Williams Fork Mine

2022 Annual Hydrology Report

Submitted March 2023

To: Colorado Division of Reclamation, Mining, and Safety

BY: Moffat County Mining, LLC

Williams Fork Mine

2022 ANNUAL HYDROLOGY REPORT
Permit No. C-1981-044

Submitted to:

Colorado Division of Reclamation Mining and Safety
Denver, Colorado

Submitted by:

Moffat County Mining, LLC
Oak Creek, Colorado

May 2022

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1.0 INTRODUCTION

The following Annual Hydrology Report (AHR) presents hydrologic monitoring data from the Williams Fork underground mine sites near Craig, Colorado for the 2022 calendar year. Site locations are described below. This AHR is provided in fulfillment of reporting requirements under the Colorado State Division of Reclamation, Mining and Safety (DRMS), Permit No. C-81-044. All references to "2022" in this report refer to the 2022 calendar year (January 1, 2022 through December 31, 2022). Monitoring results for prior calendar years (1983 through 2021) are presented in previous AHRs, although selected historical data (period of record – POR) are summarized in some of the tables and figures within this AHR.

Following a discussion of Site Location and Background, this AHR provides a section on the 2022 Hydrologic Monitoring Program, which is further divided into the following subsections:

1) Groundwater Monitoring
2) Surface Water Monitoring

This is followed by the Summary and Conclusions Section. Tables, Figures, and back-up documentation are located in the tabbed sections at the back of this AHR.

2.0 SITE LOCATION AND BACKGROUND

Williams Fork No. 5 and Eagle No. 6 Mines are underground coal mines located approximately seven miles south of Craig, Colorado, on State Highway 13. The mine sites, and adjacent area lie along the northern foot of the Williams Fork Mountains, which trend east to west. The elevation of the permit area ranges from a low of approximately 6,130 feet in the Big Bottom area, to a high of about 7,400 feet in the Williams Fork Mountains. The entire operation is located in Moffat County, Colorado. The general location of the site is shown on Figure 1.

There are two (2) major northwestern Colorado Rivers, which intersect the permit area. These are: 1) the Yampa River and 2) the Williams Fork River. The Yampa River runs from north to south through the permit area, while the Williams Fork River runs from south to north and intersects the Yampa River just north of the mine facilities area. The northern portion of the permit area is dominated by the Big Bottom alluvium, while the southern and eastern portions of the permit area are dominated by the Williams Fork Mountains and the river beds of the Yampa and Williams Fork Rivers.

The Eagle Mine sites are located in an area, which has been historically mined by surface and underground mining. The earliest records of mining indicate that underground mining began in this area in the late 1920's

and early 1930's, while surface strip mining began around 1975. The major mines which have operated in the past are: 1) Wise Hill (1,2,3,4), Williams Fork Strip (1,2,3), and Trapper Strip. The Trapper Strip Mine began operations in 1976 and has continued to date.

Underground mining began at the Eagle No. 5 Mine in 1972, under a subsidiary of the Zigler Coal Co. The Cyprus Empire Corporation (CEC), a subsidiary of the Cyprus Coal Company, subsequently acquired the mines from Zigler in 1982, and began operating under an approved Colorado Mine Land Reclamation Board permit in August, 1983. In 1999**,** CEC was acquired by RAG EC. In April 2004, RAG EC was acquired by Peabody Energy, with the mine owned by Peabody's subsidiary, BTU, and the mine name changing to BTU Empire Corporation (BTU EC). In December 2009, the mine name was changed to William's Fork Mine (WFM)

Hydrologic monitoring has been conducted at the mine site since 1980, primarily by CEC/RAG EC/BTU EC/WFM personnel. A private company (Two Pines Inc.) has also been contracted to assist with some of the hydrologic monitoring over the years. Water quality samples are currently analyzed by ACZ Laboratories, Inc., of Steamboat Springs, Colorado, an USEPA certified laboratory.

The Eagle No. 5 Mine, mining the "F" Coal Seam of the Cretaceous Age Williams Fork Formation, originally utilized room-and-pillar mining methods until 1985, when economics dictated a change to the longwall mining method. The aerial extent of the underground workings in the Eagle No. 5 Mine was approximately 2,040 acres in early 1990, when the No. 5 mine was sealed and mining moved to the Eagle No. 6 Mine. Full production in the Eagle No. 6 Mine began in late 1990, with coal extraction from the underlying "E" Coal Seam of the Williams Fork Formation. Coal mined at the No. 5 and No. 6 Mines was loaded on unit trains at the mine facility area and hauled by rail to market. The 5A portals and a short section of the No. 5 Mine mains were used for access to the Eagle No. 6 Mine. The aerial extent of the underground workings in the Eagle No. 6 Mine (underlying portions of the No. 5 Mine) was approximately 640 acres at in late 1995, when mining ceased. The mines were subsequently in temporary cessation (TC), until Williams Fork re-activated water monitoring during the second quarter of 2006, in anticipation of WFM considering options for future re-activation of the mine site, and because a bond release application was also being contemplated for the Utah Tract and Williams Fork Strip Pit portions of the mine property.

During the third quarter of 2013, the mine reverted back to TC monitoring (discussed further below). In July 2013 all power was shut down on the mine property. Within a month or so of the shut-down, the site substation was partially dismantled.

In May 2014, copper thieves were discovered on site and apprehended by the Moffat County Sherriff's department. The thieves' activities had resulted in $500,000 to one million dollars-worth of damage between the main warehouse and the multi-services building on site. Security cameras were subsequently installed on site, and a security company was hired to inspect the site daily.

In November 2016, WFM requested deactivation of TC status, in anticipation of upcoming reclamation of

the site. Reclamation continued through 2022 with the final seeding to occur in 2023. DRMS will be updated periodically with the status of the reclamation.

3.0 2022 HYDROLOGIC MONITORING PROGRAM

The WFM hydrologic monitoring program includes data collected specifically to meet requirements of the DMG, as well as data collected to meet the requirements of the Colorado Wastewater Discharge Permit System (CDPS). Note that "CDPS" parameters were formerly referred to as National Pollutant Discharge Elimination System (NPDES) parameters in prior AHRs. Specific monitoring locations are illustrated on Figure 2.

In June 2001, Technical Revision TR01-32 was approved, allowing suspension of many DRMS hydrologic monitoring requirements while the mine was in temporary cessation (TC). In 2005 BTU EC began to examinate options for future re-activation of the mine site. In view of this considerations, BTU EC reverted back to the active monitoring plan (pages 1 – 14 of Exhibit 29), during the second quarter of 2006. In the third quarter of 2013 the mine reverted back to temporary cessation monitoring, as it was decided that there were no short term plans to reactivate mining.

WFM personnel is responsible for adhering to the monitoring requirements of its CDPS permit. Note that data acquisition required under the TC monitoring plan, only include sites:

- Bedrock well TR-7A,
- Alluvial well AVF-5,
- Surface water sites (Williams Fork) WF-1, WF-2,
- CDPS (Permit CO-0034142) sites:
    - 1) Mine discharge No. 5 Mine sump [CDPS Outfall 003, a.k.a. site 5D];
    - 2) Mine discharge 7 North Angle Well Bore [CDPS Outfall 024, a.k.a. site 9P3], and
    - 3) Spring - No. 1 StripPit [CDPS Outfall 022, a.k.a. site 1SP].

In 2016 TC was lifted and reclamation of the mine site began.

Table 1A presents a summary of hydrologic monitoring requirements for these sites under TC (modified from TR01-32, Appendix D of the TC monitoring plan). Table 1B outlines monitoring and sites required when off of TC. Water quality monitoring includes field parameters (Table 2), surface water quality parameters under TC (Table 3A), and off of TC (Table 3B). CDPS parameters (Table 4) are the monitoring requirements page from CDPHE CDPS permit CO-0042142.

3.1 GROUNDWATER MONITORING

3.1.1 BEDROCK WELLS

Three sandstone aquifers are found beneath the subject site. In ascending order, they are: Trout Creek Sandstone, Middle Sandstone, and Twentymile Sandstone. The Eagle No. 5 and Eagle No. 6 Mines are located between the Trout Creek Sandstone and the Middle Sandstone.

Water Levels

Trout Creek Sandstone: Water level measurements in the Trout Creek Sandstone No. 5 Mine well are shown on Figure 3. Historical annual water level fluctuations of 20 to 200 feet have been observed at this well but no seasonal pattern is evident. Note that recent water levels (2006 to date) were lower than levels measured prior to TC. This drop is apparently from consistent subsurface dewatering with the No. 5 mine pump. Levels remained relatively consistent from 2006 through 2013 with some variation due to periodic down time from malfunctions of the No. 5 mine pump. During the last quarter of 2012, the pump failed, resulting in no discharge. The pump was replaced in the spring of 2012, but stopped operating in July 2013 when power was removed from the site. The higher water level for No 5 starting in 2016 indicates how the water level had risen without pump dewatering over the years. In September of 2020 reclamation efforts made it impossible to get a reading during the 4th quarter due to well obstruction. Water level readings resumed in 2021. The 5 Mine Well water level continues to slowly rise as the mine fills with water. The former Okie Plaza Trout Creek well was abandoned in June 1994 as mining advanced through its location.

Middle Sandstone: The water levels in the Middle Sandstone formation as measured in wells TR-4, TR-7a, 81-01, 83-01, 83-02, and 83-03. Historically these show fluctuations which are apparently related to dewatering and past subsidence associated with Mines 5 and 6. Wells TR-4 water levels appear to be slightly rising since 2008 (Fig. 4). Levels in TR-7A (Fig. 5) have risen about 50 feet since 2013. There was one outlier in the spring of 2020 that dropped the well level by 40 feet but the well has since returned to the prior level. It is unclear if there was a reading error or what caused the drop. The water level has remained steady through 2021. 81-01 is relatively consistent with that seen prior to TC (Fig. 6). The water levels in 83-01 (Fig. 7) have been on the rise since monitoring was reactivated in 2006, with consistent seasonal fluctuations. The water levels in well 83-02 (Fig. 8) are consistent with those found since monitoring was reactivated in 2006. The water level decline of about 150 feet from 1987 to mid 1990 in well 83-02 was determined to be related to mine dewatering as Mine 5 workings approached the location of the well. The more abrupt 200 foot decline in water levels observed in 1990 is thought to be a drawdown response due to subsidence as it is located only a few hundred feet horizontally from an F seam longwall panel which was mined in a similar time frame. The water level stabilized until 1994 when it recovered to the 1983 levels. Water levels in 83-02 have been stabile since 2006.

Wells TR-4 and 83-03 are located at greater distance horizontally from the active operations for mines 5 and 6. Water levels in Well TR-4 (Fig. 4) historically appear to be related to the fluctuations observed on all three of the down gradient Middle Sandstone Wells: 81-01, 83-01 and 83-02. The water level decline in TR-4 prior to 1984 and the subsequent recovery up to 1988 closely parallels the trends observed in Wells 81-01

and 83-01. The decline during the first part of 1991 also parallels the trend in these two wells. However, the rapid decline during the last part of 1989 and the first part of 1990 appears to follow the trend observed in Well 83-02 although the magnitude of decline is considerably less. In 2022, Well 83-02, was unable to be sampled due to obstruction in the pipe. Unusually large fluctuations for TR-4 for 1999 through 2000 have been attributed to a faulty pressurized line system.

Well 83-03 (Fig.9) is the Middle Sandstone monitoring well located furthest (more than 1.5 miles) from active underground operations for Mines 5 and 6. The overall trend from 1984 through 2000 and again in 2006 to date suggests a similar trend to the other Middle Sandstone wells. The long term decline could be a pressure response due to the overall drop in potentiometric levels in the Middle Sandstone in the vicinity of Mines 5 and 6. The water levels in the Middle Sandstone wells had either recovered or stabilized in 1995. Note that in early 2008 and 2009 there were drops in the water level, after which water levels stabilized and started to rise again in 2012. The reason for the drops is unclear. A larger drop of over 125 feet occurred after the TC ended in 2017 and monitoring resumed, the water has since stabilized and is on a steady mild incline.

Historically, the groundwater gradient in the Middle Sandstone in the vicinity of the mining operation generally decreases from the southeast to the northwest.

Twentymile Sandstone: Monitoring results to date (Fig. 10) showed no apparent change in the water levels in the Twentymile Sandstone that could be attributable to mining activities. Wells 259 and 84-01 remained relatively stable. 9 Mine well has exhibited a stable level since the beginning of monitoring. In 2022, 9 Mine Well was unable to be sampled due to obstruction in casing. Further investigation in 2023 is needed to determine the status of the well.

Historically, the groundwater gradient in the Middle Sandstone in the vicinity of the mining operation generally decreases from the southeast to the northwest.

Water Quality

Trout Creek Sandstone: The field parameter data for No. 5 Mine well does not suggest any significant mining related water quality impacts to the Trout Creek Sandstone. The water quality data for this Trout Creek Sandstone well is summarized on Table 5. A plot of field conductivity measurements is presented in Figure 11. Note that conductivity values for the No. 5 Mine well following the 2006 removal from TC

appear elevated compared to earlier historical values. This may be related to consistent pumping at this site. Note that the No. 5 dewatering pump was damaged during the fourth quarter of 2010, and was removed and replaced with another pump in June 2012 when the area was dry enough to bring in a crane. In July 2013 all power was removed from the facility, and pumping ceased.

Middle Sandstone: The field parameter data for the three Middle Sandstone wells (TR-4, TR-7A, 81-01) was reviewed. Water quality data are summarized in Tables 6 through 11. Plots of field conductivity for these Middle Sandstone Wells are presented in Figure 12. The conductivity measurements recorded in wells TR-7A , TR-4, and 81-01 remain stable as compared to recent historic values. Note that wells TR-4 and 81-01 exhibited elevated conductivity values after monitoring was re-initiated in 2006 when removed from TC. The reason for that effect is unknown. In 2022 TR-4 showed a large drop in conductivity values during the first two quarters. The values have since been on a slight upward trend. The reason for the drop is unknown.

Wells TR-7A and TR-4 have historically indicated a slight reduction in concentrations of major ions over time. Historically, all three wells have shown a reduction in concentrations of iron which shows considerable variation in concentrations. The general reduction in iron concentrations may be the result of better purging of well bore volumes prior to sampling.

Twentymile Sandstone: The recent field parameter data for the two Twentymile Sandstone wells 259, does not suggest a significant impact or trend. Figure 13 shows historical conductivity data. The 9 Mine well exhibited a rise in conductivity in 2010, appeared to stabilize in mid-2011 and went up again in 2016 after TC but has since stabilized and is on a mild downward trend. Water quality data for these Twentymile Sandstone wells are summarized in Tables 12 through 14. Conductivity values continue to increase for well 259. In 2022, no data was collected at 9 Mine Well due to obstruction in well.

In summary, elevated conductivity values were detected in the Trout Creek and Middle Sandstones. However the overall water quality of these, as well as the Twentymile Sandstone does not indicate obvious adverse impacts related to Mines 5 and 6.

3.1.2 MINE WATER DISCHARGE

The 7 North Angle (7NA) well site (associated with CDPS Outfall 024, a.k.a. site 9P3 by DRMS) was a mine dewatering well site that would eventually discharge into the Williams Fork River. The Eagle No. 5 Mine sump discharge is CDPS Outfall 003, a.k.a. site 5D. It is also a mine dewatering pump. Under TC, monitoring of these sites remains the same as in the active mining monitoring plan, however 9P3 has not

discharged since 2001, and no near future discharge is anticipated.

Site 5D has not discharged since about July 2013, when power was removed from the site. No near future discharge is anticipated from this site either. Please consult prior AHRs for historical data.

There was no active pumping performed at the mine since July 2013. A plot of the measured discharge for this point is presented in Figure 14. Figure 15 is a historical monthly tabulation of flow measurements.

3.1.3 ALLUVIAL WELLS

Under TC, water data in the Williams Fork River Alluvium is monitored via alluvial well AVF-5, which is located adjacent to the underground discharge sediment ponds area (See Figure 2). Under TC, AVF-5 is measured for water level and field parameters on an annual basis (between July 20th and August 30th) concurrent with the Williams Fork surface water sampling (site WF-1). No water quality analyses were required for AVF-5 under TC.

Out of TC, alluvial wells AVF-3, AVF-5, and AVF-6 require quarterly water quality monitoring (See Table 1B). These wells are located in the general area of the loadout facilities and underground discharge sediment ponds. Historically, groundwater levels in the alluvium have remained fairly regular, with normal seasonal fluctuations, apparently related to changes in river levels. POR groundwater levels are plotted in Figure 16. The data indicates no impact on alluvial water levels related to mining.

Field parameter data for these alluvial wells are presented in Tables 15 through 17. POR water quality data is provided in Tables 15A through 17A. A plot of field electric conductivity versus time is presented in Figure 17. There has been no conclusive evidence of seasonal variation of water quality in the alluvium. Overall, over the past 5 years, the wells show conductivity levels within the historic readings or a slightly downward trend.

3.2 SURFACE WATER MONITORING

3.2.1 Rivers

There are two rivers in the vicinity of the mine site. The Yampa River, flows in a southeasterly direction across the mine site. The Yampa River drains most of the northwest corner of Colorado and part of south-central Wyoming. The second river is the Williams Fork, which is a major tributary of the Yampa River. The Williams Fork River joins the Yampa River on the mine property. Monitoring data is collected for the Williams Fork River. The Williams Fork River gaging station (WF-2) is near the confluence with the Yampa River, downstream of the Eagle No. 5 Mine discharge. The staff gage (WF-1) is located upstream of the mine discharge points. WF-2 is also monitored concurrent with WF-1.

The flow data for WF-2 was historically provided by the United States Geologic Survey (USGS) via one

gaging station and one staff gage for collection of Williams Fork River flow data (former site 09249750). however, their monitoring of the Williams Fork stations was discontinued in 2001. In 2010 the State Division of Water Resources (Office of State Engineer) reactivated the site. Data for the former USGS site can be found on the State Water Resources website under station No. WMFKMHCO. A copy of their 2022 daily average flow data is provided at the back of this AHR under Support Data.

Historically, comparisons between up gradient site WF-1, and down gradient site WF-2, have not show any stream depletion impacts from mine dewatering. Summaries of WF-1 and WF-2 water quality data are presented in Tables 18 through 19. POR data is provided in Tables 18A and 19A, respectively. A plot of upstream and downstream dissolved solids measurements for the river is presented in Figure 18. Water quality data does not show any significant variation from expected values. The comparisons of data from the upstream and downstream station on the Williams Fork River indicate that there is no detectable effect of mining on river water quality. As expected, dissolved solids decrease with increasing flow rate in the rivers, due to dilution from runoff.

3.2.2 Springs

There is one active spring on the mine site area, known as the No. 1 Strip Pit Discharge, or 1SP. There are a few other ephemeral springs and local permanent "damp spots" in the area; however, their combined flow is normally less than 5-10 gpm, and therefore are not significant. The 1SP Discharge is a CDPS monitoring point (Outfall 022). There is no sediment pond associated with this spring. Spring water runs down a narrow path through a vegetative filter, drops down onto an isolated sand bar, and during the spring discharges directly to the Williams Fork River. The POR discharges for the 1SP are presented in Figure 19. 2022 discharge data is presented in Figure 20. The site flows sporadically during the spring. The discharge typically begins in March during the spring melt, and is generally dry by the end of June. 1SP is typically dry from July through November, and freezes over from December into February/March.

Table 20 provides 2022 data for this site, while Table 20A provides POR data. A plot of POR total dissolved solids for 1SP is presented in Figure 21, and POR iron concentrations are presented on Figure 22. Figure 21 indicates TDS concentrations that are consistent with historic concentrations. Figure 22 illustrates the variable nature of total recoverable iron concentrations in 1SP discharge. Since 2002 there has been slight general upward trend in iron concentrations, however these levels are still within historic ranges seen for this site. We will continue to monitor this trend.

3.2.3 Ponds

There was no recorded discharge from any on-site sediment ponds in 2022.

4.0 SUMMARY AND CONCLUSIONS

The subject mine site ceased active mining operations in 1995, thus total mined acreage has not changed since then. The site went in and out of Temporary Cessation (TC) until 2016 when it was removed from TC

to commence final reclamation. The site was taken off TC in November 2016 for reclamation and will continue until further notice. DRMS will be notified of our intensions well in advance.

No significant, unpredicted, or adverse environmental impacts were noted during hydrologic monitoring for 2022. All environmental precautions have been taken to a max extent during the reclamation process. BMP are being followed. During 2018 most of the major structures were demolished and removed from site. Final grading started in 2019 and reclamation grading was finalized in 2022 with the final seeding to take place in the spring of 2023.

TABLES

LIST OF TABLES

TABLE 1A
SUMMARY OF HYDROLOGIC MONITORING STATIONS UNDER TEMPORARY CESSATION

BEDROCK WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	SCREEN INTERVAL (ft)	FREQUENCY OF MEASUREMENT*			
					WATER LEVEL	FIELD PARAMETER**	FULL QUALITY**	COMMENTS
TR-7A	Middle SS	6,244.30	740	624-725	A	A	NA	

ALLUVIAL WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	FREQUENCY OF MEASUREMENT*			
				WATER LEVEL	FIELD PARAMETER**	FULL QUALITY**	COMMENTS
AVF-5	Wms. Fk. Alluvial	6,132.59	16	A	A	NA	.

