Seneca Property, LLC

Robin Reilley
Division of Reclamation, Mining, and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

September 18, 2024

RE: Seneca II West Mine (Permit C-1982-057)
Phase III Bond Release Application (SL-8)

Dear Ms. Reilley,

Pursuant to Rule 3.03.1, Seneca Property, LLC (SPL) is hereby submitting a formal Final Phase III Bond Release Application for the remaining 107.9 acres for Phase III release, requesting release of the entire bond remaining in the amount of $316,698.60. This application has been prepared and is submitted in accordance with the *Colorado Division of Minerals and Geology Guidelines Regarding Selected Coal Mine Bond Release Issues* (April 18, 1995) and *Rule 3.03 Release of Performance Bonds.*

Copies of the letters sent to surface owners within and adjacent to the permit boundary, holders of easements on the property, and local government bodies providing written notice to seek release are included in this bond release application package with copies of the certified receipts. The public notice was submitted to the Steamboat Pilot to run once a week for four consecutive weeks. The first publication date was September 11th, 2024. The proof of publication for the original publication will be provided after the final publication.

Enclosed is one hard copy of the Bond Release Application and one digital copy. If more are needed please do not hesitate to request more copies. A single copy will be sent to the Office of Surface Mining for their records

If you have any questions, feel free to contact me at (970)870-2718.

Sincerely,

Miranda Kawcak

Miranda Kawcak
Manager, Environmental
Seneca Property, LLC

Phase III Bond Release Request
(SL-8)

Seneca II-W Mine

Seneca Property, LLC

Permit No. C-1982-057

September 2024

Seneca Property LLC • Routt County Road 27 • Oak Creek, Colorado 80467

Telephone (970) 870-2718

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INTRODUCTION

The Seneca II-W Mine is located approximately seven miles south of the town of Hayden, Colorado. Seneca II-W is a reclaimed surface coal mine. Coal extraction began at Seneca II-W in 1990 and ceased in January 2006. During the life of the mine over 12 million tons of coal were produced. Reclamation grading, topsoil replacement and seeding of the mine disturbance areas have been completed. A copy of the complete approved permit is located at the Foidel Creek Mine, 29515 RCR 27, Oak Creek, Colorado.

This application is submitted in accordance with the *Colorado Division of Minerals and Geology Guideline Regarding Selected Coal Mine Bond Release Issues* (April 18, 1995), *Rule 3.03 Release of Performance Bonds,* the approved permit, and consultations with Colorado Division of Reclamation, Mining, and Safety (CDRMS) on vegetation sampling, analysis and success evaluations.

BOND RELEASE BACKGROUND INFORMATION

This submittal represents a formal Phase I/II/III bond release request by Seneca Property, LLC (SPL) for the Seneca II-W Mine (II-W). SPL submitted an initial Phase I Bond release request (SL-2) in April 2009 and received partial release of the II-W mine area in June 2010. A second Phase I release request (SL-3) was submitted in July 2010 for additional lands and received partial release in May 2011. A third formal Phase I bond release request (SL-4) was submitted in November 2012. In May 2013 a Phase II bond release request (SL-5) was submitted for lands in the northern half of II-W which was approved in October 2014. In October 2019 a Phase II/III bond release request (SL-6) was submitted. Phase III SL-7 application was submitted in conjunction with SL-6 in June 2020. These applications made up majority of the mines disturbance and were processed concurrently and approved in March/April 2021. All areas included in this Phase I/II/III application have had topsoil replaced and were revegetated between 1990 and 2007.This SL8 application represents the final bond release for this permit.

GENERAL REQUIREMENTS

Date of Request September 2024
Permittee Seneca Property, LLC
Permit Number C-1982-057
Permit Approval Date December 31, 1985
Mine Name Seneca II-W Mine
Phase of Bond Release Requested Phase I, II & III (SL-8)
Total Acres within Permit 3,878.5
Total Acres Disturbed 1,291.5
Number of Acres Requested for Release 29.6 acres Phase I/II/III, 78.3 Phase II/III
Reclamation Liability (Bond Amount) $316,698.60
Dollar Amount Requested for Release $316,698.60

LAND CATEGORIES

The affected lands within the II-W permit area fall within the permanent program (SMCRA and CSCMRA) category and as defined in the regulations of the Colorado Mined Land Reclamation Board for Coal Mining.

IDENTIFICATION OF LANDS

The Seneca II-W Mine is located off of Routt County Road 53 approximately seven miles south of the Town of Hayden, Colorado. The USGS 7.5 Minute Quadrangle Maps of Hayden Gulch, Hayden, Dunkley, and Mt. Harris, contain the described permit area. The Permit Area is approximately 3,878.5 acres. The permitted disturbed area contains 1,290.2 acres. Surface ownership is predominately fee, with right of entry based on a number of fee leases, sub-leases, and easements. The Permit Area also includes limited areas of federal- and state-controlled surface.

The specific areas to which this bond release request applies are included within the Permit Area described as follows:

T5N, R88W

Section 9:	Portions of SE¼NE¼, NE¼SE¼, and W½NE¼
Section 10:	S½S½NW¼, SW¼, SE¼, Portions of S½NE¼
Section 11:	Portions of S½S½SW¼
Section 14:	Portions of SW¼, NW¼, and S½S½SE¼
Section 15:	All
Section 16:	Portions of W½NW¼, SE¼NW¼, NE¼SW¼, and SE¼
Section 21:	Portions of E½NE¼
Section 22:	NW¼, NE¼, N½SE¼ , SW¼SE¼, Portions of N½SW¼, and SW¼SE¼
Section 23:	NW¼, SW¼, W½E½, and W½E½E½
Section 26:	W½, W½E½, and Portions of W½E½NE¼ and W½E½SE¼
Section 27:	E½
Section 34:	NE¼, N½SE¼, and Portions of N½S½SE¼
Section 35:	NW¼, W½NE¼, N½SW¼ and Portions of N½S½SW¼, NW¼SE¼, NW¼SW¼SE¼, NW¼NE¼SE¼, and W½E½NE¼

All west of the 6th Principal Meridian; totaling approximately 3,878.5 acres. The exact location of the requested Phase III bond release areas within the Permit Area are shown on Map 1 – Phase III Bond Release SL-8 Delineation Map.

PERMIT RENEWAL HISTORY

Permit #: C-1982-057
Issued: December 31, 1985
Renewals:

RN-1	01/01/1991
RN-2	01/01/1996
RN-3	12/31/2000
RN-4	12/31/2005
RN-5	12/31/2010
RN-6	05/10/2017
RN-7	01/29/2021

The Division's current calculated reclamation liability is $316,698.60. SPL has a surety-bond in-place with the CDRMS, with the Routt County Board of Commissioners identified as an additional insured.

MAP DESCRIPTION

Map 1 – Phase III Bond Release SL-8 Delineation Map. This map shows all requested Phase III areas. These areas meet the minimum 10 year period for revegetation.

Map 2 – Phase III Bond Release SL-8 Location Map. This map shows the location of the mine permit with respect to the surrounding area.

Map 3 – Phase III Bond Release SL-8 Permanent Features Map. This map shows all approved roads, ponds and the permanent drainage features.

PHASE III BOND RELEASE DOCUMENTATION

This application represents a formal request for Phase I/II/III Bond Release at II-W of approximately 29.6 acres and Phase II/III Bond Release of 78.3 acres of reclaimed lands (see Map 1). These reclaimed lands comply with applicable success and demonstration criteria set forth in Rule 4 – Performance Standards, and the approved II-W permit. This is the final Bond Release Application for this permit therefore the entire surety is being requested for release.

SUMMARY OF RECLAMATION AND MANAGEMENT HISTORY

Reclamation (i.e., topsoil replacement and revegetation) was initiated in 1990 and continued through 2012 in the Phase III request areas. This activity is documented in the II-W Annual Reclamation Reports submitted to CDRMS. Topsoil depth replacement information and revegetation history are included in the SL-5 Phase II bond release application for the Seneca II-W mine approved by CDRMS in October 2014. Vegetation establishment was documented in formal vegetation sampling and results reported partially in the SL-5 Phase II bond release document with the remaining supporting documentation provided with SL-7 Bond Release Application.

Reclamation management has been an ongoing effort that includes:

Weed Control - Reclaimed areas and mining-related disturbances, such as roadsides and facilities, are monitored for noxious weed infestations. Monitoring is conducted through the formal revegetation monitoring program or as qualitative observations by Peabody Environmental staff or qualified contractors. If noxious weed infestations are identified as occurring at levels that may interfere with successful reclamation, or are detrimental to reclaimed land quality and management, appropriate weed control measures are implemented. Targeted weed control through application of selective herbicides is conducted by Peabody Environmental staff and/or qualified contractors in compliance with applicable regulations and procedures.

Grazing - Livestock grazing has been conducted on II-W reclaimed lands since 2007. The grazing season has historically been from mid-July to mid-September. Livestock grazing has been conducted annually and livestock numbers have increased as more reclaimed acres have become available and the vegetation communities have continued to mature. Stocking rates have been developed from

ongoing vegetation monitoring data, and a goal of proper use at 50 percent forage utilization has been a basis of management, as has pasture development to facilitate management and grazing systems. Annual precipitation and the effects on current year's production are factored into annual management. Results of annual grazing are presented in the Seneca II-W Annual Reclamation Reports submitted to CDRMS and have demonstrated the utility for the postmine land use.

REVEGETATION SUCCESS

The SL-8 Phase III bond release includes lands within the BRB-6 block totaling approximately 81.1 acres, plus 26.8 acres of roadways, ponds, and features that are permitted as permanent features which do not require demonstration of vegetation. The parcels within the BRB-6 block were revegetated between 2006 and 2014. Phase I bond release for the BRB-6 area was approved under the previous SL-3 submittal, and Phase II bond release encompassing the BRB-6 area has been approved based on the previous SL-5 submittal. These lands have established vegetation that meets the minimum ten-year liability period and are able to support the approved post-mining land uses. Phase III revegetation success evaluations have been based on the applicable regulatory success standard requirements and procedures spelled out in Tab 22 "Revegetation Plan" of the approved Seneca II-W permit, Rules 3.03.1(2)(c), 3.03.1(4) and 4.15.8, and the CDRMS Guideline Regarding Selected Coal Mine Bond Release Issues (April 1995). Revegetation success is demonstrated by meeting the appropriate cover, production, woody density, and species diversity success standards based on statistically valid sampling and analysis. Species composition and diversity requirements are assessed through the vegetation cover data and evaluations using a species diversity assessment specifically developed for SPL reclaimed lands as detailed in Tab 22 of the approved mining permit.

Vegetation sampling in the BRB-6 Phase III and the II-W reference areas were conducted in August of 2022 and 2023 by Cedar Creek Associates. The 2022 and 2023 report of the findings of testing for revegetation success for the II-W BRB-6 Phase III bond release evaluation is included in ***Attachment D – Revegetation Success Supporting Documentation***. The Phase III bond release block, reference areas and random sample point locations are shown on Maps 1 - 4 contained in the 2022 and 2023 revegetation success evaluation report in Attachment D.

As a result of sampling and analysis, successful revegetation for the parameters of cover, herbaceous production, woody plant density (background and concentration areas), and species diversity was demonstrated in 2022/2023 vegetation sampling. The results of those demonstrations are summarized in the following sections.

Vegetative Cover Evaluation

The II-W cover standard and evaluation for success is as follows. The cover success standard is based on a weighted average value (based on the relative extent of primary premine vegetation type contributions to total acreage) for allowable all-hit herbaceous cover derived from sampling in the approved northern extended reference area. The rounded weighting contribution by type is aspen 11%, mountain brush 35%, sagebrush 31%, steep mountain brush 13% and western wheatgrass/alkali sagebrush 10%. Allowable all-hit herbaceous cover is determined from cover sampling in the Phase III reclaimed lands and the native reference area with subtractions made for woody plants, noxious weeds and cover of annual/biennial weeds in excess of 10% relative cover. *The Phase III bond release area sample value will be no less than 90% of the cover success standard at 90% statistical confidence.* In the following discussion and the bond release vegetation report attached, cover for the reference area derived standard and the Phase III reclaimed area may be variously referred to as allowable all-hit herbaceous cover or as allowable

herbaceous cover. The derivation of the allowable all-hit herbaceous cover for the Phase III bond release block and the reference area types are included in the discussion and data tables in the 2022/2023 revegetation success evaluation report included in ***Attachment D – Revegetation Success Supporting Documentation***. Table 1 provide a summary of the sample cover attributes for the Phase III bond release blocks and the five native types in the extended reference areas for years 2022/2023 (BRB-6), and the calculated allowable first hit herbaceous cover values for these communities.

