



Colorado Discharge Permit System (CDPS)
 Fact Sheet to Permit Number CO0032115
 TRAPPER MINE INC., TRAPPER MINE, MOFFAT COUNTY

June 30, 2020

TABLE OF CONTENTS

I. TYPE OF PERMIT 1

II. FACILITY INFORMATION..... 1

III. SUMMARY OF MAJOR CHANGES FROM LAST RENEWAL..... 5

IV. RECEIVING STREAM 6

V. FACILITY DESCRIPTION 6

VI. PERFORMANCE HISTORY..... 8

VII. DISCUSSION OF NUMERIC EFFLUENT LIMITATIONS..... 12

VIII. DISCUSSION OF STORMWATER-ONLY, NON-NUMERIC EFFLUENT LIMITATIONS, TERMS AND CONDITIONS..... 22

IX. ADDITIONAL TERMS AND CONDITIONS 26

X. CLARIFICATIONS 29

XII. REFERENCES 30

XIII. PUBLIC NOTICE COMMENTS..... 32

I. TYPE OF PERMIT

- A. Permit Type: Industrial Minor, Seventh Renewal
- B. Discharge To: Surface Water

II. FACILITY INFORMATION

- A. SIC Code: 1221 (Coal Surface)
- B. Facility Location: County Road 107S, Craig, CO 81625
 Latitude: 40.45183° N, Longitude: 107.59195° W
- C. Permitted Feature: 001, 002, 005, 008, 009, 011, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026, 027, following sedimentation ponds, prior to mixing with receiving streams. Table II-1 provides detailed information on the outfalls.





Table II-1 Outfall Information

Outfall	Lat° N	Long° W	Wastewater	Wastewater Source	Max. 30-Day Average Flow MGD	Receiving Water	Applicable ELG Subpart
001	40.452496	-107.582908	Stormwater	Surface runoff from current and future ash disposal area (not from landfill working face), active haul roads and shop/office, historical spoil springs	2.1	Johnson Gulch	D
002	40.449303	-107.600169	Stormwater	Surface runoff from future ash disposal area (not from landfill working face), haul roads, shop/office and employee coal stockpile.	1.0	No-Name Gulch	D
005	40.448611	-107.616944	Stormwater	Surface runoff from phase III bond release land, inactive haul road, topsoil stockpiles, small waste storage site with containment.	0.0011	Coyote Gulch	H
008	40.417292	-107.584774	Stormwater	Surface runoff from phase III bond release and a small parcel of reclamation with an active slump.	0.05	Ute Gulch	H
009	40.449864	-107.565756	Mine Water Stormwater	Mine water and surface runoff from phase I, II and III bond release areas, active haul road drainage and a small portion of the active ash pit (not from landfill working face).	0.2	Middle Pyeatt Gulch	D
011	40.451388	-107.561666	Stormwater	Surface runoff from phase I, II and III bond release areas, haul road drainage, topsoil piles and some active reclamation areas, historical spoil springs. No longer receives mine water.	2.5	East Pyeatt Gulch	D
013	40.450573	-107.567575	Stormwater	Surface runoff from phase III bond areas, active haul road, topsoil stockpiles.	0.066	West Pyeatt Gulch	D
014	40.44283	-107.619481	Stormwater	Surface runoff from phase III bond area, inactive haul road, some topsoil stockpiles. Small waste storage site with containment.	1.0	Far East Buzzard Gulch	H
015	40.45014	-107.549675	Stormwater	Surface runoff from phase III bond released area, inactive haul road, topsoil	0.022	Grouse Gulch	H





				stockpiles.			
016	40.450077	-107.546086	Stormwater	Surface runoff from phase III bond released area, inactive haul road, topsoil stockpiles.	0.001	Sage Gulch	H
017	40.445277	-107.535833	Stormwater	Surface runoff from phase I, II and III bond released areas, haul road, topsoil piles and some active reclamation areas. No longer receives mine water.	0.15	Oak Gulch	D
018	40.419444	-107.540277	Stormwater	Surface runoff from phase I and II bond release areas. Outfall sits below valley fill consisting of excess spoil materials; stormwater routed through French drain.	0.22	Horse Gulch	D
019	40.440113	-107.527327	Stormwater	Surface runoff from phase I, II and III bond release areas, active haul road, topsoil piles and some active reclamation areas. No longer receives mine water.	0.05	West Flume Gulch	D
020	40.435304	-107.519361	Stormwater	Surface runoff from active mining and regraded spoils, haul roads, topsoil piles. No longer receives mine water.	2.16	Middle Flume Gulch	D
021	40.436401	-107.515833	Stormwater	Surface runoff from active mining and regraded spoils, haul roads, topsoil piles. No longer receives mine water.	2.16	East Middle Flume Gulch	D
022	40.411111	-107.517777	Stormwater	Surface runoff from active mining areas with current stripping and eventual regrading.	0.05	Deal Gulch	D
023	40.436111	-107.512777	Mine Water Stormwater	Surface runoff from active mining and regraded spoils, haul roads, topsoil piles; mine water from pit pumping.	0.2	East Flume Gulch	D
024	40.416944	-107.545555	Stormwater	Surface runoff from phase I, II and III bond released areas.	0.05	West Horse Gulch	H
025	40.4399	-107.500291	Mine Water Stormwater	Surface runoff from active stripping and mining areas; outfall will potentially receive pit pumping water in the future.	0.2	Deacon Gulch	D
026	40.408372	-107.512711	Stormwater	Surface runoff from active stripping areas, roads and reclaimed areas.	0.05	Deal Gulch	D





027	40.416808	-107.498819	Stormwater	Surface runoff from active stripping areas, roads and reclaimed areas.	0.05	Jeffway Gulch	D
-----	-----------	-------------	------------	--	------	---------------	---

The outfall locations provided above will serve as the points of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water.

Historical spoil springs

Three spoil springs were identified on the application as wastewater sources to outfalls 001, 002 and 011. Typically when an area contributing to a spoil spring is phase II bond released, the facility is able to request that the spring be removed as a wastewater source in accordance with Water Quality Policy 1 - Permit Inactivation Where a Discharge Remains. In short, the policy requires that a perpetual discharge such as a spoil spring meets water quality standards without treatment (i.e. before the treatment pond). The demonstration requires one year of monthly data. When the spoil springs were phase II bond released in 1999 and 2014, this step was overlooked. The facility is eligible to remove the spoil springs as wastewater sources to the outfalls. The data below were available for each spring, and were compared to the permit limits in place when phase II bond release took place. One year of monthly sampling data were not available as the springs do not discharge continuously; therefore, the available data were determined to be sufficient to demonstrate the springs meet water quality standards without treatment. In the future, the facility can apply for a modification to remove qualifying spoil springs in accordance with WQP-1. See section X.D for additional information.

No Name Spring to Outfall 002

	pH	TSS	Fe
Date	6.5 - 9	35/70	3,000/6000
5/14/98	7.4	6	-
5/20/99	7.7	< 5	130
11/9/99	6.9	< 5	660
5/24/00	6.9	< 5	360
5/10/01	7	8	270

Johnson Spring to Outfall 001

	pH	TSS	Fe
Date	6.5 - 9	35/70	3,000/6000
4/11/95	7.8	12	-
11/7/95	7.4	5	-
4/23/96	7.3	12	-
6/2/97	7.3	-	-
5/15/98	8.1	8	-
9/30/98	7.8	-	-
5/20/99	7.6	14	480
10/7/99	8.0	-	-
11/8/99	7.3	< 5	60
5/24/00	7.7	< 5	190

East Pyeat South Spring to Outfall 011

	pH	TSS	Fe
	6.5 - 9	35/70	3,000/6000
6/7/16	8.1	33	820





6/9/15	8.2	70	1390
6/3/14	8.3	22	410
6/4/13	8.2	19	40
6/3/12	8.3	7	150
6/8/11	8.2	7	60
6/8/10	8.2	6	90
6/2/09	8.2	8	< 50
6/10/08	8.2	8	< 100
6/4/07	7.3	< 20	50

III. SUMMARY OF MAJOR CHANGES FROM LAST RENEWAL

A. General Changes

- Outfalls 025, 026 and 027 have been added to the permit at the request of the permittee. The outfalls will cover new stormwater (026 and 027) and new process/mine water (025) discharges associated with planned mining expansion.
- Outfalls 002, 011, 017, 019, 020 and 021 no longer receive process/mine water and are stormwater-only discharges in this permit renewal.
- Outfalls 001, 002 and 011 have had the historical spoil springs removed as a wastewater source.
- Outfalls 009, 023, and 025 are the sole process/mine water discharges authorized in the renewal permit.
- New monitoring requirements at process water outfalls for total recoverable arsenic, total recoverable beryllium, potentially dissolved cadmium, total recoverable trivalent chromium, potentially dissolved copper, low-level total mercury, total recoverable manganese, potentially dissolved selenium, and potentially dissolved zinc.
- New permit limits for total recoverable manganese, dissolved selenium, and TDS at outfalls 009, 023 and 025.
- New monitoring at stormwater outfalls for total recoverable arsenic, total recoverable beryllium, potentially dissolved cadmium, total recoverable chromium, potentially dissolved copper, total recoverable manganese, low-level total mercury, total recoverable manganese, potentially dissolved selenium, and potentially dissolved zinc.
- Flow limitations were implemented for all discharges that have numeric effluent limitations. A compliance schedule for flow limitation was implemented in the permit for outfalls 013 and 019.
- Outfalls 013 and 019 were assigned Subpart D of the federal ELG instead of Subpart H, based on the description of the wastewater sources to these outfalls provided by Trapper.
- Stormwater effluent limitations, and terms and conditions, were added to the permit for stormwater-only outfalls (Outfalls 001, 002, 005, 008, 011, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 024, 026, 027)
- The WQBEL for chronic total iron is applied.





- Quarterly acute WET testing at all outfalls discharging mine water (009, 023 and 025) replaced annual WET testing requirements only when mine water is discharged.

IV. RECEIVING STREAM

A. Waterbody Identification: COLCLY03b Johnson Gulch, No-Name Gulch, Coyote Gulch, Ute Gulch, Pyeatt Gulch, Buzzard Gulch, Grouse Gulch, Sage Gulch, Oak Gulch, Horse Gulch, Flume Gulch, Deal Gulch, Deacon Gulch, Jeffway Gulch.

B. Water Quality Assessment:

An assessment of the stream standards, low flow data, and ambient stream data has been performed to determine the assimilative capacities for Pyeatt Gulch, Flume Gulch, and Deacon Gulch, for potential pollutants of concern. This information, which is contained in the Water Quality Assessment (WQA) for the receiving streams, also includes an antidegradation review, where appropriate. The Division’s Permits Section has reviewed the assimilative capacities to determine the appropriate water quality-based effluent limitations as well as potential limits based on the antidegradation evaluation, where applicable.

V. FACILITY DESCRIPTION

A. Industry Description

Trapper Mine is an active surface coal mine. Overburden is primarily removed with draglines and a truck/loader fleet. The coal is removed with tracked excavators and hauled directly to the adjoining Craig Station via large haul trucks. Trapper Mine receives coal ash for disposal from the adjoining Craig Station. No processing or benefaction activities occur at the facility. The facility operates 24 hours/day year-round. The maximum production rate is approximately 2.6 million tons per year.

B. Chemical Usage

The permittee stated in the application that they utilize one chemical in their treatment process. The MSDS sheet has been reviewed and the following chemical has been approved for use and is summarized in the following table.

Table V-1 - Chemical Additives

Chemical Name	Purpose	Constituents of Concern
Airgas USA, Carbon Dioxide Gas	pH correction	pH

Chemicals deemed acceptable for use in waters that will or may be discharged to waters of the State are acceptable only when used in accordance with all state and federal regulations, and in strict accordance with the manufacturer’s site-specific instructions.

C. Wastewater Sources and Treatment Description

Outfall 001 - Stormwater runoff from current and future ash disposal area, active haul roads, and the shop/office, and historical spoil springs, is routed through a series of five ponds for settling before being discharged to Johnson Gulch.

Outfall 002 - Stormwater runoff from future ash disposal area, haul roads, the shop/office, and employee coal stockpile is routed through a series of three ponds for settling before being discharged to No-Name Gulch.





Outfall 005 - Stormwater runoff from phase III bond release area, inactive haul road, topsoil stockpile, and small waste storage site with containment is directed to a pond before being discharged to Coyote Gulch.

Outfall 008 - Stormwater runoff from phase III bond release area and active slump is directed to a pond before being discharged to Ute Gulch.

Outfall 009 - Mine water and stormwater runoff from phase I, II and III areas; active haul road and ash pit is routed through a series of three ponds before being discharged to Middle Pyeatt Gulch.

Outfall 011 - Stormwater runoff from phase I, II and III areas, haul road, topsoil stockpiles is routed through a series of three ponds before being discharged to East Pyeatt Gulch.

Outfall 013 - Stormwater runoff from phase III bond released area, active haul road and topsoil stockpile is routed through two ponds before being discharged to West Pyeatt Gulch.

Outfall 014 - Stormwater runoff from phase III bond released area, inactive haul road, topsoil stockpile, and waste storage site with containment is directed to a pond before being discharged to Far East Buzzard Gulch.

Outfall 015 - Stormwater runoff from phase III bond released area, inactive haul road and topsoil stockpiles is routed through two ponds before being discharged to Grouse Gulch.

Outfall 016 - Stormwater runoff from phase III bond released area, inactive haul road and topsoil stockpiles is routed through two ponds before being discharged to Sage Gulch.

Outfall 017 - Stormwater runoff from phase I, II and III areas, haul road and topsoil stockpiles is routed through two ponds before being discharged to Oak Gulch.

Outfall 018 - Stormwater runoff from phase I and II areas and French drain discharge consisting of stormwater coming into contact spoil materials is routed to a pond before being discharged to Horse Gulch.

Outfall 019 - Stormwater runoff from phase I, II and III areas, active haul road and topsoil stockpiles is routed through a pond before being discharged to West Flume Gulch.

Outfall 020 - Stormwater runoff from active mining area, regraded spoils, haul roads, topsoil stockpiles is routed through two ponds before being discharged to Middle Flume Gulch.

Outfall 021 - Stormwater runoff from active mining area, regraded spoils, haul roads, topsoil stockpiles is routed through two ponds before being discharged to East Middle Flume Gulch.

