requirement for this parameter

Bold Analyte exceeds the NPDES limit or Yampa Segment 13d Standard

Table D.3. Dry Creek Segment 13d NPDES Outfall 016 analytical data for water year 2024.

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	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES16	10/27/2023	0.037	8.3	N			< 0.12		0.65	0.62		2290	< 0.1
NPDES16	11/6/2023	0.036	8.4	N			< 0.12		0.69	0.84		2370	< 0.1
NPDES16	12/5/2023	0.035	8.4	N			< 0.06		1.41	1.13		2420	< 0.1
NPDES16	1/10/2024	0.035	8.4	N			< 0.06		1.47	1.71		2450	< 0.1
NPDES16	2/1/2024	0.036	8.3	N			0.062		1.85	1.81		2420	< 0.1
NPDES16	3/26/2024	0.041	8.3	N			0.075		1.97	1.79		1670	< 0.1
NPDES16	4/23/2024	0.351	7.9	N			**1.17**		0.78	0.72		676	< 0.1
NPDES16	5/28/2024	0.236	8.2	N	0.0756	0.0599	0.089	0.85	0.76	0.86	< 5	1920	< 0.1
NPDES16	6/10/2024	0.2	8.2	N			< 0.06		0.85	0.69		1980	< 0.1
NPDES16	7/9/2024	0.053	8	N	< 0.12	< 0.12	< 0.12	0.85		0.78	< 5	2240	< 0.1
NPDES16	8/19/2024	0.047	8	N			< 0.12		0.65	0.78		2180	< 0.1
NPDES16	9/3/2024	0.038	8.2	N			0.066		0.62	0.72		2250	< 0.1
NPDES Limit	Daily Max		6.5 - 9.0	10*	-	-	Report	-	Report	-	-	Report	0.5
	Monthly Avg.		NA	NA	-	-	1	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	4.6	-	-	-	-	

Note

* Limit only applicable if presence of oil or grease is detected

** This outfall does not have an NPDES discharge monitoring requirement for this parameter

Bold Analyte exceeds the NPDES limit or Yampa Segment 13d Standard

Table D.4. Dry Creek Segment 13d NPDES Outfall 006 analytical data for water year 2024.

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	Manganese PD MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES6	10/27/2023	0.053	8.1	N			< 0.12	< 0.02		0.23	< 0.5		3940	< 0.1
NPDES6	11/6/2023	0.052	8.3	N			< 0.12			< 0.5	0.47		4000	< 0.1
NPDES6	12/5/2023	0.05	8.4	N			0.13			< 0.5	< 0.5		4180	< 0.1
NPDES6	1/10/2024	0.045	8.4	N			0.159	0.91		< 0.2	< 0.2		3970	< 0.1
NPDES6	2/1/2024	0.056	8.3	N			0.154			0.3	0.55		3890	< 0.1
NPDES6	3/26/2024	0.056	8.2	N			0.14			1.09	0.95		2290	< 0.1
NPDES6	4/23/2024	0.27	8.1	N			0.307	0.0616		1.9	1.72		1410	< 0.1
NPDES6	5/28/2024	0.212	8.2	N	0.109	0.0974	< 0.12		0.54	0.48	0.59	12	3620	< 0.1
NPDES6	6/10/2024	0.174	8	N			0.095			0.3	0.37		3780	< 0.1
NPDES6	7/9/2024	0.085	7.9	N	< 0.12	0.129	0.143	0.049	< 0.5		0.26	5	3830	< 0.1
NPDES6	8/19/2024	0.081	8	N			< 0.12			< 0.2	0.23		3980	0.46
NPDES6	9/3/2024	0.057	8.1	N			< 0.12			< 0.2	< 0.2		3920	< 0.1
NPDES Limit	Daily Max		6.5 - 9.0	10*	-	-	Report	Report	-	Report	-	-	Report	0.5
	Monthly Avg.		NA	NA	-	-	1	Report	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	4.738	18.4	-	-	-	-	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	2.618	4.6	-	-	-	-	

Note

* Limit only applicable if presence of oil or grease is detected

** This outfall does not have an NPDES discharge monitoring requirement for this parameter

Bold Analyte exceeds the NPDES limit or Yampa Segment 13d Standard

Table D.5. Dry Creek Segment 13d NPDES Outfall 005 analytical data for water year 2024.