MINE DISCHARGES

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				
			WATER LEVEL	FIELD PARAMETER**	CDPS	FULL QUALITY**	COMMENTS
No. 5 Mine Sump	F Seam	6,300-5,600	W	W	Outfall 003 (5D)	S/Q	No Discharge in 2014
7 N. Angle Sump	F Seam		W	W	Outfall 024 (9P3)	S/Q	No Discharge in 2014

SURFACE WATERS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				
			WATER LEVEL	FIELD PARAMETER**	CDPS	FULL QUALITY**	COMMENTS
WF-1	Wms. Fk. Upstrm	6,142.39	A	A	NA	A	
WF-2	Wms. Fk. Dwnstrm	6,119.87	A	A	NA	A	

SPRINGS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				
			WATER LEVEL	FIELD PARAMETER**	CDPS	FULL QUALITY**	COMMENTS
No. 1 Strip Pit	Spoils	6,120.00	W	W	Outfall 022 (1SP)	S/Q	Limited discharge in 2014

* W=Weekly, S=Semi-Monthly, M=Monthly, Q=Quarterly, A=Annually

** Surface water parameters for surface water stations, and CDPS parameters for mine discharges and No. 1 Strip Pit

TABLE 1B - CONTINUED
SUMMARY OF HYDROLOGIC MONITORING STATIONS

ALLUVIAL WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	FREQUENCY OF MEASUREMENT*			COMMENTS
				FLOW LEVEL	FIELD PARAMETER**	FULL QUALITY**	
AVF-3	Wms. Fk. Alluvial	6,137.95	17	Q	Q	Q	
AVF-5	Wms. Fk. Alluvial	6,132.59	16	Q	Q	Q	Replaced AVF-5 9/82
AVF-6	Wms. Fk. Alluvial	6,146.23	16	Q	Q	Q	
9BF	9MN Waste Pile	-	-	Q	Q	Q	

MINE DISCHARGES

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				COMMENTS
			FLOW LEVEL	FIELD PARAMETER**	NPDES	FULL QUALITY**	
No. 5 Mine Sump	F Seam	6,300-5,600	W	W	S/Q	--	NPDES # 003
7 N. Angle Sump	F Seam		W	W	S/Q		NPDES #024 (9P3)

SURFACE WATERS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				COMMENTS
			FLOW LEVEL	FIELD PARAMETER**	NPDES	FULL QUALITY**	
WF-1	Wms. Fk. Upstrm	6,142.39	M	M	--	Q	
WF-2	Wms. Fk. Dwnstrm	6,119.87	C	M	--	Q	

SPRINGS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				COMMENTS
			FLOW LEVEL	FIELD PARAMETER**	NPDES	FULL QUALITY**	
No. 1 Strip Pit	Spoils	6,120.00	W	W	S/Q	--	NPDES #022

* C=Continuous, D=Daily, W=Weekly, S=Semi-Monthly, M=Monthly, Q=Quarterly, A=Annually

** Surface water parameters for surface water stations, ground water parameters for spring stations, and NPDES parameters for mine discharges and No. 1 Strip Pit

TABLE 2
FIELD PARAMETERS

PARAMETER	SAMPLE SOURCE		
	Ground Water	Surface Water	NPDES
Temperature	X	X	X
Conductivity	X	X	X
pH	X	X	X
Suspended Solids		X	
Flow		X	X
Depth	X		

TABLE 3A
FULL SUITE OF WATER QUALITY ANALYSES
UNDER TEMPORARY CESSATION

PARAMETER	SURFACE WATER
Conductivity	**X**
pH	**X**
Acidity (as CaCO3)	**X**
Solids, Total Dissolved	**X**
Solids, Total Suspended	**X**
Chloride	**X**
Iron, Total Recoverable	**X**
Manganese, Total Recoverable	**X**

TABLE 3B
FULL SUITE OF WATER QUALITY ANALYSES

PARAMETER	GROUND WATER	SURFACE WATER
Conductivity*	X	X
pH	X	X
Alkalinity (CaCO3)	X	
Acidity (as CaCO3)		X
Solids, Dissolved		X
Suspended		X
Hardness	X	
Calcium	X	
Magnesium	X	
Sodium	X	
Bicarbonate (as HCO3)	X	
Carbonate (as CO3)	X	
Chloride	X	X
Sulfate	X	
Arsenic	X	
Cadmium	X	
Lead	X	
Mercury	X	
Selenium	X	
Iron	X	X
Manganese	X	X
Zinc	X	
Boron	X	
Molybdenum	X	
Nitrate (as N)	X	

* umhos/cm3 @ 25 C

TABLE 4
NPDES PARAMETERS

PARAMETER	WEEKLY	BI-MONTHLY	MONTHLY	QUARTERLY	ANNUAL
Discharge Points 003, 022, and 024					
Flow	X				
pH	X				
Solids, Total Suspended		X			
Oil and Grease		X			
Solids, Total Dissolved				X	
Arsenic, Total			X		
Arsenic, PD			X		
Cadmium, PD			X		
Chromium, PD			X		
Chromium- Tri, TR			X		
Copper, PD			X		
Iron, TR		X			
Lead, PD			X		
Manganese, PD			X		
Mercury, Total			X		
Nickel, PD			X		
Selenium, PD			X		
Silver, PD			X		
Zinc, Total Recoverable		X	X		
Sulfide			X		
WET, Chronic					**X**

Table: 5 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 5MN, NO. 5 Mine Well, Trout Creek Sandstone Datum: 6143.62

Date	3/21/2022	5/12/2022	9/16/2022	12/10/2022
Depth to Water (FT)	17.98	16.45	16.4	16.3

POWER HAS BEEN DISCONNECTED AND WATER LEVEL IS TOO LOW TO OBTAIN SAMPLE SINCE 2013

Table: 6 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: T4, Well TR-4, Middle Sandstone Datum: 6308.3

			Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
			Depth to Water (FT)	10.07		9.56		9.67		9.65	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			386	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			40.2	Y				
ANION	Chloride	N	MG/L			16.6	Y				
ANION	Sulfates	N	MG/L			297	Y				
CATION	Calcium	D	MG/L			41.3	Y				
CATION	Magnesium	D	MG/L			21.1	Y				
CATION	Sodium	D	MG/L			246	Y				
FIELD	pH, Field	N	S.U.	8.33	Y	8.27	Y	7.72	Y	7.69	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1780	Y	1500	Y	1560	Y	1600	Y
FIELD	Temperature, Field	N	DEG-C	10.7	Y	11.2	Y	10.9	Y	10.4	Y
NUTRIENT	Nitrate Nitrogen	N	MG/L			0.1	N				
NUTRIENT	Nitrite as NO2	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			427	Y				
PHYSICAL	Hardness	N	MG/L			190	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.6	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			1420	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			0.5	N				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			164	Y				
SECONDARY	Manganese	D	UG/L			53	Y				
SECONDARY	Zinc	D	UG/L			50	N				
TRACE	Boron	D	UG/L			128	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 6A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: T4, Well TR-4, Middle Sandstone Datum: 6308.3

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	5/12/2022	9	555	558	690	386	99.6
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/27/1996	5/12/2022	8	44.7	39.1	112	2	32.1
ANION	Chloride	N	MG/L	3/30/1981	5/12/2022	38	12	3	41	1	15.4
ANION	Sulfates	N	MG/L	3/30/1981	5/12/2022	38	176	49	620	2	240
CATION	Calcium	D	MG/L	7/8/1983	5/12/2022	30	9.45	4.3	100	2	18.8
CATION	Magnesium	D	MG/L	7/8/1983	5/12/2022	30	14.1	7.5	51.3	1	11.8
CATION	Sodium	D	MG/L	7/8/1983	5/12/2022	30	199	41	553	16.3	221
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	108	8.53	8.6	9.5	6.97	0.493
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	108	807.69	353.5	2410	180	776.08
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	104	11.5	11	26.5	4.5	2.8
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.04	0.04	0.05	0.01	0.02
NUTRIENT	Nitrite as NO2	N	MG/L	5/12/2022	5/12/2022	1	0.05	0.05	0.05	0.05	0
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	5/12/2022	23	0.03	0.03	0.1	0.02	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	5/12/2022	40	0.06	0.04	0.1	0.02	0.04
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	5/12/2022	34	336	250	630	117	182
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/12/2022	9	49	33	190	18	53
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	114	114	114	114	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/11/1992	5/12/2022	14	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	3/30/1981	5/12/2022	38	8.55	8.6	10.3	6.9	0.614
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	5/12/2022	38	914	510	2340	180	832
PRIMARY	Arsenic	D	UG/L	7/8/1983	5/12/2022	30	3	1	40	1	7
PRIMARY	Cadmium	D	UG/L	7/8/1983	5/12/2022	30	4.7	4	50	0.25	8.9
PRIMARY	Lead	D	UG/L	7/8/1983	5/12/2022	30	16	20	50	0.1	14
PRIMARY	Mercury	D	UG/L	7/8/1983	5/12/2022	30	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	7/8/1983	5/12/2022	30	0.89	1	2	0.2	0.56
SECONDARY	Iron	D	UG/L	3/5/1985	5/12/2022	29	320	90	1510	10	446
SECONDARY	Manganese	D	UG/L	7/8/1983	5/12/2022	30	20	11	54	5	16
SECONDARY	Zinc	D	UG/L	7/8/1983	5/12/2022	30	56	10	990	5	180
TRACE	Boron	D	UG/L	7/8/1983	5/12/2022	30	92.4	50	220	10	79.8
TRACE	Molybdenum	D	UG/L	7/8/1983	5/12/2022	30	60	50	200	5	50

Table: 7 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: T7A, Well TR-7A, Middle Sandstone Datum: 6244.3

			Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
			Depth to Water (FT)	96.92		91.85		98.15		97.86	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			183	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			18.8	Y				
ANION	Chloride	N	MG/L			1.82	Y				
ANION	Sulfates	N	MG/L			1.4	Y				
CATION	Calcium	D	MG/L			7.39	Y				
CATION	Magnesium	D	MG/L			26.5	Y				
CATION	Sodium	D	MG/L			32.7	Y				
FIELD	pH, Field	N	S.U.	8.51	Y	8.73	Y	8.5	Y	8.52	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	400	Y	420	Y	420	Y	430	Y
FIELD	Temperature, Field	N	DEG-C	10.2	Y	11.1	Y	10.1	Y	9.9	Y
NUTRIENT	Nitrate Nitrogen	N	MG/L			0.1	N				
NUTRIENT	Nitrite as NO2	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			202	Y				
PHYSICAL	Hardness	N	MG/L			128	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.6	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			373	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			5.74	Y				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			435	Y				
SECONDARY	Manganese	D	UG/L			28	Y				
SECONDARY	Zinc	D	UG/L			32	Y				
TRACE	Boron	D	UG/L			48	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 7A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: T7A, Well TR-7A, Middle Sandstone Datum: 6244.3

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	5/12/2022	9	206	204	250	183	20.6
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/25/1996	5/12/2022	8	23	21.4	34.8	12	7.83
ANION	Chloride	N	MG/L	3/30/1981	5/12/2022	38	3.3	2	8	1	1.97
ANION	Sulfates	N	MG/L	3/30/1981	5/12/2022	38	21.4	10	85	1	21.7
CATION	Calcium	D	MG/L	6/29/1983	5/12/2022	30	7.3	5.65	28	2	5.6
CATION	Magnesium	D	MG/L	6/29/1983	5/12/2022	30	26.2	27.4	32	14	5.35
CATION	Sodium	D	MG/L	6/29/1983	5/12/2022	30	36.3	33	63	19.6	10.1
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	111	8.63	8.68	10.1	7.1	0.48
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	111	406	390	1320	122	117
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	106	11.6	11.4	21	5.4	2.36
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.05	0.05	0.05	0.05	8E-18
NUTRIENT	Nitrite as NO2	N	MG/L	5/12/2022	5/12/2022	1	0.05	0.05	0.05	0.05	0
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	5/12/2022	23	0.03	0.02	0.1	0.02	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	5/12/2022	41	0.074	0.1	0.35	0.02	0.062
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	5/12/2022	35	187	198	239	127	30.3
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/12/2022	9	132	133	146	120	8.68
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	131	131	131	131	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/11/1992	5/12/2022	14	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	3/30/1981	5/12/2022	38	8.719	8.78	10.14	6.5	0.554
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	5/12/2022	38	379	370	600	265	58.6
PRIMARY	Arsenic	D	UG/L	6/29/1983	5/12/2022	30	3	1	40	1	7
PRIMARY	Cadmium	D	UG/L	6/29/1983	5/12/2022	30	3.2	4	10	0.06	2.5
PRIMARY	Lead	D	UG/L	6/29/1983	5/12/2022	30	25.3	20	290	0.7	51.5
PRIMARY	Mercury	D	UG/L	6/29/1983	5/12/2022	30	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	6/29/1983	5/12/2022	30	0.9	1	2	0.25	0.55
SECONDARY	Iron	D	UG/L	3/5/1985	5/12/2022	29	307	80	3780	10	695
SECONDARY	Manganese	D	UG/L	6/29/1983	5/12/2022	30	25	25	50	10	10
SECONDARY	Zinc	D	UG/L	6/29/1983	5/12/2022	30	23.1	10	102	5	22
TRACE	Boron	D	UG/L	6/29/1983	5/12/2022	30	41	40	100	10	21
TRACE	Molybdenum	D	UG/L	6/29/1983	5/12/2022	30	70	50	200	10	50

Table: 8 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 01, Well 81-01, Middle Sandstone Datum: 6413.0

			Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
			Depth to Water (FT)	257.94		260.31		258.17		257.92	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			313	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			20	N				
ANION	Chloride	N	MG/L			41	Y				
ANION	Sulfates	N	MG/L			400	Y				
CATION	Calcium	D	MG/L			83.1	Y				
CATION	Magnesium	D	MG/L			107	Y				
CATION	Sodium	D	MG/L			33.1	Y				
FIELD	pH, Field	N	S.U.	7.51	Y	7.75	Y	7.79	Y	7.81	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1420	Y	1390	Y	1380	Y	1450	Y
FIELD	Temperature, Field	N	DEG-C	9.7	Y	9.8	Y	9.9	Y	9.8	Y
NUTRIENT	Nitrate Nitrogen	N	MG/L			0.1	N				
NUTRIENT	Nitrite as NO2	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			313	Y				
PHYSICAL	Hardness	N	MG/L			648	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.2	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			1290	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			0.5	N				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			2500	Y				
SECONDARY	Manganese	D	UG/L			207	Y				
SECONDARY	Zinc	D	UG/L			50	N				
TRACE	Boron	D	UG/L			43	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 8A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 01, Well 81-01, Middle Sandstone Datum: 6413.0

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	5/12/2022	9	368	339	480	278	70.8
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	5/20/2009	5/12/2022	6	20	20	20	1	8
ANION	Chloride	N	MG/L	5/20/2009	5/12/2022	11	36.1	40	44.3	7	11.3
ANION	Sulfates	N	MG/L	5/20/2009	5/12/2022	11	350	370	449	170	81.6
CATION	Calcium	D	MG/L	5/20/2009	5/12/2022	11	98	102	120	69	16
CATION	Magnesium	D	MG/L	5/20/2009	5/12/2022	11	99.1	106	111	54	16.7
CATION	Sodium	D	MG/L	5/20/2009	5/12/2022	11	34.5	34.3	48.7	22	6.24
FIELD	pH, Field	N	S.U.	2/13/2019	12/10/2022	16	7.36	7.26	7.81	7.16	0.224
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2/13/2019	12/10/2022	16	1350	1330	1450	1300	50.3
FIELD	Temperature, Field	N	DEG-C	2/13/2019	12/10/2022	16	10.8	10.9	11.6	9.7	0.606
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.04	0.05	0.05	0.01	0.02
NUTRIENT	Nitrite as NO2	N	MG/L	5/12/2022	5/12/2022	1	0.05	0.05	0.05	0.05	0
NUTRIENT	Nitrate Nitrogen	N	MG/L	5/20/2009	5/12/2022	5	0.06	0.05	0.1	0.05	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	5/5/2011	5/12/2022	19	0.09	0.1	0.1	0.03	0.02
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	5/20/2009	5/12/2022	11	333	330	390	278	37.5
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/12/2022	9	661	663	736	588	46.4
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	705	705	705	705	0
PHYSICAL	Hydroxide as OH	N	MG/L	5/5/2011	5/12/2022	10	20	20	20	20	0
PHYSICAL	pH, Lab	N	S.U.	5/20/2009	5/12/2022	11	8.09	8.1	8.3	7.75	0.155
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	5/20/2009	5/12/2022	11	1230	1240	1380	880	149
PRIMARY	Arsenic	D	UG/L	5/20/2009	5/12/2022	11	1	1	2	1	0.5
PRIMARY	Cadmium	D	UG/L	5/20/2009	5/12/2022	11	0.42	0.5	0.5	0.25	0.11
PRIMARY	Lead	D	UG/L	5/20/2009	5/12/2022	11	0.74	0.3	5	0.1	1.4
PRIMARY	Mercury	D	UG/L	5/20/2009	5/12/2022	11	0.9	1	1	0.2	0.2
PRIMARY	Selenium	D	UG/L	5/20/2009	5/12/2022	11	0.6	0.3	2	0.25	0.65
SECONDARY	Iron	D	UG/L	5/20/2009	5/12/2022	11	5130	4500	12800	30	3270
SECONDARY	Manganese	D	UG/L	5/20/2009	5/12/2022	11	231	207	372	98	82.7
SECONDARY	Zinc	D	UG/L	5/20/2009	5/12/2022	11	50	50	50	5	10
TRACE	Boron	D	UG/L	5/20/2009	5/12/2022	11	40	40	80	20	17
TRACE	Molybdenum	D	UG/L	5/20/2009	5/12/2022	11	90	100	100	50	20

Table: 9 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 301, Well 83-01, Middle Sandstone Datum: 6172.13

Date	3/21/2022	5/12/2022	9/16/2022	12/10/2022
Depth to Water (FT)	29.61	23.39	25.78	25.71

Table: 10 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 302, Well 83-02, Middle Sandstone Datum: 6678.50

Date	3/21/2022	4/24/2022	9/16/2022	12/10/2022
Depth to Water (FT)				

Unable to obtain water level in 2022

Table: 11 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 303, Well 83-03, Middle Sandstone Datum: 6131.22

Date	3/21/2022	5/12/2022	9/16/2022	12/10/2022
Depth to Water (FT)	73.79	73.79	73.79	73.79

Table: 12 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 259, Well 259, Twentymile Sandstone Datum: 6128.0

			Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
			Depth to Water (FT)	9.22		11.53		9.22		6.92	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			223	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			7.9	Y				
ANION	Chloride	N	MG/L			2.78	Y				
ANION	Sulfates	N	MG/L			65.2	Y				
CATION	Calcium	D	MG/L			56	Y				
CATION	Magnesium	D	MG/L			21.8	Y				
CATION	Sodium	D	MG/L			33.2	Y				
FIELD	pH, Field	N	S.U.	7.76	Y	7.84	Y	7.78	Y	7.76	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	600	Y	630	Y	640	Y	650	Y
FIELD	Temperature, Field	N	DEG-C	10.1	Y	10.2	Y	10.1	Y	10	Y
NUTRIENT	Nitrate Nitrogen	N	MG/L			0.04	Y				
NUTRIENT	Nitrite as NO2	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.04	Y				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			231	Y				
PHYSICAL	Hardness	N	MG/L			230	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.3	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			567	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.072	Y				
PRIMARY	Lead	D	UG/L			0.25	Y				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			1640	Y				
SECONDARY	Manganese	D	UG/L			31	Y				
SECONDARY	Zinc	D	UG/L			226	Y				
TRACE	Boron	D	UG/L			67	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 12A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 259, Well 259, Twentymile Sandstone Datum: 6128.0

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	5/12/2022	10	111	50.5	254	8.2	109
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	11/25/1996	5/12/2022	8	7.9	5.5	20	1	7.9
ANION	Chloride	N	MG/L	3/30/1981	5/12/2022	36	6.99	3.86	30.6	1	7.23
ANION	Sulfates	N	MG/L	3/30/1981	5/12/2022	36	37.8	48	95	1	29.3
CATION	Calcium	D	MG/L	6/29/1983	5/12/2022	28	27	18.5	76	2.4	22.9
CATION	Magnesium	D	MG/L	6/29/1983	5/12/2022	28	12.7	10.5	24.2	1.1	9.16
CATION	Sodium	D	MG/L	6/29/1983	5/12/2022	28	23.4	22.2	39.3	4.7	11
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	106	7.58	7.65	9.21	6	0.649
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	106	420.8	450	1440	109.2	248.3
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	102	10.9	11	18.9	4	2.7
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.05	0.05	0.05	0.05	8E-18
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	5/12/2022	21	0.03	0.02	0.09	0.01	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	5/12/2022	40	0.065	0.06	0.26	0.02	0.05
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	5/12/2022	35	146	196	254	6.8	93
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/12/2022	9	93.7	37	230	25	93.1
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	230	230	230	230	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/11/1992	5/12/2022	14	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	5/12/2022	35	7.78	7.92	9.2	5.9	0.753
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	5/12/2022	36	362	465	575	67	192
PRIMARY	Arsenic	D	UG/L	6/29/1983	5/12/2022	28	3	1	40	1	7
PRIMARY	Cadmium	D	UG/L	6/29/1983	5/12/2022	28	3.1	3	10	0.06	2.5
PRIMARY	Lead	D	UG/L	6/29/1983	5/12/2022	28	29	20	380	0.1	70
PRIMARY	Mercury	D	UG/L	6/29/1983	5/12/2022	28	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	6/29/1983	5/12/2022	28	1.1	1	6	0.25	1.1
SECONDARY	Iron	D	UG/L	3/5/1985	5/12/2022	27	955	80	7400	10	1990
SECONDARY	Manganese	D	UG/L	6/29/1983	5/12/2022	28	99.7	50	330	7	95
SECONDARY	Zinc	D	UG/L	6/29/1983	5/12/2022	28	74.6	40	540	5	124
TRACE	Boron	D	UG/L	6/29/1983	5/12/2022	28	63	56	240	10	44
TRACE	Molybdenum	D	UG/L	6/29/1983	5/12/2022	28	70	50	200	10	50

Table: 13 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 401, Well 84-01, Twentymile Sandstone Datum: 6307.47

Date	3/21/2022	5/12/2022	9/16/2022	12/10/2022
Depth to Water (FT)	45.97	46.21	46.81	46.76

Table: 14 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 9MN, #9 Mine Well, Twentymile Sandstone Datum: 6383.29

			Date									
			Depth to Water (FT)									
Type	Parameter	Fraction	Units	Result	Detection	Result	Detection	Result	Detection	Result	Detection
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L								
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L								
ANION	Chloride	N	MG/L								
ANION	Sulfates	N	MG/L								
CATION	Calcium	D	MG/L								
CATION	Magnesium	D	MG/L								
CATION	Sodium	D	MG/L								
FIELD	pH, Field	N	S.U.								
FIELD	Specific Conductivity, Field	N	UMHOS/CM								
FIELD	Temperature, Field	N	DEG-C								
NUTRIENT	Nitrate as NO3	N	MG/L								
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L								
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L								
PHYSICAL	Hardness as CACO3	N	MG/L								
PHYSICAL	Hydroxide as OH	N	MG/L								
PHYSICAL	pH, Lab	N	S.U.								
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM								
PRIMARY	Arsenic	D	UG/L								
PRIMARY	Cadmium	D	UG/L								
PRIMARY	Lead	D	UG/L								
PRIMARY	Mercury	D	UG/L								
PRIMARY	Selenium	D	UG/L								
SECONDARY	Iron	D	UG/L								
SECONDARY	Manganese	D	UG/L								
SECONDARY	Zinc	D	UG/L								
TRACE	Boron	D	UG/L								
TRACE	Molybdenum	D	UG/L								

2022: Obstruction in well. Unable to obtain water level or sample.