BRB-6 2022-2023 Revegetation Success Sampling

Cover

Table 1 provides a summary of the sample cover attributes for the Phase III bond release block and the five native types in the extended reference areas for years 2022 and 2023. Table 1 also includes the calculated allowable first hit herbaceous cover values for these communities.

Table 1. 2022 and 2023 Vegetation Cover Sampling Data Summary for the II-W BRB-6 Phase III Bond Release and Reference Areas (RA).

Area	Total First Hit Cover (%)	Allowable All-hit Herbaceous Cover (%)	Standing Dead (%)	Litter (%)	Rock (%)	Bare Soil (%)
BRB-6 Phase III Bond Release Area **2022**	52.7	42.6	1.7	27..4	4.0	18.2
A[1] RA **2018**	121.7	62.2	0.6	13.4	-	3.4
MB[1] RA **2018**	111.0	34.1	1.1	14.7	0.1	6.1
SB[1] RA **2018**	73.6	32.5	4.3	21.1	0.4	11.6
SMB[1] RA **2018**	43.7	20.5	2.1	15.6	10.4	30.4
WW/AS[1] RA **2018**	55.7	38.4	1.3	26.6	0.5	22.1
BRB-1 Phase III Bond Release Area **2023**	63.3	53.5	1.3	26.2	2.7	14.2

A[1] RA **2019**	150.7	70.1	0.6	7.4	0.1	3.6
MB[1] RA **2019**	100.5	38.7	1.8	15.3	0.3	6.5
SB[1] RA **2019**	92.6	46.1	3.9	13.1	0.4	4.8
SMB[1] RA **2019**	60.3	29.9	1.7	14.9	8.5	19.9
WW/AS[1] RA **2019**	67.6	50.5	0.8	22.4	0.2	14.2

[1] Reference Area Types (RA): A = aspen, MB = mountain brush, SB = sagebrush, SMB = steep mountain brush, WW/AS = western wheatgrass/alkali sagebrush

Sample adequacy was calculated during 2022 and 2023 data collection based allowable all-hit herbaceous cover which is relevant to the cover success criteria. The sample results and statistics for allowable all-hit herbaceous cover are presented in Table 2 below. Sample adequacy for BRB-6 in 2022 for allowable all-hit herbaceous cover was achieved along with each of the reference areas. Sample adequacy was achieved in BRB-6 and each of the reference areas except for Steep Mountain Brush in 2023 (Note that the sample adequacy was met when Steep Mountain Brush all- hit total vegetation cover was accessed). The 2023 Steep Mountain Brush sample adequacy approach and basis for application to success criteria evaluations are addressed below Table 2.

Table 2. 2022 and 2023 Data and Sample Adequacy Summary for Allowable All-Hit Herbaceous Cover for the II-W BRB-6 Phase III Bond Release and Reference Areas (RA).

Area	**Allowable All-Hit Herbaceous Cover (x)**	**s**	**N**	**N_{min}**	**t**
BRB-1 Phase III Bond Release Area **2022**	42.6	14.4	32	20	1.309
A[1] RA **2022**	62.2	11.8	17	7	1.337
MB[1] RA **2022**	34.1	9.2	15	14	1.345
SB[1] RA **2022**	32.5	8.09	18	11	1.333
SMB[1] RA **2022**	20.5	5.73	18	14	1.333
WW/AS[1] RA **2022**	38.4	13.5	24	22	1.319

BRB-1 Phase III Bond Release Area **2023**	53.5	14.4	32	13	1.309
A[1] RA **2023**	70.2	11.8	18	6	1.333
MB[1] RA **2023**	38.7	6.7	15	6	1.345
SB[1] RA **2023**	46.1	10.8	17	10	1.337
SMB[1] RA **2023**	29.9	11.3	15	26[2]	1.345
WW/AS[1] RA **2023**	50.5	12.7	16	12	1.341

[1] Reference Area Types (RA): A = aspen, MB = mountain brush, SB = sagebrush, SMB = steep mountain brush, WW/AS = western wheatgrass/alkali sagebrush
[2] See text below for statistical measure to address sample adequacy and use of adjusted Steep Mountain Brush data for 2023 success evaluations.

2022 Cover Success Evaluation

Calculation of the cover performance standard for 2022 sampling data is demonstrated below.

Aspen Reference Area Allowable All-Hit Herbaceous Cover[1] = 62.2%
Mountain Brush Reference Area Allowable All-Hit Herbaceous Cover[1] = 34.1%
Sage Brush Reference Area Allowable All-Hit Herbaceous Cover[1] = 32.5%
Steep Mountain Brush Reference Area Allowable All-Hit Herbaceous Cover[1] = 20.5%[2]
Western Wheatgrass/Alkali Sagebrush Ref. Area Allowable All-Hit Herbaceous Cover[1] = 38.4%

[1]*Herbaceous cover adjusted to allowable by subtracting noxious weeds and annual/biennial plant cover in excess of 10% of the remainder.*

The Calculation of 90% of the 2022 Cover Standard=
0.90*[0.110(62.2%)+0.354(34.1%)+0.313(32.5%)+0.128(20.5%)+0.104(38.4%)] = 31.9%

The mean allowable all-hit herbaceous cover for the BRB-6 sampled in 2022 was 42.6 percent exceeding 90 percent of the area weighted cover performance standard (31.9%) and success is demonstrated. This direct comparison of reclaimed area mean to standard is allowed under DRMS rules (CDMG 2005 revised rule, 4.15.11(2)(a)).

2023 Cover Success Evaluation

Calculation of the cover performance standard for 2023 sampling and using the highest possible value for the Steep Mountain Brush reference area component as described above, is demonstrated below.

Aspen Reference Area Allowable All-Hit Herbaceous Cover[1] = 70.1%
Mountain Brush Reference Area Allowable All-Hit Herbaceous Cover[1] = 38.7%
Sage Brush Reference Area Allowable All-Hit Herbaceous Cover[1] = 46.1%

Steep Mountain Brush Reference Area Allowable All-Hit Herbaceous Cover[1] = 33.8% (upward adj.)
Western Wheatgrass/Alkali Sagebrush Ref. Area Allowable All-Hit Herbaceous Cover[1] = 50.5%

[1]*Herbaceous cover adjusted to allowable by subtracting noxious weeds and annual/biennial plant cover in excess of 10% of the remainder.*

The Calculation of 90% of the 2023 Cover Standard=
0.90*[0.110(70.1%)+0.354(38.7%)+0.313(46.1%)+0.128(33.8%)+0.104(50.5%)] = 40.5%

The mean allowable all-hit herbaceous cover for the BRB-6 sampled in 2023 was 53.5 percent exceeding 90 percent of the area weighted cover performance standard (40.5%) and success is demonstrated. This direct comparison of reclaimed area mean to standard is allowed under DRMS rules (CDMG 2005 revised rule, 4.15.11(2)(a)).
Successful revegetation for the parameter of cover was demonstrated in both 2022 and 2023.

Production

The allowable herbaceous production values for the five vegetation types in the reference area are used in the weighted averaged calculation to determine the production standard:

Table 3. 2022 and 2023 Data and Sample Adequacy Summary for Total and Allowable Herbaceous Production (pounds/acre) for the II-W BRB-6 Phase III Bond Release Area.

Vegetation Type	Total Herbaceous Production gm/0.5^2	Allowable Herbaceous Production gm/0.5^2	s	N	N_{min}	t
BRB-6 Phase III Bond Release Area **2022**	102.0	95.2	58.3	32	65	1.309
BRB-6 Phase III Bond Release Area **2023**	92.0	87.4	62.1	32	87	1.309

Table 4. 2022 and 2023 Data and Sample Adequacy Summary for Total and Allowable Herbaceous Production (gm/0.5^2) in the Five Reference Area Vegetation Types for the II-W BRB-6 Phase III Bond Release Herbaceous Production Performance Standard.

Vegetation Type	Total Herbaceous Production gm/0.5^2	Allowable Herbaceous Production gm/0.5^2	s	N	N_{min}	t
A[1] RA **2022**	53.9	53.31	20.2	32	24	1.309
MB[1] RA **2022**	23.9	23.51	21.6	32	54	1.309
SB[1] RA **2022**	26.5	24.7	17.4	32	25	1.309
SMB[1] RA **2022**	28.9	17.3	20.8	32	49	1.309
WW[1] RA **2022**	40.8	32.1	28.4	32	73	1.309
A[1] RA **2023**	36.0	35.88	24.6	32	43	1.309
MB[1] RA **2023**	25.9	24.62	14.0	32	36	1.309
SB[1] RA **2023**	40.5	40.0	28.6	32	55	1.309
SMB[1] RA **2023**	37.4	35.4	22.5	32	108	1.309
WW[1] RA **2023**	26.7	24.8	21.4	32	60	1.309

[1] Reference Area Types (RA): A = aspen, MB = mountain brush, SB = sagebrush, SMB = steep mountain brush, WW/AS = western wheatgrass

2022 Production Success Evaluation

Calculation of 90 percent of the production performance standard relative to 2022 sample data is demonstrated below.

Aspen Reference Area Allowable All-Hit Herbaceous Production[1] = 951.2 lbs/acre
Mountain Brush Reference Area Allowable All-Hit Herbaceous Production[1] = 419.6 lbs/acre
Sage Brush Reference Area Allowable All-Hit Herbaceous Production[1] = 440.1 lbs/acre
Steep Mountain Brush Ref. Area Allowable All-Hit Herbaceous Production[1] = 309.5 lbs/acre
Western Wheatgrass/Alkali Sagebrush Ref. Area Allowable All-Hit Herb. Prod.[1] =573.5 lbs/acre

[1] Herbaceous production adjusted by subtracting annual/biennial plant production in excess of 10% of the remainder. Production by noxious weed species is not collected.

90 percent of the production standard for 2022=
0.90[0.110(951.2)+0.345(419.6)+0.313(440.1)+0.128(309.5)+0.104(573.5)] = 437.8 lbs/acre

The 2022 BRB-6 reclaimed mean allowable herbaceous production of 1,699.4 pounds per acre (Table 8) far exceeds 90 percent of the herbaceous production performance standard of 437.8 lbs/acre.

Since the 2022 BRB-6 allowable herbaceous production exceeds 90 percent of the production performance standard (Figure C-2, Table C-1 of **Attachment F**), and sample adequacy has not been demonstrated (minimum of 30 samples) (Table C-4 of **Attachment F**), reclamation success for Phase III BRB-6 has been demonstrated by passing a one sample t-test of the "reverse null" hypothesis (CDMG 2005 revised rule, 4.15.11 (2)(c)). The BRB-6 production data were first evaluated for normality using the Shapiro-Francia test. Based on the allowable herbaceous production data; the normality test was passed. See supporting details and methods in the full 2022/2023 Testing for Revegetation Success Report in **Attachment F-2022-2023 BRB-6 Revegetation Success Supporting Documentation**.

A one-sample t-test of the "reverse null" hypothesis of the assertion that the 2022 BRB-6 total allowable herbaceous production (pounds per acre) is indistinguishable from the area weighted average of the Extended Reference Area allowable herbaceous production is as follows:

$$t_{calc} = \frac{\overline{x} - (0.9 * technical\ standard)}{(\frac{s}{\sqrt{n}})}$$

$$t_{calc} = \frac{1699.4.0 - (0.9 * 437.8)}{(\frac{1075.651}{\sqrt{32}})} = 6.865$$

Since critical t = 0.853 (one-tailed, alpha = 0.2, 32-1 df) is exceeded by t_{calc} (6.865), the hypothesis of no difference is rejected and reclamation success for 2022 BRB-6 production under Phase III is demonstrated.