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	TSS N MG/L	TDS, Lab N MG/L	Cadmium PD UG/L
NPDES5	10/27/2023	0											
NPDES5	11/6/2023	0											
NPDES5	12/5/2023	0											
NPDES5	1/10/2024	0											
NPDES5	2/1/2024	0											
NPDES5	3/26/2024	0											
NPDES5	4/23/2024	0.094	8.5	N			0.234		0.93	0.91		2080	< 0.05
NPDES5	5/28/2024	0.045	8.3	N	0.0491	0.0299	< 0.3	< 0.5	0.3	0.4	9	4030	
NPDES5	6/10/2024	0.002	8.4	N			< 0.06					4360	
NPDES5	7/9/2024	0											
NPDES5	8/19/2024	0											
NPDES5	9/4/2024	0											
NPDES Limit	Daily Max		6.5 - 9.0	10*	-	-	Report	-	Report	-	-	Report	Report
	Monthly Avg.		NA	NA	-	-	1	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	9.2
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	4.6	-	-	-	-	1.2

Location	Date	Chromium PD UG/L	Copper PD UG/L	Lead PD UG/L	Mercury T UG/L	Nickel PD UG/L	Silver PD UG/L	Zinc PD MG/L	Settleable Solids ML/L
NPDES5	10/27/2023								
NPDES5	11/6/2023								
NPDES5	12/5/2023								
NPDES5	1/10/2024								
NPDES5	2/1/2024								
NPDES5	3/26/2024								
NPDES5	4/23/2024	< 0.05	< 0.5	0.88	0.00178	11.2	< 0.1	< 0.02	< 0.1
NPDES5	5/28/2024								< 0.1
NPDES5	6/10/2024								< 0.1
NPDES5	7/9/2024								
NPDES5	8/19/2024								
NPDES5	9/4/2024								
NPDES Limit	Daily Max	Report	Report	Report	Report	Report	Report	Report	0.5
	Monthly Avg.	Report	Report	Report	Report	Report	Report	Report	Report
Yampa Segment 13d Standards - Acute		1773	50	281	-	1513	22	0.565	
Yampa Segment 13d Standards - Chronic		231	29	11	0.01	168	3.5	0.428	

Note

* Limit only applicable if presence of oil or grease is detected

** This outfall does not have an NPDES discharge monitoring requirement for this parameter

Bold Analyte exceeds the NPDES limit or Yampa Segment 13d Standard

Table D.6. Statistical summary of pre-mine total recoverable iron at SIIW stream monitoring points.

Watershed	Dates	Location	Total Recoverable Iron (mg/L)			
			N	Mean	Min	Max
Dry Creek / Hubberson	Apr 1987 - Sept 1989	WSH7	8	1.90	0.21	7.8
	Apr 1979 - Sept 1989	WSHF1	89	9.10	0.15	240
	Mar 1983 - Sept 1989	WSD5	46	6.18	0.21	106
Sage Creek	May 1991 - Sept 1995	WSSF3	25	0.22	< 0.02	1.09

Note
Non-detect value applied to all censored data for statistical calculations

Table D.7. Sage Creek Segment 13e stream point analytical data for water year 2024.

Location	Date	Flow N MGD	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	Selenium D UG/L
WSSF3	5/28/2024	1.013	1040	8.3	14.9	0.254	0.0483	< 0.2	< 0.1	< 0.02	< 0.01	0.33
WSSF3	6/12/2024	0.139	1079	8.4	11.3	0.372	0.031	< 0.2	< 0.1	< 0.02	< 0.01	0.27
WSSF3	7/9/2024	0.02	1512	8.2	14.6							0.22
WSSF3	9/3/2024	0										
Yampa Segment 13e Standards - Acute		-	-	6.5 - 9.0	-	-	4.738	0.01**	Varies***	100	0.05	18.4
Yampa Segment 13e Standards - Chronic		-	-	-	-	1	2.618	-	-	-	-	4.6
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
WSSF3	5/28/2024	0.3	0.33	326	< 0.02	716	7
WSSF3	6/12/2024	0.25	0.31	386	< 0.02	830	11
WSSF3	7/9/2024	0.21	0.2	434		944	
WSSF3	9/3/2024						
Yampa Segment 13e Standards - Acute		-	-	-	0.002****	-	-
Yampa Segment 13e Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

The current conditions temporary modification for the Segment 13e chronic selenium standard expired on 12/31/2023

* The manganese agricultural use standard is only applicable where irrigation water is applied to soils with a pH value less than 6.0. The soils in this area are alkaline.