Table: 14A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 9MN, #9 Mine Well, Twentymile Sandstone Datum: 6383.29

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	8	370	392	480	259	90
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/13/1996	4/14/2021	6	10	20	20	1	10
ANION	Chloride	N	MG/L	3/30/1981	4/14/2021	31	14.6	4	54.7	2	18.2
ANION	Sulfates	N	MG/L	3/30/1981	4/14/2021	31	90.8	50	365	4	91
CATION	Calcium	D	MG/L	6/29/1983	4/14/2021	24	81.6	79.7	163	35.1	29.4
CATION	Magnesium	D	MG/L	6/29/1983	4/14/2021	24	41.1	33	87.3	22	16.7
CATION	Sodium	D	MG/L	6/29/1983	4/14/2021	24	21.042	16.95	43.5	9.9	9.4706
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	103	7.36	7.3	8.7	6.6	0.425
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	103	785	640	3500	428	376
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	99	13.1	12.2	23.1	9.7	2.81
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.05	0.05	0.05	0.05	8E-18
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	4/11/2017	17	0.03	0.02	0.08	0.02	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	4/14/2021	37	0.055	0.04	0.12	0.02	0.036
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	4/14/2021	31	301	296	441	193	46.1
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/18/2020	8	513	481	767	358	121
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	491	491	491	491	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/4/1992	4/14/2021	13	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	3/30/1981	4/14/2021	32	7.89	7.88	9.1	7	0.403
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	4/14/2021	32	728	620	1470	380	266
PRIMARY	Arsenic	D	UG/L	6/29/1983	4/14/2021	24	3.7	1.2	40	0.5	8
PRIMARY	Cadmium	D	UG/L	6/29/1983	4/14/2021	24	3	3	10	0.07	2.5
PRIMARY	Lead	D	UG/L	6/29/1983	4/14/2021	24	10	20	50	0.1	10
PRIMARY	Mercury	D	UG/L	6/29/1983	4/14/2021	24	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	6/29/1983	4/14/2021	24	1	1	4	0.2	0.88
SECONDARY	Iron	D	UG/L	3/5/1985	4/14/2021	23	613	140	3760	10	986
SECONDARY	Manganese	D	UG/L	6/29/1983	4/14/2021	24	242	61.5	1150	40	329
SECONDARY	Zinc	D	UG/L	6/29/1983	4/14/2021	24	259	124	1200	10	296
TRACE	Boron	D	UG/L	6/29/1983	4/14/2021	24	41	30	90	20	21
TRACE	Molybdenum	D	UG/L	6/29/1983	4/14/2021	24	70	50	200	10	50

Table: 15 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: AV3, Well AVF-3, Williams Fork Alluvium Datum: 6137.95

				Date	3/21/2022		5/12/2022		9/16/2022		12/12/2022	
				Depth to Water (FT)	6.52		7.5		6.45		DRY	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L		118	Y	130	Y	277	Y		
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L		20	N	20	N	20	N		
ANION	Chloride	N	MG/L		1.92	Y	1.69	Y	8.12	Y		
ANION	Sulfates	N	MG/L		5	N	5	N	66.1	Y		
CATION	Calcium	D	MG/L		32.3	Y	49.8	Y	59.2	Y		
CATION	Magnesium	D	MG/L		7.39	Y	7.83	Y	13.6	Y		
CATION	Sodium	D	MG/L		2.58	Y	4.07	Y	69.1	Y		
FIELD	pH, Field	N	S.U.		7.55	Y	7.79	Y	7.42	Y		
FIELD	Specific Conductivity, Field	N	UMHOS/CM		620	Y	280	Y	740	Y		
FIELD	Temperature, Field	N	DEG-C		6.1	Y	8.7	Y	13.7	Y		
NUTRIENT	Nitrate as NO3	N	MG/L		0.014	Y	0.05	N	0.05	N		
NUTRIENT	Nitrite as NO2	N	MG/L		0.014	Y	0.05	N	0.05	N		
NUTRIENT	Nitrate Nitrogen	N	MG/L		0.449	Y	0.376	Y	0.15	N		
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L		0.463	Y	0.376	Y	0.15	Y		
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L		118	Y	130	Y	277	Y		
PHYSICAL	Hardness	N	MG/L		111	Y	157	Y	204	Y		
PHYSICAL	Hydroxide as OH	N	MG/L		20	N	20	N	20	N		
PHYSICAL	pH, Lab	N	S.U.		8.2	Y	8.2	Y	8	Y		
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM		230	Y	257	Y	637	Y		
PRIMARY	Arsenic	D	UG/L		0.82	Y	0.98	Y	1.22	Y		
PRIMARY	Cadmium	D	UG/L		0.07	Y	0.151	Y	0.091	Y		
PRIMARY	Lead	D	UG/L		0.72	Y	0.63	Y	0.87	Y		
PRIMARY	Mercury	D	UG/L		1	N	1	N	1	N		
PRIMARY	Selenium	D	UG/L		0.43	Y	0.4	Y	0.34	Y		
SECONDARY	Iron	D	UG/L		210	Y	267	Y	628	Y		
SECONDARY	Manganese	D	UG/L		15	Y	372	Y	808	Y		
SECONDARY	Zinc	D	UG/L		50	N	1180	Y	66	Y		
TRACE	Boron	D	UG/L		50	Y	79	Y	147	Y		
TRACE	Molybdenum	D	UG/L		100	N	100	N	100	N		

Table: 15A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: AV3, Well AVF-3, Williams Fork Alluvium Datum: 6137.95

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	3/16/2009	9/16/2022	27	419	500	601	97	158
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	3/16/1996	9/16/2022	27	10.4	2	20	1	9.39
ANION	Chloride	N	MG/L	6/29/1981	9/16/2022	113	198	180	2300	1.54	228
ANION	Sulfates	N	MG/L	6/29/1981	9/16/2022	113	283	280	531	4.4	117
CATION	Calcium	D	MG/L	3/30/1983	9/16/2022	106	111	112	167	27.1	26.2
CATION	Magnesium	D	MG/L	3/30/1983	9/16/2022	106	69.4	73	104	6.99	21.2
CATION	Sodium	D	MG/L	3/30/1983	9/16/2022	106	177	181	288	2.58	61
FIELD	pH, Field	N	S.U.	1/26/1982	9/16/2022	153	7.42	7.4	8.7	6.8	0.275
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	9/16/2022	153	1630.449	1650	2750	280	384.3062
FIELD	Temperature, Field	N	DEG-C	5/27/1982	9/16/2022	149	9.42	9	18.5	3.7	2.96
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	9/16/2022	19	0.0436	0.05	0.17	0.01	0.0345
NUTRIENT	Nitrite as NO2	N	MG/L	3/21/2022	5/12/2022	2	0.032	0.032	0.05	0.01	0.025
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/26/1984	5/12/2022	83	0.144	0.08	0.71	0.02	0.155
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	6/29/1981	9/16/2022	114	0.244	0.1	1.99	0.01	0.304
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/29/1981	9/16/2022	106	410	409	980	97	107
PHYSICAL	Hardness	N	MG/L	3/16/1992	9/16/2022	27	450	526	661	111	172
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	145	145	193	97	67.9
PHYSICAL	Hydroxide as OH	N	MG/L	8/14/1991	9/16/2022	51	10	20	20	0	10
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	9/16/2022	113	7.78	7.8	8.4	6.7	0.345
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/29/1981	9/16/2022	113	1680	1720	2700	196	482
PRIMARY	Arsenic	D	UG/L	3/30/1983	9/16/2022	106	2.33	1	40	0.2	5.49
PRIMARY	Cadmium	D	UG/L	3/30/1983	9/16/2022	106	3.54	5	10	0.05	2.2
PRIMARY	Lead	D	UG/L	3/30/1983	9/16/2022	106	22	20	100	0.1	20
PRIMARY	Mercury	D	UG/L	3/30/1983	9/16/2022	106	0.5	0.2	10	0.1	1
PRIMARY	Selenium	D	UG/L	3/30/1983	9/16/2022	106	1.55	1	25.6	0.1	2.64
SECONDARY	Iron	D	UG/L	3/26/1984	9/16/2022	102	288	60	3460	5	590
SECONDARY	Manganese	D	UG/L	3/30/1983	9/16/2022	106	151	126	934	5	150
SECONDARY	Zinc	D	UG/L	3/30/1983	9/16/2022	106	35.6	10	1180	5	116
TRACE	Boron	D	UG/L	3/30/1983	9/16/2022	105	112	100	280	10	46.9
TRACE	Molybdenum	D	UG/L	3/30/1983	9/16/2022	106	60	50	200	10	50

Table: 16 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: AV5, Well AVF-5, Williams Fork Alluvium Datum: 6132.59

				Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
				Depth to Water (FT)	7.34		7.51		8.71		8.59	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L		617	Y	617	Y	668	Y	637	Y
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L		33.6	Y	33.4	Y	20	N	59.6	Y
ANION	Chloride	N	MG/L		21.5	Y	26.1	Y	44.7	Y	39	Y
ANION	Sulfates	N	MG/L		189	Y	209	Y	388	Y	336	Y
CATION	Calcium	D	MG/L		32	Y	40.3	Y	53.6	Y	50	Y
CATION	Magnesium	D	MG/L		15.6	Y	16.8	Y	24.1	Y	24.1	Y
CATION	Sodium	D	MG/L		319	Y	327	Y	407	Y	381	Y
FIELD	pH, Field	N	S.U.		7.63	Y	7.69	Y	7.28	Y	7.4	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM		1640	Y	1710	Y	2150	Y	1950	Y
FIELD	Temperature, Field	N	DEG-C		5.9	Y	8.1	Y	13.5	Y	6.4	Y
NUTRIENT	Nitrate as NO3	N	MG/L		0.05	N	0.01	Y	0.05	N	0.1	N
NUTRIENT	Nitrite as NO2	N	MG/L		0.05	N	0.01	Y	0.05	N	0.05	N
NUTRIENT	Nitrate Nitrogen	N	MG/L		1.29	Y	0.224	Y	0.041	Y	0.1	N
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L		1.29	Y	0.234	Y	0.041	Y	0.1	N
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L		651	Y	650	Y	668	Y	696	Y
PHYSICAL	Hardness	N	MG/L		144	Y	170	Y	233	Y	224	Y
PHYSICAL	Hydroxide as OH	N	MG/L		20	N	20	N	20	N	20	N
PHYSICAL	pH, Lab	N	S.U.		8.4	Y	8.4	Y	7.5	Y	8.4	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM		1530	Y	1640	Y	2040	Y	1980	Y
PRIMARY	Arsenic	D	UG/L		0.58	Y	0.46	Y	0.77	Y	0.35	Y
PRIMARY	Cadmium	D	UG/L		0.176	Y	0.106	Y	0.113	Y	0.075	Y
PRIMARY	Lead	D	UG/L		0.18	Y	0.36	Y	0.18	Y	0.33	Y
PRIMARY	Mercury	D	UG/L		1	N	1	N	1	N	1	N
PRIMARY	Selenium	D	UG/L		7.86	Y	2.91	Y	0.78	Y	2.51	Y
SECONDARY	Iron	D	UG/L		150	N	185	Y	158	Y	131	Y
SECONDARY	Manganese	D	UG/L		224	Y	265	Y	1040	Y	1020	Y
SECONDARY	Zinc	D	UG/L		50	N	477	Y	111	Y	139	Y
TRACE	Boron	D	UG/L		246	Y	284	Y	388	Y	331	Y
TRACE	Molybdenum	D	UG/L		100	N	100	N	100	N	100	N

Table: 16A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: AVF, Well AVF-5, Williams Fork Alluvium Datum: 6132.59

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	3/16/2009	12/10/2022	29	844	816	1200	617	177
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	3/16/1996	12/10/2022	29	15.1	11.7	59.6	1	16.4
ANION	Chloride	N	MG/L	6/29/1981	12/10/2022	115	27.7	27	47.9	7	8.02
ANION	Sulfates	N	MG/L	6/29/1981	12/10/2022	115	203	180	733	4	173
CATION	Calcium	D	MG/L	3/30/1983	12/10/2022	108	69.8	50	225	28.3	42.7
CATION	Magnesium	D	MG/L	3/30/1983	12/10/2022	108	43.8	29	149	12.2	30.3
CATION	Sodium	D	MG/L	3/30/1983	12/10/2022	108	306	334	967	6.09	119
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	154	7.43	7.4	9.7	6.3	0.344
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	154	1739.31	1696.5	3700	220	457.913
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	150	10.2	10.1	18.7	2	3.72
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	12/10/2022	21	0.068	0.05	0.46	0.01	0.091
NUTRIENT	Nitrite as NO2	N	MG/L	3/21/2022	12/10/2022	3	0.04	0.05	0.05	0.01	0.02
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/26/1984	5/12/2022	83	0.551	0.05	26.4	0.01	2.97
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	6/29/1981	12/10/2022	117	1.15	0.1	74	0.02	6.98
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/29/1981	12/10/2022	109	786.1	824	1215	243	175.8
PHYSICAL	Hardness	N	MG/L	3/16/1992	12/10/2022	29	193	188	263	121	38.5
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	228	228	236	220	11.3
PHYSICAL	Hydroxide as OH	N	MG/L	8/14/1991	12/10/2022	52	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	12/10/2022	115	7.87	7.8	9.72	7	0.418
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/29/1981	12/10/2022	115	1712	1730	2580	860	280.4
PRIMARY	Arsenic	D	UG/L	3/30/1983	12/10/2022	108	2.17	1	40	0.3	5.42
PRIMARY	Cadmium	D	UG/L	3/30/1983	12/10/2022	108	3.37	5	10	0.07	2.24
PRIMARY	Lead	D	UG/L	3/30/1983	12/10/2022	108	23.1	20	310	0.1	32.8
PRIMARY	Mercury	D	UG/L	3/30/1983	12/10/2022	108	0.4	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	3/30/1983	12/10/2022	108	2.38	2	27.8	0.1	3.41
SECONDARY	Iron	D	UG/L	3/26/1984	12/10/2022	103	116	40	2100	10	263
SECONDARY	Manganese	D	UG/L	3/30/1983	12/10/2022	108	327	170	2000	5	392
SECONDARY	Zinc	D	UG/L	3/30/1983	12/10/2022	108	27.3	10	477	5	49.1
TRACE	Boron	D	UG/L	3/30/1983	12/10/2022	108	249	270	440	30	107
TRACE	Molybdenum	D	UG/L	3/30/1983	12/10/2022	108	60	50	200	10	50

Table: 17 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: AV6, Well AVF-6, Williams Fork Alluvium Datum: 6146.23

				Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
				Depth to Water (FT)	7.13		6.79		8.61		8.03	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L		378	Y	299	Y	347	Y	322	Y
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L		20	N	8.3	Y	20	N	20	Y
ANION	Chloride	N	MG/L		5.38	Y	4.23	Y	3.4	Y	4.6	Y
ANION	Sulfates	N	MG/L		97.2	Y	98.4	Y	76.2	Y	84.3	Y
CATION	Calcium	D	MG/L		64.6	Y	62.3	Y	73.2	Y	65.9	Y
CATION	Magnesium	D	MG/L		40.1	Y	38	Y	42.4	Y	40.1	Y
CATION	Sodium	D	MG/L		55.5	Y	39.4	Y	31.2	Y	45.4	Y
FIELD	pH, Field	N	S.U.		7.53	Y	7.52	Y	7.19	Y	7.29	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM		890	Y	800	Y	820	Y	800	Y
FIELD	Temperature, Field	N	DEG-C		7.5	Y	8.6	Y	13.6	Y	8.3	Y
NUTRIENT	Nitrate as NO3	N	MG/L		0.05	N	0.05	N	0.05	N	0.062	Y
NUTRIENT	Nitrite as NO2	N	MG/L		0.05	N	0.05	N	0.05	N	0.05	N
NUTRIENT	Nitrate Nitrogen	N	MG/L		0.1	N	0.1	N	0.1	N	0.062	Y
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L		0.1	N	0.1	N	0.1	N	0.062	Y
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L		378	Y	308	Y	347	Y	342	Y
PHYSICAL	Hardness	N	MG/L		326	Y	312	Y	357	Y	330	Y
PHYSICAL	Hydroxide as OH	N	MG/L		20	N	20	N	20	N	20	N
PHYSICAL	pH, Lab	N	S.U.		8.3	Y	8.3	Y	7.7	Y	8.3	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM		798	Y	743	Y	749	Y	763	Y
PRIMARY	Arsenic	D	UG/L		1	N	1	N	0.31	Y	1	N
PRIMARY	Cadmium	D	UG/L		0.099	Y	0.089	Y	0.058	Y	0.122	Y
PRIMARY	Lead	D	UG/L		0.81	Y	0.37	Y	0.2	Y	0.72	Y
PRIMARY	Mercury	D	UG/L		1	N	1	N	1	N	1	N
PRIMARY	Selenium	D	UG/L		0.27	Y	0.25	N	0.3	Y	0.17	Y
SECONDARY	Iron	D	UG/L		205	Y	339	Y	140	Y	482	Y
SECONDARY	Manganese	D	UG/L		137	Y	154	Y	103	Y	155	Y
SECONDARY	Zinc	D	UG/L		50	N	50	N	24	Y	52	Y
TRACE	Boron	D	UG/L		94	Y	92	Y	96	Y	118	Y
TRACE	Molybdenum	D	UG/L		100	N	100	N	100	N	100	N

Table: 17A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: AV6, Well AVF-6, Williams Fork Alluvium Datum: 6146.23

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	3/16/2009	12/10/2022	29	452	480	613	284	94.3
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	3/16/1996	12/10/2022	29	10	7.9	20	1	8.9
ANION	Chloride	N	MG/L	6/29/1981	12/10/2022	115	23.8	20	92	3.2	18.9
ANION	Sulfates	N	MG/L	6/29/1981	12/10/2022	115	318	310	759	10	181
CATION	Calcium	D	MG/L	3/30/1983	12/10/2022	108	124	126	234	30.3	46.1
CATION	Magnesium	D	MG/L	3/30/1983	12/10/2022	108	69.4	71.2	123	19.5	22.6
CATION	Sodium	D	MG/L	3/30/1983	12/10/2022	108	133	117	451	30	83.7
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	153	7.37	7.39	8.22	6.8	0.254
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	153	1508.93	1590	3000	630	336.41
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	149	10.4	10.5	23.1	4	3.51
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	12/10/2022	21	0.048	0.05	0.06	0.02	0.0083
NUTRIENT	Nitrite as NO2	N	MG/L	3/21/2022	12/10/2022	3	0.04	0.05	0.05	0.01	0.02
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/26/1984	5/12/2022	83	0.047	0.02	0.5	0.02	0.073
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	6/29/1981	12/10/2022	117	0.0725	0.04	0.47	0.02	0.0794
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/29/1981	12/10/2022	109	525	530	917	263	127
PHYSICAL	Hardness	N	MG/L	3/16/1992	12/10/2022	29	476	467	875	258	152
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	512	512	556	467	62.9
PHYSICAL	Hydroxide as OH	N	MG/L	8/14/1991	12/10/2022	53	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	12/10/2022	114	7.77	7.7	8.6	6.8	0.361
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/29/1981	12/10/2022	115	1426	1430	2230	556	388.4
PRIMARY	Arsenic	D	UG/L	3/30/1983	12/10/2022	108	2.1	1	40	0.2	5.4
PRIMARY	Cadmium	D	UG/L	3/30/1983	12/10/2022	108	3.46	5	11	0.06	2.38
PRIMARY	Lead	D	UG/L	3/30/1983	12/10/2022	108	21	20	130	0.1	21
PRIMARY	Mercury	D	UG/L	3/30/1983	12/10/2022	108	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	3/30/1983	12/10/2022	108	2.11	1	32	0.1	4.92
SECONDARY	Iron	D	UG/L	3/26/1984	12/10/2022	104	164	85	1600	5	236
SECONDARY	Manganese	D	UG/L	3/30/1983	12/10/2022	108	144	121	769	8	121
SECONDARY	Zinc	D	UG/L	3/30/1983	12/10/2022	108	22	10	100	5	20
TRACE	Boron	D	UG/L	3/30/1983	12/10/2022	108	109	90	390	20	72
TRACE	Molybdenum	D	UG/L	3/30/1983	12/10/2022	108	60	50	200	10	50

Table: 18 2022 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	1/22/2022		2/12/2022		3/21/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	8.04	Y	8.02	Y	7.7	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	590	Y	610	Y	560	Y
FIELD	Temperature, Field	N	DEG-C	2.1	Y	1.9	Y	2.5	Y
PHYSICAL	Acidity	N	MG/L					20	N
PHYSICAL	pH, Lab	N	S.U.					8.4	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	20	N	5	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L					304	Y
SECONDARY	Iron	TR	UG/L					484	Y
SECONDARY	Manganese	TR	UG/L					22	Y

Table: 18 2022 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	4/24/2022		5/12/2022		6/16/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	8.21	Y	8.01	Y	7.9	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	480	Y	230	Y	300	Y
FIELD	Temperature, Field	N	DEG-C	8.5	Y	7.4	Y	17.9	Y
PHYSICAL	Acidity	N	MG/L			20	N		
PHYSICAL	pH, Lab	N	S.U.			8.3	Y		
PHYSICAL	Solids, Total Suspended	N	MG/L	187	Y	1010	Y	29	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L			168	Y		
SECONDARY	Iron	TR	UG/L			29700	Y		
SECONDARY	Manganese	TR	UG/L			582	Y		

Table: 18 2022 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	7/16/2022		8/20/2022		9/16/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	8.27	Y	8.4	Y	8.11	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	450	Y	450	Y	470	Y
FIELD	Temperature, Field	N	DEG-C	21.6	Y	17.1	Y	17.3	Y
PHYSICAL	Acidity	N	MG/L					20	N
PHYSICAL	pH, Lab	N	S.U.					7.7	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	22	Y	25	Y	14	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L					252	Y
SECONDARY	Iron	TR	UG/L					531	Y
SECONDARY	Manganese	TR	UG/L					20	Y

Table: 18 2022 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

				Date	10/22/2022		11/12/2022		12/10/2022	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.		8.05	Y	7.94	Y	7.39	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM		460	Y	620	Y	530	Y
FIELD	Temperature, Field	N	DEG-C		7.8	Y	2.9	Y	3.3	Y
PHYSICAL	Acidity	N	MG/L						20	N
PHYSICAL	pH, Lab	N	S.U.						8.1	Y
PHYSICAL	Solids, Total Suspended	N	MG/L		20	N			20	N
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L						322	Y
SECONDARY	Iron	TR	UG/L						193	Y
SECONDARY	Manganese	TR	UG/L						50	N

Table: 18A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Sulfates	N	MG/L	6/19/1981	5/31/1990	13	76	66	138	21	40.4
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	322	9.67	8.1	524	7.11	28.8
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	321	540.71	556	1125	8.77	161.33
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	317	8.89	8	27.8	0	7.17
PHYSICAL	Acidity	N	MG/L	3/23/1984	12/10/2022	106	4.24	1	20	-241	25.6
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/19/1981	2/12/1997	14	163	180	225	69	52.1
PHYSICAL	pH, Lab	N	S.U.	6/19/1981	12/10/2022	117	8.21	8.3	8.79	7.3	0.312
PHYSICAL	Solids, Total Suspended	N	MG/L	6/19/1981	12/10/2022	315	83.85	16	2810	2	255.6
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	6/19/1981	12/10/2022	121	322	324	588	94	112
SECONDARY	Iron	TR	UG/L	3/23/1984	12/10/2022	87	1830	360	29700	60	4390
SECONDARY	Manganese	TR	UG/L	6/19/1981	12/10/2022	99	60.8	35	582	5	81

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Williams Fork Mine

2022 Annual Hydrology Report

Water Year Monitoring Data

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

			Date	1/22/2022		2/12/2022		3/21/2022		4/24/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	8.02	Y	8	Y	7.68	Y	8.31	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	570	Y	590	Y	560	Y	390	Y
FIELD	Temperature, Field	N	DEG-C	2.9	Y	2.7	Y	2.8	Y	7.4	Y
PHYSICAL	Acidity	N	MG/L					20	N		
PHYSICAL	pH, Lab	N	S.U.					8.3	Y		
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	20	N	20	N	182	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L					310	Y		
SECONDARY	Iron	TR	UG/L					418	Y		
SECONDARY	Manganese	TR	UG/L					33	Y		

Table: 19

Williams Fork Mine

2022 Annual Hydrology Report

Water Year Monitoring Data

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

			Date	5/12/2022		6/16/2022		7/16/2022		8/20/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.83	Y	7.93	Y	8.25	Y	8.33	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	220	Y	290	Y	440	Y	450	Y
FIELD	Temperature, Field	N	DEG-C	6.8	Y	18	Y	21.1	Y	17.5	Y
PHYSICAL	Acidity	N	MG/L	20	N						
PHYSICAL	pH, Lab	N	S.U.	8.3	Y						
PHYSICAL	Solids, Total Suspended	N	MG/L	1130	Y	30	Y	10	Y	31	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	176	Y						
SECONDARY	Iron	TR	UG/L	36300	Y						
SECONDARY	Manganese	TR	UG/L	693	Y						

Table: 19

Williams Fork Mine

2022 Annual Hydrology Report

Water Year Monitoring Data

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

			Date	9/16/2022		10/22/2022		11/12/2022		12/10/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	8.01	Y	8.06	Y	7.96	Y	7.41	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	460	Y	460	Y	560	Y	540	Y
FIELD	Temperature, Field	N	DEG-C	16.6	Y	7.5	Y	2.5	Y	3.2	Y
PHYSICAL	Acidity	N	MG/L	20	N					20	N
PHYSICAL	pH, Lab	N	S.U.	7.9	Y					7.9	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	14	Y	6	Y			7	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	248	Y					322	Y
SECONDARY	Iron	TR	UG/L	572	Y					197	Y
SECONDARY	Manganese	TR	UG/L	21	Y					50	N

Table: 19A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Sulfates	N	MG/L	6/19/1981	12/7/1983	12	80.9	85	144	21	39
FIELD	pH, Field	N	S.U.	1/26/1982	12/10/2022	328	8.05	8.09	8.83	6.77	0.388
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/10/2022	327	545.93	560	1200	174.9	167
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/10/2022	323	8.82	8	27.8	0	7.04
PHYSICAL	Acidity	N	MG/L	3/23/1984	12/10/2022	108	4.17	1	20	-245	25.8
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/19/1981	2/12/1997	13	179	203	223	71	51.7
PHYSICAL	pH, Lab	N	S.U.	6/19/1981	12/10/2022	119	8.22	8.3	8.7	7.1	0.273
PHYSICAL	Solids, Total Suspended	N	MG/L	6/19/1981	12/10/2022	318	83.6	14	2800	2	248
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	6/19/1981	12/10/2022	123	330	335	602	85	113
SECONDARY	Iron	TR	UG/L	3/23/1984	12/10/2022	89	1940	330	36300	100	5160
SECONDARY	Manganese	TR	UG/L	6/19/1981	12/10/2022	100	62.3	30	693	5	93.5