Outfall 022 - Stormwater runoff from active mining areas is routed through a pond before being discharged to Deal Gulch.

Outfall 023 - Mine water and stormwater runoff from active mining area, regraded spoils, haul roads and topsoil stockpiles is routed through a pond before being discharged to East Flume Gulch.

Outfall 024 - Stormwater runoff from phase I, II and III areas is routed through a pond before being discharged to West Horse Gulch.

Outfall 025 - Mine water and stormwater runoff from active stripping and mining areas will be routed through a pond before being discharged to Deacon Gulch.

Outfall 026 - Stormwater runoff from active stripping areas and roads will be routed through a pond before being discharged to Deal Gulch.





Outfall 027 - Stormwater runoff from active stripping area and roads will be routed through a pond before being discharged to Jeffway Gulch.

VI. PERFORMANCE HISTORY

A. Monitoring Data

1. Discharge Monitoring Reports - The following tables summarize the effluent data reported on the Discharge Monitoring Reports (DMRs) for the previous permit term, from November 1, 2012 through March 21, 2017. No discharge was reported for outfalls 008, 009, 019, 022, 023 and 024. Outfalls 025, 026 and 027 are proposed outfalls and have not begun to discharge.

Table VI-1a Summary of DMR Data Permitted Feature 001

Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/AD Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	18	0.068/0.0023/0.16	0.069/0.0023/0.16	2.1/Report	
pH (su)	18	8.3/7.9/9	8.6/8.2/9	6.5 - 9	
TSS (mg/l)	18	11/5/37	11/5/37	35/70	
Oil and Grease Visual (mg/l)	18	NV	NV	Report	
Oil and Grease (mg/l)	18	NA	NA	10	
Fe, TR (µg/l)	18	267/50/1090	267/50/1090	3000/6000	

NV means No Visible Sheen

Table VI-1b Summary of DMR Data Permitted Feature 002

Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/AD Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	18	0.19/0.055/0.46	0.19/0.055/0.46	1.0/Report	
pH (su)	18	8.1/7.5/8.3	8.4/8.3/8.5	6.5 - 9	
TSS (mg/l)	18	13/5/33	13/5/33	35/70	
Oil and Grease Visual (mg/l)	18	NV	NV	Report	
Oil and Grease (mg/l)	18	NA	NA	10	
Fe, TR (µg/l)	18	471/180/1350	471/180/1350	3000/6000	

Permitted Feature 008A - No Discharge

Permitted Feature 009A - No Discharge

Table VI-1c Summary of DMR Data Permitted Feature 011

Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/AD Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	15	0.16/0.048/0.41	0.17/0.055/0.41	2.5/Report	
pH (su)	15	7.7/7.4/8	7.9/7.7/8.3	6.5 - 9	
TSS (mg/l)	15	21/97	21/97	35/70	1
Oil and Grease Visual (mg/l)	15	NV	NV	Report	





Oil and Grease (mg/l)	15	NA	NA	10	
Fe, TR (µg/l)	15	685/2800	685/2800	3000/6000	
Wet, acute					
pimephales, LC50	4		100	100	
ceriodaphnia LC50	4		100		

Table VI-1d Summary of DMR Data Permitted Feature 017

Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/AD Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	3	0.011/0.0067/0.019	0.011/0.0067/0.019	0.15/Report	
pH (su)	3	8.4/8.1/8.6	8.4/8.1/8.6	6.5 - 9	
TSS (mg/l)	3	11/5/22	11/5/22	35/70	
Oil and Grease Visual (mg/l)	3	NV	NV	Report	
Oil and Grease (mg/l)	3	NA	NA	10	
Fe, TR (µg/l)	3	493/220/710	493/220/710	3000/6000	

Table VI-1e Summary of DMR Data Permitted Feature 018

Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/AD Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	2	0.052/0.0023/0.1	0.052/0.0023/0.1	0.22/Report	
pH (su)	2	8.2/8/8.3	8.2/8/8.3	6.5 - 9	
TSS (mg/l)	1	14/14/14	14/14/14	35/70	
Oil and Grease Visual (mg/l)	2	NV	NV	Report	
Oil and Grease (mg/l)	2	NA	NA	10	
Fe, TR (µg/l)	1	2410/2410/2410	2410/2410/2410	3000/6000	

Permitted Feature 019A - No Discharge**Table VI-1f Summary of DMR Data Permitted Feature 020**

Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/AD Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	11	0.071/0.0023/0.26	0.071/0.0023/0.26	2.16/Report	
pH (su)	11	8.3/7.6/8.6	8.4/8/8.6	6.5 - 9	
TSS (mg/l)	11	10/5/34	10/5/34	35/70	
Oil and Grease Visual (mg/l)	11	NV	NV	Report	
Oil and Grease (mg/l)	11	NA	NA	10	
Fe, TR (µg/l)	11	341/60/1060	341/60/1060	3000/6000	
Wet, acute					
pimephales, LC50	1		100	100	
ceriodaphnia LC50	1		100		

Table VI-1g Summary of DMR Data Permitted Feature 021



Parameter	# Samples or Reporting Periods	Reported Average Concentrations Avg/Min/Max	Reported Maximum Concentrations Avg/Min/Max	Previous Avg/Max/A D Permit Limit	Number of Limit Excursions
Effluent Flow (MGD)	1	0.0023/0.0023/0.0023	0.0023/0.0023/0.0023	Report	
pH (su)	1	8.3/8.3/8.3	8.3/8.3/8.3	6.5 - 9	
TSS (mg/l)	1	0/<5/0	0/<5/0	35/70	
Oil and Grease Visual (mg/l)	1	NV	NV	Report	
Oil and Grease (mg/l)	0	NA	NA	10	
Fe, TR (µg/l)	1	30/30/30	30/30/30	3000/6000	
*The pH data shows the minimum reported values in the "average" column, and the maximum reported values in the "maximum column"					

Permitted Feature 022 - No Discharge
 Permitted Feature 023 - No Discharge
 Permitted Feature 024 - No Discharge

2. Additional Data -The following tables summarizes effluent data for outfalls 011, 017, 020 and 021 provided by Trapper Mine facility from January 2011 through July 2016.

Table VI-2 - Summary of Effluent Data

Permitted Feature 002										
Parameter	7/5/16	1/5/16	7/7/15	1/6/15	7/8/14	1/8/14	10/8/13	1/2/13	10/2/12	1/10/12
As, TR µg/l	2		2				2		1	< 4
Cu, TR µg/l	< 100	< 50	< 50	< 100	< 100	< 50	< 50	< 100	< 50	< 100
Fe, diss µg/l	< 50		< 100	< 100	< 100		50	< 100		
Mn, diss µg/l		80	90	90		157		180		105
Mn, TR µg/l	90	82	442	100	70	166	171	190	176	120
Se TR µg/l	0.6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Zn, TR µg/l		< 50	< 50	< 100	< 100	< 50	< 50	< 100		< 100
Sulfate mg/l	1140	1320	1030	1090	1370	1270	1050	1190	1260	1140
TDS mg/l	1860	2280	1850	2010	2060	2360	1800	2260	2150	2220
EC, dS/m	n = 57, range 1.22 - 3.05									
Permitted Feature 011										
Parameter	7/5/16	3/8/16	7/7/15	2/3/15	8/5/14	3/4/14	10/8/13	3/6/13	10/30/12	1/10/12
As, TR µg/l		1.4					1.4	1.3		< 4
Cu, TR µg/l		< 50	< 50	< 50	< 50	< 100	< 100	< 100	< 100	< 100
Fe, diss µg/l	< 100	< 50		200	< 100	< 50	< 50	< 100	< 100	< 100
Mn, diss µg/l	80	133		210	70	68		110	130	160
Mn, TR µg/l	80	145	70	230	77	88	54	130	130	190
Se TR µg/l		< 5		< 5	< 5	< 5		< 5	< 5	< 5
Zn, TR µg/l	< 100	< 50	< 100		< 50	< 50	< 50	< 100	< 100	< 100
Sulfate mg/l	1720	870	1250	1690	1500	680	760	1870	2100	1930
TDS mg/l	3520	3430	3300	3020	2870	2810	2310	1610	1560	1290
EC, dS/m	n = 33, 1.14 - 3.87									
Permitted Feature 017										
Parameter	7/5/16	1/5/16	7/7/15	1/6/15	4/8/14	3/4/14	10/8/13	1/2/13	3/6/12	1/10/12





As TR, µg/l							1.6			
Cu, TR µg/l						< 50	< 50		< 50	
Fe, diss µg/l						< 50	110		< 50	
Mn, diss µg/l						< 30				
Mn, TR µg/l									129	
Zn, TR µg/l						< 50	< 50			
Sulfate mg/l						170	200		90	
TDS mg/l						438	626		263	
EC, dS/m					0.98	0.71	1.13		0.44	

Permitted Feature 020

Parameter	3/8/16	1/5/16	7/7/15	2/3/15	9/10/14	3/4/14	10/8/13	2/5/13	10/2/12	1/10/12
As TR, µg/l			1				1			
Cu, TR µg/l	< 50		< 50	< 50	< 100	< 50	< 50	< 50		< 100
Fe, diss µg/l	< 50		80	< 50	< 100	170	< 50			< 50
Mn, diss µg/l					< 50	30	30	30		30
Mn, TR µg/l			30			30	30	30		50
Se, TR µg/l	6.3		7.6	6.8	8.2		11.6	7.2	< 5	
Zn, TR µg/l	< 50		< 50	< 50	< 100		< 50			< 50
Sulfate mg/l	490		510	830	1020	370	620	740		860
TDS mg/l	988		1150	1580	1930	798	1340	1340		2020
EC, dS/m	N = 24, 0.91 - 3.06									

Permitted Feature 021

Parameter	3/8/16	3/6/12	1/10/12							
As TR, µg/l			< 4							
Cu, TR µg/l	< 50		< 100							
Fe, diss µg/l	< 50		< 50							
Mn, diss µg/l	< 30									
Mn, TR µg/l	< 30									
Se, TR µg/l			< 5							
Zn, TR µg/l	< 50		< 100							
Sulfate mg/l	450		1050							
TDS mg/l	809		1920							
EC, dS/m	1.19	2.3	2.43							

B. Compliance With Terms and Conditions of Previous Permit

1. Effluent Limitations -The data shown in the preceding tables indicate an exceedance for TSS at outfall 011 on one occasion. No enforcement actions were taken.

In accordance with 40 CFR Part 122.41(a), any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

2. Other Permit Requirements - The permittee has been in compliance with all other aspects of the previous permit.





VII. DISCUSSION OF NUMERIC EFFLUENT LIMITATIONS

A. Regulatory Basis for Limitations

1. Technology Based Limitations

a. Federal Effluent Limitation Guidelines - The federal guidelines that apply to outfalls 001, 002, 005, 008, 009, 011, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026 and 027, are found under 40 CFR 434, titled Coal Mining, Point Source Category, Alkaline Drainage and Western Alkaline Coal Mining. The specific subparts currently applicable to these discharges follow, and applicable limitations are found in Table VII-1:

- Subpart D - Alkaline Mine Draining, which applies to “alkaline mine drainage from an active mining area resulting from the mining of coal...,” (outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027).
- Subpart F, which contains the alternate limitation provisions for precipitation events (outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027).
- Subpart H - Western Alkaline Coal Mining, which applies to “... reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas...,” (outfalls 005, 008, 014, 015, 016, and 024). Subpart H is discussed in Section VIII of this fact sheet.

Table VII-1 - Federal Standards 40 CFR Part 434

Parameter	Limitations	
	30 Day Avg Concentration	Daily Max. Concentration
pH, s.u. (minimum - maximum)	6.0 - 9.0	
Total Suspended Solids, mg/l *	35	70
Total Iron, mg/l *		
BAT**	3.5	7.0
NSPS***	3.0	6.0
Settleable Solids, ml/l*	N/A	0.5

* These parameters subject to Burden of Proof Requirements see next section
 ** Best Available Technology - applies to best existing performance of treatment technology
 *** New Source Performance Standards - applies to a coal mine constructed after 5/4/84, or construction of a new shaft, slope, or drift.

i. Alternate Limitation Burden of Proof Requirements: In conformance with 40 CFR 434.63, the permittee has the burden of proof when requesting relief from total suspended solids (TSS), total iron and/or settleable solids limitations, as appropriate. Relief shall be granted only when necessary and shall not be granted when the permittee has control over the discharge. The permittee should endeavor to meet the primary limitations whenever possible. Relief is not available for mine drainage from underground workings of underground mines that are not commingled with discharges eligible for alternate limitations (i.e., surface runoff). In addition, relief is not available for mine drainage that is not subject to a treatment system/facility prior to discharge as contemplated in the US EPA Development Document for Effluent Limitations Guidelines and Standards for the Coal Mining Point Source Category, October 1982.

For rainfall, to waive TSS and total iron limitations, it is necessary to prove that the discharge occurred during the precipitation event, or within 48 hours after measurable precipitation has stopped. In addition, to waive settleable solids limitations, it is necessary to prove that the





discharge occurred during the precipitation event, or within 48 hours after precipitation greater than the 10-year, 24-hour event has stopped.

For snowmelt, to waive TSS and total iron limitations, it is necessary to prove that the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow has stopped. In addition, to waive settleable solids limitations, it is necessary to prove that the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow volume greater than the 10-year, 24-hour event has stopped.

Documentation that the treatment facilities were properly operated and maintained prior to and during the storm event must be submitted with any request for relief from primary limitations. The division shall determine the adequacy of proof. As part of this determination, the division shall evaluate whether the permittee could have controlled the discharge in such a manner that primary limitations could have been met, whether proper sediment storage levels were maintained and the ponds had sufficient water and sediment capacity for the storm event plus other relevant factors. All manual pond dewatering must meet TSS and total iron limitations.

- b. Regulation 62: Regulations for Effluent Limitations - These Regulations include effluent limitations that apply to all discharges of wastewater, except stormwater, to state waters. These regulations are applicable to the discharge from outfalls 009, 023, 025.
- 2. Numeric Water Quality Standards - The WQA contains the evaluation of pollutants limited by water quality standards. The mass balance equation shown in Section VI of the WQA was used for most pollutants to calculate the potential water quality based effluent limitations (WQBELs), M_2 , that could be discharged without causing the water quality standard to be violated. A detailed discussion of the calculations for the maximum allowable concentrations for the relevant parameters of concern is provided in Section V of the Water Quality Assessment developed for this permitting action.