2023 Production Success Evaluation

Calculation of 90 percent of the production performance standard relative to the 2023 BRB-6 sample data is demonstrated below.

Aspen Reference Area Allowable All-Hit Herbaceous Production[1] = 640.2 lbs/acre
Mountain Brush Reference Area Allowable All-Hit Herbaceous Production[1] = 439.4 lbs/acre
Sage Brush Reference Area Allowable All-Hit Herbaceous Production[1] = 713.0 lbs/acre
Steep Mountain Brush Ref. Area Allowable All-Hit Herbaceous Production[1] = 631.7 lbs/acre
Western Wheatgrass Ref. Area Allowable All-Hit Herbaceous Production[1] =443.4 lbs/acre

[1] *Herbaceous production adjusted by subtracting annual/biennial plant production in excess of 10% of the remainder. Production by noxious weed species is not collected.*

90 percent of the production standard for 2023=
0.90[0.110(640.2)+0.345(439.4)+0.313(713.0)+0.128(631.7)+0.104(443.4)] = 514.9 lbs/acre

The 2023 BRB-6 mean allowable herbaceous production of 1,559.5 pounds per acre for exceeds 90 percent of the production performance standard of 514.9 pounds per acre.

Though the 2023 BRB-6 reclaimed area herbaceous production exceeds 90 percent of the production performance standard, sample adequacy was not demonstrated (minimum of 30 samples), reclamation success under Phase III BRB-6 is demonstrated by passing a one sample t-test of the "reverse null" hypothesis (CDMG 2005 revised rule, 4.15.11(2)(c)). The BRB-6 production data were first evaluated for normality using the Shapiro-Francia test. Based on the allowable herbaceous production data; the normality test was passed.

Testing for Revegetation Success Report in **Attachment F-2022-2023 BRB-6 Revegetation Success Supporting Documentation**.

A one-sample t-test of the "reverse null hypothesis asserting that the 2023 BRB-6 total allowable herbaceous production (lbs per acre) is indistinguishable from the weighted average Reference Area allowable herbaceous production is as follows:

$$t_{calc} = \frac{\overline{x} - (0.9 * technical\ standard)}{(\frac{s}{\sqrt{n}})}$$

$$\mathrm{t_{calc}} = \frac{1559.5 - (0.9 * 514.9)}{(\frac{1162.65}{\sqrt{32}})} = 5.333$$

Since critical t_t = 0.853 (one-tailed, alpha = 0.2, 32-1 df) is exceeded by t_{calc} (5.333), the hypothesis of no difference is rejected and reclamation success for allowable herbaceous production under Phase III is demonstrated in 2023.

Woody Plant Density

The location of fenced woody plant concentration areas in the BRB-6 were established by SPL. All other un-fenced portions of the BRB-6 were labeled as "background" density. Should the "background" density fall below the 1000 stems per acre standard, areas labeled as "volunteer" density (totaling at least 10% of the unfenced bond release block acreage) were determined by field mapping and assisted by aerial photography (Routt County DOQQ 2011). These areas were apparently (visually) greater than or equal to 1000 stems per acre (one quarter shrub per m2; 25 shrubs per 100 m2) and include any non-fenced remnants of woody plant density concentration areas planted by SCC.

Table 5. 2022 and 2023 Data and Sample Adequacy Summary for Background and Concentrated Area Woody Plant Density, II-W BRB-6 Phase III Bond Release Area.

Woody Density Area and Sampling Year	Woody Density (stems/100m^2)	s	N	N_{min}	t
Background Density BRB-6 Phase III Bond Release Area **2022**	30.1	55.5	32	260	1.309
Volunteer Concentrated Area Density BRB-6 Phase III Bond Release Area **2022**[1]	30.1	55.5	32	260	1.309
Background Density BRB-6 Phase III Bond Release Area **2023**	25.34	49.8	32	295	1.309
Volunteer Concentrated Area Density BRB-6 Phase III Bond Release Area **2023**[1]	25.34	49.8	32	295	1.309

2022 Woody Plant Density Success Evaluation

In 2022, the 1,217.9 stems per acre observed in the Background area exceeds 180 stems per acre (90 percent of the 200 stems per acre mandatory performance standard 1). Since the performance standard has been exceeded and a minimum of 30 samples were collected without demonstrating sample adequacy (Table C-4), reclamation success for BRB-6 has been demonstrated by passing a non-parametric rank-order "L" test (CDMG 2010 revised rule, Rule 4.15.11(3)(a)).

Use of a non-parametric rank order "L" test of the assertion that the 2022 BRB-6 Background woody plant density exceeds 70% of mandatory performance standard (140 stems per acre) is shown as follows:

$$L = p(n+1) - Z[np(1-p)]^{0.5}$$

$$L = 0.5(32+1) - 0.842[32 * 0.5(1-0.5)]^{0.5} = 14.118$$

L-value (Lower 80% confidence limit for BRB-6 median) = rank value 14+11.8% of Rank 15-Rank 14 =288.1 stems per acre.

Since L-value (288.1 stems per acre) exceeds 70% of the standard (140 stems per acre), the test has passed and reclamation success for 2022 BRB-6 Background WPD under Phase III is demonstrated.

2023 Woody Plant Density Success Evaluation

In 2023, the 1,025.6 stems per acre observed in the Background area exceeds 180 stems per acre (90 percent of the 200 stems per acre mandatory performance standard 1.

Sample adequacy based on woody plant density was not achieved in the "Background" areas of the Phase III BRB-6 in 2023. The mean "Background" woody plant density exceeded 90% of the mandatory performance standard 1 (Figure D-3, Table C-1) in 2023. Thus, reclamation success under Phase III for woody plant density is demonstrated by passing a one sample t-test of the "reverse null" hypothesis (CDMG 2005 revised rule, 4.15.11 (2)(c)). The BRB-6 "Background" woody plant density data were first evaluated for normality using the Shapiro-Francia test. Based on the raw stems per acre density data; the normality test was not passed in 2023. Consequently, a square root transformation was performed and the normality test was passed in 2023 (Tables 3 and 5 above).

Use of a reverse-null t-test of the assertion that the 2023 BRB-6 Background woody plant density exceeds 90% of mandatory performance standard 1 (200 stems per acre) is shown as follows:

$$t_c = \frac{\overline{x} - (0.9 * technical\ standard)}{\frac{s}{\sqrt{n}}}$$

$$t_c = \frac{25.34 - (13.4)}{\frac{29.16}{\sqrt{32}}} = 2.316$$

Since critical tt = 0.853 (one-tailed, alpha = 0.2, 32-1 df) and tcalc (2.316) is greater than this critical value, the hypothesis of no difference is rejected and reclamation success for 2023 BRB-6 Background WPD is demonstrated.

Thus, successful revegetation with respect to mandatory shrub standard 1 is demonstrated in 2022 and 2023. The mine wide performance standard (mandatory standard 2) was achieved during previous bond release evaluations.

Species Diversity

2022 & 2023 Species Diversity Success Evaluation

Success for the Mandatory Test **A** requires that no single species comprise greater than 60% relative cover in the 2022-2023 BRB-6. Table J-1 of the Revegetation Monitoring Success Report (**Attachment F- BRB-6 Revegetation Success Supporting Documentation**) shows that the most abundant single species was Alfalfa with 18.1% relative all-hit cover in 2022 and intermediate wheatgrass with 20.7% in 2023, far below the 60% threshold of concern. Hence **Mandatory Test A is passed** for 2022 and 2023 data.

With regard to Alternative Test **B**, Total Species Density Test, the standard is the point at which the central 75 percent of the distribution of overall species density in the reference area begins. Mathmatically this would be the mean Reference Area species density. The following is calculated for the BRB-6 Phase III Area (See Table J-2 in Attachment F):

2022 Mean Species density (area-weighted, without noxious species) in the 5 reference areas = 26.9 species per 100 sq.m.

2023 Mean Species density (area-weighted, without noxious species) in the 5 reference areas = 24.5 species per 100 sq.m.

Probability-adjusted density standard:

2022 Mean Reference Area Species Density – 1.15s = 26.9 – 1.15 (5.5) = 20.6

2022 Mean total species density without noxious species in the BRB-6 = 22.4 (min 21.4)

2023 Mean Reference Area Species Density – 1.15s = 24.5 – 1.15 (5.0) = 18.7

2023 Mean total species density without noxious species in the BRB-6 = 17.0 (max 18.2)

Since the reclaimed area value was greater than the standard, **Alternative Test B is passed** for 2022. However, the reclaimed area value was less than the standard for 2023, so **Alternative Test B is failed in 2023**.

Regarding Alternative Test **C**, the similarity index between the lifeform species density values for the prescribed lifeforms for the BRB-6 and the Mean Species density (area-weighted) in the five reference areas is below (Table J-3), exceeding 90% of the standard (0.9 x 70% = 63%).

2022 similarity index is 81%, which exceeds 63%

2023 similarity index is 79%, which exceeds 63%

Hence **Alternative Test C is passed** for 2022 and 2023 data.

Regarding Alternative Test **D,** the total number of native species encountered in an adequate number of samples of the BRB-6 (based on allowable all-hit herbaceous cover and species density) compared to the area weighted native species standard (based on the extended reference area) (Table J-4)

2022 The total number of native species encountered in the first seven 100m^2 samples was 31.
2022 Area weighted native species density standard was 22.8 species per 100 m^2.

2023 The total number of native species encountered in the first sixteeen 100m^2 samples was 46.
2023 Area weighted native species density standard was 21.9 species per 100m^2.

Hence **Alternative Test D is passed** for 2022 and 2023 data.

In summary, Mandatory Test A was passed as were Alternative Tests B (in 2022), C and D. Thus, the species diversity test as a whole is passed for the 2022 and 2023 BRB-6 and revegetation success for species diversity for Phase III is demonstrated.

Phase II Suspended Solids Evaluation

**All tables and figures referenced in this section can be found in Attachment E.

The Seneca II West Mine lies within the Dry Creek and Sage Creek Watersheds. The majority of the permit area drains to the west towards Hubberson Gulch (a tributary to Dry Creek) and Dry Creek, which flows north to the Yampa River. The remainder of the permit area drains northeast towards Sage Creek, which flows north-northeast to the Yampa River. Runoff from the reclaimed mine discharges from six NPDES outfalls (Figure 1 Monitoring Site Locations). Outfall 005 discharges to an unnamed tributary to Dry Creek, Outfalls 006, 016, and 017 discharge to the west to unnamed tributaries to the Hubberson Gulch and Outfall 015 discharges to unnamed tributaries to Sage Creek. Outfall 009, which also reports to Sage Creek, has been excluded from this evaluation as it previously received Phase III bond release.

There are five stream monitoring points; four within the Dry Creek Watershed and one within the Sage Creek Watershed. Stream monitoring points within the Dry Creek Watershed include Hubberson Gulch points WSH9 (SW-S2W-SG9), WSH7 (SW-S2W-SG7), and WSHF1 (SW-S2W-FG1) and Dry Creek point (WSD5) SW-S2W-SG5 (WSD5). Monitoring point WSH9 (SW-S2W-SG9) is located upstream of all the outfalls within the Dry Creek watershed, WSH7 (SW-S2W-SG7) is located downstream of Outfalls 016 and 017, WSHF1 (SW-S2W-FG1) is located downstream of Outfalls 006, 016, and 017, and WSD5 (W- S2W-SG5) is located downstream of Outfalls 005, 006, 016, and 017. Stream points WSSF3 (SW-S2W- FG4) is located within Sage Creek downstream of Outfall 015. Analytical results for the Hubberson Gulch (WSH9, WSH7, WSHF1), Dry Creek (WSD5), and Sage Creek (WSSF3) stream points between 2019 – 2023 are included in Tables 1 – 5. Table 6 provides a statistical summary of the pre-mine and post mine total suspended solids (TSS) for each of these locations except for WSH9. WSH9 is located upstream of all mine drainage and sampling at this location was not initiated prior to mining in the watershed. The range of post mine TSS measured between 2019 – 2023 at stream points WSGH7, WSHF1, and WSD5 are less than or comparable to the pre-mine range. The post mine TSS measured at stream point WSSF3, however, indicates that the TSS

concentrations have increased at this location.