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Williams Fork Mine

2022 Annual Hydrology Report

Water Year Monitoring Data

Site: 1SP, Spoil Spring Datum: 6120.0

			Date	3/29/2022		4/7/2022		4/13/2022		4/20/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	Flow	N	CFS	0.0337	Y	0.0213	Y	0.0179	Y	0.012	Y
FIELD	pH, Field	N	S.U.	7.6	Y	7.6	Y	7.5	Y	7.6	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2110	Y	1880	Y	1740	Y	2080	Y
FIELD	Temperature, Field	N	DEG-C	9	Y	11	Y	9.6	Y	11.2	Y
PRIMARY	Arsenic	PD	UG/L	0.57	Y			0.49	Y		
PRIMARY	Arsenic	T	UG/L	0.53	Y			0.59	Y		
PRIMARY	Cadmium	PD	UG/L	0.25	N			0.25	N		
PRIMARY	Chromium	TR	UG/L	50	N			50	N		
PRIMARY	Copper	PD	UG/L	50	N			50	N		
PRIMARY	Lead	PD	UG/L	0.5	N			0.5	N		
PRIMARY	Mercury	T	UG/L	1	N			1	N		
PRIMARY	Selenium	PD	UG/L	17.9	Y			1.02	Y		
TRACE	Nickel	PD	UG/L	40	N			40	N		
TRACE	Sulfide	N	UG/L	100	N			100	N		
SECONDARY	Iron	TR	UG/L	150	N			64	Y		
SECONDARY	Manganese	PD	UG/L	50	N			71	Y		
SECONDARY	Silver	PD	UG/L	25	N			25	N		
SECONDARY	Zinc	PD	UG/L	50	N			50	N		
PHYSICAL	pH, Lab	N	S.U.	8.3	Y			8.3	Y		
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N			20	N		
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	2050	Y			2200	Y		
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	1600	Y			1620	Y		

Table: 20

Williams Fork Mine

2022 Annual Hydrology Report

Water Year Monitoring Data

Site: 1SP, Spoil Spring Datum: 6120.0

			Date	4/26/2022		5/6/2022		5/9/2022		5/11/2022	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	Result	Detection	Result	Detection	Result	Detection
FIELD	Flow	N	CFS	0.0213	Y	0.008	Y	0.008	Y	0.008	Y
FIELD	pH, Field	N	S.U.	7.5	Y	7.1	Y			6.6	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2160	Y	2150	Y			2300	Y
FIELD	Temperature, Field	N	DEG-C	10.2	Y	11.6	Y			6.4	Y
PRIMARY	Arsenic	PD	UG/L							0.45	Y
PRIMARY	Arsenic	T	UG/L							0.45	Y
PRIMARY	Cadmium	PD	UG/L							0.25	N
PRIMARY	Chromium	TR	UG/L							50	N
PRIMARY	Copper	PD	UG/L							50	N
PRIMARY	Lead	PD	UG/L							0.5	N
PRIMARY	Mercury	T	UG/L							1	N
PRIMARY	Selenium	PD	UG/L							0.4	Y
TRACE	Nickel	PD	UG/L							40	N
TRACE	Sulfide	N	UG/L							100	N
SECONDARY	Iron	TR	UG/L	359	Y					370	Y
SECONDARY	Manganese	PD	UG/L							281	Y
SECONDARY	Silver	PD	UG/L							25	N
SECONDARY	Zinc	PD	UG/L							50	N
PHYSICAL	pH, Lab	N	S.U.							8.2	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N					20	N
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM							2250	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	1730	Y					1660	Y

Table: 20A **2022 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 1SP, Spoil Spring Datum: 6120.0

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
FIELD	Flow	N	CFS	1/3/1984	7/5/2022	536	0.0604	0.04	0.67	0	0.0733
FIELD	pH, Field	N	S.U.	5/28/1982	6/23/2022	1250	8.02	8	9.06	6.6	0.336
FIELD	Specific Conductivity, Field	N	UMHOS/CM	5/28/1982	6/23/2022	1249	1630.31	1628	3080	585	247.278
FIELD	Temperature, Field	N	DEG-C	5/28/1982	6/23/2022	1246	9.36	9.55	30	0	5.68
PRIMARY	Arsenic	PD	UG/L	11/20/2012	6/7/2022	46	0.73	0.6	5	0.3	0.7
PRIMARY	Arsenic	T	UG/L	9/22/1983	6/7/2022	48	0.82	0.79	2	0.4	0.34
PRIMARY	Cadmium	PD	UG/L	11/20/2012	6/7/2022	46	0.45	0.5	3	0.1	0.4
PRIMARY	Chromium	TR	UG/L	11/20/2012	6/7/2022	46	50	50	50	50	0
PRIMARY	Copper	PD	UG/L	11/20/2012	6/7/2022	46	50	50	100	50	7
PRIMARY	Lead	PD	UG/L	11/20/2012	6/7/2022	46	0.5	0.5	3	0.1	0.4
PRIMARY	Mercury	T	UG/L	1/17/1983	6/7/2022	52	0.8	1	1	0.1	0.3
PRIMARY	Selenium	PD	UG/L	11/20/2012	6/7/2022	46	1.17	0.3	17.9	0.1	3.16
TRACE	Nickel	PD	UG/L	11/20/2012	6/7/2022	46	40	40	80	10	11
TRACE	Sulfide	N	UG/L	5/31/1990	6/7/2022	46	96	100	210	10	29
SECONDARY	Iron	TR	UG/L	3/23/1984	6/14/2022	335	409	250	2350	0.16	436
SECONDARY	Manganese	PD	UG/L	11/20/2012	6/7/2022	46	482	465	1450	20	345
SECONDARY	Silver	PD	UG/L	11/20/2012	6/7/2022	46	30	30	50	25	3.6
SECONDARY	Zinc	PD	UG/L	11/20/2012	6/7/2022	46	56	50	330	10	43
PHYSICAL	pH, Lab	N	S.U.	9/28/1981	6/7/2022	181	8.11	8.1	8.5	7.08	0.224
PHYSICAL	Solids, Total Suspended	N	MG/L	9/28/1981	6/14/2022	653	11	6	76	1	9.3
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	9/28/1981	6/7/2022	181	2030	2090	2680	7.8	356.4
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	9/28/1981	6/14/2022	204	1312	1202	5160	820	429.9

Table: 21 **2022 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 9BF Datum: 6308.3

			Date	3/21/2022		5/12/2022		9/16/2022		12/10/2022	
			Depth to Water (FT)	40.42		40.74		41.67		42.76	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Det**	**Result**	**Det**	**Result**	**Det**	**Result**	**Det**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	205	Y	277	Y	285	Y	276	Y
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	20	N	20	N	20	N	20	N
ANION	Chloride	N	MG/L	6.42	Y	5.74	Y	7.27	Y	8.36	Y
ANION	Sulfates	N	MG/L	92.4	Y	119	Y	99.4	Y	81.4	Y
CATION	Calcium	D	MG/L	27.4	Y	38	Y	35.8	Y	35.3	Y
CATION	Magnesium	D	MG/L	17.1	Y	24.9	Y	21.6	Y	21.9	Y
CATION	Sodium	D	MG/L	74.7	Y	92.5	Y	79.3	Y	83.2	Y
FIELD	pH, Field	N	S.U.	6.99	Y	7.21	Y	6.96	Y	6.87	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	960	Y	840		800	Y	780	Y
FIELD	Temperature, Field	N	DEG-C	12.2	Y	12.3		13.6	Y	10.4	Y
NUTRIENT	Nitrate as NO3	N	MG/L	0.05	N	0.05	N	0.014	Y	3.19	Y
NUTRIENT	Nitrite as NO2	N	MG/L	0.05	N	0.05	N	0.014	Y	0.08	Y
NUTRIENT	Nitrate Nitrogen	N	MG/L	2.82	Y	1.47	Y	1.69	Y	3.19	Y
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	2.82	Y	1.47	Y	1.69	Y	3.27	Y
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	205	Y	277	Y	285	Y	276	Y
PHYSICAL	Hardness	N	MG/L	139	Y	197	Y	178	Y	178	Y
PHYSICAL	Hydroxide as OH	N	MG/L	20	N	20	N	20	N	20	N
PHYSICAL	pH, Lab	N	S.U.	8	Y	8.1	Y	7.4	Y	8.1	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	591	Y	766	Y	736	Y	730	Y
PRIMARY	Arsenic	D	UG/L	0.45	Y	0.27	Y	1.54	Y	0.74	Y
PRIMARY	Cadmium	D	UG/L	0.25	N	0.053	Y	0.088	Y	0.053	Y
PRIMARY	Lead	D	UG/L	0.12	Y	0.13	Y	0.81	Y	0.43	Y
PRIMARY	Mercury	D	UG/L	1	N	1	N	1	N	1	N
PRIMARY	Selenium	D	UG/L	0.95	Y	0.94	Y	0.16	Y	0.15	Y
SECONDARY	Iron	D	UG/L	150	N	68	Y	360	Y	270	Y
SECONDARY	Manganese	D	UG/L	50	N	14	Y	106	Y	92	Y
SECONDARY	Zinc	D	UG/L	249	Y	394	Y	681	Y	112	Y
TRACE	Boron	D	UG/L	642	Y	680	Y	571	Y	605	Y
TRACE	Molybdenum	D	UG/L	100	N	100	N	100	N	100	N

Table: 21A **2022 Annual Hydrology Report**

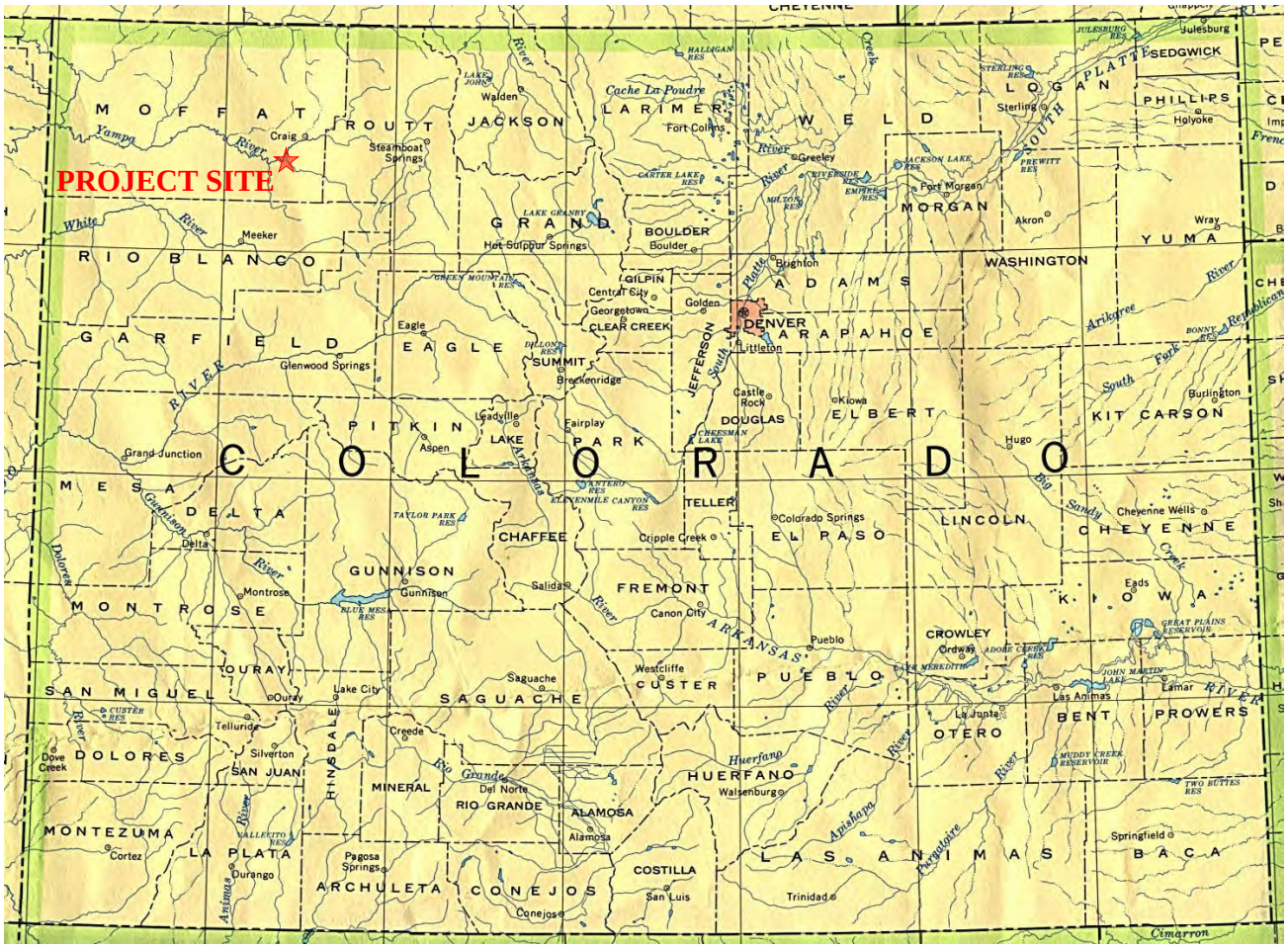
Williams Fork Mine **Period of Record**

Site: 9BF Datum: 6308.3

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	6/10/2010	12/10/2022	25	447	382	1100	102	228
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/10/2010	12/10/2022	18	20	20	20	1	7
ANION	Chloride	N	MG/L	6/10/2010	12/10/2022	31	22.2	19.6	57	5.74	12.4
ANION	Sulfates	N	MG/L	6/10/2010	12/10/2022	31	233	239	520	18	131
CATION	Calcium	D	MG/L	6/10/2010	12/10/2022	31	49.3	45.7	87.3	27	15.9
CATION	Magnesium	D	MG/L	6/10/2010	12/10/2022	31	32.9	32.7	57.6	17.1	11.3
CATION	Sodium	D	MG/L	6/10/2010	12/10/2022	31	192	146	493	74.7	113
FIELD	pH, Field	N	S.U.	11/29/2016	12/10/2022	25	7.15	7.14	7.67	6.84	0.195
FIELD	Specific Conductivity, Field	N	UMHOS/CM	11/29/2016	12/10/2022	24	1130	1140	1850	710	269
FIELD	Temperature, Field	N	DEG-C	11/29/2016	12/10/2022	24	13.1	12.8	19.2	9.4	1.86
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	12/10/2022	20	0.202	0.05	3.19	0.01	0.704
NUTRIENT	Nitrite as NO2	N	MG/L	3/21/2022	12/10/2022	2	0.07	0.07	0.08	0.05	0.02
NUTRIENT	Nitrate Nitrogen	N	MG/L	6/10/2010	5/12/2022	12	0.442	0.05	2.82	0.02	0.861
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	2/15/2011	12/10/2022	53	0.828	0.56	3.27	0.02	0.934
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/10/2010	12/10/2022	31	453	367	957	102	219
PHYSICAL	Hardness	N	MG/L	2/15/2011	12/10/2022	26	271	299	455	138	88.9
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	206	206	206	205	0.707
PHYSICAL	Hydroxide as OH	N	MG/L	2/15/2011	12/10/2022	28	20	20	20	20	0
PHYSICAL	pH, Lab	N	S.U.	6/10/2010	12/10/2022	31	7.86	8	8.4	6.9	0.4
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/10/2010	12/10/2022	31	1310	1200	2320	591	437
PRIMARY	Arsenic	D	UG/L	6/10/2010	12/10/2022	31	2.16	0.74	30	0.22	5.46
PRIMARY	Cadmium	D	UG/L	6/10/2010	12/10/2022	31	1.1	0.5	10	0.05	2.2
PRIMARY	Lead	D	UG/L	6/10/2010	12/10/2022	31	4.12	0.5	50	0.1	12.4
PRIMARY	Mercury	D	UG/L	6/10/2010	12/10/2022	31	0.9	1	1	0.2	0.2
PRIMARY	Selenium	D	UG/L	6/10/2010	12/10/2022	31	2.91	0.68	20.5	0.1	4.94
SECONDARY	Iron	D	UG/L	6/10/2010	12/10/2022	31	190	150	1210	20	224
SECONDARY	Manganese	D	UG/L	6/10/2010	12/10/2022	31	62.7	50	129	10	37.7
SECONDARY	Zinc	D	UG/L	6/10/2010	12/10/2022	31	130	49	830	5	207
TRACE	Boron	D	UG/L	6/10/2010	12/10/2022	31	593	610	690	440	72.5
TRACE	Molybdenum	D	UG/L	6/10/2010	12/10/2022	31	90	100	100	50	20

FIGURES

LIST OF FIGURES



SCALE

0 50 100

MILES

GENERAL LOCATION MAP

R92W R91W T6N T5N

HENREY
W4K
OTIS, DENNIS & WENDY
BTU EMPIRE
HINKEMEYER
MURRAY, MARVIN
FOLKS, FRANCES, MERLEAN & NEIL
HOLLAND, ROY & D
RIESER, LOUIS
GERBER, JULIE
SNARE, MAX & SHIRL
MITCHELL, JAMES
REDD, NORMAN & CARO
STEELE, ROBERT
ARNOLD, ERNEST
MITCHELL, BOB
DEAKINS, RICHARD
J-MAR FARMS, LLC
SILVER, DORMAN & MARY
PECK, CLAYTON
KOSTUR, ROBERT
WELKER, GLENNON
ROBERTS, CHARLES
LEWIS, JANE
BLM
STATE
STATE OF COLORADO
YS-1
81-19 WSS
COLOWYO COAL CO., L.P.
THE YAMPA PROJECT POWER PLANT
MOFFAT / CITY LAND FILL
MACK, B &
903
NORMAN & CARO
ELLGEN, LARRY & GARY
YAW-1
83-03 MSS
YAW-2
81-04b WSS
YAW-5
YAW-6
OSBOURN BROS, INC.
YAZZIE
YAW-3
81-03a WSS
MUSGRAVE, L. F.
LUX, F. & L.
MUSGRAVE, K & F
HORSLEY
HAXTON SPRING
ELLGEN, LORENCE & RAEOLA
TR-4 MSS
84-01 TMSS
BTU EC
9A-P1 (018)
Y-2
TR-7a MSS
BTU EC PERMIT BOUNDARY
HR-P1b (004) 259 TMSS
#1 STRIP PIT
BTU EMPIRE WP#2
83-01 MSS
NO. 9BF
NO. 9 TMSS
AVF-5
WISE HILL NO. 4
#5 & #6 MINE #5 MINE SUMP PONDS
7NA
AVF-3
81-01 MSS
NO.5 TCSS WASTE WATER
AVF-6
BTU EMPIRE CORP.
RAFTOPOULOS, JOHN & STEVE
TRAPPER MINING COMPANY
83-02 MSS
CRAIG EMPIRE CORP.
OKIE PLAZA TCSS (ABANDONED 1994)
WF-1
86-01 ES
COLOWYO COAL CO., L.P.
RAFTOPOULOS
RAFTOPOULOS, AGNEW
HATHHORN, STANLEY
HATHHORN
HATHHORN, S.
McKUNE, W.
McINTYRE
HOELAND, M.J.
MEAD RANCH PARTNERSHIP
RAFTOPOULOS, JOHN & STEVE
GLASS, KENNETH
GLASS, KENNETH ROSS JR.
FEDERAL
ELLGEN, LORENCE

LEGEND

- PERMIT BOUNDARY
- 86-01 — GROUNDWATER MONITOR WELL
- AVF-6 — ALLUVIAL MONITOR WELL
- WF-6 — STREAM WATER QUALITY MONITOR
- WF-1 — STREAM QUALITY & QUANTITY MONITOR
- A — MINE DISCHARGE LOCATION
- 1 — STREAM GAUGE
- HAXTON SPRING — SPRING
- WSS — WHITE SANDSTONE
- TMSS — TWENTYMILE SANDSTONE
- MSS — MIDDLE SANDSTONE
- TCSS — TROUT CREEK SANDSTONE
- ES — "E" SEAM
- 9A-P1 — POND

SITES MONITORED UNDER TEMPORARY CESSATION TR01-32

WF-1 — TC SITES HIGHLIGHTED CIRCLE

N

COLORADO

MOFFAT COUNTY MINING, LLC

Peabody ENERGY

FIGURE 2
WILLIAMS FORK MINES
HYDROLOGIC MONITORING PROGRAM
LOCATION MAP

DESIGNED BY:	FJJ	COUNTRY:	USA
DRAWN BY:	KEC	STATE/PROVINCE:	Colorado
APPROVED BY:	Supervisor	GCS:	T 6 N, R 91 W
DATE:	2018 03 06	DRAWING/SHEET:	1 of 1
SCALE:	1" = 1000'	C.I.:	0'