The maximum allowable pollutant concentrations determined as part of these calculations represent the calculated effluent limits that would be protective of water quality. These are also known as the water quality-based effluent limits (WQBELs). Both acute and chronic WQBELs may be calculated based on acute and chronic standards, and these may be applied as daily maximum (acute) or 30-day average (chronic) limits.

- 3. Narrative Water Quality Standards - Section 31.11(1)(a)(iv) of The Basic Standards and Methodologies for Surface Waters (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.
 - a. Agricultural Use Protection - The division's Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops policy does not apply because there are no irrigation intakes that may be affected by the discharge.

Stormwater discharges were not contemplated during development of the Protection of Irrigated Crops policy; therefore, EC and SAR monitoring is not applicable to stormwater-only discharges.

- b. Whole Effluent Toxicity - The Water Quality Control Division has established the use of WET testing as a method for identifying and controlling toxic discharges from wastewater treatment facilities. WET testing is being utilized as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life" as required by Section 31.11 (1) of the Basic Standards and Methodologies for Surface Waters. The requirements for WET testing are being implemented in accordance with division policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010).
- 4. Water Quality Regulations, Policies, and Guidance Documents





- a. Antidegradation - Since the receiving water is Use Protected an antidegradation review is not required pursuant to Section 31.8(2)(b) of The Basic Standards and Methodologies for Surface Water.
- b. Antibacksliding - As the receiving water is designated Use Protected, the antibacksliding requirements in Regulation 61.10 have been met.
- c. Determination of Total Maximum Daily Loads (TMDLs) - The stream segments are not on the state's 303(d) list. Therefore TMDLs do not apply.
- d. Salinity Regulations - In compliance with the Colorado River Salinity Standards and the Colorado Discharge Permit System Regulations, the permittee shall monitor for total dissolved solids on a quarterly basis. Samples shall be taken at outfalls 009, 023 and 025. The Colorado River Salinity Standards were promulgated prior to the 1987 amendments to the Clean Water Act that specifically addressed stormwater; therefore, TDS monitoring is not applicable to stormwater-only discharges.

TDS monitoring was not reported during the previous permit term; therefore, an evaluation of the TDS load by Trapper Mine could not be calculated in this permit renewal.

- e. Reasonable Potential Analysis - Using the assimilative capacities contained in the WQA, an analysis must be performed to determine whether to include the calculated assimilative capacities as WQBELs in the permit. This reasonable potential (RP) analysis is based on the Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, dated December, 2002. This guidance document utilizes both quantitative and qualitative approaches to establish RP depending on the amount of available data.

A qualitative determination of RP may be made where ancillary and/or additional treatment technologies are employed to reduce the concentrations of certain pollutants. Because it may be anticipated that the limits for a parameter could not be met without treatment, and the treatment is not coincidental to the movement of water through the facility, limits may be included to assure that treatment is maintained.

A qualitative RP determination may also be made where a federal ELG exists for a parameter, and where the results of a quantitative analysis results in no RP. As the federal ELG is typically less stringent than a limitation based on the WQBELs, if the discharge was to contain concentrations at the ELG (above the WQBEL), the discharge may cause or contribute to an exceedance of a water quality standard.

For this renewal, the division also used information provided in the US EPA Development Document for Effluent Limitations Guidelines and Standards for the Coal Mining Point Source Category, October 1982 (the development document for the federal ELG), which identifies various metals and other parameters that can be found in alkaline coal-related discharges, as part of the qualitative RP analysis. Those metals with no or limited detects (i.e., less than 20%), as documented in the development document, were typically not considered further in the qualitative RP analysis, nor were those metals for which a water quality standard was not identified for the receiving stream. The metals and other parameters considered from the development document are: arsenic, beryllium, cadmium, chromium, copper, mercury, selenium, manganese and zinc.

To conduct a quantitative RP analysis, a minimum of 10 effluent data points from the previous 5 years, should be used. The equations set out in the guidance for normal and lognormal distribution, where applicable, are used to calculate the maximum estimated pollutant concentration (MEPC). For data sets with non-detect values, and where at least 30% of the data set was greater than the detection level, MDLWIN software is used consistent with division guidance to generate the mean and standard deviation, which are then used to establish the multipliers used to calculate the MEPC. If the MDLWIN program cannot be used the division's guidance prescribes the use of best professional judgment.





For some parameters, recent effluent data or an appropriate number of data points may not be available, or collected data may be in the wrong form (dissolved vs total) and therefore may not be available for use in conducting an RP analysis. Thus, consistent with division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit. A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected.

For other parameters, effluent data may be available to conduct a quantitative analysis, and therefore an RP analysis will be conducted to determine if there is RP for the effluent discharge to cause or contribute to exceedances of ambient water quality standards. The guidance specifies that if the MEPC exceeds the maximum allowable pollutant concentration (MAPC), limits must be established and where the MEPC is greater than half the MAPC (but less than the MAPC), monitoring must be established.

Trapper Mine provided effluent data; however, most of the data were unsuitable for quantitative RP analysis because the minimum effluent data points were not available, data were not available for the appropriate outfalls, available data were in the wrong form or the PQL was too high.

B. Parameter Evaluation

1. Technology Based Limitations (Outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027)

Total Suspended Solids (TSS) - The federal ELG (Subpart D) limitation for TSS is applied to discharges from outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027. According to Part 62.2(3) of the Regulations for Effluent Limitations "If the Commission has not so promulgated effluent limitation guidelines for any particular industry, but that industry is subject to effluent limitation guidelines promulgated by the United States Environmental Protection Agency pursuant to the Federal Water Pollution Control Act of 1972, the effluent from these industries shall be subject to the applicable EPA guidelines and shall not be subject to the effluent limitations of Regulation 62.4." Effluent limits based on federal ELGs are effective immediately.

Total Iron - The federal ELG limitations for total iron are applied to discharges from outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027. In cases where the WQBEL is the more stringent limit, the WQBEL will be applied in lieu of the 30-day average ELG. See discussion in the Water Quality Standards section for total iron below. Effluent limits based on federal ELGs are effective immediately.

Oil and Grease - The oil and grease limitations from the Regulations for Effluent Limitations (Regulation 62) are applied to discharges from outfalls 009, 023 and 025. Technology based limits are effective immediately.

2. Water Quality Standards (Outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027)

pH - This parameter is limited by the water quality standards of 6.5-9.0 s.u. for discharges from outfalls 001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, 023, 025, 026 and 027 as this range is more stringent than other applicable standards.

Total Recoverable Arsenic

A qualitative monitoring determination was made for outfalls **009, 023 and 025**. As provided in the development document, arsenic is present in the effluent from some alkaline coal mining operations. No arsenic data are available at outfalls 009, 023 or 025. Effluent data provided in Table VI-2 indicate this metal is present at outfalls with similar pollutant sources at concentrations much lower than the standard (i.e., <4 ug/l compared to a WQBEL of 100 ug/l. However, because arsenic data are not available for the appropriate





outfalls, the data are not considered adequate for use in determining there is no RP. Monitoring has been added to the permit to collect data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, arsenic is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring has been added to the permit to collect data for a future quantitative RP analysis.

Dissolved Arsenic

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, arsenic is present in the effluent from some alkaline coal mining operations. Because dissolved arsenic is a subset of total arsenic, and the total recoverable arsenic standard is less than the dissolved standard, the total recoverable arsenic concentration can be used as a conservative estimate for dissolved arsenic. Permit monitoring for total arsenic will allow for a quantitative RP analysis for dissolved arsenic in the future. A dissolved arsenic limit or monitoring requirement is not necessary at this time.

A qualitative RP analysis was conducted for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, arsenic is present in the effluent from some alkaline coal mining operations. Because dissolved arsenic is a subset of total arsenic, monitoring for total arsenic is sufficient for collecting data for a future quantitative RP analysis. A dissolved arsenic limit or monitoring requirement is not necessary at this time.

Total Recoverable Beryllium

A qualitative RP analysis was conducted for **009, 023 and 025**. As provided in the development document, beryllium is present in the effluent from some alkaline coal mining operations. Effluent data for beryllium are not available; therefore, monitoring is included in the permit to collect data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, beryllium is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring has been added to the permit to collect data for a future quantitative RP analysis.

Potentially Dissolved Cadmium

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, cadmium is present in the effluent from some alkaline coal mining operations. Effluent data for dissolved cadmium were not available. Although there were effluent data provided for total recoverable cadmium at outfalls with similar pollutant sources, and the data are non-detect, the detection level achieved of 20 - 30 µg/l were not sufficiently low to determine quantitative RP against the calculated WQBEL of 1.2 µg/l and were also greater than the achievable detection levels. Consequently, the data are not considered adequate for use in determining there is no RP. Therefore, monitoring is included in the permit to collect data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, cadmium is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring is included in the permit to collect data for a future quantitative RP analysis.

Total Recoverable Trivalent Chromium





A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, chromium is present in the effluent from some alkaline coal mining operations. No chromium data are available for outfalls 009, 023 and 025. Although there were effluent data provided for total recoverable chromium at outfalls with similar pollutant sources, and the data are non-detect, the detection level achieved of 50 - 100 µg/l were not sufficiently low to determine quantitative RP against the WQBEL of 100 µg/l and were also greater than the achievable detection levels. Consequently, the data are not considered adequate for use in determining there is no RP. Therefore, monitoring is included in the permit to collect data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, chromium is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring is included in the permit to collect data for a future quantitative RP analysis.

Potentially Dissolved Trivalent Chromium

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, chromium is present in the effluent from some alkaline coal mining operations. Data for potentially dissolved trivalent chromium were not available. Because dissolved trivalent chromium is a subset of total recoverable trivalent chromium, and the total recoverable trivalent chromium standard is less than the dissolved standard, the total recoverable trivalent chromium concentration can be used as a conservative estimate for potentially dissolved trivalent chromium. Monitoring for total recoverable trivalent chromium will allow for a quantitative RP analysis for dissolved trivalent chromium in the future. Therefore, a dissolved trivalent chromium limit or monitoring requirement is not necessary at this time.

A qualitative RP analysis was conducted for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, chromium is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Because dissolved trivalent chromium is a subset of total recoverable trivalent chromium, monitoring for total recoverable trivalent chromium is sufficient for collecting data for a future quantitative RP analysis. A dissolved trivalent chromium limit or monitoring requirement is not necessary at this time.

Potentially Dissolved Copper

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, copper is present in the effluent from some alkaline coal mining operations. Although there were effluent data provided by the facility for total recoverable copper at outfalls with similar pollutant sources, and the data are non-detect, data are in the wrong form (total recoverable copper) and the detection level achieved of 50 - 100 µg/l were not sufficiently low to determine there is no RP against the WQBEL of 29 µg/l and were also greater than the achievable detection levels. Therefore, monitoring is included in the permit to collect data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, copper is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring is included in the permit to collect data for a future quantitative RP analysis.

Total Recoverable Iron

A qualitative RP determination was made for outfalls **009, 023 and 025** as a federal ELG exists for total iron. Although no total recoverable iron data are available for outfalls 009 and 023, data in Tables VI-1b through VI-1g from outfalls with similar pollutant sources show Fe TR ranged from 341 µg/l to 2,800 µg/l compared to the





WQBEL of 1,000 µg/l and that a limit is necessary. The application of the 30-day average WQBEL for total recoverable iron is a new limit and reported effluent concentrations indicate the facility may not be able to consistently meet with the limit. A compliance schedule is included in the permit for outfalls **009 and 023** to allow the permittee time to meet the WQBEL. During the compliance schedule, the 30-day average federal ELG limit of 3,000 µg/l is applicable. A compliance schedule is also included in the permit for these outfalls for the Alternate Limitations total recoverable iron limitation.

A qualitative RP determination was made for **outfall 025** as a federal ELG exists for total iron. A limitation for total recoverable iron is included in the permit. As outfall 025 is a new outfall, the WQBEL limitation is effectively immediately.

A qualitative RP determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027** as a federal ELG exists for total iron. Data in Tables VI-1a and VI-1e show the maximum Fe TR concentration at the reported stormwater outfalls was 2410 µg/l compared to the WQBEL of 1,000 µg/l. The application of the 30-day average WQBEL for total recoverable iron is a new limit and reported effluent concentrations indicate the facility may not be able to consistently meet with the limit. A compliance schedule is included in the permit for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, and 022** to allow the permittee time to meet the WQBEL. During the compliance schedule, the 30-day average federal ELG limit of 3,000 µg/l is applicable. A compliance schedule is also included in the permit for these outfalls for the Alternate Limitations total recoverable iron limitation.

A qualitative RP determination was made for **outfalls 026 and 027** as a federal ELG exists for total iron. A limitation for total recoverable iron is included in the permit. As outfalls 026 and 027 are new outfalls, the WQBEL limitation is effectively immediately.

Potentially Dissolved Lead

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. Lead is identified in the development document as a parameter with no or limited detects (i.e., less than 20%) in alkaline coal mines. A qualitative no RP determination has been made, and limits and monitoring are not necessary at this time.

A qualitative RP analysis was conducted for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. Lead is identified in the development document as a parameter with no or limited detects (i.e., less than 20%) in alkaline coal mines. A qualitative no RP determination has been made, and limits and monitoring are not necessary at this time.

Total Recoverable Manganese

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, manganese is present in the effluent from some alkaline coal mining operations. No total recoverable manganese data are available for outfalls 009, 023 and 025. Data in Table VI-2 indicate this metal is present at outfalls with similar pollutant sources, and the concentration ranges from non-detect at PQL 30 µg/l to 230 µg/l compared to the potential limit of 200 µg/l. Data from facility outfalls with a similar pollutant source indicate a limit is necessary. The application of the 30-day average WQBEL for total recoverable manganese is a new limit and reported effluent concentrations from outfalls with similar pollutant sources indicate the facility may not be able to consistently meet the limit. A compliance schedule is included in the permit for outfalls 009 and 023 to allow the permittee time to meet the WQBEL. As outfall 025 is a new outfall, the WQBEL is effectively immediately.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, manganese is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring has been added to the permit to collect data for a future quantitative RP analysis.