Analytical results for the mines NPDES outfalls between 2019 and 2023 are provided in Tables 7 - 11. TSS was removed as a monitoring requirement from the outfalls when their drainage status was changed to reclamation. Outfalls 005, 006, 009, and 015 were reclassified to reclamation in November 2006 and Outfalls 016 and 017 were reclassified in June 2010. Between 2019 and 2023,33 TSS samples were collected from outfalls 006, 016, and 017, all within the Dry Creek Watershed. Table 12 includes a statistical summary of the 2019 -2023 TSS data collected from these outfalls. The TSS concentration measured at Outfalls 006, 016, and 017 ranged from < 5 - 59 mg/L. Both the average and maximum TSS concentrations measured at Outfall 016 (mean: 11.2 mg/L; max: 59 mg/L) and 017 (mean: 7.7 mg/L; max: 18) were less than the average and maximum pre-mine concentrations observed at downstream point WSH7 (mean: 73 mg/L; max: 214 mg/L), and the TSS at Outfall 006 (mean: 8.5 mg/L; max: 19 mg/L) was less than the pre-mine concentrations at downstream point WSHF1 (mean: 314 mg/L, max: 14000 mg/L).

Table 13 includes a summary of the five outfalls TSS analytical data during the five-year period prior to their change to reclamation drainage status. During this time the average TSS at the four outfalls in the Dry Creek Watershed (005, 006, 016, 017) ranged from 6.4 – 17.8 mg/L and the maximum TSS ranged from 14 – 50 mg/L. This is significantly less than the pre-mine TSS measured at the three stream points (WSH7, WSHF1, WSD5), where the average pre-mine TSS ranged from 73 – 260 mg/L and the maximum TSS ranged from 214 – 14000 mg/L. TSS concentrations at outfall 015 in the Sage Creek Watershed (was similarly low with an average TSS of 9.4 mg/L and a maximum concentration of 30 mg/L. This is comparable to the pre-mine average (7 mg/L) and maximum (24 mg/L) TSS concentrations measured at WSSF3 and is well below the NPDES monthly average effluent limit of 35 mg/L. This indicates that the reclaimed parcels reporting to these ponds are adequately stable.

PHASE III HYDROLOGY

**All tables and figures referenced in this section can be found in Attachment E.

A.) Basic Standards Interim Narrative Standard for Ground Water (CWQCC Regulation 41.5(c)(6).

The Groundwater Point of Compliance (GWPOC) for the Seneca II West Mine was established in 2009 under Technical Revision 63 (TR-63). The GWPOC well at the Seneca II West Mine is monitoring well DCAL-02 which is screened within the Dry Creek Alluvium downgradient (north) of the mines permit boundary (see Figure 1). A GWPOC for the Sage Creek Alluvium was deemed unnecessary due to the small portion of the ridgeline mined within the Sage Creek watershed. The bedrock within the permit area dips to the west and the spoil groundwater at the ridge top drains to the west along the dipping bedrock, away from the Sage Creek tributaries. GWPOC bedrock wells were also deemed unnecessary due to the limited potential for the mine to negatively impact the quality of bedrock groundwater. The Wadge and Wolf Creek Coal exhibit low hydraulic conductivity (3.5E-8 to 3.5E-5 cm/sec) and attenuation and dilution should further limit water quality impacts. Low permeability confining layers isolate mine- impacted water bearing units from the nearest useable aquifer, the Trout Creek Sandstone. The Trout Creek Sandston lies approximately 300 to 400 feet below the Wadge Coal seam and

approximately 60 to 100 feet below the Wolf Creek Coal Seem. See TR-63 in Appendix 15-3B of the Seneca II West Mine permit package for additional justification for the Groundwater Point of Compliance.

Table 14 includes a summary of the water quality collected at well DCAL-02 over the last five years (2019 – 2023) and provides a comparison against the Dry Creek alluvial GWPOC water quality standards established in TR-63 in 2009. The groundwater quality at DCAL-02 consistently meets the water quality standards.

B.) Instream Numeric Standards (CWQCC Regulation 33)

The Colorado Water Quality Control Commission (CWQCC) has established segment specific water quality standards for upper Dry Creek (Yampa River Segment 13d) and Sage Creek (Yampa River Segment 13e). Tables 1 – 4 includes the analytical results for the samples collected from the four stream points within Hubberson Gulch and Dry Creek during the last five years (2019 – 2023) and a comparison against the Segment 13d water quality standards. Table 5 includes the analytical results for the samples collected from the Sage Creek stream point during the last five years (2019 – 2023) and a comparison against the Segment 13e water quality standards. Additional discussion of the water quality in each stream segment follows.

Upper Dry Creek Segment 13d

Total Recoverable Iron

Total recoverable iron exceeded the Yampa Segment 13d surface water quality standard twice (n: 14) at WSH9 (SW-S2W-SG9), nine times (n: 17) at WSH7 (SW-S2W-SG7), 10 times (n: 22) at WSHF1 (SW-S2W- FG1), and zero times (n: 16) at WSD5 (SW-S2W-SG5) between the 2019 and 2023. Table 15 provides a statistical summary of the pre-mine and post mine total recoverable iron for the Dry Creek / Hubberson Gulch stream points. Although the total recoverable chronic water quality standard was exceeded frequently at WSH7 and WSHF1, the iron in the samples collected during the last five years did notexceed the pre-mine concentrations.

Total recoverable iron was monitored at Outfalls 016 and 017 during 12 of the 22 WSH7 (SW-S2W-SG7) monitoring events (Table 16). This included four of the nine events that total recoverable iron exceeded the water quality standard at WSH7 (SW-S2W-SG7). During all four of those events the total recoverable iron measured at Outfalls 016 and 017 met the Yampa Segment 13d surface water quality standard and was an order of magnitude less than the concentration measured downstream at WSH7 (SW-S2W-SG7). Similarly, total recoverable iron was measured at Outfall 006 during 12 of the 22 WSHF1 (SW-S2W-FG1) monitoring events. During six of these events the total recoverable iron exceeded the water quality standard at WSHF1(SW-S2W-FG1).
Total recoverable iron at Outfall 006 ranged from < 0.1 – 0.469 mg/L during the 12 events, never exceeding the Yampa Segment 13d surface water quality standard. This indicates that the elevated iron at WSH7 (SW-S2W-SG7) and WSHF1 (SW-S2W-FG1) is unrelated to runoff from the mine.

Total recoverable iron is strongly correlated with suspended solids at stream points WSH7 (r2: 0.92) and WSHF1 (r2: 0.97) (Figure 2). As described in the Phase II Suspended Solids Evaluation, TSS in the effluent of the NPDES outfalls is typically one to two orders of magnitude less than the concentrations observed at the stream points. Furthermore, the post mine effluent TSS concentrations do not exceed the stream points pre-mine concentrations. This indicates that the iron observed at WSH7 and WSHF1 is unrelated to runoff from the reclaimed mine and is more likely the result of natural erosion that is occurring from the unaffected portion of the watershed.

Ammonia, Nitrogen

The CDPHE Yampa Segment 13d ammonia as nitrogen water quality standard is dependent on both the pH and temperature of the surface water body. Only one sample collected at WSHF1(SW-S2W-FG1) had a measured value above the laboratory detection limit. The sample was compared to the temperature and pH dependent values of the aquatic and chronic criterion for Warm Water Fish in CWCC Regulation 33. The measured value of 0.117 mg/L did not exceed the 1.94 mg/L chronic aquatic life criteria for surface waters with pH of 8.15 standard units and temperature of 12.1 degrees Celsius. None of the ammonia samples collected at WSD5 exceeded the lab detection method or chronic aquatic life criteria.

Sulfide

The method detection limit for the sulfide analysis (MDL: 0.02 mg/L) conducted by SCC's lab exceeds the CDPHE Yampa Segment 13d water quality standard for un-ionized sulfide (0.002 mg/L). There was also a single sulfide samples collected between 2019 and 2023 above the laboratory method detection level at WSHF1. The analytical method used by the lab detects both dissolved sulfides and acid-soluble metallic sulfides that are present in suspended matter and provides a single cumulative concentration that includes both the ionized (HS-) and un-ionized forms of hydrogen sulfide (H2S). The un-ionized hydrogen sulfide is the potentially toxic form which CDPHE based the water quality standard on. The distribution of sulfide between the un-ionized hydrogen sulfide and ionized form is dependent on the temperature and pH. At low pH most of the total dissolved sulfide exists as un-ionized hydrogen sulfide. In alkaline waters, like those present at Seneca II-W, most of the total dissolved sulfide exists as non-toxic ionized sulfide. A procedure for calculating the un-ionized form from the sulfide data can be found in the American Public Health Standard Methods for the Examination of Water and Wastewater. The results of this calculation indicate that un-ionized hydrogen sulfide will not exceed the water quality standard when the non-detect sulfide concentration is equal to 0.02 mg/L. **The single detection at WSHF1 occurred in the 6/2/2020 sample. The reported sulfide concentration of 0.05 mg/L was flagged as being an estimated quantity because the sulfide was detected at a level between the method detection limit of 0.02 mg/L and the practical quantitation limit of 0.1 mg/L. It's unclear if this estimate is valid as sulfide was not detected in any other sample during the five-year monitoring period.**

Mercury

The method detection limit for mercury (0.02 ug/L) used by SCC's lab is above the 0.01 ug/L aquatic life standard for mercury. None of the samples collected during the last five years exceeded the labs method detection limit. The CDPHE performed a reasonable potential analysis for the Seneca NPDES outfalls and mercury monitoring was dropped from all outfalls except Outfall 005, which did not have enough sample data for CDPHE to complete the analysis due to its intermittent flow regime. Mercury has not exceeded the Yampa Segment 13d aquatic life water quality standard in any of the effluent samples collected from Outfall 005 during the last five years.

Selenium

The Yampa Segment 13d temporary modification of the chronic aquatic criterion table value standard of 4.6 ug/L to current conditions expired on 12/31/2022. Therefore the stream point selenium concentrations during the last five years was compared to the 4.6 ug/L table value standard. Between 2019 and 2023 there were no exceedances of the selenium standard at the Dry Creek stream points.

Spoil Springs

Several spoil springs have been identified within the permit area. Five of these are actively monitored. Spoil Spring 1 (WSSPG1) is located above NPDES Outfall 005. Spoil Spring 2 (WSSPG2), Spoil Spring 3 (WSSPG3), and Spoil Spring 4 (WSSPG4) are located upstream of NPDES Outfall 006, and Spoil Spring (WSSPG5) is located upstream of NPDES Outfall 016 (see Figure 1). The post-mining land use of the reclaimed parcels in this Phase III bond release application are designated as livestock grazing and wildlife habitat. Therefore the water quality data collected from these springs are compared to the CWQCC Agricultural Use surface water standards as established in CDPHE Regulation 31.

Table 17 - 21 include the analytical results for the spring samples collected from 2019 – 2023. No Agricultural Use surface water quality standard was exceeded at the Spoil Springs. The Manganese Agricultural Use Standard in CDPHE Regulation 31 were recently updated to specify that this standard is only applicable to plants that are grown in areas with acidic soils (<6.0 pH). In alkaline soils, as are found in the Seneca II-W region, a more appropriate standard would be 10 mg/L (EPA, 1976). None of samples collected from the spoil springs exhibited manganese above 10 mg/L. There were also no excursions of the CDPHE Yampa Segment 13d acute or chronic standard for manganese at the spoil springs or at surface points WSH7 (SW-S2W-SG7), WSHF1 (SW-S2W-FG1), WSD5 (SW-S2W-SG5) downstream of outfalls 005, 006, and 016.