0 1000 2000 3000 FEET

I:\Mandat\FIG 2 2017.dwg

PLOT OF WATER LEVELS

Trout Creek Sandstone Wells

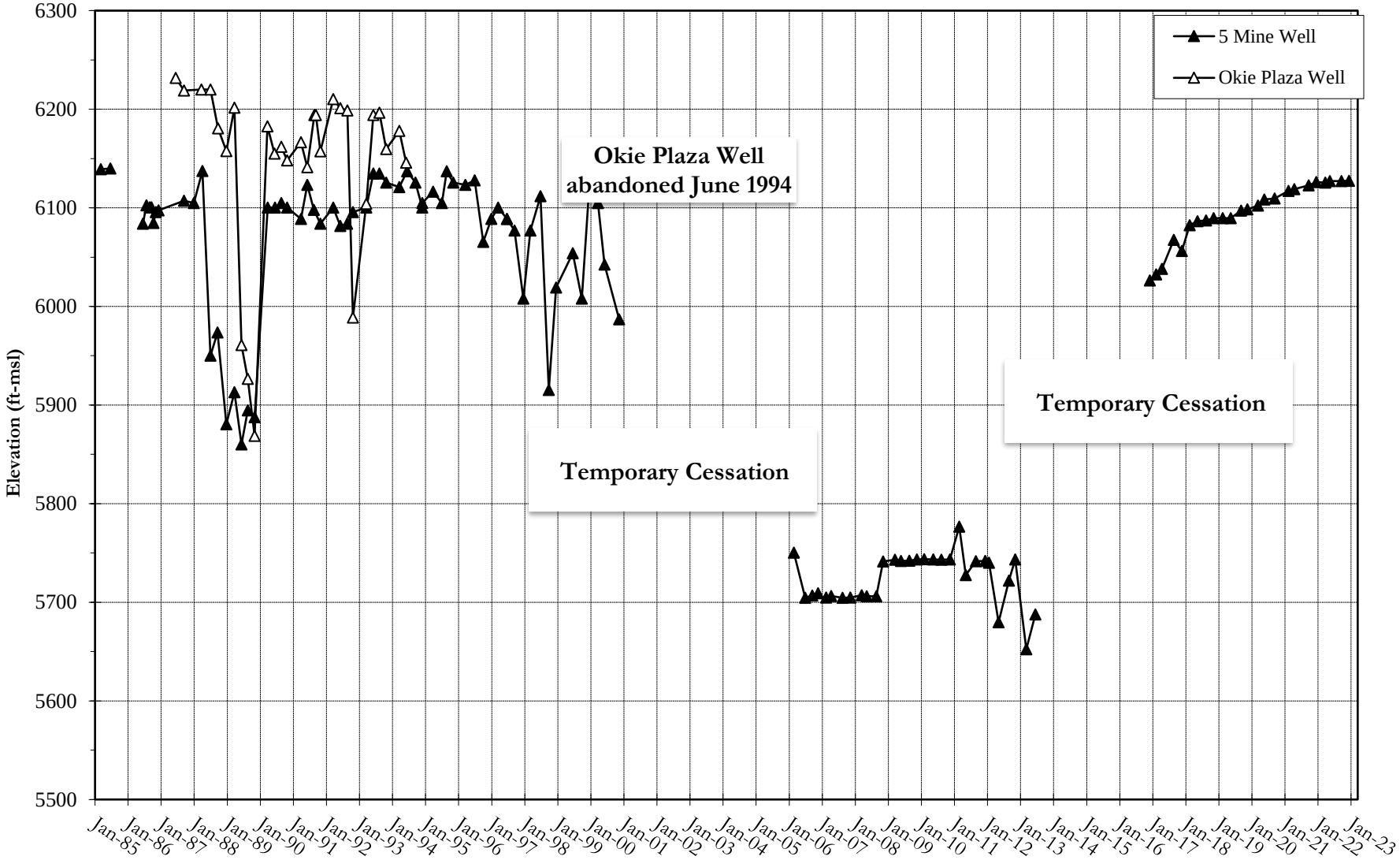
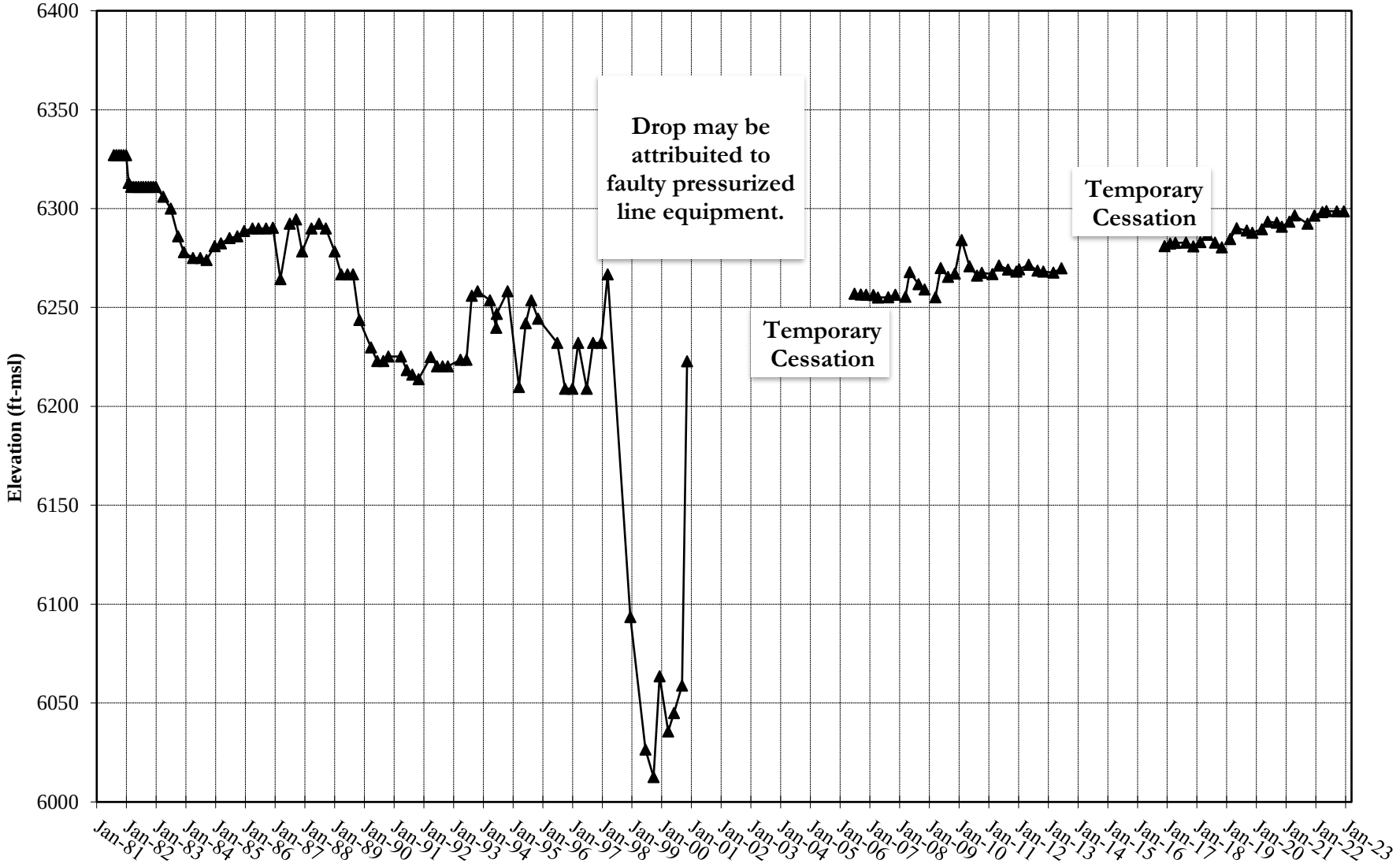


FIGURE 3

PLOT OF WATER LEVELS

Well TR-4, Middle Sandstone



I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\4 MIDDLE SS TR-4 WL

FIGURE 4

PLOT OF WATER LEVELS

Well TR-7a, Middle Sandstone

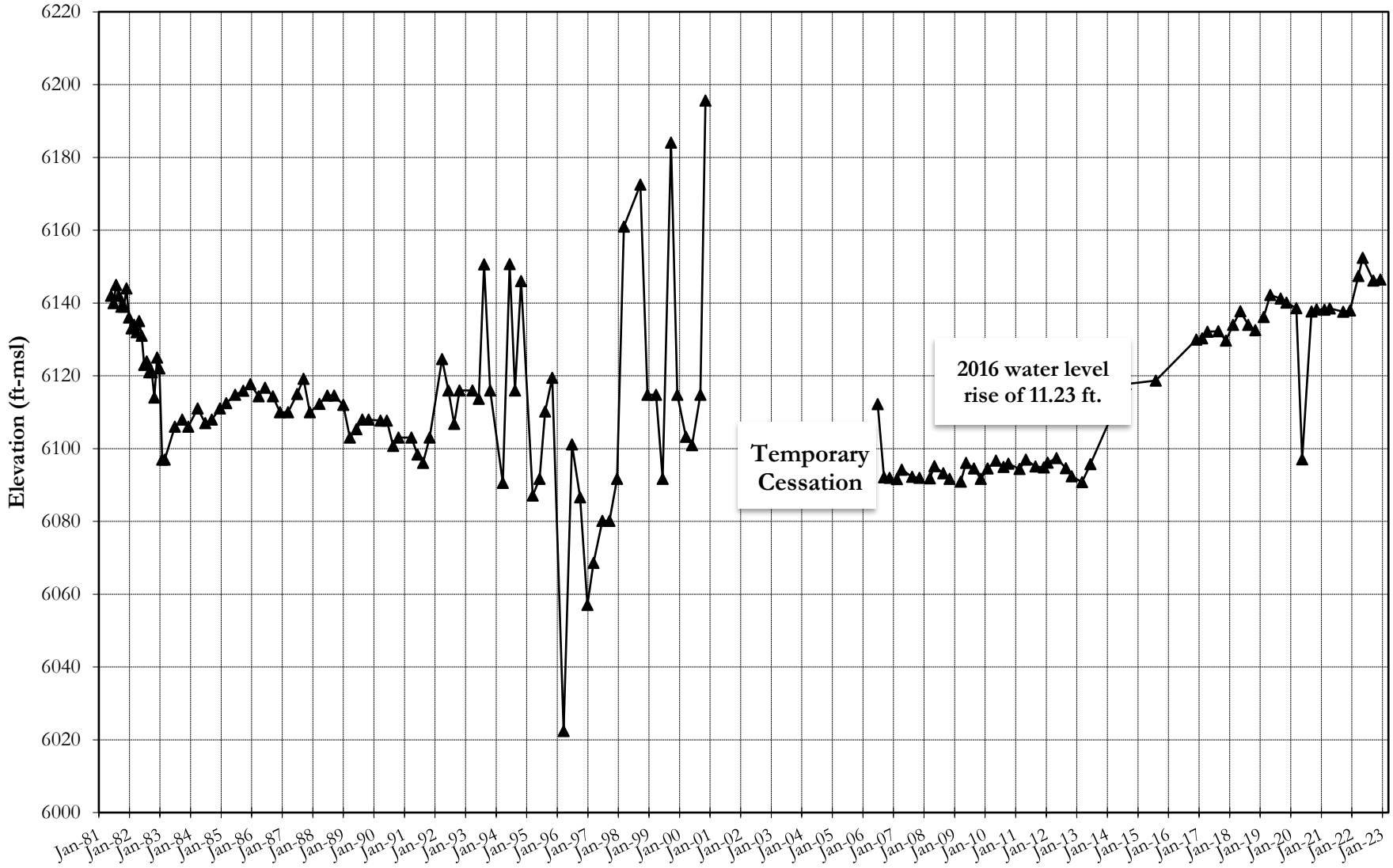


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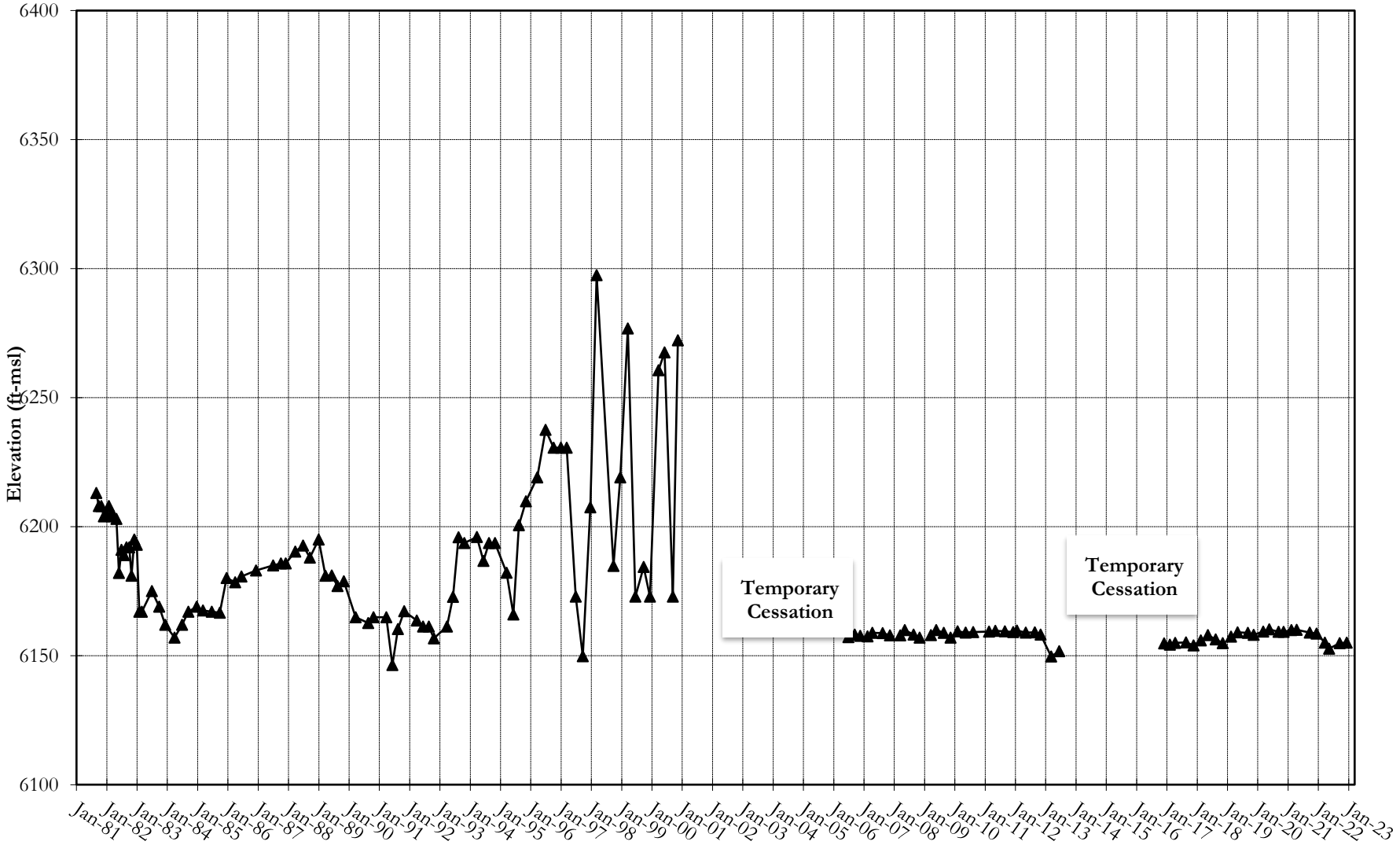
FIGURE 5