Potentially Dissolved Manganese





A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, manganese is present in the effluent from some alkaline coal mining operations. No dissolved manganese data are available for outfalls 009, 023 and 025. Data for total recoverable manganese in Table VI-2 indicate this metal is present at outfalls with similar pollutant sources, and concentrations ranged from non-detect at PQL of 30 to 210 µg/l compared to a WQBEL of 2618 µg/l. Because potentially dissolved manganese is a subset of total recoverable manganese, and the WQBEL for total recoverable manganese is less than potentially dissolved WQBEL, the permit limitations and monitoring for total recoverable manganese will sufficiently control the potentially dissolved manganese concentration and will allow for a quantitative RP analysis for dissolved manganese in the future. A potentially dissolved manganese limit or monitoring requirement is not necessary at this time.

A qualitative RP analysis was conducted for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, manganese is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. Because potentially dissolved manganese is a subset of total recoverable manganese, and the WQBEL for total recoverable manganese is less than potentially dissolved WQBEL, monitoring for total recoverable manganese is sufficient for collecting data for a future quantitative RP analysis. A potentially dissolved manganese limit or monitoring requirement is not necessary at this time.

Total Mercury

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, mercury is present in the effluent from some alkaline coal mining operations. Although there were effluent data provided for mercury for outfalls with a similar pollutant source, and the data are non-detect, the detection level achieved of 1 µg/l were greater than the calculated WQBEL of 0.01 µg/l for this pollutant and were also much greater than the achievable detection levels. Consequently, the data are not considered adequate for use in determining there is no RP. Quarterly monitoring at low-level detection is required to gather data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, mercury is present in the effluent from some alkaline coal mining operations, and outfalls these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Quarterly monitoring for low-level mercury has been added to the permit to collect data for a future quantitative RP analysis.

Potentially Dissolved Nickel

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. Nickel is identified in the development document as a parameter with no or limited detects (i.e., less than 20%) in alkaline coal mines. A qualitative no RP determination has been made, and limits and monitoring are not necessary at this time.

A qualitative RP analysis was conducted for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. Nickel is identified in the development document as a parameter with no or limited detects (i.e., less than 20%) in alkaline coal mines. A qualitative no RP determination has been made, and limits and monitoring are not necessary at this time.

Potentially Dissolved Selenium

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, selenium is present in the effluent from some alkaline coal mining operations. No dissolved selenium data are available for outfalls 009, 023 and 025. Data for total recoverable selenium in Table VI-2 indicate this metal is present at outfalls with similar pollutant sources, and the concentration ranges non-detect at a PQL of 5 µg/l to 11.6 µg/l compared to the potential limit of 4.6 µg/l. Data from facility outfalls with a similar pollutant source indicate a limit is necessary. The application of the 30-day average WQBEL for potentially dissolved selenium is a new limit and reported effluent concentrations from outfalls with similar pollutant sources indicate the facility may not be able to consistently meet with the limit. A compliance





schedule is included in the permit for outfalls 009 and 023 to allow the permittee time to meet the WQBEL. As outfall 025 is a new outfall, the WQBEL is effectively immediately.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, selenium is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring is included in the permit to collect data for a future quantitative RP analysis.

Potentially Dissolved Silver

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. Silver is identified in the development document as a parameter with no or limited detects (i.e., less than 20%) in alkaline coal mines. A qualitative no RP determination has been made, and limits and monitoring are not necessary at this time.

A qualitative RP analysis was conducted for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. Silver is identified in the development document as a parameter with no or limited detects (i.e., less than 20%) in alkaline coal mines. A qualitative no RP determination has been made, and limits and monitoring are not necessary at this time.

Potentially Dissolved Zinc

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. As provided in the development document, zinc is present in the effluent from some alkaline coal mining operations. Effluent data for dissolved zinc were not available. Although there were effluent data provided by the facility for total recoverable zinc at outfalls with similar pollutant sources, and the data are non-detect, data are in the wrong form (total recoverable zinc) and are not available for the appropriate outfalls. Therefore, the data are not considered adequate for use in determining there is no RP. Monitoring is included in the permit to collect data for a future quantitative RP analysis.

A qualitative monitoring determination was made for outfalls **001, 002, 011, 013, 017, 018, 019, 020, 021, 022, 026 and 027**. As provided in the development document, zinc is present in the effluent from some alkaline coal mining operations, and these outfalls transmit surface flow from the active mining area. The treatment provided by sedimentation ponds approved under the SMCRA authority are not expressly designed for all pollutants regulated under the WQCA, including metals removal. Monitoring is included in the permit to collect data for a future quantitative RP analysis.

TDS

A qualitative RP analysis was conducted for outfalls **009, 023 and 025**. Coal mining operations have the potential to discharge effluent with elevated concentrations of dissolved solids. No TDS data are available for outfalls 009, 023 and 025. Data in Table VI-2 indicate TDS concentrations at outfalls with similar pollutant sources ranges from 263 mg/l to 3520 mg/l compared to the potential limit of 3500 mg/l. Outfalls with similar pollutant sources indicate there is potential for TDS concentrations to exceed the 3500 mg/l standard to protect livestock watering and that a limit is necessary. The application of TDS is a new limit and reported effluent concentrations from outfalls with similar pollutant sources indicate the facility may not be able to consistently meet with the limit. A compliance schedule is included in the permit for outfalls 009 and 023 to allow the permittee time to meet the limit. As outfall 025 is a new outfall, the limitation is effectively immediately.

Whole Effluent Toxicity (WET) Testing - Mining operations have the potential to discharge metals and dissolved solids at concentrations that are toxic to aquatic life, and the treatment provided by sedimentation ponds are not expressly designed for all pollutants regulated under the WQCA. Therefore, WET testing has been included in the permit for outfalls **009, 023 and 025**.

At outfalls **009, 023 and 025** chronic WET testing has been determined to be applicable based on the instream waste concentrations calculated in the WQA for the receiving stream. However, in public notice comments





Trapper Mine submitted a statement that discharge from outfalls 009, 023, and 025 is intermittent, and that discharges are solely caused by precipitation events. The portion of the 2010 WET Testing Policy referenced in the request is the Exemptions From the Normal Acute vs. Chronic Determination (Section III.2.c), which states that:

“[w]here the discharge is intermittent, as defined below, acute WET testing may be substituted for chronic WET testing. The basis for this is that there would not be chronic exposure of aquatic life to the effluent.” The policy defines “intermittent discharge” as one of the following three situations:

A) the maximum discharge frequency is less than 3 consecutive days (72 hours), and less than 3 days per 7 day period, and less than 10 days total per month

B) the maximum discharge frequency is less than 5 consecutive days (120 hours) and less than 5 total days per month

C) It can be shown that discharge frequency and duration is tied solely to precipitation events, where the discharge starts and stops shortly after the precipitation event starts/stops. See WET Policy, Section III.2.c., pg. 4 (emphasis in original).

Consistent with the 2010 WET Testing Policy, the division changed WET requirements to **acute WET testing** instead of **chronic WET testing** at **outfalls 009, 023 and 025** (see Part I.C of the permit). *Ceriodaphnia dubia* and *Pimephales promelas* organisms are required for the acute WET testing. The division added Permit Compliance criteria (Part I.C of the permit) for all discharges from outfalls **009, 023 and 025**, and Specific Monitoring Requirements for Acute WET Testing were added at Part I.D of the permit.

In addition, the division added an effluent limitation for outfalls **009, 023 and 025** (see Part I.C of the permit) to facilitate the demonstration that the discharge frequency and duration for outfalls **009, 023 and 025** is ‘tied solely to precipitation events, where the discharge starts and stops shortly after the precipitation event starts/stops’ (consistent with the 2010 WET Testing Policy). This requirement is applicable to all discharges from the outfalls (i.e., not just those that are sampled to meet the quarterly WET requirements), and requires the permittee to demonstrate that for rainfall, the discharge occurred during the precipitation event, or within 48 hours after measurable precipitation has stopped; and for snowmelt, the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow has stopped. These requirements are consistent with the Alternate Limitation Burden of Proof Requirements (Part I.C.1.b of the permit) currently implemented in the permit. The new effluent limitation table includes reporting requirements and a pass/fail limitation.

The permittee should read the WET testing section of Part I of the permit carefully, as this information has been updated in accordance with the division’s updated policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010) . The permit outlines the test requirements and the required follow-up actions the permittee must take to resolve a toxicity incident. The permittee should also read the above mentioned policy which is available on the Permit Section website. The permittee should be aware that some of the conditions outlined above may be subject to change if the facility experiences a change in discharge, as outlined in Part II of the permit. Such changes shall be reported to the division immediately.

C. Parameter Speciation

Total / Total Recoverable Metals

For standards based upon the total and total recoverable methods of analysis, the limitations are based upon the same method as the standard.

Total / Total Recoverable Arsenic





For total recoverable arsenic, the analysis may be performed using a graphite furnace. However, this method may produce erroneous results and may not be available to the permittee. Therefore, the total method of analysis will be specified instead of the total recoverable method.

Total Mercury

Until recently there has not been an effective method for monitoring low-level total mercury concentrations in either the receiving stream or the facility effluent. To ensure that adequate data are gathered to determine reasonable potential and consistent with division initiatives for mercury, quarterly effluent monitoring for total mercury at low-level detection methods will be required by the permit.

Dissolved Metals / Potentially Dissolved

For metals with aquatic life-based dissolved standards, effluent limits and monitoring requirements are typically based upon the potentially dissolved method of analysis, as required under Regulation 31, Basic Standards and Methodologies for Surface Water. Thus, effluent limits and/or monitoring requirements for these metals will be prescribed as the “potentially dissolved” form.

Total Recoverable Trivalent Chromium

For total recoverable trivalent chromium, the regulations indicate that standard applies to the total of both the trivalent and hexavalent forms. Therefore, monitoring for total recoverable chromium will be required.

VIII. DISCUSSION OF STORMWATER-ONLY, NON-NUMERIC EFFLUENT LIMITATIONS, TERMS and CONDITIONS

This renewal permit contains requirements for stormwater discharges from the facility that are necessary to protect waters of the State. The stormwater provisions resulted from a comprehensive review of stormwater provisions for mining and non-mining sectors in existing CDPS permits, and coordination with the Division of Reclamation, Mining and Safety (DRMS).

A. Narrative Water Quality Effluent Limitation (Outfalls 001, 002, 005, 008, 011, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 024, 026, 027)

This permit section contains the narrative effluent limitation that ‘discharges authorized under this permit must be controlled as necessary to meet applicable water quality standards’, which relates stormwater discharge quality to water quality standards.

As provided in this permit, the division expects that compliance with the other conditions in the permit will control discharges as necessary to meet applicable water quality standards, but requires the permittee to take corrective action if the permittee becomes aware, or the division determines, that the authorized discharge causes or contributes to an exceedance of applicable water quality standards. For such cases, the division also included a provision in the permit that allows it to modify the permit to add site-specific terms and conditions.

B. Technology-based Effluent Limitations

1. Federal Effluent Limitation Guideline - Sediment Control Plan (Outfalls 005, 008, 014, 015, 016, 024)

The federal effluent limitation guideline applicable to the above referenced outfalls is found under 40 CFR 434, titled Coal Mining, Point Source Category, Alkaline Drainage, Coal Preparation Plants and Coal Preparation Plant Associated Areas and Western Alkaline Coal Mining - Subpart H (40 CFR Part 434.82). This subpart applies to alkaline mine drainage at western coal mining operations from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas.

As provided by Subpart H, the following effluent limitations apply to mine drainage from applicable areas of western coal mining operations:





- a. The operator must submit a site-specific Sediment Control Plan to the permitting authority (Division of Mining, Reclamation, and Safety) that is designed to prevent an increase in the average annual sediment yield from pre-mined, undisturbed conditions. The Sediment Control Plan must be approved by the permitting authority (DRMS) and be incorporated into the permit as an effluent limitation. The Sediment Control Plan must identify best management practices (BMPs) and also must describe design specifications, construction specifications, maintenance schedules, criteria for inspection, as well as expected performance and longevity of the best management practices.
- b. Using watershed models, the operator must demonstrate that implementation of the Sediment Control Plan will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined, undisturbed conditions. The operator must use the same watershed model that was, or will be, used to acquire the Surface Mining Control and Reclamation Act (SMCRA) permit.
- c. The operator must design, implement, and maintain BMPs in the manner specified in the Sediment Control Plan.

The permittee is responsible for submitting evidence that the Sediment Control Plan required under Subpart H has been approved by the Colorado Division of Reclamation, Mining, and Safety, and is implemented at the facility. A final decision letter that reflects DRMS’s approval of the Sediment Control Plan and its associated modeling, is appropriate documentation for demonstrating compliance with this permit requirement. The operator must design, implement, and maintain BMPs in the manner specified in, or to maintain the requirements of, the Sediment Control Plan.

2. Practice-based Effluent Limitations (Outfalls 001, 002, 005, 008, 011, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 024, 026, 027)

The effluent limitations contained in this permit are located in a section separate from the Stormwater Management Plan, thereby differentiating effluent limitations from other terms and conditions of the permit.

Practice-based effluent limits (PBELs) are technology-based effluent limits, which are required for all CDPS permits. The PBELs correspond to the required levels of technology-based control (BPT, BCT, BAT) for various discharges under the Colorado Water Quality Control Act.

The PBELs identified in this permit are applicable to stormwater-only discharges, to address potential impacts to receiving water quality from such discharges.

- a. Minimize Exposure - the renewal permit defines the term “minimize” to provide the permittee with a clear expectation for the level of performance of control measures implemented to achieve the practice-based effluent limits that require the permittee to “minimize” pollutants. For such practice-based effluent limits, the term minimize means to “reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically and economically practicable in light of best industry practice.”

Minimizing exposure prevents pollutants from coming into contact with precipitation and can reduce the need for control measures to treat or otherwise reduce pollutants in stormwater runoff. As such, this is one of the most important control options.

- b. Good Housekeeping - good housekeeping is an inexpensive way to maintain a clean and orderly facility and keep contaminants out of stormwater discharges. Poor housekeeping can result in more stormwater running off a site than necessary and an increased potential for stormwater contamination. A clean and orderly work area reduces the possibility of accidental spills caused by mishandling of chemicals and equipment. Well-maintained material and chemical storage areas will reduce the possibility of stormwater mixing with pollutants.