** Analytic detection limit is an order of magnitude greater than the 0.01 mg/L mercury standard.

*** Table value standard (TVS) for ammonia varies based on temperature and pH. See WQCC Regulation 33 for equation.

**** Analytic detection limit is an order of magnitude greater than 0.002 mg/L sulfide standard.

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

Table D.8. Sage Creek Segment 13e NPDES Outfall 009 and 015 analytical data for water year 2024.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES9	10/27/2023	0				
NPDES9	11/6/2023	0				
NPDES9	12/5/2023	0				
NPDES9	1/10/2024	0				
NPDES9	2/1/2024	0				
NPDES9	3/26/2024	0				
NPDES9	4/23/2024	0				
NPDES9	5/28/2024	0				
NPDES9	6/10/2024	0				
NPDES9	7/9/2024	0				
NPDES9	8/19/2024	0				
NPDES9	9/3/2024	0				
NPDES15	10/27/2023	0.002	8.1	N	444	< 0.1
NPDES15	11/6/2023	0.002	8.7	N	458	< 0.1
NPDES15	12/5/2023	0.001	8.7	N	476	< 0.1
NPDES15	1/10/2024	0				
NPDES15	2/1/2024	0				
NPDES15	3/26/2024	0				
NPDES15	4/23/2024	0.07	7.9	N	358	< 0.1
NPDES15	5/28/2024	0.075	8	N	302	< 0.1
NPDES15	6/10/2024	0.064	8.2	N	344	< 0.1
NPDES15	7/9/2024	0.015	8.2	N	392	< 0.1
NPDES15	8/19/2024	0.003	8.2	N	3050	< 0.1
NPDES15	9/3/2024	0.002	8.1	N	416	< 0.1
NPDES Limit	Daily Max		6.5 - 9.0	10*	Report	0.5
	Monthly Avg.		NA	NA	Report	Report
Yampa Segment 13e Standards - Acute			6.5 - 9.0	-	-	
Yampa Segment 13e Standards - Chronic			-	-	-	