PLOT OF WATER LEVELS

Well 81-01, Middle Sandstone

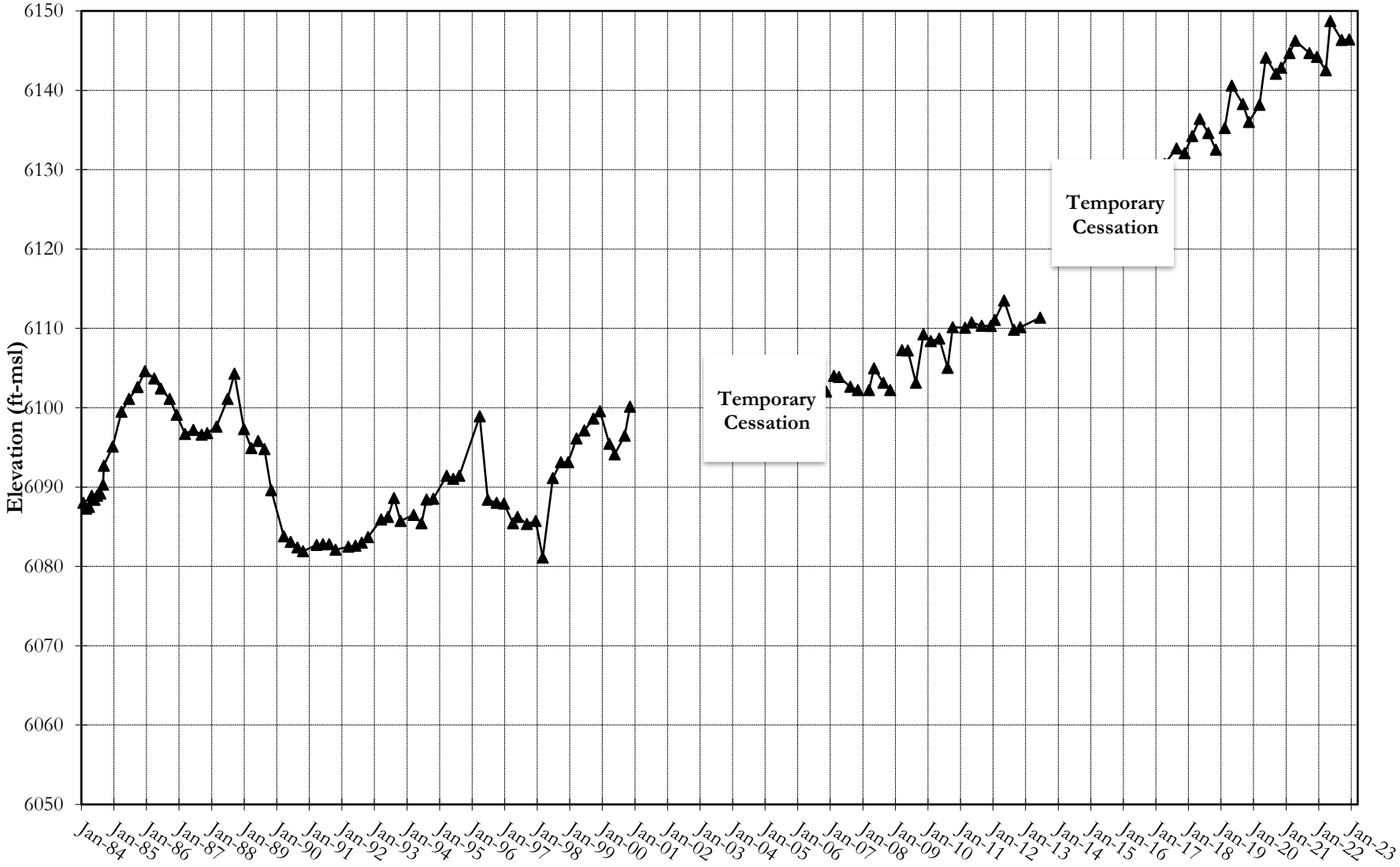


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\6 MIDDLE SS 81-01 WL

FIGURE 6

PLOT OF WATER LEVELS

Well 83-01, Middle Sandstone



I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\7 MIDDLE SS 83-01 WL

FIGURE 7

PLOT OF WATER LEVELS

Well 83-02, Middle Sandstone

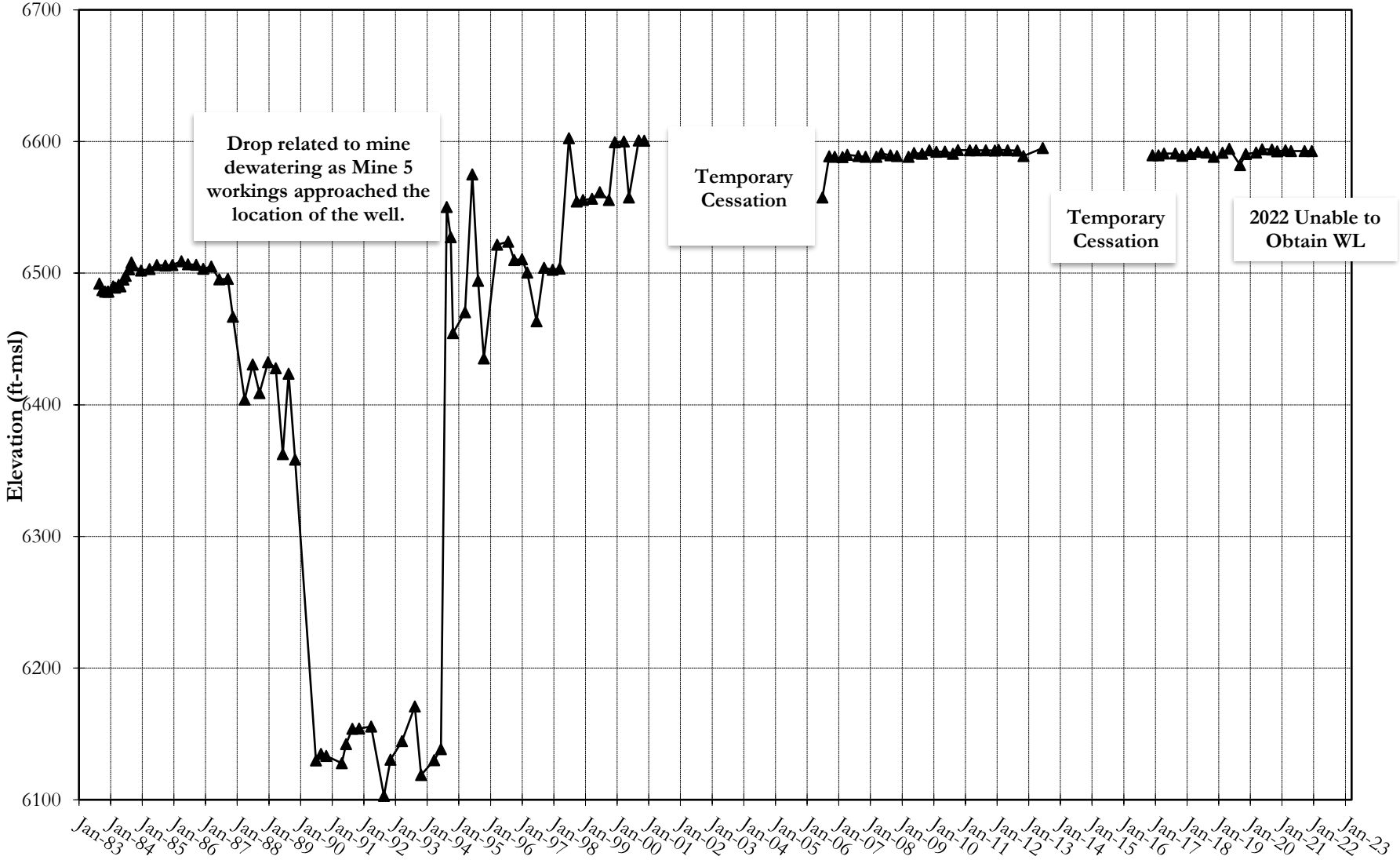


FIGURE 8

PLOT OF WATER LEVELS

Well 83-03, Middle Sandstone

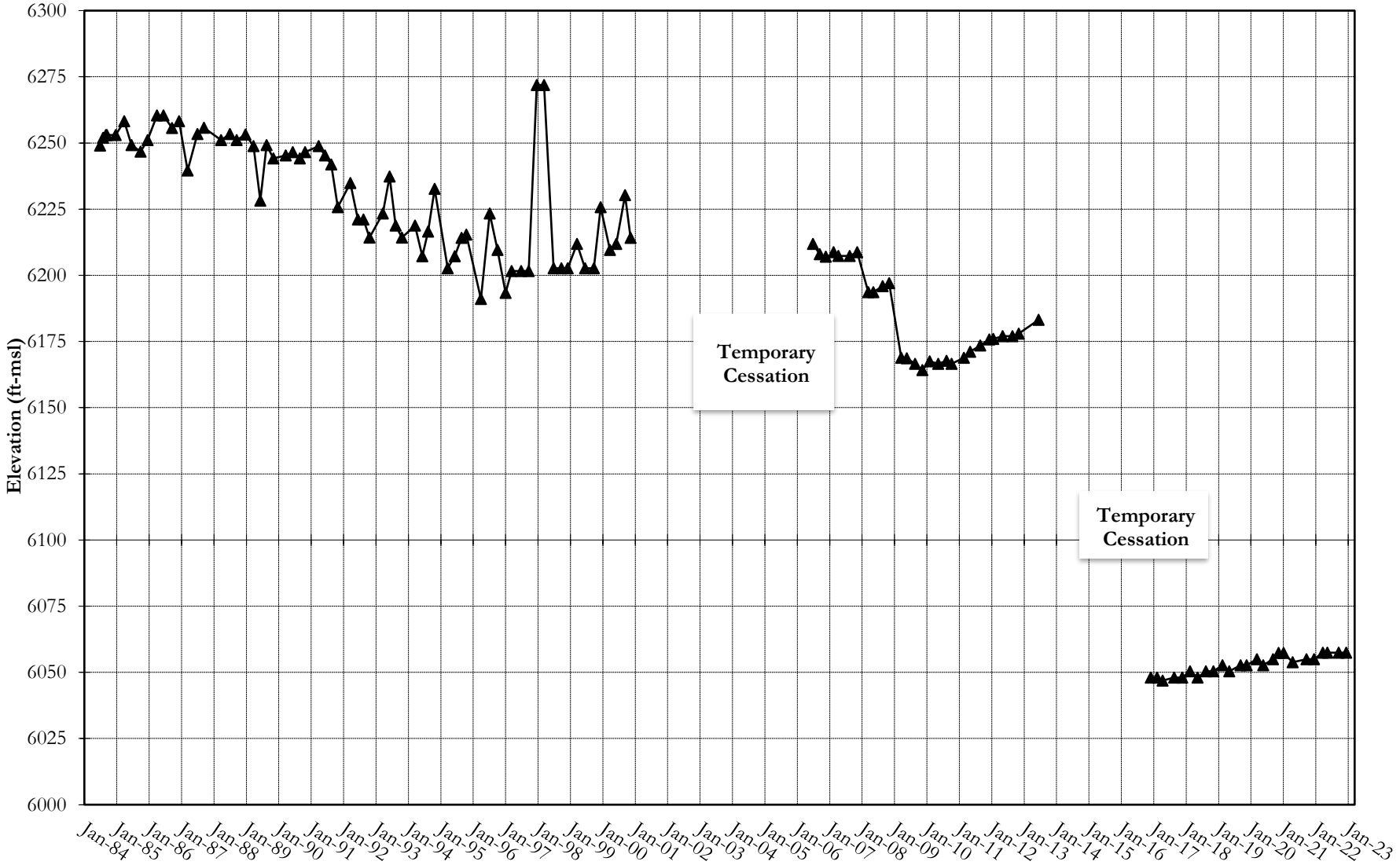
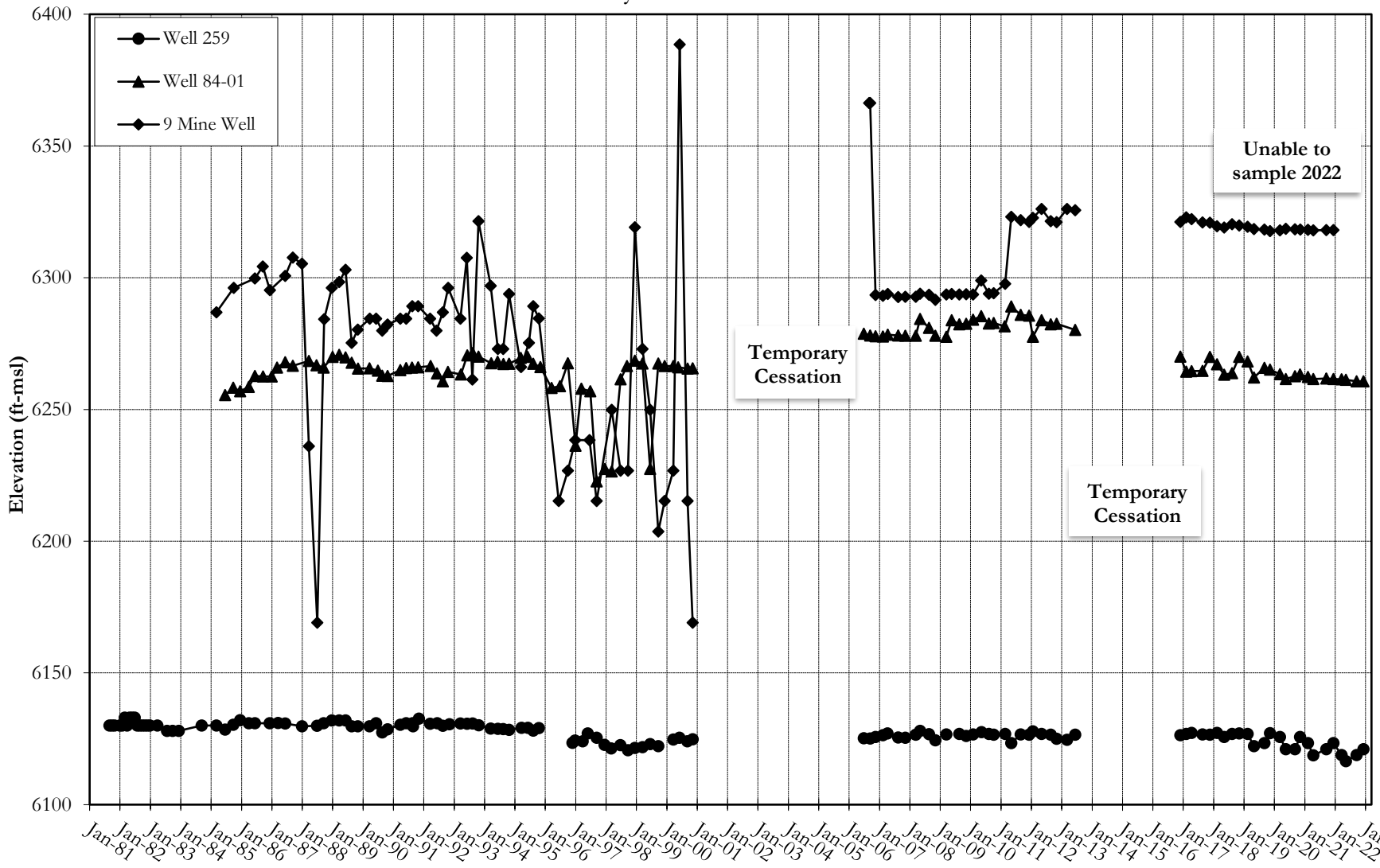


FIGURE 9

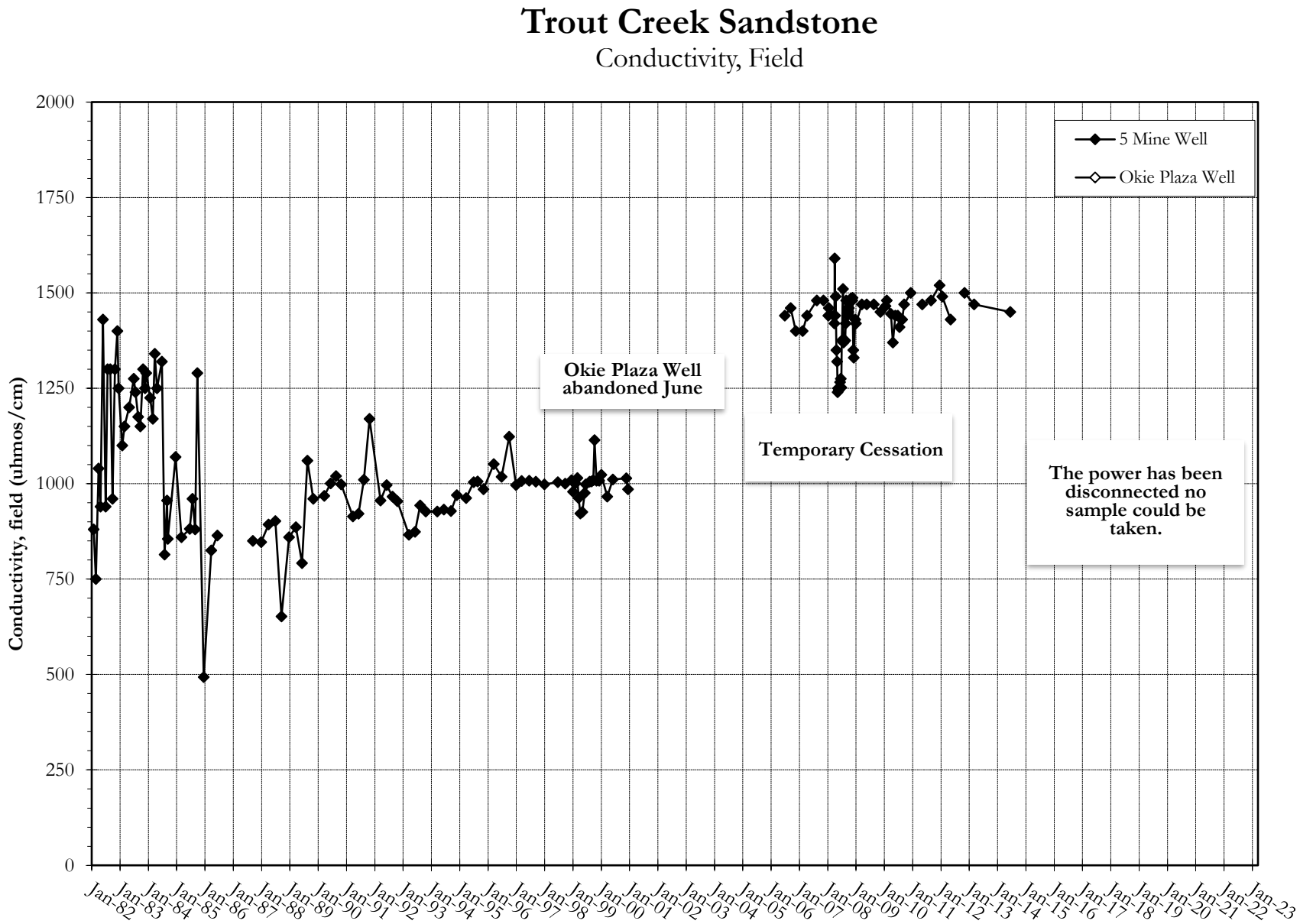
PLOT OF WATER LEVELS

Twentymile Sandstone Wells



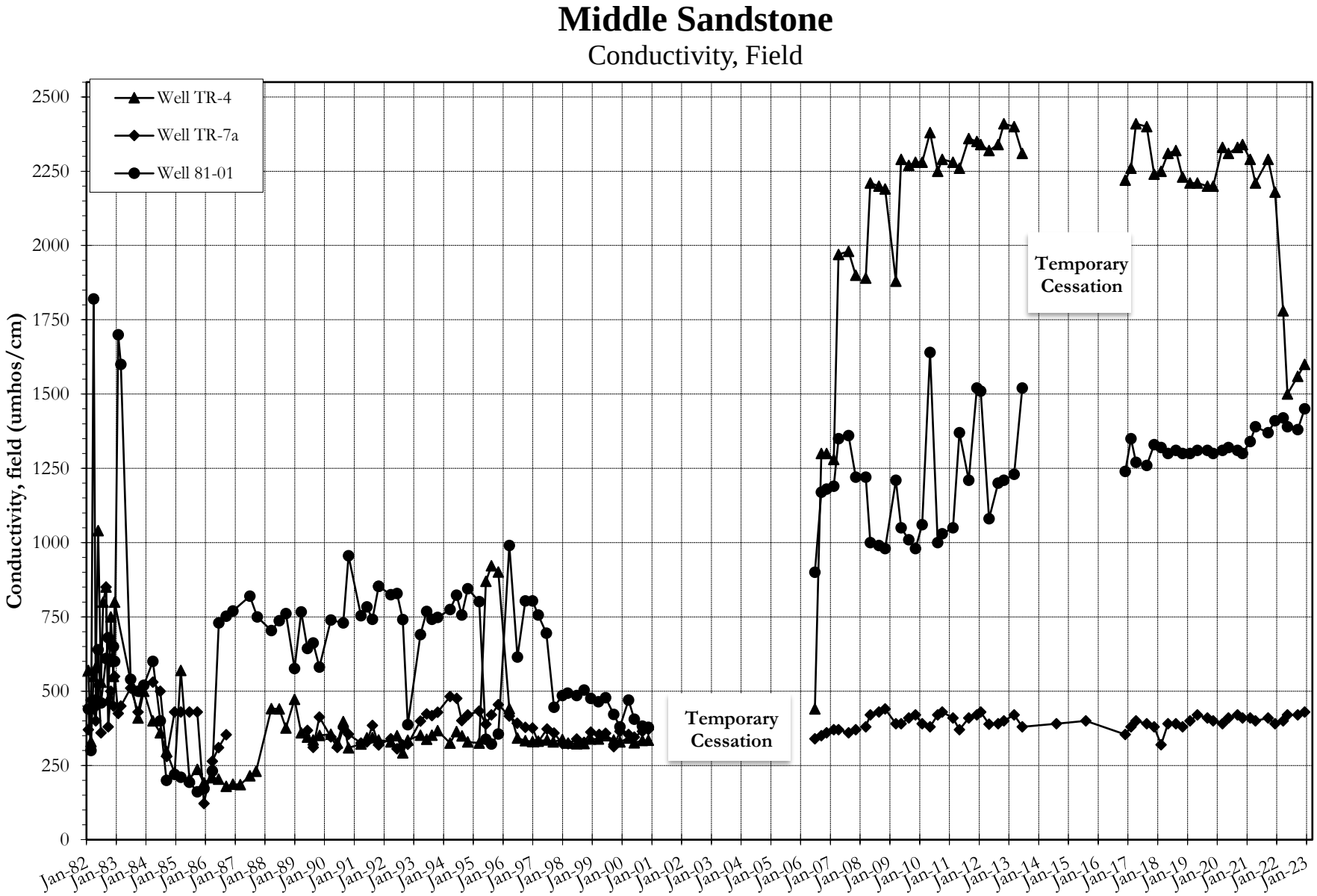
I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\10 TWENTYMILE SS WL

FIGURE 10



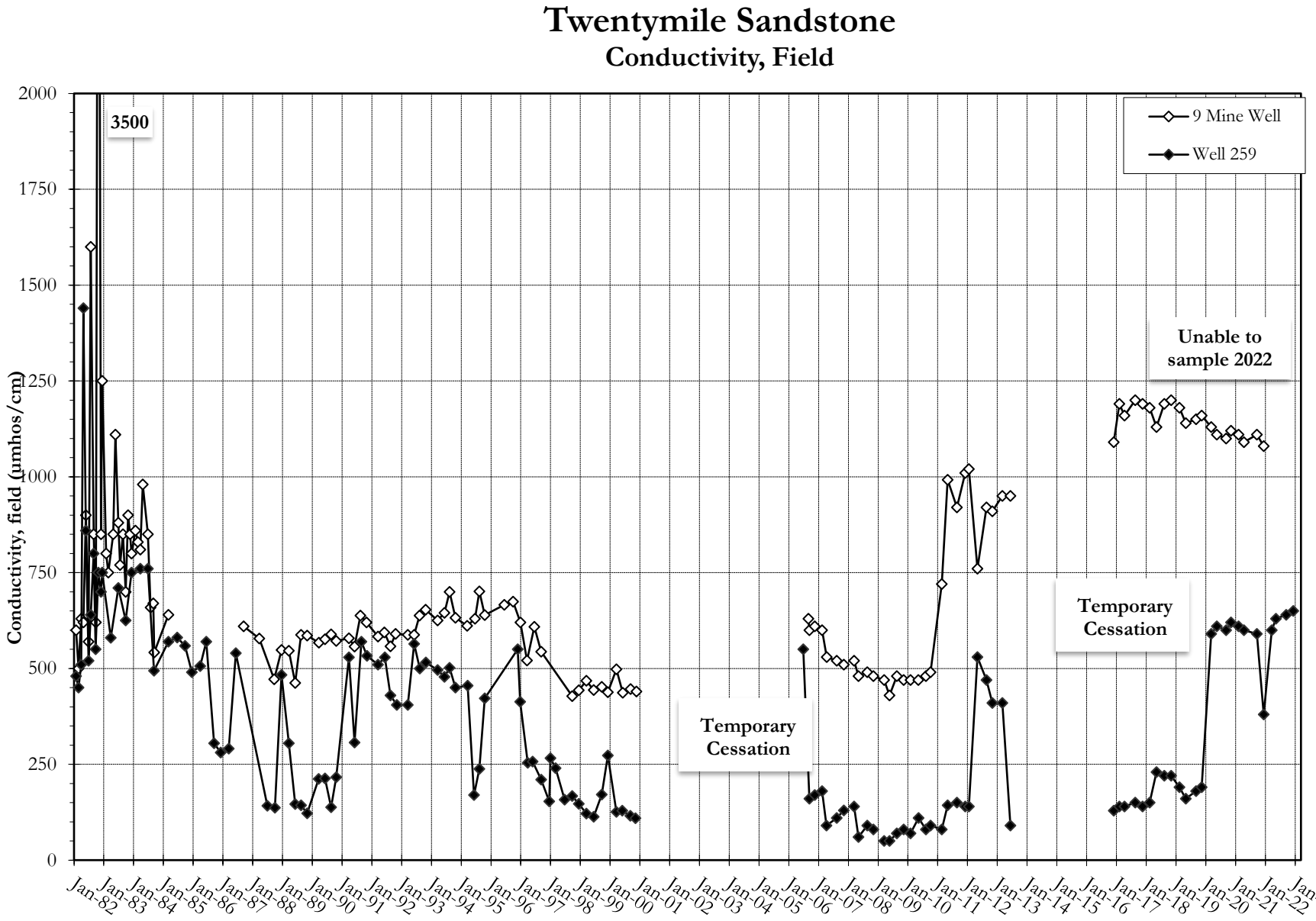
I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\11 TROUT CREEK SS EC

FIGURE 11



I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\12 MIDDLE SS EC

FIGURE 12


Twentymile Sandstone
Conductivity, Field
Conductivity, field (µmhos/cm)
2000
1750
1500
1250
1000
750
500
250
0
3500
9 Mine Well
Well 259
Unable to sample 2022
Temporary Cessation
Temporary Cessation
Jan-82
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
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Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
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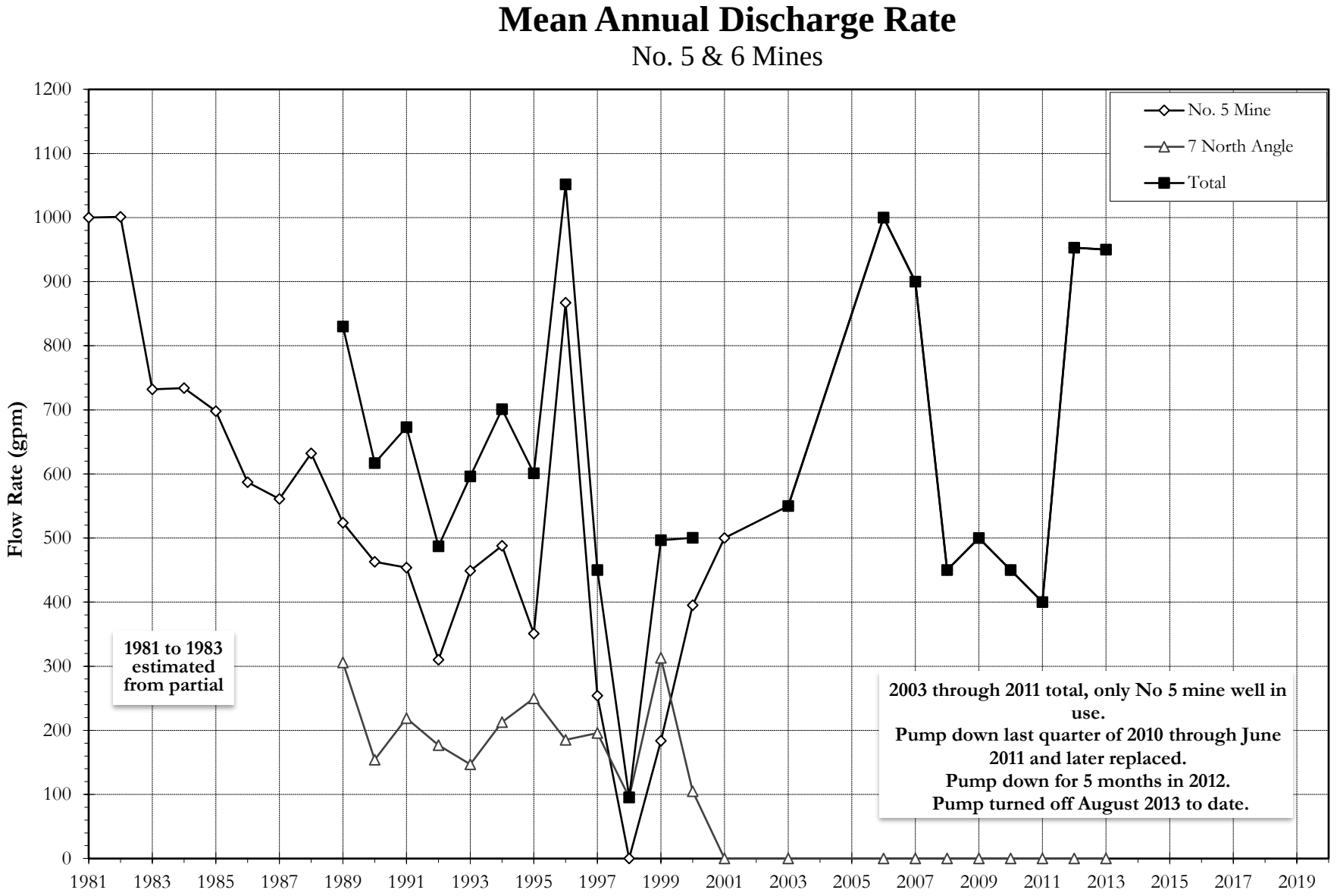
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23