- c. Maintenance of Control Measures - this PBEL requires that the permittee maintain all control measures used to achieve the effluent limits required by the permit in effective operating condition. Control measures must be maintained, in accordance with good engineering hydrologic and pollution control, to function as intended.
- d. Spill Prevention and Response Procedures - The purpose of this effluent limit is not only to prevent spills and leaks but, in the event one does occur, to limit environmental damage via development of spill prevention and response procedures. Based on an assessment of possible spill scenarios, the permittee must specify appropriate material handling procedures, storage requirements, containment or diversion equipment, and spill cleanup procedures that will minimize the potential for spills and, in the event of a spill, ensure proper and timely response. For a spill prevention and response program to be effective, employees should clearly understand the proper procedures and requirements and have the equipment necessary to respond to spills.
- e. Erosion and Sediment Controls - There may be exposed areas of industrial sites that, due to land disturbing activities, steep slopes, sandy soils or other factors, are prone to soil erosion. Land disturbing activities typically remove vegetation and other protective ground covers resulting in the exposure of underlying soil/overburden, etc. to wind and rain, which are easily eroded by wind or rain. This erosion process can be controlled or prevented through the use of appropriate control measures. The purpose of this effluent limit is to control or prevent the erosion process and control sediment transport from disturbed or other erodible areas at the facility.
- f. Management of Runoff - Managing runoff (diverting, infiltrating, reusing, containing, or treating stormwater runoff) prevents stormwater contact with exposed materials or pollutant sources, and like minimizing exposure, can reduce the need for control measures to treat or otherwise reduce pollutants in stormwater runoff.
- g. Salt Storage Piles or Piles Containing Salt - Salt storage piles are prevalent across the country. The permit requires that permittees adequately control salt piles to prevent aquatic effects resulting from stormwater runoff from such piles. The permittee must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, and implement appropriate measures to minimize exposure resulting from adding to or removing materials from the pile. Preventing exposure of piles to stormwater or run-on also eliminates the economic loss from materials being dissolved and washed away.
- h. Employee Training - Operators must train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit.
- i. Waste, Garbage and Floatable Debris - In addition to other stormwater pollutants, the permittee must minimize the discharge of waste, garbage, and floatable debris, so that these pollutants are not ultimately discharged to receiving waters. Trash and floating debris in waterways have become significant pollutants, especially near areas where a large volume of trash can be generated in a concentrated area. Trash can cause physical impairments in water bodies to aquatic species and birds, is also visual pollution, and detracts from the aesthetic qualities of receiving waters.
- j. Dust Generation and Vehicle Tracking of Industrial Materials - In addition to other stormwater pollutants, the permittee must minimize generation of dust and off-site tracking of raw, final, or waste materials.

C. Terms and Conditions

1. Specific Monitoring Requirements





Visual Monitoring: The division considered requiring that the permittee conduct quarterly visual examinations of stormwater discharges for the presence of color; odor; clarity; floating solids; settled solids; suspended solids; foam; oil sheen; and other obvious indicators of stormwater pollution. These assessments of stormwater discharges are an inexpensive and valuable part of the stormwater management and planning process that may, for some discharges, provide information not provided by sampling (e.g., a sheen that some sampling would not identify).

However, compliance with the technology-based effluent limitations (Subpart H and PBELs) and other terms and conditions of this permit (such as control measure requirements, inspections, and documentation requirements) will adequately control stormwater discharges for oil and grease and other pollutants at all outfalls comprised solely of stormwater as authorized by this permit. Therefore, this permit does not contain visual monitoring requirements.

2. Control Measures

This permit section clarifies the division’s expectations for the control measures implemented at the facility. The division uses the term “**control measure**” instead of “BMP” throughout the renewal permit. This term has a broader range of meaning than BMP, as it includes both BMPs and “other methods”, and as such, better describes the range of pollutant reduction practices a permittee may implement. The division does not mandate specific control measures, but leaves this decision to the permittee who is familiar with the facility characteristics and pollutant sources.

The permit contains the requirement to retain **installation and implementation specifications** with the Stormwater Management Plan for each control measure used by the permittee to meet the effluent limitations contained in the permit. The division requires this in other CDPS permits and finds that it is necessary to ensure that permittees select, design, install, implement, and maintain control measures that are appropriate for specific pollutant sources. The division also added the requirement that permittees maintain control measures in effective operating condition so that they can function as intended, and correct control measure deficiencies with due diligence.

The division expects that, in many cases, the control measures implemented by the permittee to meet the SMCRA/DRMS requirements may also be adequate to meet the terms and conditions of this renewal permit. If the division determines that this is not the case, e.g., during a division compliance inspection, it will state the reason that the existing control measure is inadequate, or additional control measures required.

3. Inspections

The permit requires two inspections per year (spring/fall) in this permit, and also requires the permittee to conduct corrective action for the two remaining quarters, based on DRMS inspection findings. One inspection must be conducted during a run-off event. Corrective actions are required for triggering conditions.

In developing the inspection requirement, the division compared the SMCRA-required inspections conducted by DRMS to the comprehensive, quarterly inspections required in existing CDPS permits, specifically looking at inspection frequency, scope, findings, and required corrective action(s). The two agency’s inspection approaches are not equivalent; however, aspects of both approaches were important in developing an inspection requirement that minimizes potential overlap with DRMS inspection requirements; utilizes the information gained from a DRMS’ inspection; decreases the cost and time burden on industry; and is a comprehensive approach to inspections.

The requirement for facility inspections and documented corrective actions is a useful means for permittees to evaluate the effectiveness of implemented control measures, and correct any deficiencies. In recognition that DRMS does conduct inspections for coal mining permittees, the division is requiring two inspections per year (spring/fall) in this permit, and also requires the permittee to conduct corrective action for the two remaining quarters, based on DRMS inspection findings.





This inspection requirement applies to active, inactive and reclaimed coal mine facilities, including mines that are in temporary or permanent cessation, until the DRMS approves the Phase II performance bond release for the area (Phase II bond release). The inspection requirement is a minimum inspection frequency, and more frequent inspections may be appropriate in certain instances, such as for areas of the facility with significant activities and materials exposed to stormwater, areas in close proximity to waterways, water crossings, etc.

4. Corrective Actions

In this permit section, the division identifies the permittee’s responsibilities with respect to resolving specific facility conditions. Conditions fall into two categories: those the permittee must eliminate, and those that require the permittee to review and modify control measures. This section also addresses permittee responsibilities with respect to corrective action reports and deadlines, and control measure modification.

5. Stormwater Management Plan (SWMP)

A SWMP is a site-specific, written document that: identifies potential sources of stormwater pollution at the coal mine; describes stormwater control measures that are used to reduce or eliminate pollutants in stormwater discharges from the mine; and identifies procedures the permittee will use to comply with the stormwater terms and conditions in the renewal permit. The permittee must develop the SWMP to address the specific conditions at the facility, and keep it current to reflect changes at the mine.

This permit locates all effluent limitations, including the practice-based effluent limitations in a section separate from the requirement to develop and implement a SWMP. As such, the requirement to prepare a SWMP and the documentation requirements set forth in the SWMP are not effluent limitations themselves, but terms and conditions of the permit, because the permittee is documenting information on how it intends to comply with the effluent limitations of the permit. This difference allows the permittee to modify, at any time and as required by the terms and conditions of the permit, the control measures used to meet these effluent limitations.

The permit allows **90 days** from the effective date of the permit to allow the permittee time to develop and implement the SWMP.

6. General Monitoring and Sampling Requirements (Additional Stormwater-specific provisions)

This permit section clarifies the monitoring requirements specific to stormwater discharges from the facility.

7. Reporting and Recordkeeping (Additional Stormwater-specific provisions)

This permit section clarifies the reporting requirements specific to stormwater discharges from the facility.

IX. **ADDITIONAL TERMS AND CONDITIONS**

A. **Monitoring**

Effluent Monitoring - Effluent monitoring will be required as shown in the permit document. Refer to the permit for locations of monitoring points. Monitoring requirements have been established in accordance with the frequencies and sample types set forth in the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities. Trapper is a mine facility, designated as a ‘minor’ and so the baseline monitoring frequency for this facility is 2X per month for most parameters.

The division evaluated monitoring frequency reductions for each existing outfall which had enough data during the previous permit term to evaluate a reduction. Note that new outfalls are not eligible for reductions.





Outfall 001

Parameter	Proposed Permit Limit	Average of 30-Day (or Daily Max)	Standard Deviation	Long Term Characterization	Reduction Potential
pH (su) Minimum	min 6.5	8.3	0.28	7.74	None
pH (su) Maximum	max 9.0	8.6	0.28	9.16	
TSS, effluent (mg/l)	30	11	8.4	27.8	1 Level
Fe, TR (µg/l)	1000	267	231	729	2 Levels

Outfall 002

Parameter	Proposed Permit Limit	Average of 30-Day (or Daily Max) Average Conc.	Standard Deviation	Long Term Characterization (LTC)	Reduction Potential
pH (su) Minimum	min 6.5	8.1	0.083	7.934	None
pH (su) Maximum	max 9.0	8.4	0.083	8.566	
TSS, effluent (mg/l)	30	13	8.3	29.6	1 Level
Fe, TR (µg/l)	1000	471	346	1163	None

Outfall 011

Parameter	Proposed Permit Limit	Average of 30-Day (or Daily Max) Average Conc.	Standard Deviation	Long Term Characterization (LTC)	Reduction Potential
pH (su) Minimum	min 6.5	7.7	0.16	7.38	1 Step
pH (su) Maximum	max 9.0	7.9	0.16	8.22	
TSS, effluent (mg/l)	30	21	25	71	None
Fe, TR (µg/l)	1000	685	836	2357	None

Outfall 017

Parameter	Proposed Permit Limit	Average of 30-Day (or Daily Max) Average Conc.	Standard Deviation	Long Term Characterization (LTC)	Reduction Potential
pH (su) Minimum	min 6.5	8.4	0.29	7.82	None
pH (su) Maximum	max 9.0	8.4	0.29	8.98	
TSS, effluent (mg/l)	30	11	9.5	30	None
Fe, TR (µg/l)	1000	493	250	993	1 Level

Outfall 020

Parameter	Proposed Permit Limit	Average of 30-Day (or Daily Max) Average Conc.	Standard Deviation	Long Term Characterization (LTC)	Reduction Potential
pH (su) Minimum	min 6.5	8.3	0.2	7.9	None
pH (su) Maximum	max 9.0	8.4	0.2	8.8	
TSS, effluent (mg/l)	30	10	9.2	28.4	1 Level
Fe, TR (µg/l)	1000	341	346	1033	None





B. Reporting

1. Discharge Monitoring Report - The Trapper Mine facility must submit Discharge Monitoring Reports (DMRs) on a monthly basis to the division. These reports should contain the required summarization of the test results for all parameters and monitoring frequencies shown in Part I.A.2 of the permit. See the permit, Part I.K for details on such submission.
2. Special Reports - Special reports are required in the event of an upset, bypass, or other noncompliance. Please refer to Part II of the permit for reporting requirements. As above, submittal of these reports to the US Environmental Protection Agency Region VIII is no longer required.

C. Signatory and Certification Requirements

Signatory and certification requirements for reports and submittals are discussed in Part II of the permit.

D. Compliance Schedules

As discussed in the Colorado WQCD Compliance Schedule Policy 2, the division evaluates the appropriateness of compliance schedules for discharges that are not new on the basis of necessity. “Necessity” is determined on the basis of whether associated effluent limits can be met. Once necessity has been determined, the division evaluates the “appropriateness” of a compliance schedule. Factors relevant to whether a compliance schedule in a specific permit is “appropriate” under 40 C.F.R. § 122.47(a) include: how much time the discharger has already had to meet the WQBEL(s) under prior permits; the extent to which the discharger has made good faith efforts to comply with the WQBELs and other requirements in its prior permit(s); whether there is any need for modifications to treatment facilities, operations or measures to meet the WQBELs and if so, how long would it take to implement the modifications to treatment, operations or other measures; or whether the discharger would be expected to use the same treatment facilities, operations or other measures to meet the WQBEL as it would have used to meet the WQBEL in its prior permit.

Once the division determines that a compliance schedule is necessary and appropriate, the division then uses information to develop a permit compliance schedule with enforceable milestones appropriate for the type of actions that are anticipated to be conducted to attain the underlying permit limits. In determining the duration of the compliance schedule to meet the underlying permit limits, the division intends to provide adequate time to conduct the actions needed leading to compliance with the limits, while not providing more time than reasonably needed, thus ensuring that the requirements of the CWA and applicable regulations are met “as soon as possible.”

The division has evaluated the necessity of a permit compliance schedule for each parameter in Section VI.B of this fact sheet. The compliance schedule for the parameters below are “appropriate” as these are new or more stringent limitations that the facility will likely not attain upon the effective date of the new permit. The timelines for each parameter below are determined to be “as soon as possible,” as described below due to the characterization, changes, or adjustments that the facility may need to make to meet the underlying effluent limitations. See Part I.B of the permit for more information.

The following compliance schedules are included in the permit. See Part I.B of the permit for more information.

Total Recoverable Iron

A three-year compliance schedule is included for the chronic total recoverable iron WQBEL at outfalls **001, 002, 009, 011, 013, 017, 018, 019, 020, 021, 022, and 023**. The duration was selected to allow additional time for the facility to evaluate their effluent concentrations and determine any changes if needed to meet the WQBEL.

Total Recoverable Manganese, Dissolved Selenium, and TDS





A four-year compliance schedule is included for total recoverable manganese, potentially dissolved selenium and TDS at outfalls **009 and 023**. A four year extension was chosen to allow the facility time to collect additional data, characterize sources, develop and evaluate strategies for control, and select and implement the preferred strategy for control.

Flow limitations

A three-year compliance schedule is included for the 30-Day Average flow limit at outfalls **013 and 019**. The duration was selected to allow additional time for the facility to evaluate their effluent discharge, and determine any changes if needed to meet the flow limitations.

E. Economic Reasonableness Evaluation

Section 25-8-503(8) of the revised (June 1985) Colorado Water Quality Control Act required the division to "determine whether or not any or all of the water quality standard based effluent limitations are reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons, and are in furtherance of the policies set forth in sections 25-8-102 and 25-8-104."