There were no exceedances of the selenium agricultural use standard at the spoil springs. There were also no exceedances of the acute or chronic aquatic life table value standards for selenium.

Sage Creek Segment 13e

Total recoverable iron exceeded the Yampa Segment 13e surface water quality standard twice at downstream monitoring point WSSF3 (SW-S2W-FG4) during the last five years (Table 6). Both exceedances occurred in 2020. The iron in these samples (1.04 – 1.47 mg/L) was just above the water quality standard. The pH in both samples was alkaline but the total suspended solids (range: 31 - 44 mg/L; mean: 37.5 mg/L) were elevated relative to historic levels (2 – 24 mg/L; mean: 7 mg/L). The SIIW drainage area that reports to Sage Creek has been vegetated and stable for over a decade and the slightly elevated iron may be the result of natural erosion in the unaffected portions of the watershed or the sampler could have accidentally disturbed the base of the stream channel while collecting the samples. None of the samples collected in 2021 – 2023 exceeded the standard, with all samples exhibiting iron concentrations less than or equal to 0.29 mg/L.

As discussed above in the Dry Creek Mercury section the lab used by SCC has a method detection limit for mercury (0.02 ug/L) that is above the 0.01 ug/L aquatic life standard. None of the samples collected during the last five years exceed the labs method detection limit. The CDPHE performed a reasonable potential analysis for the NPDES outfalls reporting to Sage Creek to exceed the mercury limits during the last NPDES renewal and determined that there was no reasonable potential for the outfalls to exceed the mercury limit. As discussed in greater detail in the Dry Creek Sulfide section the sulfide detection method used by SSC's lab exceeds the instream water quality standard. The analytical method used by SCC's lab detects both dissolved sulfides and acid-soluble metallic sulfides that are present in suspended matter and provides a single cumulative concentration that includes both the ionized (HS-) and un-ionized forms of hydrogen sulfide (H2S). The un-ionized hydrogen sulfide is the potentially toxic form that the instream water quality standard was established for. Calculations of the un-ionized H2S indicate that the alkaline surface water at this location will not result in un-ionized H2S above the water quality standard when the sulfide concentrations are less than or equal to 0.02 mg/L. None of the samples collected from the stream points exceed the 0.02 mg/L concentration. There have also been no excursions of the NPDES discharge limits during this period at 015 which discharge to Sage Creek.

C.) Permit Requirements of the Colorado Department of Public Health & Environment (CDPHE)

The five Seneca II West Mine NPDES outfalls located within the Phase-III request area are permitted under CPDS Permit No. CO-0000221. Outfalls 006, 016, and 017 discharge to unnamed tributaries to the Hubberson Gulch, Outfall 005 discharges to an unnamed tributary to Dry Creek, and Outfalls 015 discharges to an unnamed tributaries to Sage Creek. Between January 1, 2019 and December 31, 2023 there were only four exceedance of the NPDES limits at these five outfalls (Tables 7 – 11). All four exceedances were for the total recoverable iron monthly average limit during the spring snowmelt season. Total recoverable iron exceeded the monthly average limit at Outfall 006 in April 2023, Outfall 016 in April 2022 and April 2024, and Outfall 017 in April 2023.

The NPDES permits monthly average limit is based on the 1 mg/L chronic total recoverable iron table value standard. However, the Colorado Water Quality Control Commission adopted an ambient-based total recoverable iron standard for Dry Creek Segment 13d (see WQCC Regulation 33). The ambient-

standard includes a chronic total recoverable iron standard of 1.11 mg/L for May – February and a standard of 3.04 mg/L for March – April. Although the Water Quality Control Division acknowledges that this standard is in place they have been unable to incorporate it into permit CO-0000221 while the permit is under Administrative Extension. The total recoverable iron measured at Outfalls 006, 016, and 017 were within the Yampa Segment 13d chronic water quality standard. There were no other exceedances of the NPDES limits at these five outfalls during the last five years.
All NPDES samples met the CDPHE Yampa Segment 13d and 13e instream standards except for a single manganese result at Outfall 006. The manganese sample, collected on 1/10/2022, was analyzed for the potentially dissolved fraction rather than the dissolved fraction, which is the fraction the surface water quality standards are based on. This is an important distinction because the potentially dissolved analysis is run after the sample is treated with nitric acid to a pH less than 2.0 and left to stand for 8 to 96 hours before its filtered. This promotes artificial leaching of metals from sediment and organics present in the sample prior to filtration, something that would not occur in the alkaline surface waters of this region. No other samples exceeded any of the Yampa Segment 13d or 13e water quality standards. See the Seneca II-W Annual Hydrology Reports from 2019 through 2023 for additional discussion on the frequency of discharge.

D.) Clean Water Act Effluent Limitations (40CFR Part 434)

Monitoring data from the past five years indicate the mine has not caused exceedances of the 40 CFR Part 434 settleable solids and pH limits that are applicable to reclamation areas on coal mines (settleable solids limit: 0.5 ml/l; pH limit: 6.0 - 9.0 S.U.). See the Seneca II-W Annual Hydrology Reports from 2019 through 2023 (2019 to be submitted in 2020) for additional discussion of the frequency of discharge and analytical data.

E.) Impacts to Alluvial Valley Floors (AVFs)

No lands satisfying the geomorphic and flood or subirrigation criteria for an Alluvial Valley Floor were located within the Seneca II-W mining permit boundary.

Two AVF areas were identified downstream of Seneca II-W mining operation. A flood irrigated field located within the Dry Creek drainage in Section 16 and 21, T5N, R88W and a flood irrigated field within the Sage Creek drainage in Section 30, T6N, R87W. Two subirrigated fields in Section 9, T5N, R88W of the Dry Creek drainage were originally identified as AVF's however subsequent assessments of these fields in 2005 by ESCO Associates (Dr. David L. Buckner) determined that these parcels do not meet the AVF criteria. A more detailed discussion of these findings can be found in Tab 17 Probable Hydrologic Consequence section of the mine permit.

Impacts to the Alluvial Valley Floors were addressed in the Probable Hydrologic Consequences section of the mine permit (Tab 17). Projected TDS concentrations in the receiving streams were estimated from geochemical models that evaluated potential salt loads from spoil/groundwater interactions. This information was then used to evaluate the potential impacts to the AVF crops. The impact analysis projected a 270% (1088 mg/L) increase in TDS within Hubberson Gulch near WSH7 (SW-S2W-SG7)

and a 95% increase (1303 mg/L) within Dry Creek near WSD5 (SW-S2W-SG5). These increases equated to a final predicted TDS concentration of 1787 mg/L at WSH7 (SW-S2W-SG7) and 2451 mg/L at WSD5 (SW- S2W-SG5). The projected increase within Sage Creek at WSSF3 (SW-S2W-FG4) was lower at 12% (64 mg/L) and resulted in a predicted concentration of 676 mg/L. The evaluation concluded that the quality of the surface water supplying the AVF's would not be impacted to such an extent that the water uses (irrigation and stock water) would be prohibited or degraded to the point of material damage.

This conclusion is supported by the post mine surface water quality at the sample locations within Dry Creek watershed. Hubberson Gulch drains through the 26 acres AVF located approximately a quarter mile southeast of the confluence of Hubberson Gulch and Water Trough Gulch (Section 16 and 21, T5N, R88W). The fields are flood irrigated with Hubberson Gulch water from just upstream of sample point WSH7 (SW-S2W-SG7). The average TDS concentration over the last five years at WSH7 (SW-S2W-SG7) is 1152 mg/L which is approximately 600 mg/L lower than the predicted 1787 mg/L TDS concentration specified in the Probable Hydrologic Consequences analysis. Lower than predicted TDS concentrations were also observed further downstream at WSD5 within Dry Creek where the 1754 mg/L five-year TDS average has been approximately 700 mg/L lower than the predicted 2451 mg/L concentration. These concentrations are significantly lower than the 3567 mg/L pre-mine TDS concentrations measured lower in the watershed at the southwest corner of Section 22, Township 6N, Range 88W. This elevated TDS was attributed to soil salt accumulations from dry land farming in the watershed that are dissolved and transported to the primary drainages.

The Sage Creek flood irrigated AVF, located in Section 30, T6N, R87W, receives spoil contributions from both Seneca II-W and Yoast Mine. Although the 1073 mg/L five year average TDS concentration measured at nearby stream point WSSF3 (SW-S2W-FG4) exceeds the predicted TDS concentration of 676 mg/L included in the Seneca II-W permit it is still approximately 1100 mg/L less than the 2118 mg/L post mine concentration predicted in the Yoast Mine PHC (see Tab 17 of Permit C-1994-082). The Yoast Mine was permitted approximately 12 years after Seneca II-W and the contributions from the Yoast were not considered at the tie of the SIIW PHC predictions. However, the Yoast Mine PHC, which did consider contributions from both mines, concluded that the impact from the increased TDS concentrations in Sage Creek would not have a significant impact in regard to the potential use of the surface water for flood irrigation. Therefore the elevated TDS at point WSSF3 relative to the earlier projected post mine concentrations detailed in the Seneca II-W PHC do not appear to have impacted the AVF.

F.) Agreement of Observed Hydrologic Impacts with the "Probable Hydrologic Consequences" (PHC) Projected in the Mining Permit

The Observed Hydrologic Impacts are generally in good agreement with the Probable Hydrologic Consequences projected in the mine permit. The pre-mine groundwater was marginal to unsuitable for stock and/or irrigation. A single residential well was identified within the mining area and was mitigated per legal agreement. No other residential wells were located within or adjacent to the mine area. Water quality at compliance well DCAL-02 meet all applicable water quality standards. Compliance bedrock

wells were deemed unnecessary due to the limited potential for the mine to negatively impact the quality of bedrock groundwater (see Section A and Technical Revision 63). Therefore, as predicted in the PHC no groundwater users were impacted. Impacts of spoil water to the primary drainages were described in detail in Part E. Spoil water contributions to TDS concentrations downstream of the mine were conservatively estimated and no significant impacts to adjacent Alluvial Valley Floors were predicted. Post mine TDS concentrations support these predictions as TDS contributions remained below predicted values within the Dry Creek watershed. Furthermore, contributions from mining did not exceed the pre-mine downstream TDS concentrations in Dry Creek which were attributed to dry land farming in the watershed. The predicted post mine TDS concentration for Sage Creek was less than the recently measured concentrations. However, the prediction in the Seneca II-W permit was made prior to the development of the Yoast Mine which also contributes to this stream. The post mine concentrations remain well below the projected increases as described in the Yoast Mine PHC (see Tab 17 Permit C-1994-082). Therefore, it is unlikely that the contributions from Seneca II-W have been significant.

Impacts from runoff of the reclaimed mine areas and sediment ponds were projected to be of minimal significance. This is in agreement with the water quality observed in the receiving stream and at the NPDES outfalls (see Section B and C above).

G.) Completion of the Hydrologic Reclamation Plan

Seneca II-W has been reclaimed utilizing the approved practices and measures described within the C-1982-057 permit. The final remaining measure within Hydrologic Reclamation Plan to be addressed is the abandonment of the thirty-four remaining monitoring wells within or adjacent to the requested Phase III bond release area. Thirteen are located in the alluvium, six within the Wadge Coal seam, six within the Wadge Overburden, three within the Wolf Creek Coal, one with the Wolf Creek Coal Overburden, one within the Wolf Creek Underburden, one within the Sage Creek Coal, one within the Sage Creek Overburden, and two within the Trout Creek Sandstone (see Table 3 of the Seneca II-W Annual Hydrology Report for the list wells and their construction details). All thirty-four remaining wells will be removed using well abandonment procedures approved by the CDRMS upon approval of this bond release application.

As described in above in Part A and in previously approved Technical Revision 63, alluvial well DCAL-02 is the only groundwater point of compliance (GWPOC) well for the Seneca II West Mine. The well is screened within the Dry Creek Alluvium and is located downgradient (north) of the mines permit boundary. A GWPOC for the Sage Creek Alluvium was deemed unnecessary due to the small portion of the ridgeline that was mined within the Sage Creek watershed. GWPOC bedrock wells were also deemed unnecessary based on the absence of the potential for the mine to negatively impact the quality of bedrock groundwater. See Part A above and TR-63 in Appendix 15-B of the Seneca II-W permit for additional justification. The groundwater quality at GWPOC well DCAL-02 is in compliance with the groundwater quality standards.