FIGURE 13

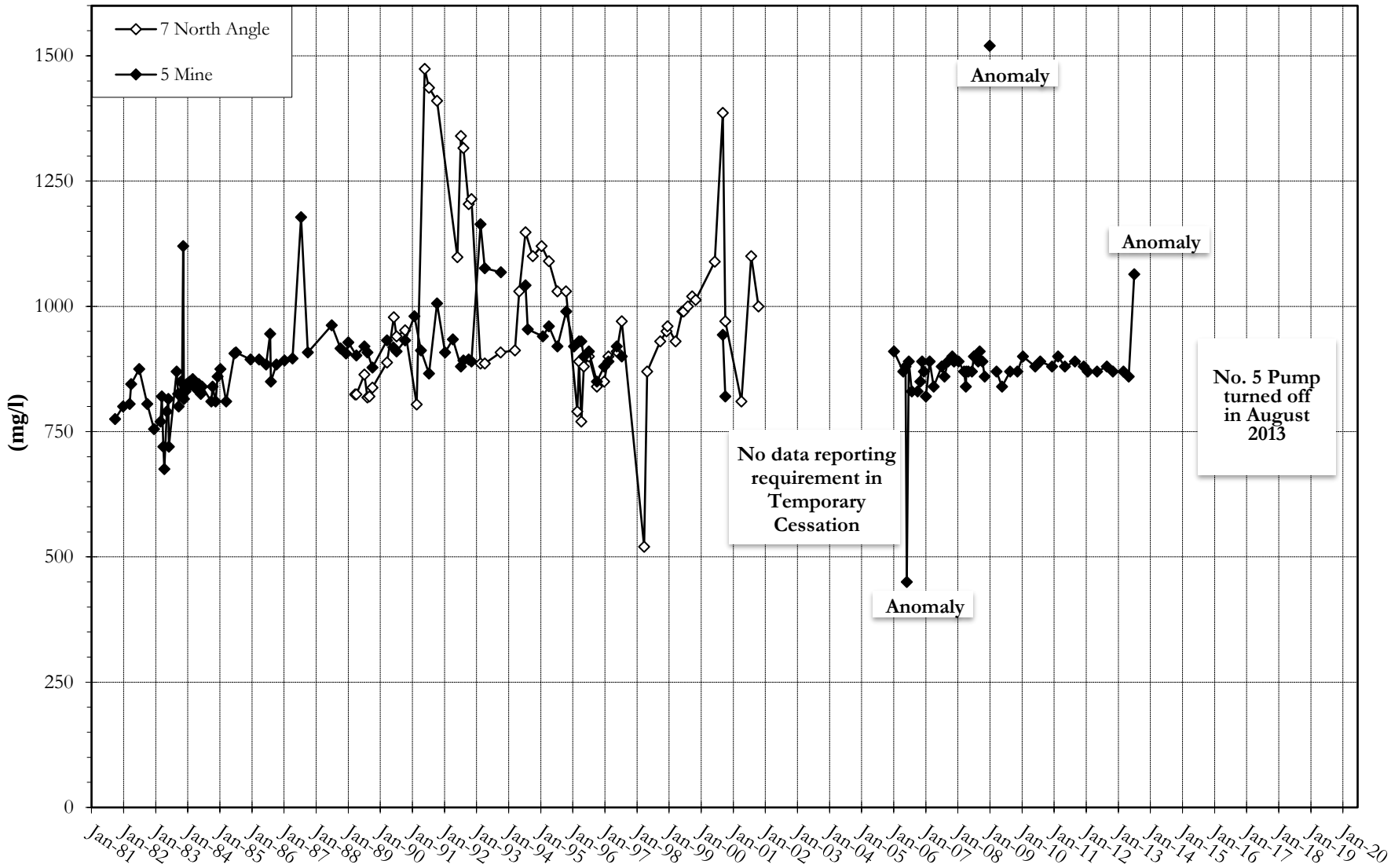


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\14 5 & 6 DISCHARGE 2012

FIGURE 14

No. 5 Mine & 7 North Angle Discharges

Solids, Dissolved

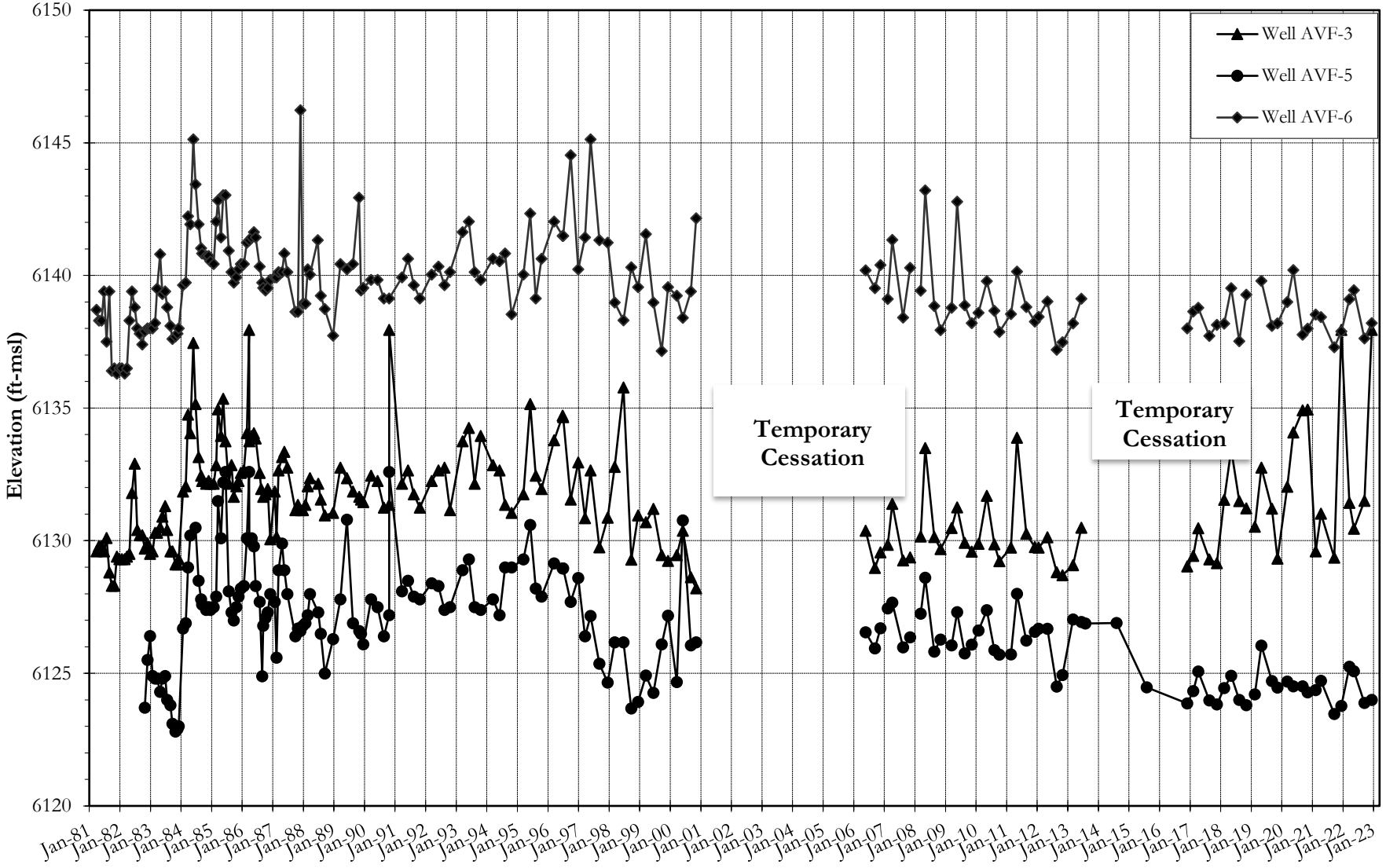


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\15 5MN & 7NA POR TDS

FIGURE 15

PLOT OF WATER LEVELS

Williams Fork Alluvium

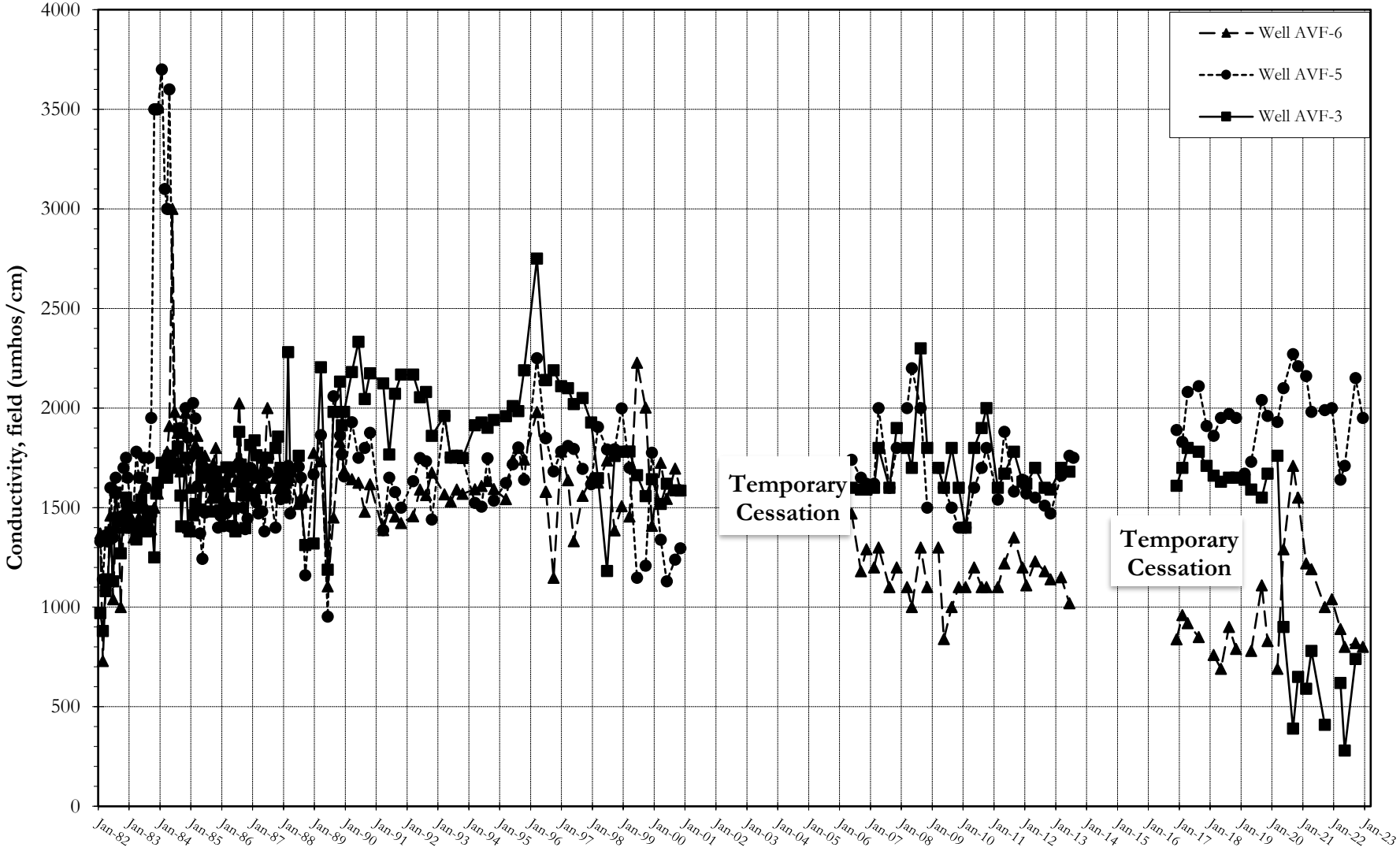


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\16 WILLIAMS FK ALLUVIUM POR WL

FIGURE 16

Williams Fork Alluvium

Conductivity, Field



I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\17 WILLIAMS FK ALLUVIUM POR EC

FIGURE 17

Williams Fork River

Solids, Total Dissolved

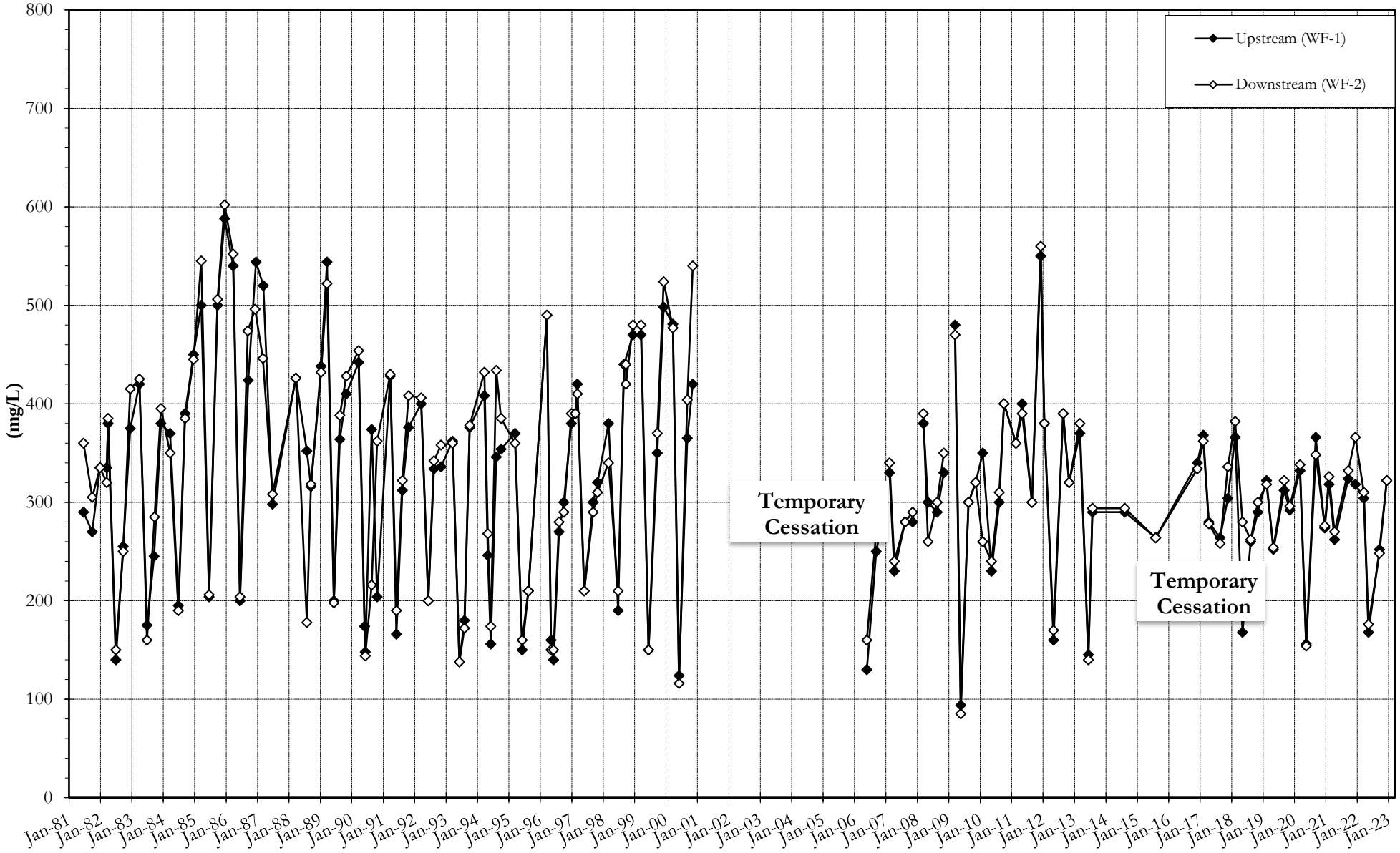
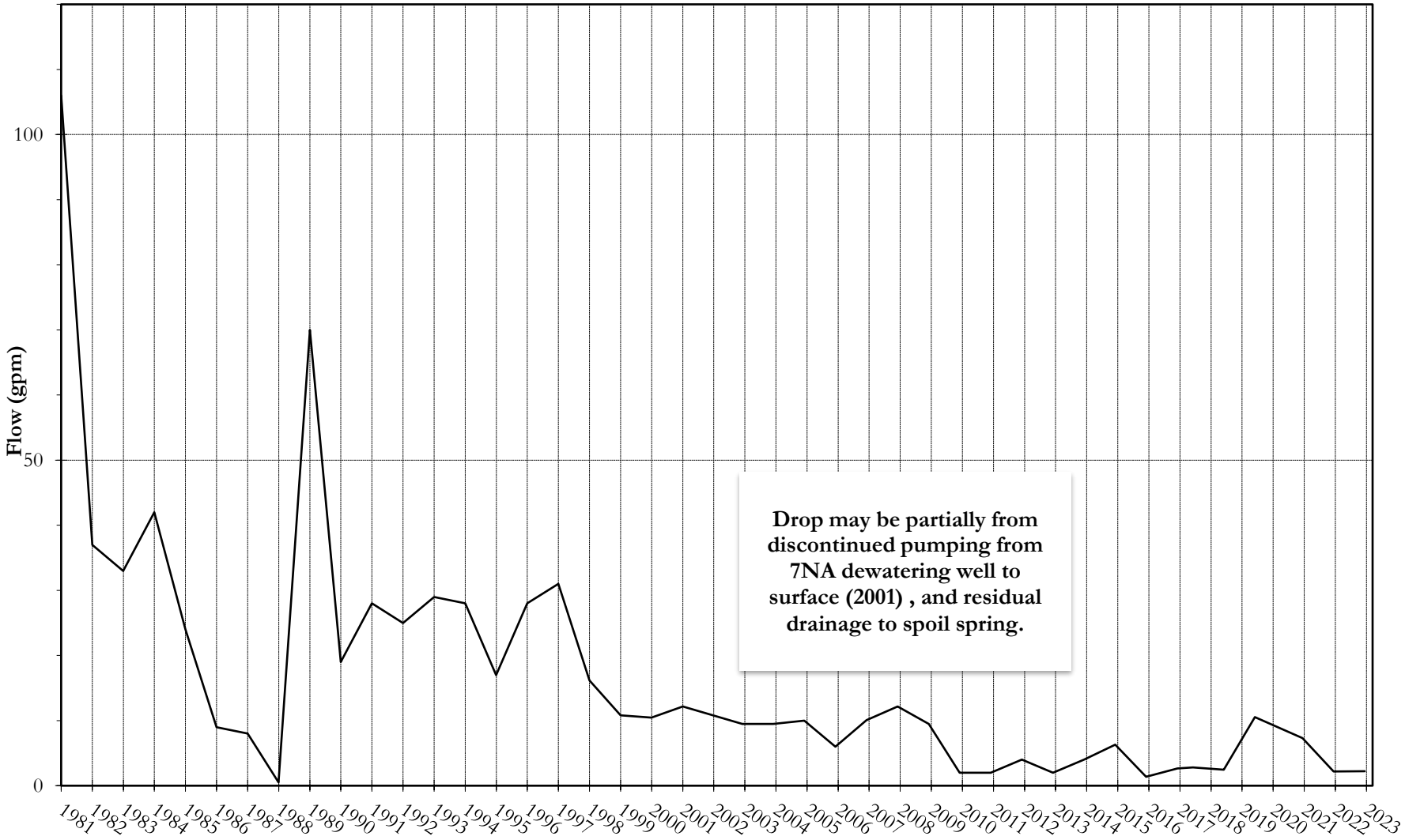


FIGURE 18

Average Discharge From No. 1 Strip Pit

Period of Record

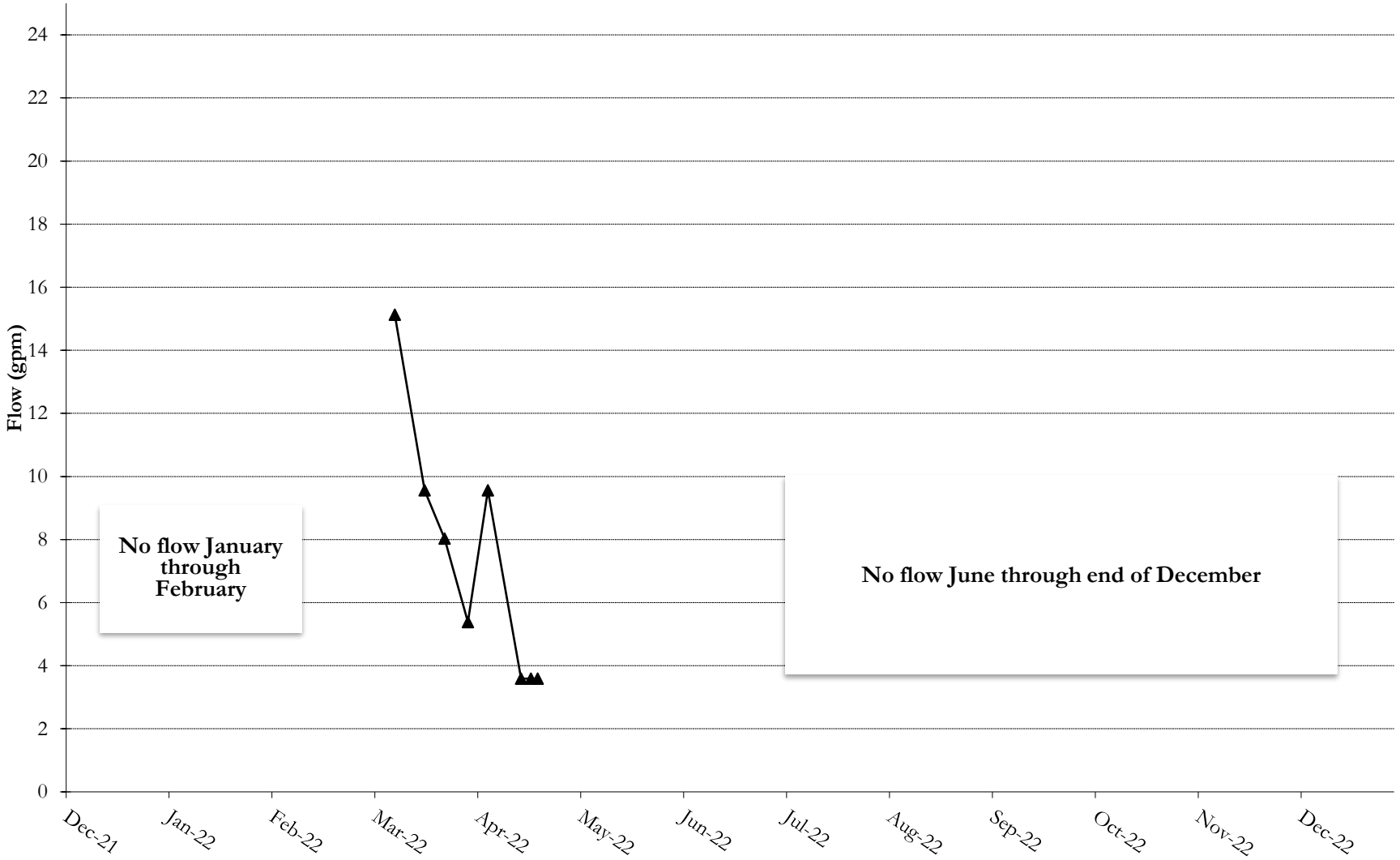


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\19 STRIP PIT 1, 1SP POR DISCHARGE

FIGURE 19

Plot of Flow Rates

No. 1 Strip Pit Discharge, 2022 Water Year

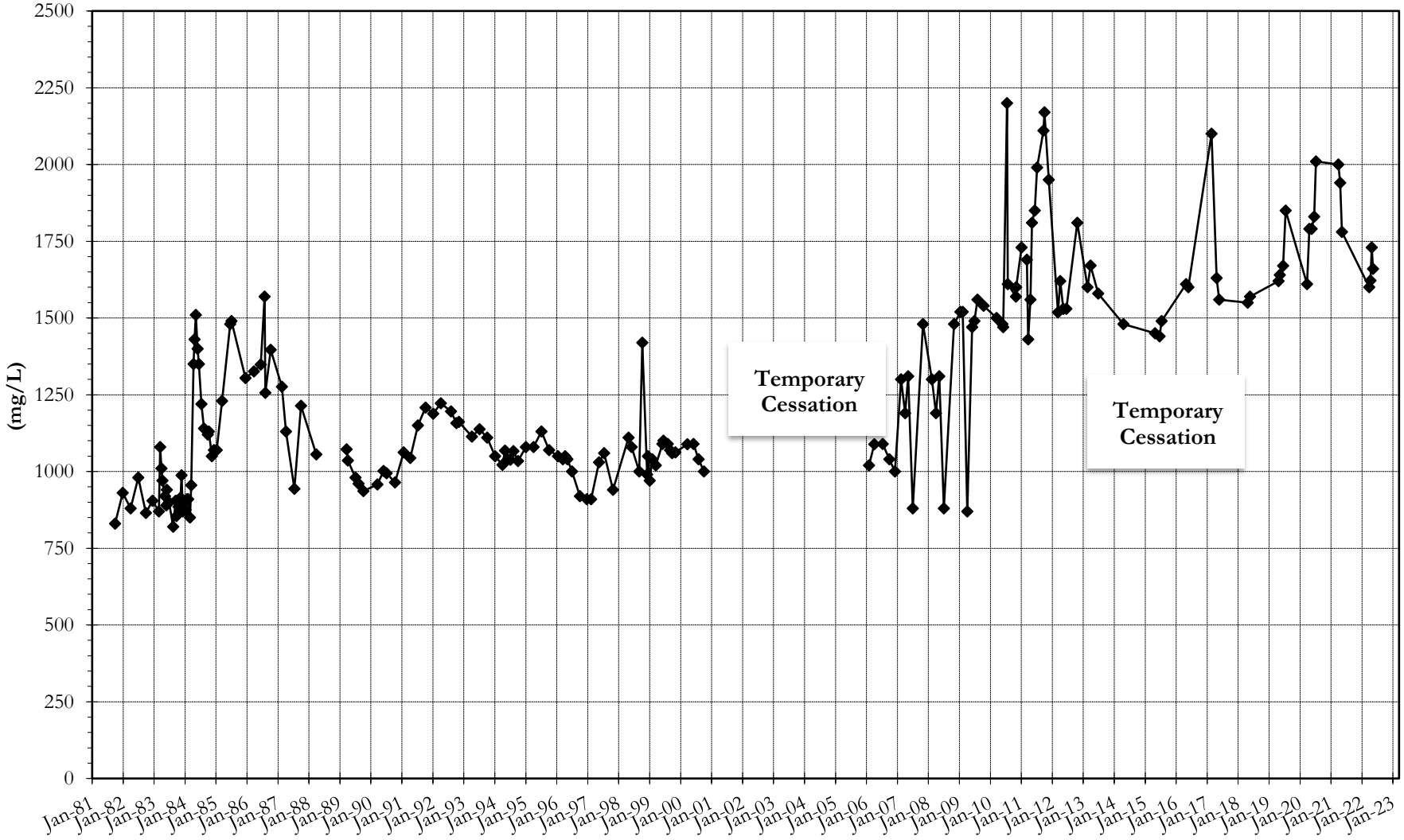


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\20 STRIP PIT 1, 1SP WY DISCHARGE