The Colorado Discharge Permit System Regulations, Regulation No. 61, further define this requirement under 61.11 and state: "Where economic, environmental, public health and energy impacts to the public and affected persons have been considered in the classifications and standards setting process, permits written to meet the standards may be presumed to have taken into consideration economic factors unless:

- a. A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or
- b. In the case of a continuing discharge, additional information or factors have emerged that were not anticipated or considered at the time of the classification and standards rulemaking."

The evaluation for this permit shows that the Water Quality Control Commission, during their proceedings to adopt the Classifications and Numeric Standards for Lower Colorado River Basin, considered economic reasonableness.

Furthermore, this is not a new discharger and no new information has been presented regarding the classifications and standards. Therefore, the water quality standard-based effluent limitations of this permit are determined to be reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons and are in furtherance of the policies set forth in Sections 25-8-102 and 104. If the permittee disagrees with this finding, pursuant to 61.11(b)(ii) of the Colorado Discharge Permit System Regulations, the permittee should submit all pertinent information to the division during the public notice period.

X. CLARIFICATIONS

A. Construction activities at coal mining facilities

The division considered including construction activities (those that exceed one-acre of disturbance) as an industrial activity authorized under this renewal individual permit. The division determined that because EPA promulgated an ELG for the construction and development category (Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, 40 CFR Part 450), it was more appropriate to interpret the ELG during renewal of the CDPS stormwater construction permit (COR030000), and subsequently, incorporate in other permits, as applicable. For this reason, the division decided against providing coverage for construction activities in this renewal permit.

Therefore, stormwater discharges from construction activities at the facility that exceeds the one-acre threshold and that does not commingle with process water from the mine (see discussion on Commingled discharges below), must be covered by a separate stormwater construction permit certification.





B. Roads

At coal mine facilities, stormwater runoff from haul roads that: 1) are used or traveled by carriers of raw materials, manufactured products, waste material, or by-products; 2) mixes with regulated stormwater (i.e., contaminated by contact with overburden, raw material, intermediate products, finished products, byproducts or waste products); or, 3) are constructed out of materials such as overburden or byproducts, is subject to the stormwater provisions identified in the permit, and the applicable federal ELG under 40 CFR 434, unless it commingles with process water from the mine prior to discharge (see discussion on Commingled discharges below).

C. Commingled discharges

The division considers stormwater runoff (from industrial or construction activities) that combines with process water, or mine dewatering water, to be process water. Such discharges are subject to the process water provisions in the permit, and the stormwater provisions do not apply. This approach also applies to stormwater runoff from construction activities at the facility that exceed the one-acre threshold; specifically, if run-off from such activities commingles with facility process water, the activity does not require separate construction stormwater permit coverage.

D. Termination of permit coverage

Discharge remains

Consistent with the Water Quality Permits Policy 1 (WQP-1, Permit Inactivation Policy Where A Discharge Remains), a permit can be inactivated, or outfalls removed from the permit, when a discharge remains only if the following conditions are met:

1. the permittee can demonstrate that, without treatment (including settling ponds), the water quality standards/ beneficial uses of the receiving stream are not violated by the continuing discharge; and
2. all activity at the site has ceased; and
3. the division has visited the site and concurs with the inactivation.

WQP-1 requires the permittee to supply one year of water quality data, collected at least monthly and prior to any treatment, for each outfall. Consistent with WQP-1, the parameters analyzed are those that will enable the division to determine that the continuing discharge will not exceed the water quality standards for the receiving water body. The permittee must conduct all monitoring consistent with the permit.

No remaining discharge

For areas of the coal facility that are subject to solely to 40 CFR 434, Subpart H, a permit can be inactivated, or outfalls removed from the permit, when the permittee provides documentation to the division with a Notice of Termination request that DRMS approved the applicable Phase II performance bond release. The division’s practice for discharges of stormwater from areas solely subject to Subpart H (i.e., no other flows contribute to the discharge), is to consider the Phase II performance bond release commensurate with the ‘bond release’ criteria identified in the federal ELG.

XI. Opportunities for administrative adjudication

Once the final modified permit is issued, the applicant or any other person affected or aggrieved by the Division’s final determination on the modification may demand an adjudicatory hearing within thirty (30) calendar days of the date of issuance on the conditions subject to modification, under 5 CCR 1002-61 (Colorado Discharge Permit System Regulations), Regulations 61.7 and 61.8(8)(g). Any request must comply with the Water Quality Control Act, 24-4-101, C.R.S., et seq. and the Water Quality Control Commission’s regulations, including Regulation 61.7 and 5 CCR 1002-21 (Procedural Rules), Regulation 21.4(B). Failure to contest any term and condition of the permit in this request for an adjudicatory hearing constitutes consent to the condition by the permittee.

XII. REFERENCES





- A. Colorado Department of Public Health and Environment, Water Quality Control Division Files, for Permit Number C00032115.
- B. Basic Standards and Methodologies for Surface Water, Regulation No. 31, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 31, 2018.
- C. Classifications and Numeric Standards for Lower Colorado River Basin, Regulation No. 37. Colorado Department of Public Health and Environment, Water Quality Control Commission, effective December 31, 2019.
- D. Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective December 31, 2018.
- E. Regulations for Effluent Limitations, Regulation No. 62, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective July 30, 2012.
- F. Colorado River Salinity Standards, Regulation No. 39, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective August 30, 1997.
- G. Colorado’s Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 02, 2018.
- H. Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December 2001.
- I. Memorandum Re: First Update to (Antidegradation) Guidance Version 1.0, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 23, 2002.
- J. Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential Procedural Guidance, Policy Number CW-1, Colorado Department of Public Health and Environment, Water Quality Control Division, effective November 18, 2013.
- K. The Colorado Mixing Zone Implementation Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 2002.
- L. Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Domestic and Industrial Wastewater Treatment Facilities, Water Quality Control Division Policy WQP-20, May 1, 2007.
- M. Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops, Water Quality Control Division Policy WQP-24, March 10, 2008.
- N. Implementing Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (WET) Testing. Colorado Department of Public Health and Environment, Water Quality Control Division Policy Permits-1, September 30, 2010.
- O. Policy for Conducting Assessments for Implementation of Temperature Standards in Discharge Permits, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-23, effective July 3, 2008.
- P. Permit Compliance Schedules, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number CW-3, effective December 2, 2010.
- Q. Code of Federal Regulations (40 CFR Part 434, Coal Mining Point Source Category), Office of the Federal Register, Government Printing Office, effective October 9, 1985.





XIII. PUBLIC NOTICE COMMENTS

The public notice period was from March 8, 2018 to May 8, 2018. Comments were received from Vranesh and Raisch, LLP on behalf of Trapper Mining Inc. (Trapper), and the Colorado Mining Association during public notice. These comments and the associated Division responses are in separate document PUBLIC NOTICE COMMENTS and are incorporated herein.





Attachment 1

Water Quality Assessment

Johnson Gulch, No-Name Gulch, Coyote Gulch, Ute Gulch, Pyeatt Gulch, Buzzard Gulch, Grouse Gulch, Sage Gulch, Oak Gulch, Horse Gulch, Flume Gulch, Deal Gulch, Deacon Gulch, Deal Gulch, Jeffway Gulch

Trapper Mining Inc., Trapper Mine

June 30, 2020

Table of Contents

I.	WATER QUALITY ASSESSMENT SUMMARY	2
II.	INTRODUCTION	2
III.	WATER QUALITY STANDARDS	5
	Narrative Standards.....	5
	Standards for Organic Parameters and Radionuclides.....	5
	Temperature	7
	Segment Specific Numeric Standard	7
	Table Value Standards and Hardness Calculations	8
	Total Maximum Daily Loads and Regulation 93 - Colorado’s Section 303(d) List of Impaired Waters and Monitoring and Evaluation List.....	9
IV.	RECEIVING STREAM INFORMATION.....	9
	Low Flow Analysis	9
	Mixing Zones	9
V.	FACILITY INFORMATION AND POLLUTANTS EVALUATED	10
	Ambient Water Quality	10
	Facility Information	10
	Pollutants of Concern.....	10
VI.	DETERMINATION OF WATER QUALITY BASED EFFLUENT LIMITATIONS (WQBELS)	11
	Technical Information	11
	Calculation of WQBELS	11
	Whole Effluent Toxicity (WET) Testing:	12
	Agricultural Use Parameters (SAR and EC):	13
VII.	ANTIDegradation EVALUATION.....	13
VIII.	REFERENCES	14





I. Water Quality Assessment Summary

Table A-1 includes summary information related to this WQA. This summary table includes key regulatory starting points used in development of the WQA such as: receiving stream information; threatened and endangered species; 303(d) and Monitoring and Evaluation listings; low flow and facility flow summaries; and a list of parameters evaluated.

Table A-1 WQA Summary					
Facility Information					
Facility Name	Permit Number	Design Flow (max 30-day ave, MGD)		Design Flow (max 30-day ave, CFS)	
Trapper Mine	CO0032115	009 - 0.2 023A - 0.2 025A - 0.2 Combined = 0.6	009 - 0.31 023A - 0.31 025A - 0.31 Combined = 0.93		
Receiving Stream Information					
Receiving Stream Name	Segment ID	Designation		Classifications	
Middle Pyeatt Gulch East Flume Gulch Deacon Gulch	COLCLY03b	Use Protected		Agriculture Aquatic Life Warm 2 Recreation P	
Low Flows (cfs)					
Receiving Stream Name	1E3 (1-day)	7E3 (7-day)	30E3 (30-day)	Ratio of 30E3 to the Design Flow (cfs)	
Middle Pyeatt Gulch East Flume Gulch Deacon Gulch	0	0	0	0:1	
Regulatory Information					
T&E Species	303(d) (Reg 93)	Monitor and Eval (Reg 93)	Existing TMDL	Temporary Modifications	Control Regulation
None	None	None	NA	None	None
Pollutants Evaluated					
Metals, TDS					

II. Introduction

The water quality assessment (WQA) of Middle Pyeatt Gulch, East Flume Gulch, and Deacon Gulch near the Trapper Mine, located in Moffat County, is intended to determine the assimilative capacities available for pollutants found to be of concern. This WQA describes how the water quality based effluent limits (WQBELs) are developed. These parameters may or may not appear in the permit with limitations or monitoring requirements, subject to other determinations such as reasonable potential analysis, evaluation of federal effluent limitation guidelines, implementation of state-based technology based limits, mixing zone analyses, 303(d) listings, threatened and endangered species listing, or other requirements as discussed in the permit rationale. Figure A-1 contains a map of the study area evaluated as part of this WQA.





FIGURE A-1 Outfall Map at Trapper Mine



The Trapper Mine outfalls 009, 023, and 025 discharge to Middle Pyeatt Gulch, East Flume Gulch, and Deacon Gulch which are stream segment COLCLY03b. This means the Lower Colorado Basin, Lower Yampa Sub-basin, Stream Segment 03b. In the June 2019 Lower Colorado River basin rulemaking hearing, the Water Quality Control Commission adopted changes to the segmentation on Lower Colorado segments 3a and 3b, effective 12/31/2019. Deacon Gulch and Jeffway Gulch were moved from Segment 3a to Segment 3b. Trapper Mine outfalls 025 and 027 discharge to Deacon Gulch and Jeffway Gulch. The segment changes adopted by the commission have been incorporated into this permit. Segment 3b is composed of the “mainstem of Upper Johnson Gulch from the source to the confluence with Pyeatt Gulch at CO 107. Mainstems of Pyeatt Gulch, Ute Gulch, Castor Gulch, No Name Gulch, Flume Gulch, Buzzard Gulch, Coyote Gulch, Deal Gulch, Horse Gulch (BOTH), Elk Gulch, Jeffway Gulch, and Deacon Gulch, including all tributaries from their source to their mouths”. Stream segment COLCLY03b is classified for agriculture, aquatic life warm 2 and recreation class P.

Table A-2 is a summary of the outfalls located at Trapper Mine. Aside from this table, only process water outfalls are discussed further in this WQA. All stormwater outfalls are discussed in the fact sheet.

Table A-2					
WQA Outfall Summary for Trapper Mine, COLCLY03b					
Outfall	Source Water	Latitude ° N	Longitude ° W	Receiving Stream	Downstream Segment
001	Stormwater	40.452496	-107.582908	Johnson Gulch COLCLY03b	Lower Johnson Gulch COLCLY03i, Yampa River COLCLY02
002	Stormwater	40.449303	-107.600169	No-Name Gulch COLCLY03b	Unnamed reservoir COLCLY23
005	Stormwater	40.448611	-107.616944	Coyote Gulch	Yampa River COLCLY02





				COLCLY03b	
008	Stormwater	40.417292	-107.584774	Ute Gulch COLCLY03b	Williams Fork COLCLY13b
009	Mine Water Stormwater	40.449864	-107.565756	Middle Pyeatt Gulch COLCLY03b	Lower Johnson Gulch COLCLY13i, Yampa River COLCLY02
011	Stormwater	40.451388	-107.561666	East Pyeatt Gulch COLCLY03b	Lower Johnson Gulch COLCLY13i, Yampa River COLCLY02
013	Stormwater	40.450573	-107.567575	West Pyeatt Gulch COLCLY03b	Lower Johnson Gulch COLCLY13i, Yampa River COLCLY02
014	Stormwater	40.44283	-107.619481	East Buzzard Gulch COLCLY03b	Yampa River COLCLY02
015	Stormwater	40.45014	-107.549675	Grouse Gulch COLCLY03b	Yampa River COLCLY02
016	Stormwater	40.450077	-107.546086	Sage Gulch COLCLY03b	Yampa River COLCLY02
017	Stormwater	40.445277	-107.535833	Oak Gulch COLCLY03b	Yampa River COLCLY02
018	Stormwater, French drain below valley fill of spoil material	40.419444	-107.540277	Horse Gulch COLCLY03b	Williams Fork COLCLY13b
019	Stormwater	40.440113	-107.527327	West Flume Gulch COLCLY03b	Yampa River COLCLY02
020	Stormwater	40.435304	-107.519361	Middle Flume Gulch COLCLY03b	Yampa River COLCLY02
021	Stormwater	40.436401	-107.515833	East Middle Flume Gulch COLCLY03b	Yampa River COLCLY02
022	Stormwater	40.411111	-107.517777	Deal Gulch COLCLY03b	Williams Fork COLCLY13a
023	Mine Water Stormwater	40.436111	-107.512777	East Flume Gulch COLCLY03b	Yampa River COLCLY02
024	Stormwater	40.416944	-107.545555	West Horse Gulch COLCLY03b	Williams Fork COLCLY13b
025	Mine Water Stormwater	40.43990	-107.500291	Deacon Gulch COLCLY03b	Yampa River COLCLY02
026	Stormwater	40.408372	-107.512711	Deal Gulch COLCLY03b	Williams Fork COLCLY13a
027	Stormwater	40.416808	-107.498819	Jeffway Gulch COLCLY03b	Williams Fork COLCLY13a

When developing permit limitations, the receiving stream and downstream segment standards should be considered in order to ensure protection of the designated uses. Where it is determined that effluent has reasonable potential to reach the downstream waterbody, the downstream segment standards must be considered. The permit limitations necessary to protect the designated uses may differ between segments based on several factors, including: difference in flow, hardness, segment standards, threatened and endangered species and temporary modifications. The more restrictive limitations are adopted in the permit to protect the uses of both the immediate receiving waterbody and ensure downstream waterbodies are protected.