In 2023 the water levels measured at all bedrock and alluvial wells were within historic ranges. Water level fluctuations are observed in both alluvial and bedrock wells. Water levels in the alluvial display seasonal fluctuations related to climatic variation. Water levels are highest in the spring after the

snowmelt and increased precipitation recharge the underlying water table. Bedrock wells display water level fluctuations in response to groundwater inflow from the reclaimed mine pits and recharge from precipitation where the units outcrop. This suggests the reclaimed area has re-saturated and sufficient infiltration rates and recharge capacities have been established. Additional water quantity information, including a summary of the water levels measured and hydrographs for the life of each active monitoring well at Seneca II-W can be found in the groundwater section and Appendix C of the 2023 Annual Hydrology Report.

The drainage channels and stock ponds that will remain in the Phase III bond release area are those that have already been approved for permanent retention and are shown on Figure 1. These will include sediment ponds 005, 006, 015, 016, and 017 that are associated with NPDES permit CO-0000221. Note that sediment pond 009 previously received Phase III Bond release. See Part B and C above for a detailed discussion of the receiving stream and NPDES outfalls water quality.

H.) Findings of the Protection of Hydrological Balance

The disturbance of the hydrologic balance within and adjacent to the permit area have been minimized through the use of best management practices. Groundwater levels within bedrock and alluvial wells fall within historic ranges. Groundwater quality meets all applicable standards at compliance well DCAL-02. Groundwater point of compliance wells were deemed unnecessary based on the absence of the potential for the mine to negatively impact the bedrock groundwater quality. Disturbance to adjacent surface water bodies were minimized through the proper utilization of drainage and sediment control structures. As discussed in detail above the discharges from the mines site meet the NPDES permitted limits and the receiving streams meet all applicable surface water quality standards except for the occasional excursion of total recoverable iron. The elevated iron in the Dry Creek Drainage (CDPHE Yampa Segment 13d is strongly correlated with suspended solids in the streams water column. Multiple concurrent NPDES outfall and receiving stream sampling events indicate that the elevated iron is unrelated to the discharges from the mine site and is the result of natural erosion processes that are occurring within the unaffected portion of the Dry Creek drainage area. Total dissolved solids within the receiving streams have remained below the concentrations predicted within the Probably Hydrologic Consequences and the streams water uses have not been degraded significantly.

Additional hydrology data for Seneca II-W can be found in the Annual Hydrology Reports which have been submitted to CDRMS for several decades.

POSTMINING LAND USE

The postmine land uses for the Seneca II-W mine are livestock grazing and wildlife habitat. Grazing has been conducted for a number of years at the mine to implement and demonstrate the postmine land use. Additionally, proper grazing has been used to encourage re-establishment and enhancement of native plant diversity and woody plant density. The grazing season at Seneca II-W has historically been from mid-July to mid-September. The average estimated stocking rate based on historical herbaceous production data, forage palatability and a fifty percent (50%) proper use factor is 1.5 acres per animal unit month (AUM).

The ability of the reclaimed lands to provide good stocking rate values represent the results of implemented best practices for reclamation, management of the reclaimed areas and the restoration of ecosystem function and continuing successional development of the reclaimed lands.

Seneca II-W reclaimed area livestock grazing was initiated in 2007 using the Salt River and Top reclaimed pastures located in the area of the BRB-1. The grazing was approximately 15 days in each pasture and averaged 16 percent use of all forage and 33% of the PUF forage (PUF = 50% of available forage as a proper use factor). Grazing has continued annually through 2024 and has gradually spread to majority of the mine reclaimed lands as granted by the land owners. Livestock have been cow-calf pairs and grazing numbers have ranged from 30 pair to 230 pair. Days of grazing have ranged from 29 days to 51 days. Utilization has ranged from light to moderate with rates from 5% of total forage (23% of PUF forage) to 32% of total forage (65% of PUF forage). Anecdotal comments by the livestock operators to reclamation management personnel indicate satisfaction with the reclaimed grazing resource and animal performance.

Wildlife monitoring was conducted annually at the Seneca II-W Mine from 1994 through 2010. Comprehensive monitoring including big game, upland game birds, raptors and predators continued through 2007. From 2008 through 2010 monitoring centered on upland game birds, golden eagles and Sandhill cranes. From 2011 the general mine area has been included in annual Columbian Sharp-tailed grouse counts. The results of monitoring are presented in the annual reports submitted to CDRMS. Additionally, CDRMS inspection personnel note wildlife observations in their ongoing inspection activities at the mine.

Seneca II-W reclaimed lands provide excellent habitat for a number of wildlife species. Elk and mule deer make common use of the reclaimed areas where significant numbers of deer and elk can be observed in the reclaimed areas throughout the year. The reclaimed areas provide beneficial and nutritional forage resources throughout the year but especially in the spring and early summer as the elk and mule deer complete gestation and move to lactation cycles. Elk and mule deer numbers on the mine site during the period of monitoring for these species showed year to year fluctuations as a result of mining activities and climatic conditions. As mining activity moved to new areas and reclamation became established, big game moved back into reclaimed areas and adjacent native habitats. This has been especially true for elk as the herbaceous forage quality is compatible with their foraging preferences.

Review of annual monitoring reports shows that mule deer and elk numbers have had a steady increase over the 1994 through 2007 period. This has been in part due to improved survey methods later in the period. In the latter part of the monitoring years elk and mule deer were found increasingly in the established areas of reclamation. In 2006 elk were averaging 9.4 individuals per square mile while mule deer were averaging 1.92 individuals per square mile. Incidental observations by mine personnel and CDRMS inspectors indicate that elk and mule deer are common on reclamation through much of the year.

Raptors including red-tailed hawks and golden eagles nest and hunt in the area and other raptors such as northern harriers and Swainson's hawks that prefer more grassland or grass shrubland habitat have been observed in reclaimed areas in past studies and monitoring. The reclaimed areas are trending towards a sagebrush grassland/shrubland habitat and species with an affinity to that habit type are present in these

reclaimed areas. Golden eagle nests are located in sandstone cliffs west of Seneca II-W in Hubberson Gulch. During the length of the monitoring period there has been active nesting and breeding at these sites in most years. Golden eagles have been observed flying over the reclaimed areas. The continued presence of these birds and the successful breeding activity could in part be contributed by the reclaimed areas which offer good foraging opportunities related to the stature and nature of the herbaceous dominated reclaimed areas and related prey base.

Columbian sharp-tailed grouse (CSTG) are of particular interest in Colorado. Monitoring efforts have been attuned to documenting presence and numbers, particularly at lek sites during the breeding season by CPW. Since 2002 monitoring has shown a steady increase in presence of these birds at Seneca II-W, especially in reclaimed areas. As an example, in 2002 there were 12 birds observed and in 2010 there were 57 birds documented. Several historic and new leks are present on the mine site both in native and reclaimed sites at Seneca II-W. CSTG have established up to four active leks on II_W reclaimed lands and these leks are monitored annually. The affinity for reclaimed sites by CSTG is well documented in northwest Colorado and this is consistent with observations at Seneca II-W. The 2013 counts for the four leks totaled 66 CSTG with the lowest lek count having 14 CSTG and the highest with 23 CSTG. There is potential for additional CTSG presence due to the large amount of similar and available reclamation habitat and the proximity of active leks and CSTG activity surrounding the mine. Please note that Colorado Parks and Wildlife monitoring is showing an increased upward trend in CSTG numbers and reclaimed lands play a role in this trend.

Sandhill cranes have been monitored for a number of years through 2010. Birds have been present in areas west of the mine and have been observed flying over the mine. None have been documented as nesting on the II-W mine site but in other mine sites outside of Seneca II-W they have been observed in this activity.

PERMANENT INFRASTRUCTURE

The Seneca II West Mine has approved the retention of various structures to become permanent features to the mine permit. The permanent structures can be located on Exhibit 20-2, Post Mine Topography and Drainage in the approved mine PAP, or included in this Bond Release Application as Map 3. Structures left as permanent features include the shop and surrounding area (approximately 2.3 acres), water well and well house located at the shop, power lines and substation, all ten fenced shrub plots, sediment ponds, stock ponds, and miscellaneous fences. Detailed inventory of the structures retained are described below.

Roads. Several roads have been approved as permanent features for the Seneca II West Mine as part of Technical Revisions 68 and 79. These roads are presented in Attachment 20-2 (Permanent Features) of the approved mine permit application package. Segments of the following roads occur within or adjacent to the current Seneca II West Mine permit area (See Map 3 for permanent feature locations):

- Access Roads
    - Road G
    - Ridgeline Access Road

- Road J
- Road K
- Road 53C
- Road A
- Routt County

- Light Use Roads
  - LU-1 (1,450 feet)
  - LU-1A (490 feet)
  - LU-1B (1,600 feet)
  - LU-3 (3,860 feet)
  - LU-4 (2,930 feet)
  - LU-5 (7,580 feet)
  - LU-6 (580 feet)

Permanent Impoundments. Seneca II West Mine has retained multiple stock tanks and sediment ponds as permanent structures. Currently the mine has received full approval for three of the six sediment ponds to remain as permanent, Pond 005, 009, and 015. All the ponds have received approval by CDRMS to remain as permanent but the mine is currently working to receive the State Engineers Office (SEO) approval for the remaining three sediment ponds, 006, 016, and 017. The mining area included many stock tank structures, of which many have been retained as permanent structures. Stock tanks T-2, T-3, T-5, T-18, T-20, T-24, T-26, and T-27 have all received full approval to be retained as permanent structures. Land owner approval letters, SEO approvals, and pond demonstrations for the approved impoundment structures can be found in Appendix 20-2.1 and 2.2 of the approved mine PAP.

FENCED SHRUB PLOTS

The Seneca II West Mine Permit area includes ten fenced shrub plots that were part of the reclamation efforts of the Seneca II West Mine. These plots are remaining as permanent features along with the existing big-game proof fence enclosures. These enclosures where required by permit conditions during the ten-year liability term. Prior to final bond release the gates to the plots will be opened to demonstrate the shrubs can withstand the existing wildlife and livestock foraging pressure.

POWERLINES AND SUBSTATION

The Seneca II West Mine permit boundary consists of a single remaining substation and approximately 7,355 feet of powerline with poles throughout the property. The substation was constructed to provide electricity to the mining equipment and facilities during the mining operation. The Substation is privately owned by Yampa Valley Electric Association (YVEA). YVEA has provided a letter requesting the substation remain as a permanent feature.

MISCELLANEOUS BOUNDARY AND GRAZING FENCES

There are a variety of fences throughout the Seneca II West Mine permit area. All of the current fences will remain as permanent features following final bond release. These fences delineate property boundaries, and grazing areas. The fences support reclamation success along with post mining land use.