FIGURE 20

No. 1 Strip Pit Discharge

Solids, Dissolved

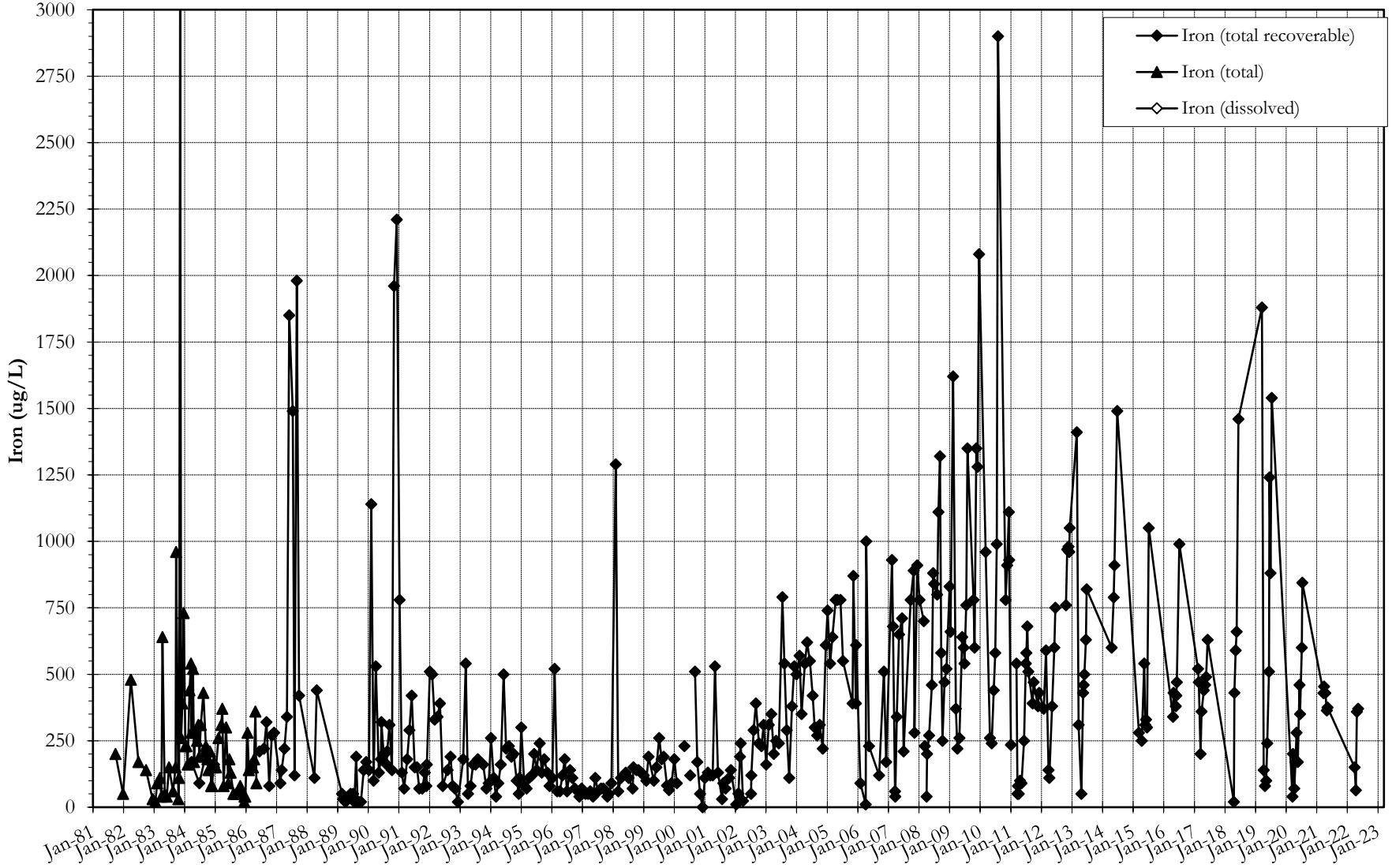


I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\21 STRIP PIT 1, 1SP POR TDS

FIGURE 21

No. 1 Strip Pit Discharge

Iron - Period of Record



I:\Environmental\CDMG - CDRMS\AHR\2022\WF\Figures\22 STRIP PIT 1, 1SP POR FE

FIGURE 22

SUPPORTING DATA

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	01/01/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/02/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/03/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/04/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/05/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/06/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/07/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/08/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/09/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/10/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/11/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/12/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/13/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/14/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/15/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/16/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/17/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/18/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/19/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/20/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/21/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/22/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/23/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/24/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/25/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/26/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/27/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/28/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/29/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/30/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	01/31/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/01/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/02/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/03/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/04/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/05/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/06/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/07/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/08/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/09/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/10/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/11/2022 00:00	No Reading	cfs	ICE

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	02/12/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/13/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/14/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/15/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/16/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/17/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/18/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/19/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/20/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/21/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/22/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/23/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/24/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/25/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/26/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/27/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	02/28/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/01/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/02/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/03/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/04/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/05/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/06/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/07/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/08/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/09/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/10/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/11/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/12/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/13/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/14/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/15/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/16/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/17/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/18/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/19/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/20/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/21/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/22/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/23/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/24/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/25/2022 00:00	No Reading	cfs	ICE

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	03/26/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/27/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/28/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/29/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/30/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	03/31/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/01/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/02/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/03/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/04/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/05/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/06/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/07/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/08/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/09/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/10/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	04/11/2022 00:00	80.8	cfs	
WMFKMHCO	04/12/2022 00:00	81.2	cfs	
WMFKMHCO	04/13/2022 00:00	70.5	cfs	
WMFKMHCO	04/14/2022 00:00	64.4	cfs	
WMFKMHCO	04/15/2022 00:00	76.1	cfs	
WMFKMHCO	04/16/2022 00:00	72.5	cfs	
WMFKMHCO	04/17/2022 00:00	84.1	cfs	
WMFKMHCO	04/18/2022 00:00	93.1	cfs	
WMFKMHCO	04/19/2022 00:00	126	cfs	
WMFKMHCO	04/20/2022 00:00	203	cfs	
WMFKMHCO	04/21/2022 00:00	234	cfs	
WMFKMHCO	04/22/2022 00:00	340	cfs	
WMFKMHCO	04/23/2022 00:00	354	cfs	
WMFKMHCO	04/24/2022 00:00	260	cfs	
WMFKMHCO	04/25/2022 00:00	210	cfs	
WMFKMHCO	04/26/2022 00:00	185	cfs	
WMFKMHCO	04/27/2022 00:00	181	cfs	
WMFKMHCO	04/28/2022 00:00	236	cfs	
WMFKMHCO	04/29/2022 00:00	330	cfs	
WMFKMHCO	04/30/2022 00:00	276	cfs	
WMFKMHCO	05/01/2022 00:00	277	cfs	
WMFKMHCO	05/02/2022 00:00	314	cfs	
WMFKMHCO	05/03/2022 00:00	325	cfs	
WMFKMHCO	05/04/2022 00:00	347	cfs	
WMFKMHCO	05/05/2022 00:00	304	cfs	
WMFKMHCO	05/06/2022 00:00	356	cfs	

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	05/07/2022 00:00	670	cfs	
WMFKMHCO	05/08/2022 00:00	728	cfs	
WMFKMHCO	05/09/2022 00:00	753	cfs	
WMFKMHCO	05/10/2022 00:00	691	cfs	
WMFKMHCO	05/11/2022 00:00	782	cfs	
WMFKMHCO	05/12/2022 00:00	1100	cfs	
WMFKMHCO	05/13/2022 00:00	772	cfs	
WMFKMHCO	05/14/2022 00:00	813	cfs	
WMFKMHCO	05/15/2022 00:00	981	cfs	
WMFKMHCO	05/16/2022 00:00	1120	cfs	
WMFKMHCO	05/17/2022 00:00	940	cfs	
WMFKMHCO	05/18/2022 00:00	1100	cfs	
WMFKMHCO	05/19/2022 00:00	1100	cfs	
WMFKMHCO	05/20/2022 00:00	978	cfs	
WMFKMHCO	05/21/2022 00:00	663	cfs	
WMFKMHCO	05/22/2022 00:00	536	cfs	
WMFKMHCO	05/23/2022 00:00	426	cfs	
WMFKMHCO	05/24/2022 00:00	379	cfs	
WMFKMHCO	05/25/2022 00:00	341	cfs	
WMFKMHCO	05/26/2022 00:00	367	cfs	
WMFKMHCO	05/27/2022 00:00	465	cfs	
WMFKMHCO	05/28/2022 00:00	558	cfs	
WMFKMHCO	05/29/2022 00:00	635	cfs	
WMFKMHCO	05/30/2022 00:00	681	cfs	
WMFKMHCO	05/31/2022 00:00	509	cfs	
WMFKMHCO	06/01/2022 00:00	407	cfs	
WMFKMHCO	06/02/2022 00:00	381	cfs	
WMFKMHCO	06/03/2022 00:00	399	cfs	
WMFKMHCO	06/04/2022 00:00	377	cfs	
WMFKMHCO	06/05/2022 00:00	410	cfs	
WMFKMHCO	06/06/2022 00:00	451	cfs	
WMFKMHCO	06/07/2022 00:00	505	cfs	
WMFKMHCO	06/08/2022 00:00	484	cfs	
WMFKMHCO	06/09/2022 00:00	456	cfs	
WMFKMHCO	06/10/2022 00:00	446	cfs	
WMFKMHCO	06/11/2022 00:00	452	cfs	
WMFKMHCO	06/12/2022 00:00	443	cfs	
WMFKMHCO	06/13/2022 00:00	409	cfs	
WMFKMHCO	06/14/2022 00:00	352	cfs	
WMFKMHCO	06/15/2022 00:00	284	cfs	
WMFKMHCO	06/16/2022 00:00	236	cfs	
WMFKMHCO	06/17/2022 00:00	221	cfs	

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	06/18/2022 00:00	238	cfs	
WMFKMHCO	06/19/2022 00:00	267	cfs	
WMFKMHCO	06/20/2022 00:00	239	cfs	
WMFKMHCO	06/21/2022 00:00	191	cfs	
WMFKMHCO	06/22/2022 00:00	167	cfs	
WMFKMHCO	06/23/2022 00:00	148	cfs	
WMFKMHCO	06/24/2022 00:00	145	cfs	
WMFKMHCO	06/25/2022 00:00	163	cfs	
WMFKMHCO	06/26/2022 00:00	140	cfs	
WMFKMHCO	06/27/2022 00:00	127	cfs	
WMFKMHCO	06/28/2022 00:00	114	cfs	
WMFKMHCO	06/29/2022 00:00	103	cfs	
WMFKMHCO	06/30/2022 00:00	105	cfs	
WMFKMHCO	07/01/2022 00:00	146	cfs	
WMFKMHCO	07/02/2022 00:00	140	cfs	
WMFKMHCO	07/03/2022 00:00	125	cfs	
WMFKMHCO	07/04/2022 00:00	105	cfs	
WMFKMHCO	07/05/2022 00:00	89.2	cfs	
WMFKMHCO	07/06/2022 00:00	136	cfs	
WMFKMHCO	07/07/2022 00:00	127	cfs	
WMFKMHCO	07/08/2022 00:00	109	cfs	
WMFKMHCO	07/09/2022 00:00	91.8	cfs	
WMFKMHCO	07/10/2022 00:00	79.5	cfs	
WMFKMHCO	07/11/2022 00:00	72	cfs	
WMFKMHCO	07/12/2022 00:00	65.7	cfs	
WMFKMHCO	07/13/2022 00:00	62.4	cfs	
WMFKMHCO	07/14/2022 00:00	61.1	cfs	
WMFKMHCO	07/15/2022 00:00	57.9	cfs	
WMFKMHCO	07/16/2022 00:00	63.4	cfs	
WMFKMHCO	07/17/2022 00:00	68.9	cfs	
WMFKMHCO	07/18/2022 00:00	54.6	cfs	
WMFKMHCO	07/19/2022 00:00	48.4	cfs	
WMFKMHCO	07/20/2022 00:00	49.9	cfs	
WMFKMHCO	07/21/2022 00:00	45.5	cfs	
WMFKMHCO	07/22/2022 00:00	41.5	cfs	
WMFKMHCO	07/23/2022 00:00	41	cfs	
WMFKMHCO	07/24/2022 00:00	44.8	cfs	
WMFKMHCO	07/25/2022 00:00	62.1	cfs	
WMFKMHCO	07/26/2022 00:00	59.9	cfs	
WMFKMHCO	07/27/2022 00:00	49.3	cfs	
WMFKMHCO	07/28/2022 00:00	46.7	cfs	
WMFKMHCO	07/29/2022 00:00	54.4	cfs	

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	07/30/2022 00:00	53.4	cfs	
WMFKMHCO	07/31/2022 00:00	49.4	cfs	
WMFKMHCO	08/01/2022 00:00	46.6	cfs	
WMFKMHCO	08/02/2022 00:00	44.4	cfs	
WMFKMHCO	08/03/2022 00:00	48.1	cfs	
WMFKMHCO	08/04/2022 00:00	50	cfs	
WMFKMHCO	08/05/2022 00:00	38.7	cfs	
WMFKMHCO	08/06/2022 00:00	36.9	cfs	
WMFKMHCO	08/07/2022 00:00	38.6	cfs	
WMFKMHCO	08/08/2022 00:00	35.7	cfs	
WMFKMHCO	08/09/2022 00:00	32.1	cfs	
WMFKMHCO	08/10/2022 00:00	27.6	cfs	
WMFKMHCO	08/11/2022 00:00	24.1	cfs	
WMFKMHCO	08/12/2022 00:00	23.3	cfs	
WMFKMHCO	08/13/2022 00:00	24.7	cfs	
WMFKMHCO	08/14/2022 00:00	23	cfs	
WMFKMHCO	08/15/2022 00:00	25.4	cfs	
WMFKMHCO	08/16/2022 00:00	30.3	cfs	
WMFKMHCO	08/17/2022 00:00	23.8	cfs	
WMFKMHCO	08/18/2022 00:00	24.4	cfs	
WMFKMHCO	08/19/2022 00:00	19.4	cfs	
WMFKMHCO	08/20/2022 00:00	15.3	cfs	
WMFKMHCO	08/21/2022 00:00	22.9	cfs	
WMFKMHCO	08/22/2022 00:00	35.7	cfs	
WMFKMHCO	08/23/2022 00:00	34.6	cfs	
WMFKMHCO	08/24/2022 00:00	25.2	cfs	
WMFKMHCO	08/25/2022 00:00	23.1	cfs	
WMFKMHCO	08/26/2022 00:00	19.7	cfs	
WMFKMHCO	08/27/2022 00:00	16.9	cfs	
WMFKMHCO	08/28/2022 00:00	18	cfs	
WMFKMHCO	08/29/2022 00:00	15.5	cfs	
WMFKMHCO	08/30/2022 00:00	15.7	cfs	
WMFKMHCO	08/31/2022 00:00	15.4	cfs	
WMFKMHCO	09/01/2022 00:00	13.4	cfs	
WMFKMHCO	09/02/2022 00:00	11.1	cfs	
WMFKMHCO	09/03/2022 00:00	6.36	cfs	
WMFKMHCO	09/04/2022 00:00	5.68	cfs	
WMFKMHCO	09/05/2022 00:00	6.41	cfs	
WMFKMHCO	09/06/2022 00:00	6.25	cfs	
WMFKMHCO	09/07/2022 00:00	7.15	cfs	
WMFKMHCO	09/08/2022 00:00	11.4	cfs	
WMFKMHCO	09/09/2022 00:00	11.7	cfs	

2022 Williams Fork River Flow Record
Site: WMFKMHCO

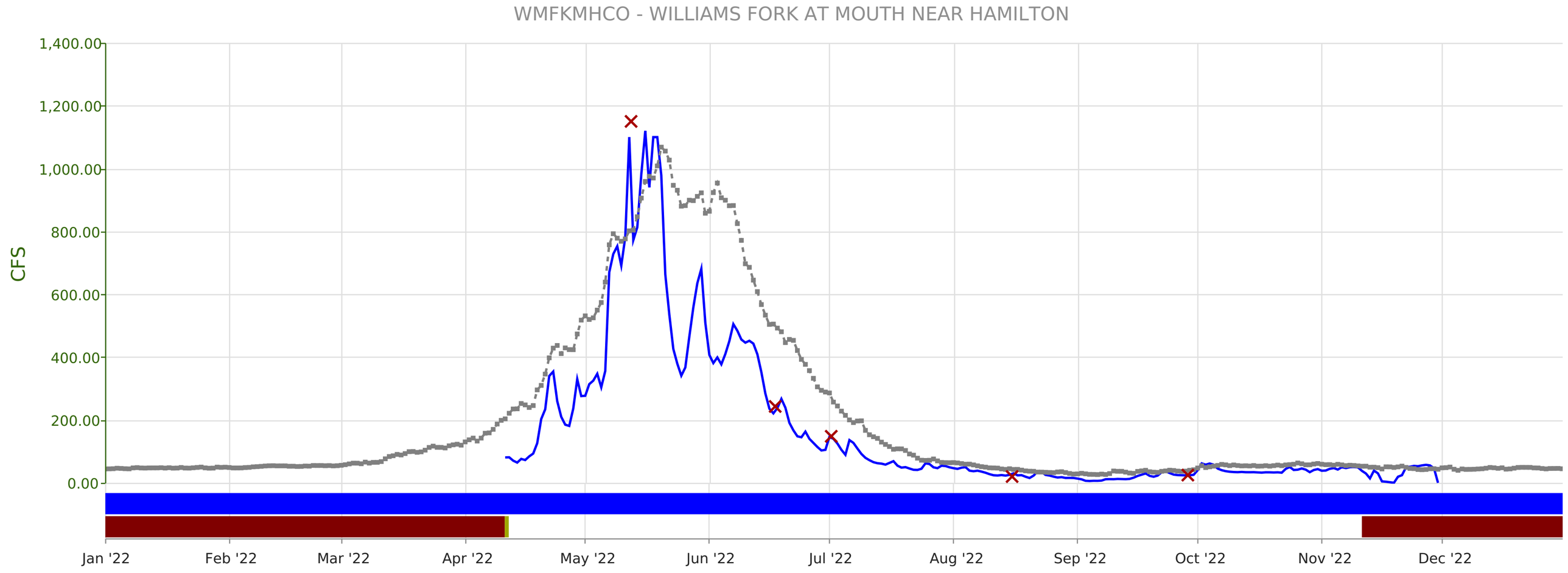
Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	09/10/2022 00:00	11.5	cfs	
WMFKMHCO	09/11/2022 00:00	12.4	cfs	
WMFKMHCO	09/12/2022 00:00	12	cfs	
WMFKMHCO	09/13/2022 00:00	11.6	cfs	
WMFKMHCO	09/14/2022 00:00	12.5	cfs	
WMFKMHCO	09/15/2022 00:00	16.4	cfs	
WMFKMHCO	09/16/2022 00:00	21.9	cfs	
WMFKMHCO	09/17/2022 00:00	25.9	cfs	
WMFKMHCO	09/18/2022 00:00	29.9	cfs	
WMFKMHCO	09/19/2022 00:00	22.2	cfs	
WMFKMHCO	09/20/2022 00:00	19.4	cfs	
WMFKMHCO	09/21/2022 00:00	23	cfs	
WMFKMHCO	09/22/2022 00:00	33.7	cfs	
WMFKMHCO	09/23/2022 00:00	36.4	cfs	
WMFKMHCO	09/24/2022 00:00	31.1	cfs	
WMFKMHCO	09/25/2022 00:00	26.2	cfs	
WMFKMHCO	09/26/2022 00:00	24.6	cfs	
WMFKMHCO	09/27/2022 00:00	24.2	cfs	
WMFKMHCO	09/28/2022 00:00	23.8	cfs	
WMFKMHCO	09/29/2022 00:00	23.9	cfs	
WMFKMHCO	09/30/2022 00:00	25.6	cfs	
WMFKMHCO	10/01/2022 00:00	40.2	cfs	
WMFKMHCO	10/02/2022 00:00	61.8	cfs	
WMFKMHCO	10/03/2022 00:00	57.8	cfs	
WMFKMHCO	10/04/2022 00:00	61.4	cfs	
WMFKMHCO	10/05/2022 00:00	57.6	cfs	
WMFKMHCO	10/06/2022 00:00	45.3	cfs	
WMFKMHCO	10/07/2022 00:00	40.2	cfs	
WMFKMHCO	10/08/2022 00:00	37.1	cfs	
WMFKMHCO	10/09/2022 00:00	35.3	cfs	
WMFKMHCO	10/10/2022 00:00	34.3	cfs	
WMFKMHCO	10/11/2022 00:00	33.9	cfs	
WMFKMHCO	10/12/2022 00:00	34.6	cfs	
WMFKMHCO	10/13/2022 00:00	33.8	cfs	
WMFKMHCO	10/14/2022 00:00	33.7	cfs	
WMFKMHCO	10/15/2022 00:00	33.9	cfs	
WMFKMHCO	10/16/2022 00:00	33.1	cfs	
WMFKMHCO	10/17/2022 00:00	32.4	cfs	
WMFKMHCO	10/18/2022 00:00	33.5	cfs	
WMFKMHCO	10/19/2022 00:00	33.4	cfs	
WMFKMHCO	10/20/2022 00:00	32.9	cfs	
WMFKMHCO	10/21/2022 00:00	33.4	cfs	

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	10/22/2022 00:00	32.2	cfs	
WMFKMHCO	10/23/2022 00:00	44.4	cfs	
WMFKMHCO	10/24/2022 00:00	50.4	cfs	
WMFKMHCO	10/25/2022 00:00	40.9	cfs	
WMFKMHCO	10/26/2022 00:00	41.8	cfs	
WMFKMHCO	10/27/2022 00:00	45.7	cfs	
WMFKMHCO	10/28/2022 00:00	41.9	cfs	
WMFKMHCO	10/29/2022 00:00	33.9	cfs	
WMFKMHCO	10/30/2022 00:00	40.7	cfs	
WMFKMHCO	10/31/2022 00:00	43.7	cfs	
WMFKMHCO	11/01/2022 00:00	38.4	cfs	
WMFKMHCO	11/02/2022 00:00	39.1	cfs	
WMFKMHCO	11/03/2022 00:00	44.6	cfs	
WMFKMHCO	11/04/2022 00:00	47	cfs	
WMFKMHCO	11/05/2022 00:00	42.2	cfs	
WMFKMHCO	11/06/2022 00:00	49.6	cfs	
WMFKMHCO	11/07/2022 00:00	46.8	cfs	
WMFKMHCO	11/08/2022 00:00	49.8	cfs	
WMFKMHCO	11/09/2022 00:00	50.2	cfs	
WMFKMHCO	11/10/2022 00:00	49.2	cfs	
WMFKMHCO	11/11/2022 00:00	38	cfs	ICE
WMFKMHCO	11/12/2022 00:00	29.6	cfs	ICE
WMFKMHCO	11/13/2022 00:00	14.1	cfs	ICE
WMFKMHCO	11/14/2022 00:00	38.9	cfs	ICE
WMFKMHCO	11/15/2022 00:00	30.1	cfs	ICE
WMFKMHCO	11/16/2022 00:00	4.48	cfs	ICE
WMFKMHCO	11/17/2022 00:00	3.49	cfs	ICE
WMFKMHCO	11/18/2022 00:00	1.85	cfs	ICE
WMFKMHCO	11/19/2022 00:00	0.261	cfs	ICE
WMFKMHCO	11/20/2022 00:00	19.4	cfs	ICE
WMFKMHCO	11/21/2022 00:00	24.3	cfs	ICE
WMFKMHCO	11/22/2022 00:00	49.3	cfs	ICE
WMFKMHCO	11/23/2022 00:00	51.2	cfs	ICE
WMFKMHCO	11/24/2022 00:00	53.9	cfs	ICE
WMFKMHCO	11/25/2022 00:00	52.9	cfs	ICE
WMFKMHCO	11/26/2022 00:00	55.4	cfs	ICE
WMFKMHCO	11/27/2022 00:00	57.2	cfs	ICE
WMFKMHCO	11/28/2022 00:00	55.3	cfs	ICE
WMFKMHCO	11/29/2022 00:00	46.2	cfs	ICE
WMFKMHCO	11/30/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/01/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/02/2022 00:00	No Reading	cfs	ICE

2022 Williams Fork River Flow Record
Site: WMFKMHCO

Site	Date Time	DISCHRG Value	Units	Observation
WMFKMHCO	12/03/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/04/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/05/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/06/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/07/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/08/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/09/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/10/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/11/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/12/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/13/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/14/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/15/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/16/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/17/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/18/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/19/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/20/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/21/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/22/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/23/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/24/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/25/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/26/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/27/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/28/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/29/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/30/2022 00:00	No Reading	cfs	ICE
WMFKMHCO	12/31/2022 00:00	No Reading	cfs	ICE



Legend

Flags

O - Original data as collected by the data collection platform Ssn - Parameter monitored seasonally Obs* - Multiple flags were active during this timestep