The Trapper Mine process water outfalls discharge to tributaries of the Yampa River. Outfall 009 discharges to Middle Pyeatt Gulch, which confluences with Lower Johnson Gulch Segment COLCLY03i downstream before reaching the Yampa River COLCLY02. Outfall 023 discharges to East Flume Gulch and confluences with the Yampa River downstream. Outfall 025 discharges to Deacon Gulch, which confluences with Deep Cut Ditch prior to reaching the Yampa River. Downstream standards were considered on Lower Johnson Gulch Segment 3i and the Yampa River Segment 2. The stream standards on Lower Johnson Gulch Segment 3i are the same as standards on Segment 3b. Therefore, standards that are protective of 3b will also be protective of 3i.

Trapper Mine performed a flow study using field measurements and modeling to demonstrate flow from the process water outfalls will not reach the Yampa River. Water was pumped from settling ponds above outfalls 011 (surrogate for 009) and 023 to the stream channels to observe and measure the flow lines as they traveled downstream. Field measurements were used to calibrate the EPA SWMM V model to simulate a three-day period representing the maximum 30-day average design flow to evaluate estimated maximum flow distances for the receiving streams for outfalls 009, 023 and 025. Please see the Response to Comment #1, Fact Sheet, June 2020. As a result, the division removed COLCLY02 from consideration in the WQA and permit. The flow study was submitted to the division November 2018 and is available on the public record.

Information used in this assessment includes data gathered from the Trapper Mine, the division, the Colorado Division of Water Resources (DWR), the U.S. Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), and communications with the local water commissioner. The data used in the assessment consist of the best information available at the time of preparation of this WQA analysis.

III. Water Quality Standards

Narrative Standards

Narrative Statewide Basic Standards have been developed in Section 31.11(1) of the regulations, and apply to any pollutant of concern, even where there is no numeric standard for that pollutant. Waters of the state shall be free from substances attributable to human-caused point source or nonpoint source discharges in amounts, concentrations or combinations which:

for all surface waters except wetlands;

(i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludge, mine slurry or tailings, silt, or mud; or (ii) form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or (iii) produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or (iv) are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or (v) produce a predominance of undesirable aquatic life; or (vi) cause a film on the surface or produce a deposit on shorelines; and

for surface waters in wetlands;

(i) produce color, odor, changes in pH, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impart any undesirable taste to significant edible aquatic species of the wetland; or (ii) are toxic to humans, animals, plants, or aquatic life of the wetland.

In order to protect the Basic Standards in waters of the state, effluent limitations and/or monitoring requirements for any parameter of concern could be put in CDPS discharge permits.

Standards for Organic Parameters and Radionuclides

Radionuclides: Statewide Basic Standards have been developed in Section 31.11(2) and (3) of The Basic Standards and Methodologies for Surface Water to protect the waters of the state from radionuclides and organic chemicals.





In no case shall radioactive materials in surface waters be increased by any cause attributable to municipal, industrial, or agricultural practices or discharges to as to exceed the following levels, unless alternative site-specific standards have been adopted. Standards for radionuclides are shown in Table A-3.

Table A-3	
Radionuclide Standards	
Parameter	Picocuries per Liter
Americium 241*	0.15
Cesium 134	80
Plutonium 239, and 240*	0.15
Radium 226 and 228*	5
Strontium 90*	8
Thorium 230 and 232*	60
Tritium	20,000

*Radionuclide samples for these materials should be analyzed using unfiltered (total) samples. These Human Health based standards are 30-day average values.

Organics: The organic pollutant standards contained in the Basic Standards for Organic Chemicals Table are applicable to all surface waters of the state for the corresponding use classifications, unless alternative site-specific standards have been adopted. These standards have been adopted as “interim standards” and will remain in effect until alternative permanent standards are adopted by the Commission. These interim standards shall not be considered final or permanent standards subject to antibacksliding or downgrading restrictions. Although not reproduced in this WQA, the specific standards for organic chemicals can be found in Regulation 31.11(3).

In order to protect the Basic Standards in waters of the state, effluent limitations and/or monitoring requirements for radionuclides, organics, or any other parameter of concern could be put in CDPS discharge permits.

The aquatic life standards for organics apply to all stream segments that are classified for aquatic life. The water supply standards apply only to those segments that are classified for water supply. The water + fish standards apply to those segments that have a Class 1 aquatic life and a water supply classification. The fish ingestion standards apply to Class 1 aquatic life segments that do not have a water supply designation. The water + fish and the fish ingestion standards may also apply to Class 2 aquatic life segments, where the Water Quality Control Commission has made such determination.

Because segments COLCLY03b is classified for aquatic life warm 2 without a water supply designation, the aquatic life standards apply to this discharge.

Salinity: Regulation 61.8(2)(l) contains requirements regarding salinity for any discharges to the Colorado River Watershed. For industrial dischargers and for the discharge of intercepted groundwater, this is a no-salt discharge requirement. However, the regulation states that this requirement may be waived where the salt load reaching the mainstem of the Colorado River is less than 1 ton per day, or less than 350 tons per year. The division may permit the discharge of salt upon a satisfactory demonstration that it is not practicable to prevent the discharge of all salt. See Regulation 61.8(2)(l)(i)(A)(1) for industrial discharges and 61.8(2)(l)(iii) for discharges of intercepted groundwater for more information regarding this demonstration.

In addition, the division’s policy, Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops, may be applied to discharges where an agricultural water intake exists downstream of a discharge point. Limitations for electrical conductivity (EC) and sodium absorption ratio (SAR) may be applied in accordance with this policy.





Temperature

Temperature shall maintain a normal pattern of diurnal and seasonal fluctuations with no abrupt changes and shall have no increase in temperature of a magnitude, rate, and duration deemed deleterious to the resident aquatic life. This standard shall not be interpreted or applied in a manner inconsistent with section 25-8-104, C.R.S.

Segment Specific Numeric Standards

Numeric standards are developed on a basin-specific basis and are adopted for particular stream segments by the Water Quality Control Commission. The standards in **Error! Reference source not found.**4 have been assigned to stream segment COLCLY03b in accordance with the *Classifications and Numeric Standards for Lower Colorado River Basin*.

The Water Quality Control Commission has completed a final action concerning the Classifications and Numeric Standards for Lower Colorado River Basin. The final action became effective 12/31/2019, and modified the segmentation for Lower Yampa Segment 3b to include Deacon Gulch. This WQA has been developed in conformance with the water quality standards that became effective 12/31/2019.

Table A-4 In-stream Standards for Stream Segment COLCLY03b
Physical and Biological
Dissolved Oxygen (DO) = 5 mg/l, minimum
pH 6.5- 9.0
E. coli chronic = 205 colonies/100 ml
Chlorophyll a = 150 mg/m ²
Temperature March-Nov = 28.7° C MWAT and 31.8° C DM
Temperature Dec-Feb = 14.3° C MWAT and 24.9° C DM
Inorganic
Total Ammonia acute and chronic = TVS
Chlorine acute = 0.019 mg/l
Chlorine chronic = 0.011 mg/l
Free Cyanide acute = 0.005 mg/l
Sulfide chronic = 0.002 mg/l
Boron chronic = 0.75 mg/l
Nitrite acute = 0.05 mg/l
Nitrate acute = 100 mg/l
Phosphorus chronic = 0.17 mg/l
Metals
Dissolved Arsenic acute = 340 µg/l
Total Recoverable Arsenic chronic = 100 µg/l
Total Recoverable Beryllium chronic = 100 µg/l
Dissolved Cadmium acute and chronic = TVS
Total Recoverable Trivalent Chromium chronic = 100 µg/l
Dissolved Trivalent Chromium acute and chronic = TVS
Dissolved Hexavalent Chromium acute and chronic = TVS
Dissolved Copper acute and chronic = TVS
Total Recoverable Iron chronic = 1000 µg/l
Dissolved Lead acute and chronic = TVS
Dissolved Manganese acute and chronic = TVS
Total Recoverable Manganese chronic = 200 µg/l
Total Recoverable Molybdenum chronic = 150 µg/l
Total Mercury chronic = 0.01 µg/l
Dissolved Nickel acute and chronic = TVS
Dissolved Selenium acute and chronic = TVS
Dissolved Silver acute and chronic = TVS
Dissolved Zinc acute and chronic = TVS





Table Value Standards and Hardness Calculations

Standards for metals are generally shown in the regulations as Table Value Standards (TVS), and these often must be derived from equations that depend on the receiving stream hardness, or species of fish present for ammonia. Standards are discussed further in Section IV of this WQA. The Classification and Numeric Standards documents for each basin include a specification for appropriate hardness values to be used. Specifically, the regulations state that:

The hardness values used in calculating the appropriate metal standard should be based on the lower 95% confidence limit of the mean hardness value at the periodic low flow criteria as determined from a regression analysis of site-specific data. Where insufficient site-specific data exists to define the mean hardness value at the periodic low flow criteria, representative regional data shall be used to perform the regression analysis. Where a regression analysis is not appropriate, a site-specific method should be used.

Segment COLCLY03b is zero low flow as discussed in Section IV; therefore, hardness data of the effluent rather than the receiving stream was used to calculate TVS equations. The mean hardness from outfalls 011, 017, 020 and 021 was used to estimate the hardness of effluent that will discharge to 009, 023 and 025. Outfall 009 was previously a stormwater only outfall. Hardness data at outfall 023 were not available, and 025 is a new outfall that has not yet discharged. Because outfalls 011, 017, 020 and 021 previously discharged mine water and stormwater, it is reasonable to use those outfalls to estimate hardness. Average hardness was computed to be 999 mg/l based on sampling data from 2010 through 2015 provided by the facility. The *Basic Standards and Methodologies for Surface Water* indicates that hardness must be capped at 400 mg/l when determining in-stream metal water quality standards using the equations in the TVS. This maximum hardness value and the formulas contained in the TVS were used to calculate the in-stream water quality standards for metals, with the results shown in Table A-5.

Table A-5 TVS-Based Metals Water Quality Standards for COLCLY03b Based on the Table Value Standards in the Water Quality Control Commission Regulation #37			
Parameter	In-Stream Water Quality Standard		TVS Formula: Hardness (mg/l) as CaCO3 = 400
Cadmium, Dissolved	Acute	9.1 µg/l	$[1.136672-0.041838\ln(\text{hardness})]e^{(0.9151(\ln(\text{hardness}))-3.1485)}$
	Chronic	1.2 µg/l	$[1.101672-0.041838\ln(\text{hardness})]e^{(0.7998(\ln(\text{hardness}))-4.4451)}$
Trivalent Chromium, Dissolved	Acute	1773 µg/l	$e^{(0.819(\ln(\text{hardness}))+2.5736)}$
	Chronic	231 µg/l	$e^{(0.819(\ln(\text{hardness}))+0.5340)}$
Hexavalent Chromium, Dissolved	Acute	16 µg/l	Numeric standards provided, formula not applicable
	Chronic	11 µg/l	Numeric standards provided, formula not applicable
Copper, Dissolved	Acute	50 µg/l	$e^{(0.9422(\ln(\text{hardness}))-1.7408)}$
	Chronic	29 µg/l	$e^{(0.8545(\ln(\text{hardness}))-1.7428)}$
Lead, Dissolved	Acute	281 µg/l	$[1.46203-0.145712\ln(\text{hardness})][e^{(1.273(\ln(\text{hardness}))-1.46)}]$
	Chronic	11 µg/l	$[1.46203-0.145712\ln(\text{hardness})][e^{(1.273(\ln(\text{hardness}))-4.705)}]$
Manganese, Dissolved	Acute	4738 µg/l	$e^{(0.3331(\ln(\text{hardness}))+6.4676)}$
	Chronic	2618 µg/l	$e^{(0.3331(\ln(\text{hardness}))+5.8743)}$
Nickel, Dissolved	Acute	1513 µg/l	$e^{(0.846(\ln(\text{hardness}))+2.253)}$
	Chronic	168 µg/l	$e^{(0.846(\ln(\text{hardness}))+0.0554)}$
	Acute	18.4 µg/l	Numeric standards provided, formula not applicable





Selenium, Dissolved	Chronic	4.6 µg/l	Numeric standards provided, formula not applicable
Silver, Dissolved	Acute	22 µg/l	$\frac{1}{2} e^{(1.72(\ln(\text{hardness}))-6.52)}$
	Chronic	3.5 µg/l	$e^{(1.72(\ln(\text{hardness}))-9.06)}$
Zinc, Dissolved	Acute	564 µg/l	$0.978e^{(0.9094(\ln(\text{hardness}))+0.9095)}$
	Chronic	428 µg/l	$0.986 e^{(0.9094(\ln(\text{hardness}))+0.6235)}$

Total Maximum Daily Loads and Regulation 93 - Colorado’s Section 303(d) List of Impaired Waters and Monitoring and Evaluation List

Stream segment COLCLY03b is not listed on the division’s 303(d) list of water quality impacted streams and is not on the monitoring and evaluation list.

IV. Receiving Stream Information

Low Flow Analysis

The Colorado Regulations specify the use of low flow conditions when establishing water quality based effluent limitations, specifically the acute and chronic low flows. The acute low flow, referred to as 1E3, represents the one-day low flow recurring in a three-year interval, and is used in developing limitations based on an acute standard. The 7-day average low flow, 7E3, represents the seven-day average low flow recurring in a 3 year interval, and is used in developing limitations based on a Maximum Weekly Average Temperature standard (MWAT). The chronic low flow, 30E3, represents the 30-day average low flow recurring in a three-year interval, and is used in developing limitations based on a chronic standard.