SUPPORTING INFORMATION

LEGAL SURFACE OWNERS WITHIN THE PERMIT BOUNDARY

Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, Colorado 81625

Colorado State Land Board
2667 Copper Ridge Circle, Unit 1
Steamboat Springs, CO 80487

Babson Farms, Inc.
Mark Stephenitch
7985 Keslinger Road
Dekalb, IL 60115

Dave Smith & Sons LLC
PO Box 460
Hayden, CO 81639

Friederich Family Trust
4571 New Hampshire Street
San Diego, California 92116

Hayden Public Library
PO Box 1813
Hayden, CO 81639

Sage Creek Holdings, LLC
Lands Department
701 Market Street
St. Louis, MO 63101

Salt River Project
c/o Mike Diehl Dept. 41495
1800 Larimer Street. Suite 400
Denver, Colorado 80202

Salt River Project
c/o Mark Stewart
13125 US HWY 40
Hayden, Colorado 81639

Steamboat Partners, LTD
600 E Las Colinas BLVD #1300
Irving, TX 75039

Boulware Family, LLC
81 Sunset BLVD
Beaufort, SC 29907

SURFACE OWNERS CONTIGUOUS TO THE PERMIT BOUNDARY

Ralph Harris & Emina Palusek
322 Fairway Dr
Willow Park, TX 76087

HOLDERS OF EASEMENTS ON THE PROPERTY

Yampa Valley Electric Association Inc.
2211 Elk River Road
Steamboat Springs, Colorado 80487

LOCAL GOVERNMENT BODIES

Colorado Parks & Wildlife
925 Weiss Drive
Steamboat Springs, Colorado 80487

Colorado River Water Conservation District
201 Centennial, Suite 200
Glenwood Springs, Colorado 81601

Office of Surface Mining Recl & Enfm
One Federal Center, Building 41
Denver, CO 80225

Routt County Board of Commissioners
522 Lincoln Avenue
P.O. Box 773598
Steamboat Springs, Colorado 80477

Routt County Regional Planning Dept.
Planning Director
136 6th Street, Suite 200
Steamboat Springs, Colorado 80487

Town of Hayden
P.O. Box 190
178 Jefferson Ave.
Hayden, Colorado 81639

Upper Yampa Water Conservancy District
P.O. Box 775529
Steamboat Springs, Colorado 80477

SENECA
Property, LLC

Seneca II West Bond Release Polygons

Permanent Rd vs BRB	ID Number	Year Seeded	Acres
Bond Release Block			
	41	2014	2.47
	66	2006	0.23
	75	2008	5.2
	80	2011	0.54
	81	2011	10.89
	82	2011	9.17
	83	2011	12.77
	84	2011	25.99
	86	0	3.67
	87	2013	0.48
	101	2014	0.25
	129	2013	3.36
	133	2013	2.35
	134	2014	0.86
	138	2014	0.64
	145	0	2.26
		Sum Acres	81.12
Permanent Building			
	85	2011	2.71
		Sum Acres	2.71
Permanent Drainage			
	89	2005	4.48
	96	1999	0.36
	118	2005	0.46
		Sum Acres	5.31
Permanent Pond			
	105	0	2.57
	139	0	2.15
	147	0	1.41
	148	0	1.92
	149	0	5.65
	153	0	0.93
		Sum Acres	14.62
Permanent Road			
	120	0	0.51
	126	0	3.28
	136	0	0.4
		Sum Acres	4.19
		Sum Acres	107.96

0 0.175 0.35 0.7 1.05 1.4 Miles

N W E S

Legend

Phase I SL, Phase II SL, Phase III SL

- Phase II, III
- Phase I, II, III
- Phase III
- SIIW-DisturbanceBoundary

Seneca II West
BOND RELEASE
AREA DELINIATION MAP

Peabody

MAP 1

DATE: 09-18-2024
DRAWN BY: M.KAWCAK

SENECA Property, LLC

MAP 2

Seneca II West Mine

Peabody

29515 RCR #27
OAK CREEK, CO 80467

SL8 PHASE III BOND RELEASE GENERAL LOCATION MAP

DESIGNED BY: MLK DRAWN BY: MLK APPROVED BY:	COUNTRY: USA STATE/PROVINCE: COLORADO GSC: 5N 88W
DATE: 2024-09-18 SCALE:	DRAWING/SHEET: 1 of 1 C.I.: 0'

Legend

- Post Mining Drainages
- Light Use Roads
- Permanent Roads
- DisturbanceBoundary
- Permit Boundary
- NPDES Discharge Points

HAYDEN, CO
SAGE CREEK MINE
YOAST MINE
6N 88W
6N 87W
6N 86W
5N 88W
5N 87W
5N 86W
Copyright:© 2014 Esri

County Road 37
County Road 53
County Road 53C
NPDES 005
NPDES 009
NPDES 006
NPDES 015
NPDES 016
NPDES 017
005 E1
005 GULCH
005 GULCH TRIB
006 W1
005 GULCH
006 NE4
006 NE1
006 NE3
006 NE2
UNAMED TRIB
006 NE1
006 E2
006 E1
006 S1
006 SE1
006 GULCH
006 GULCH GTRIB
006 GTRIB
006 GULCH
PM 5B
PM 5A
PM 4D
PM 4C
PM 4
PM 4B
PM 4A
PM 3
PM 3A
PM 2 TRIB
PM 2
PM 6
PM 2A
PM 2B
PM 2B TRIB
PM 2C
PM 2D
PM 2A TRIB1
PM 2A TRIB2
PM 2E
PM 1A
PM 1
PM 1C
PM 1B

N
W
E
S

0 0.175 0.35 0.7 1.05 1.4 Miles

UNDISTURBED

UD

SUBSTATION

SHOP & STORAGE AREA

WELV HOUSE

RIDGELINE ACCESS ROAD

ROAD (U)

PERMIT BOUNDARY

LEGEND

- SURFACE CONTOUR
- PERMANENT ROADS
- LIGHT USE ROAD
- DISTURBANCE BOUNDARY
- POWERLINE
- OPEN WATER
- SECTION CORNER
- PERMIT BOUNDARY
- FENCE
- CROSS SECTION LOCATION
- STOCK TANK
- CULVERT
- RUNOFF CONTROL STRUCTURE
- STREAM
- POSTMINING CHANNEL
- POND

SCALE

CONTOUR INTERVAL 5 & 10 FT.

SAGECREEK\SenecaData\2W\BONDRELEASE\SL-4 PHASE 1\seneca20-2SL-4PHASE1BOND.dwg

MAP 3

Seneca II West Mine

Peabody

29515 RCR #27
OAK CREEK, CO 80467

SL8 PHASE II/ III BOND RELEASE
POSTMINING TOPO
AND PERMANENT FEATURES

DESIGNED BY: MLK DRAWN BY: MLK APPROVED BY:	COUNTRY: USA STATE/PROVINCE: COLORADO GSC: 5N 88W
DATE: 2019-10-21 SCALE:	DRAWING/SHEET: 1 of 1 C.I.: 0'

ATTACHMENT A

NOTARIZED STATEMENT

In accordance with Rule 3.03.2 (1)(e): I hereby certify that, to the best of my knowledge, all applicable reclamation activities have been accomplished in accordance with the requirements of the Act, the rules and the approved reclamation program.

Miranda Kawcak 9/18/24

Miranda Kawcak Date

Environmental Manager

Seneca Property, LLC

Peabody Energy

Notary seal

CANDICE RENEE TRUJILLO
NOTARY PUBLIC - STATE OF COLORADO
NOTARY ID 20234016335
MY COMMISSION EXPIRES MAY 1, 2027

Signed Candice Trujillo

My Commission Expires: 5/1/27

September 17, 2024

To:

RE: Seneca II West Mine Final Bond Release Application (SL-8):

To Whom It May Concern:

You are receiving this notification as a requirement by the Colorado Division of Reclamation, Mining and Safety (CDRMS). Pursuit to rule 3.03.2 of CDRMS regulations Seneca Properties, LLC is required to notify all adjoining property owners, surface owners, appropriate local government bodies, municipalities, regional planning commissions, boards of county commissioners, county planning agencies, sewage and water treatment authorities, and water conservancy and water conservation districts in the locality in which the surface coal mining operations took place.

Seneca Property, LLC, 29515 Routt County Road 27, Oak Creek, Colorado 80467, has requested final release of Liability on the remaining 107.9 acres of its reclaimed lands at the Seneca II West Mine *(CDRMS Permit No. C 1982-057, approved December 31, 1985)*.

The Seneca II-West Mine is located approximately seven miles south of the Town of Hayden, Colorado, off of Routt County Road 53. The specific area to which this bond release request applies is included within the Permit Area located as follows:

T5N, R88W	
Section 9 :	Portions of SE¼ NE¼ , NE¼ SE¼ , & W½ NE¼
Section 10:	S½ S½ NW¼, SW¼, SE¼ , Portions of S½ NE¼
Section 11:	Portions of S½ S½ SW¼
Section 14:	Portions of SW¼, NW¼, & S½ S½ SE¼
Section 15:	ALL
Section 16:	Portions of W½ NW¼, SE¼ NW¼, NE¼ SW¼, SE¼
Section 21:	Portions of E½ NE¼
Section 22:	NW¼, NE¼, N½ SE¼, SW¼ SE¼, Portions of N½ SW¼, & SW¼ SE¼
Section 23:	NW¼, SW¼, W½ E½, W½ E½ E½
Section 26:	W½, W½ E½, & Portions of W½ E½ NE¼ and W½ E½ SE¼
Section 27:	E½
Section 34:	NE¼, N½ SE¼, & Portions of N½ S½ SE¼
Section 35:	NW¼,W½ NE¼, N½ SW¼, & Portions of N½ S½ SW¼, NW¼ SE¼, NW¼ SW¼ SE¼, NW¼ NE¼ SE¼ and W½ E½ NE¼

All located west of the 6th Principal Meridian; totaling 3,878.5 acres, of which 107.9 acres for final release are requested in the Bond Release Application (SL-8). The USGS 7.5 Minute Quadrangle maps for Hayden Gulch, Dunckley and Mt. Harris contain the described affected area.

A Corporate Surety Bond in the amount of $316,698.60 is currently in place and its entirety is being requested for release. Pursuant to Rule 3.01.1, a permittee may request Phase I bond Release upon successful completion of backfilling, regarding, and drainage control in accordance with the approved reclamation plan. A permittee may request Phase II bond Release upon the establishment of vegetation which supports the approved postmining land use and which meets the approved success standard for cover, pursuit to Rule 4.15.8. A permittee may request Phase III Bond Release upon completion of all surface mining operations in accordance with the approved reclamation plan, and the final inspection and procedures of Rule 3.03.2 have been satisfied, achieving postmining land used of Rangeland. Phase III shall not be released prior to a ten year liability period specified for vegetation responsibility and success. The portion of the mine for which Bond Release is being requested consists of permanent roads, permanent ponds, and successfully reclaimed areas. Reclamation of the disturbed mining areas and demolition of non-permanent structures occurred throughout the reclamation phases from 1993 through 2013. The approved reclamation plan can be viewed in its entirety in the Seneca II West Mine Permit Application Package located at the Twentymile Mine Office, Oak Creek, Colorado.

A copy of the SL-8 bond release application is available for public inspection at the Twentymile Mine Office, 29515 Routt County Road 27, Oak Creek, Colorado 80467. Written comments or objections or requests for public hearing or informal conference concerning this application may be submitted to, and additional information obtained from, the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203-2273, (303) 866-3567. Comments must be received within 30 days of the last publication of this notice or within 30 days of the onsite inspection, whichever is later.