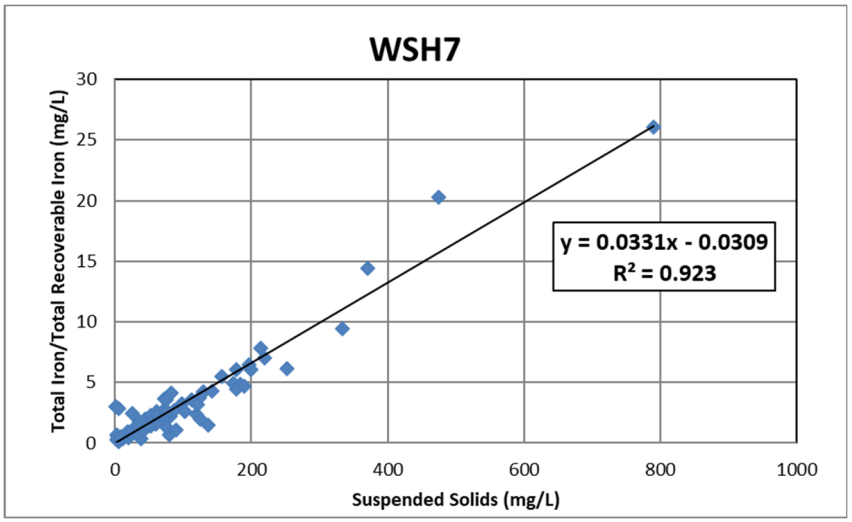
Note

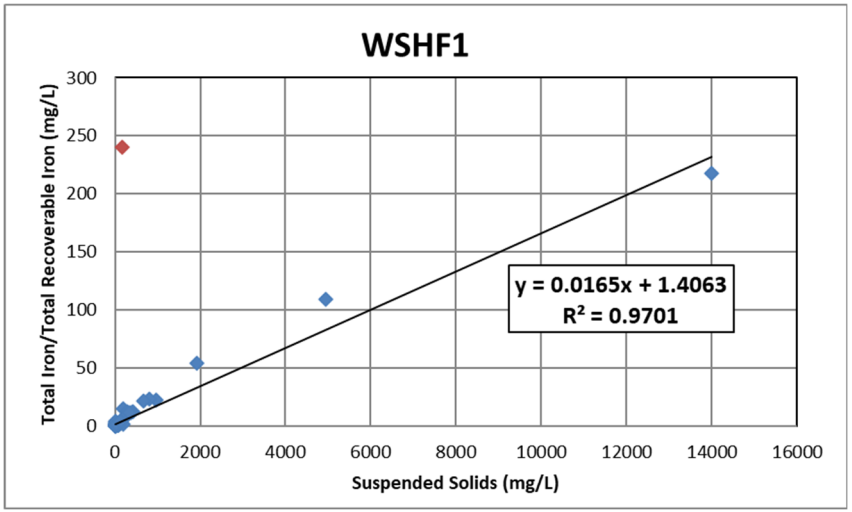
* Limit only applicable if presence of oil or grease is detected

Settleable solids data only submitted to SCC database if result exceeds limit. No exceedances occurred during this time period.

Bold Analyte exceeds the NPDES limit or Yampa Segment 13d Standard

Figure D.1. Suspended solids vs total iron/total recoverable iron at Dry Creek stream points WSH7 and WSHF1. Note that a single sample from WSHF1 collected on April 27, 1979 was determined to be a statistical outlier. This sample is designated in red on the WSHF1 plot and was not included in the correlation analysis.





APPENDIX E

SPRING WATER QUALITY DATA

Table E.1. Analytical data for springs sampled during the 2024 water year.

Location	Date	Flow N MGD	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	Selenium D UG/L
WSPG7	6/13/2024	0.006	1684	7	13.7	< 0.06	0.0234	< 0.2	< 0.1	0.597	< 0.01	0.19
WSPG46	6/13/2024	0	4076	7.5	17.1	2.13	0.946	< 0.2	0.197	0.021	< 0.01	< 0.2
WSPG47	6/13/2024	0.009	2341	7.2	12.9	1.47	0.171					< 0.1
WSPG50	6/12/2024	0.011	2833	7.2	13.8	0.066	1.03	< 0.2	< 0.1	0.207	< 0.01	< 0.1
WSSPG1	6/13/2024	0.01	4578	7.8	14.6	2.2	2.05					< 0.5
WSSPG2	6/13/2024	0.004	3361	7.9	17.4	< 0.12	0.0113	< 0.2	< 0.1	1.49	< 0.01	1.42
WSSPG3	6/13/2024	0.017	4307	6.6	14.3	< 0.3	0.194	< 0.2	< 0.1	0.126	< 0.01	< 0.2
WSSPG4	6/13/2024	0.035	4410	7.8	17.8	< 0.12	0.472	< 0.2	< 0.1	0.119	< 0.01	< 0.2
WSSPG5	6/12/2024	0.091	2677	7	13.4	0.089	1.02	< 0.2	< 0.1	0.215	< 0.01	< 0.1
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
WSPG7	6/13/2024	0.2	0.21	505	< 0.02	1100	< 5
WSPG46	6/13/2024	< 0.2	< 0.2	1650	< 0.02	2870	38
WSPG47	6/13/2024	< 0.1	< 0.1			1630	< 5
WSPG50	6/12/2024	< 0.1	< 0.1	999	< 0.02	1960	6
WSSPG1	6/13/2024	< 0.2	< 0.5			4330	34
WSSPG2	6/13/2024	1.3	1.44	1430	< 0.02	2700	9
WSSPG3	6/13/2024	< 0.2	< 0.5	2630	< 0.02	4510	< 5
WSSPG4	6/13/2024	< 0.2	< 0.2	2250	< 0.02	3780	7
WSSPG5	6/12/2024	< 0.1	0.19	964	< 0.02	1970	5
Agricultural Use Standards		-	-	-	-	-	-

Notes

* The manganese agricultural use standard is only applicable where irrigation water is applied to soils with a pH value less than 6.0. The soils in this area are alkaline

Bold Analyte exceeds the Agricultural Use Water Quality Standarc