Based on information provided by the facility and the local water commissioner, Middle Pyeatt Gulch, Deacon Gulch and East Flume Gulch have a low flow of zero.

Table A-6													
Low Flows for Middle Pyeatt Gulch, East Flume Gulch, and Deacon Gulch at the Trapper Mine													
Low Flow (cfs)	Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1E3 Acute	0	0	0	0	0	0	0	0	0	0	0	0	0
7E3 Chronic	0	0	0	0	0	0	0	0	0	0	0	0	0
30E3 Chronic	0	0	0	0	0	0	0	0	0	0	0	0	0

The ratio of the low flow of Middle Pyeatt Gulch, East Flume Gulch, and Deacon Gulch to the Trapper Mine facility design flow is 0:1. Note that for streams with a low flow of zero, the ambient water quality discussion is unnecessary.

Mixing Zones

The amount of the available assimilative capacity (dilution) that may be used by the permittee for the purposes of calculating the WQBELs may be limited in a permitting action based upon a mixing zone analysis or other factor. These other factors that may reduce the amount of assimilative capacity available in a permit are: presence of other dischargers in the vicinity, the presence of a water diversion downstream of the discharge (in the mixing zone), the need to provide a zone of passage for aquatic life, the likelihood of bioaccumulation of toxins in fish or wildlife, habitat considerations such as fish spawning or nursery areas, the presence of threatened and endangered species, potential for human exposure through drinking water





or recreation, the possibility that aquatic life will be attracted to the effluent plume, the potential for adverse effects on groundwater, and the toxicity or persistence of the substance discharged.

Since Middle Pyeatt Gulch, Deacon Gulch and East Flume Gulch have a zero low flow as indicated above, the WQBELs would be equal to the WQS, and therefore consideration of full or reduced assimilative capacity is inconsequential.

V. Facility Information and Pollutants Evaluated

Ambient Water Quality

The division evaluates ambient water quality based on a variety of statistical methods as prescribed in Section 31.8(2)(a)(i) and 31.8(2)(b)(i)(B) of the *Colorado Department of Public Health and Environment Water Quality Control Commission Regulation No. 31*, and as outlined in the division's Policy for Characterizing Ambient Water Quality for Use in Determining Water Quality Standards Based Effluent Limits (WQP-19). The ambient water quality was not assessed for Middle Pyeatt Gulch, East Flume Gulch and Deacon Gulch because the in-stream low flow condition is zero.

Facility Information

The Trapper Mine is located approximately 6.5 miles southwest of Craig on County Road 1075 in Moffat County. Wastewater treatment is accomplished using sedimentation ponds. The maximum discharge is 0.2 MGD at outfall 009, 0.2 MGD at outfall 023, and 0.2 MGD at outfall 025 for a combined maximum discharge of 0.6 MGD. The technical analyses that follow include assessments of the assimilative capacity based on the design capacity.

An assessment of Division records indicate that there are 17 facilities discharging to the same stream segments, but are discharging to different streams. These facilities are all covered under general permits. Due to the in-stream low flow of zero, the assimilative capacities during times of low flow are not affected by nearby contributions. Therefore, modeling nearby facilities in conjunction with this facility was not necessary.

Pollutants of Concern

Pollutants of concern may be determined by one or more of the following: facility type, effluent characteristics and chemistry, effluent water quality data, receiving water quality, presence of federal effluent limitation guidelines, or other information. Parameters evaluated in this WQA may or may not appear in a permit with limitations or monitoring requirements, subject to other determinations such as a reasonable potential analysis, mixing zone analyses, 303(d) listings, threatened and endangered species listings or other requirement as discussed in a permit rationale.

There are no site-specific in-stream water quality standards for TSS and oil and grease for this receiving stream. Thus, assimilative capacities were not determined for these parameters. The applicable limitations for these pollutants can be found in Regulation No. 62 and will be applied in the permit for the facility.

The following parameters were identified by the division as pollutants to be evaluated for this facility:

- Metals
- SAR and EC
- TDS

Metals occur naturally in rock around coal seams. Earth disturbances, such as mining operations, expose rock to air and water creating a potential for these elements to be present at elevated concentrations. Thus, metals have been identified as pollutants potentially present in mine water discharges and are evaluated in this assessment.





Chromium consists primarily of trivalent and hexavalent forms. Hexavalent forms are produced by industrial sources, which are not expected to be present at this facility. Therefore, the following analyses will include trivalent chromium only.

VI. Determination of Water Quality Based Effluent Limitations (WQBELs)

Technical Information

Note that the WQBELs developed in the following paragraphs, are calculations of what an effluent limitation may be in a permit. The WQBELs for any given parameter will be compared to other potential limitations (federal effluent limitations guidelines, state effluent limitations, or other applicable limitation) and typically the more stringent limit is incorporated into a permit. If the WQBEL is the more stringent limitation, incorporation into a permit is dependent upon a reasonable potential analysis.

In-stream background data and low flows evaluated in Sections II and III are used to determine the assimilative capacity of Middle Pyeatt Gulch, East Flume Gulch, and Deacon Gulch near the Trapper Mine for pollutants of concern, and to calculate the WQBELs. It is the division’s approach to calculate the WQBELs using the lowest of the monthly low flows (referred to as the annual low flow) as determined in the low flow analysis.

The division’s standard analysis consists of steady-state, mass-balance calculations for most pollutants and modeling for pollutants such as ammonia. The mass-balance equation is used by the division to calculate the WQBELs, and accounts for the upstream concentration of a pollutant at the existing quality, critical low flow (minimal dilution), effluent flow and the water quality standard. The mass-balance equation is expressed as:

$$M_2 = \frac{M_3Q_3 - M_1Q_1}{Q_2}$$

Where,

- Q_1 = Upstream low flow (1E3 or 30E3)
- Q_2 = Average daily effluent flow (design capacity for domestic wastewater treatment facilities)
- Q_3 = Downstream flow ($Q_1 + Q_2$)
- M_1 = In-stream background pollutant concentrations at the existing quality
- M_2 = Calculated WQBEL
- M_3 = Water Quality Standard, or other maximum allowable pollutant concentration

When Q_1 equals zero, Q_2 equals Q_3 , and the following results: $M_2 = M_3$

Because the low flow (Q_1) for Middle Pyeatt Gulch, East Flume Gulch, and Deacon Gulch is zero, the WQBELs for the pollutants of concern are equal to the in-stream water quality standards.

Calculation of WQBELs

Using the mass-balance equation provided in the beginning of Section VI, ambient water quality as discussed in Section V, and the in-stream standards shown in Section III, the WQBELs were calculated. The data used and the resulting WQBELs, M_2 , are set forth in Table A-7a for the chronic WQBELs and A-7b for acute WQBELs.

Temperature: The 7E3 low flow is 0 in all twelve months, and the discharge is to an effluent dependent (ephemeral stream without the presence of wastewater); therefore, in accordance with Regulation 31.9(3), no temperature limitations are required.

Table A-7a Chronic WQBELs for COLCLY03b - Middle Pyeatt Gulch (Outfall 009), East Flume Gulch (Outfall 023), and Deacon Gulch (Outfall 025)						
Parameter	Q_1 (cfs)	Q_2 (cfs)	Q_3 (cfs)	M_1	M_3	M_2





As, TR (µg/l)	0	0.31	0.31	0	100	100
Be, TR (µg/l)	0	0.31	0.31	0	100	100
Cd, Dis (µg/l)	0	0.31	0.31	0	1.2	1.2
Cr+3, TR (µg/l)	0	0.31	0.31	0	100	100
Cr+3, Dis (µg/l)	0	0.31	0.31	0	231	231
Cu, Dis (µg/l)	0	0.31	0.31	0	29	29
Fe, TR (µg/l)	0	0.31	0.31	0	1000	1000
Pb, Dis (µg/l)	0	0.31	0.31	0	11	11
Mn, TR (µg/l)	0	0.31	0.31	0	200	200
Mn, Dis (µg/l)	0	0.31	0.31	0	2618	2618
Mo, TR (µg/l)	0	0.31	0.31	0	150	150
Hg, Tot (µg/l)	0	0.31	0.31	0	0.01	0.01
Ni, Dis (µg/l)	0	0.31	0.31	0	168	168
Se, Dis (µg/l)	0	0.31	0.31	0	4.6	4.6
Ag, Dis (µg/l)	0	0.31	0.31	0	3.5	3.5
Zn, Dis (µg/l)	0	0.31	0.31	0	428	428
B, Tot (mg/l)	0	0.31	0.31	0	0.75	0.75
Sulfide as H2S (mg/l)	0	0.31	0.31	0	0.002	0.002

Table A-7b Acute WQBELs COLCLY03b - Middle Pyeatt Gulch (Outfall 009), East Flume Gulch (Outfall 023) and Deacon Gulch (Outfall 025)						
Parameter	Q1 (cfs)	Q2 (cfs)	Q3 (cfs)	M1	M3	M2
As, Dis (µg/l)	0	0.31	0.31	0	340	340
Cd, Dis (µg/l)	0	0.31	0.31	0	9.1	9.1
Cr+3, Dis (µg/l)	0	0.31	0.31	0	1773	1773
Cu, Dis (µg/l)	0	0.31	0.31	0	50	50
Pb, Dis (µg/l)	0	0.31	0.31	0	281	281
Mn, Dis (µg/l)	0	0.31	0.31	0	4738	4738
Ni, Dis (µg/l)	0	0.31	0.31	0	1513	1513
Se, Dis (µg/l)	0	0.31	0.31	0	18.4	18.4
Ag, Dis (µg/l)	0	0.31	0.31	0	22	22
Zn, Dis (µg/l)	0	0.31	0.31	0	564	564

Whole Effluent Toxicity (WET) Testing:

The Water Quality Control Division has established the use of WET testing as a method for identifying and controlling toxic discharges from wastewater treatment facilities. WET testing is being utilized as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life" as required by Section 31.11 (1) of the Basic Standards and Methodologies for Surface Waters. The requirements for WET testing are being implemented in accordance with Division policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010).

In-Stream Waste Concentration (IWC) - Where monitoring or limitations for WET are deemed appropriate by the division, the chronic in-stream dilution is critical in determining whether acute or chronic conditions shall apply. In accordance with division policy, for those discharges where the chronic IWC is greater than





9.1% and the receiving stream has a Class 1 Aquatic Life use or Class 2 Aquatic Life use with all of the appropriate aquatic life numeric standards, chronic conditions will normally apply. Where the chronic IWC is less than or equal to 9.1, or the stream is not classified as described above, acute conditions will normally apply. The chronic IWC is determined using the following equation:

$$IWC = [Facility\ Flow\ (FF) / (Stream\ Chronic\ Low\ Flow\ (annual) + FF)] \times 100\%$$

The flows and corresponding IWC for the appropriate discharge point are:

Table A-8 IWC for Outfalls 009, 023 and 025			
Permitted Feature	Chronic Low Flow, 30E3 (cfs)	Facility Design Flow (cfs)	IWC, (%)
009, 023, 025	0	0.6	100

The IWC for each outfall is 100%, which represents a wastewater concentration of 100% effluent to 0% receiving stream. This IWC correlates to chronic WET testing. The fact sheet and the permit will contain additional information regarding the type of WET testing applicable to this facility.

Agricultural Use Parameters (SAR and EC):

Section 31.11(1)(a)(iv) of *The Basic Standards and Methodologies for Surface Waters* (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life. The interpretation of these conditions (i.e., “no harm to plants” and “no harm to the beneficial uses”) and how they were to be applied in permits were contemplated by the division as part of an Agricultural Work Group, and culminated in the most recent policy entitled *Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops* (hereafter the Ag Policy)

The outfalls discharge to zero low flow streams that discharge into Deep Cut Ditch (outfalls 023 and 025) and the Yampa River (009). Based on available information, the water in Deep Cut Ditch and the Yampa River is used for irrigation water. However, Trapper Mine has demonstrated that the process water discharged from outfalls 009, 023 and 025 does not reach Deep Cut Ditch or the Yampa River. Therefore, EC/SAR was not further evaluated.

TDS: A TDS limit of 3500 µg/l is used for the protection of livestock watering. Information provided by the facility indicates that livestock watering is active downstream of outfalls 009, 023 and 025 on Middle Pyeatt Gulch, East Flume Gulch and Deacon Gulch. The TDS limit of 3,500 mg/l is applicable to these outfalls to protect the livestock watering use.

VII. Antidegradation Evaluation

As set out in *The Basic Standards and Methodologies for Surface Water*, Section 31.8(2)(b), an antidegradation analysis is required except in cases where the receiving water is designated as “Use Protected.” Note that “Use Protected” waters are waters “that the Commission has determined do not warrant the special protection provided by the outstanding waters designation or the antidegradation review process” as set out in Section 31.8(2)(b). The antidegradation section of the regulation became effective in December 2000, and therefore antidegradation considerations are applicable to this WQA analysis.

According to the *Classifications and Numeric Standards for Lower Colorado River Basin*, stream segment COLCLY03b is use protected. For receiving waters that are designated as use protected, no antidegradation review is necessary in accordance with the regulations.





VIII. References

Regulations:

The Basic Standards and Methodologies for Surface Water, Regulation 31, Colorado Department Public Health and Environment, Water Quality Control Commission, effective January 13, 2018.

Classifications and Numeric Standards for Lower Colorado River Basin, Regulation No. 37, Colorado Department Public Health and Environment, Water Quality Control Commission, effective December 31, 2019.

Regulations for Effluent Limitations, Regulation 62, CDPHE, WQCC, July 30, 2012.

Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation 93, Colorado Department Public Health and Environment, Water Quality Control Commission, effective March 02, 2018.

Policy and Guidance Documents:

Rationale for Classifications, Standards and Designations of Segments of the Lower Colorado River Basin, Colorado Department Public Health and Environment, Water Quality Control Division, effective December 31, 2019.

Colorado Mixing Zone Implementation Guidance, Colorado Department Public Health and Environment, Water Quality Control Division, effective April 2002.

Policy for Conducting Assessments for Implementation of Temperature Standards in Discharge Permits, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-23, effective July 3, 2008.