Sincerely,

Miranda Kawcak

Miranda Kawcak
Manager, Environmental
Peabody
Seneca Properties, LLC | 29515 Routt County Rd #27 | Oak Creek, CO 80467
Office Phone: (970) 870-2718 | Cell: (970) 439-8273
mkawcak@peabodyenergy.com

PUBLIC NOTICE

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Section 15:	ALL
Section 16:	Portions of W½ NW¼, SE¼ NW¼, NE¼ SW¼, SE¼
Section 21:	Portions of E½ NE¼
Section 22:	NW¼, NE¼, N½ SE¼, SW¼ SE¼, Portions of N½ SW¼, & SW¼ SE¼
Section 23:	NW¼, SW¼, W½ E½, W½ E½ E½
Section 26:	W½, W½ E½, & Portions of W½ E½ NE¼ and W½ E½ SE¼
Section 27:	E½
Section 34:	NE¼, N½ SE¼, & Portions of N½ S½ SE¼
Section 35:	NW¼,W½ NE¼, N½ SW¼, & Portions of N½ S½ SW¼, NW¼ SE¼, NW¼ SW¼ SE¼, NW¼ NE¼ SE¼ and W½ E½ NE¼

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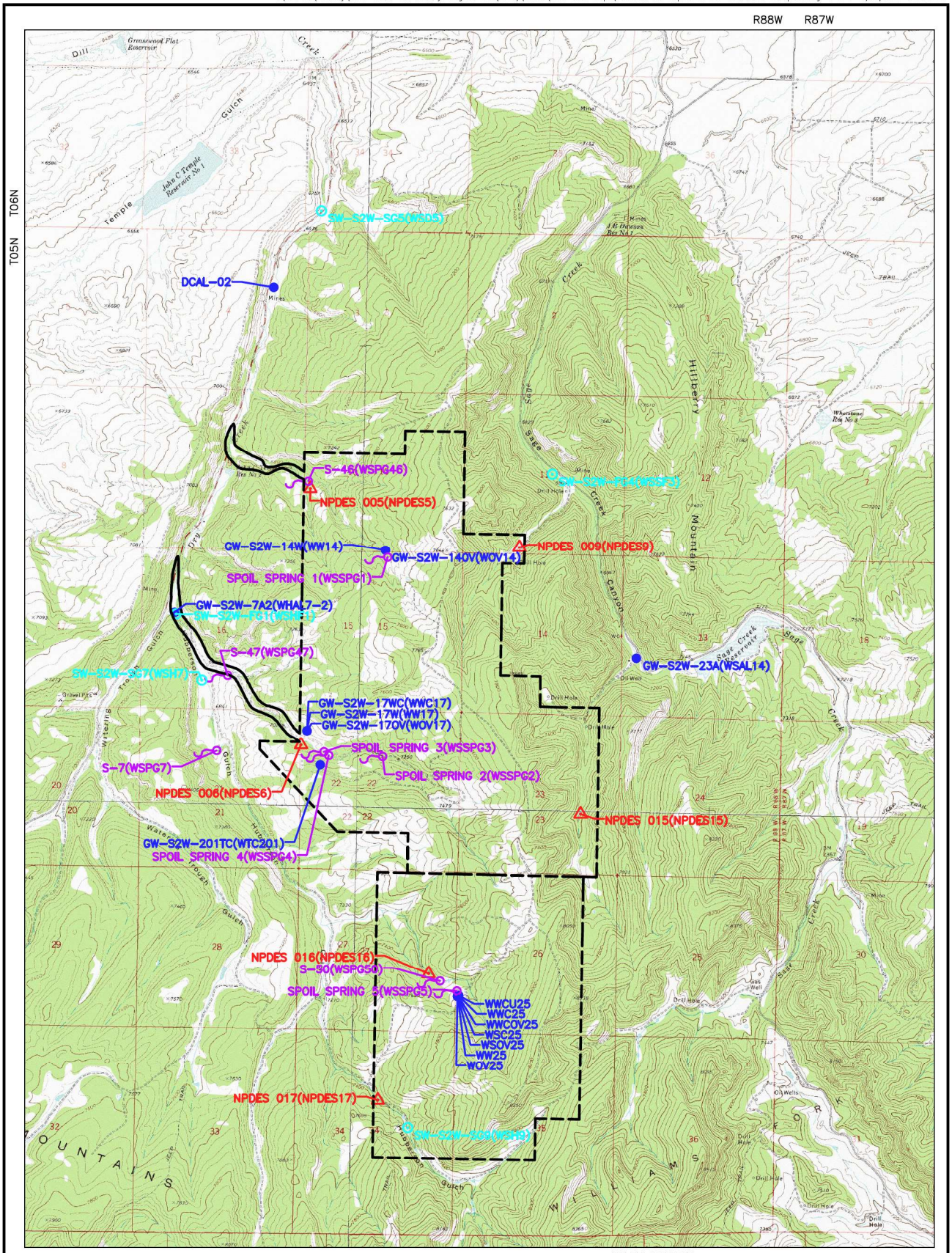


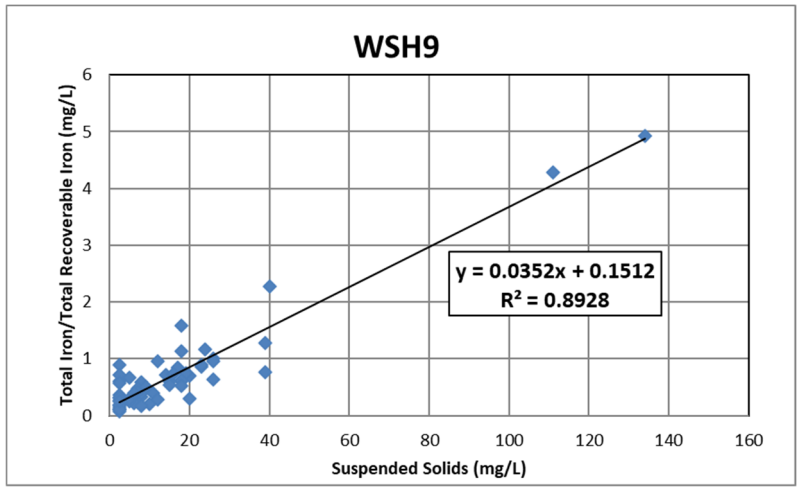
GROUNDWATER
SURFACE WATER
NPDES
SPRING
PERMIT BOUNDARY

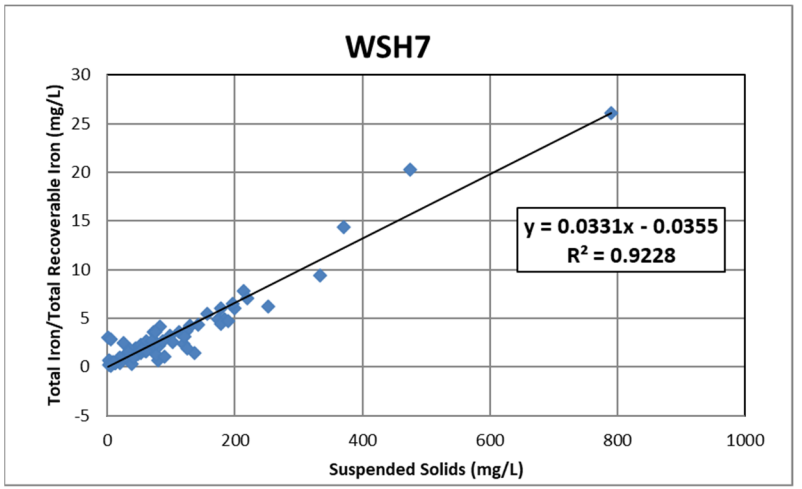
IMAGE SOURCE:
DIGITAL RASTER GRAPHIC COUNTY MOSAIC BY NRCS OF ROUTT COUNTY, COLORADO FROM GEOSPATIAL DATA GATEWAY (HTTPS://GDG.SC.EGOV.USDA.GOV) DOWNLOADED 10/16

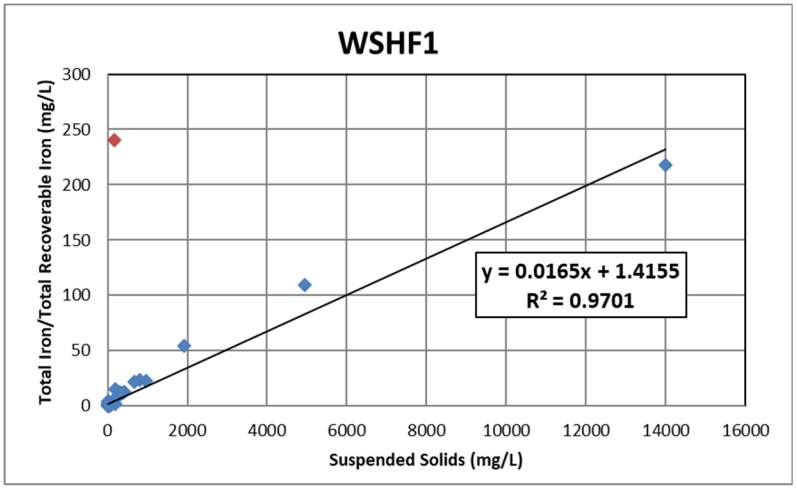
0 3000'
SCALE

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

Figure 2. Suspended solids vs total iron/total recoverable iron at the four stream points within Dry Creek. Note that a single sample from SW-S2W-FG1 (WSHF1) collected on April 27, 1979 was determined to be a statistical outlier. This sample is designated in red on the WSHF1 plot and was not included in the correlation analysis.







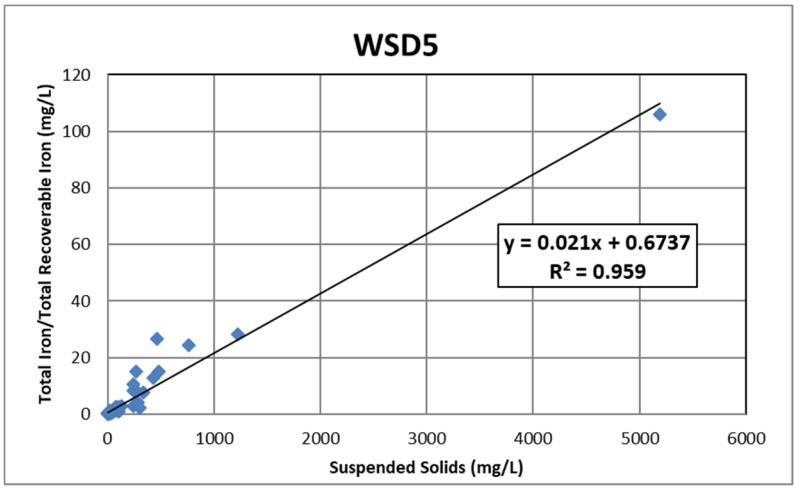


Table 1. Surface water quality data at WSH9 (SW-S2W-SG9) for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	TDS, Lab N MG/L	TSS N MG/L
WSH9	5/2/2019	0.459	501	8.32	10.9	< 0.03	0.16	0.52					324	18
WSH9	6/11/2019	0.203	567	8.29	15.5			0.22	0.0174	0.5	0.5	0.5	346	6
WSH9	7/29/2019	0.142	851	8.35	18.8	< 0.03	0.2	0.25					532	5
WSH9	9/3/2019	0.000												
WSH9	4/22/2020	0.435	675	7.03	8.5	< 0.06	0.79	2.27					450	40
WSH9	6/2/2020	0.288	569	7.87	16.4			0.85	0.0141	0.3	0.4	0.4	344	17
WSH9	7/21/2020	0.011	1045	8.28	18.9	0.07	0.61	0.67					866	5
WSH9	9/1/2020	0.000												
WSH9	4/22/2021	0.039	1437	8.4	3.5	< 0.06	0.252	0.305					1100	5
WSH9	6/15/2021	0.002	1113	8.22	15.6			0.533	0.191	0.4	0.3	0.4	722	15
WSH9	7/21/2021	0.000												
WSH9	9/9/2021	0.000												
WSH9	4/19/2022	0.194	1928	8.21	6.5	< 0.06	0.811	**4.93**					516	134
WSH9	6/21/2022	0.000						0.735	0.126	0.25	0.29	0.3	574	16
WSH9	7/19/2022	0.001	952	8.18	16.2	< 0.06	0.334	0.416					640	7
WSH9	9/6/2022	0.000												
WSH9	5/24/2023	0.469	393	8.4	15.4	< 0.06	0.094	0.177					250	8
WSH9	6/28/2023	0.02	715	8.1	13.9			0.402	0.0726	0.38	0.26	0.31	410	6
WSH9	7/18/2023	0.011	802	7.8	15.2	0.14	0.711	**1.13**					494	18
WSH9	9/7/2023	0												
Yampa Segment 13d Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	18.4	-	-	-	-
Yampa Segment 13d Standards - Chronic		-	-	-	-	-	-	1.11 (May-Feb) 3.04 (Mar-Apr)	2.618	4.6	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-	-	0.2*	20	-	-	-	-

Notes

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

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

Table 2. Surface water quality data at WSH7 (SW-S2W-SG7) for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	TDS, Lab N MG/L	TSS N MG/L
WSH7	5/2/2019	3.380	894	8.57	12.4	< 0.03	0.83	**2.33**					632	119
WSH7	5/2/2019	3.380	894	8.57	12.4			**1.95**	0.0083	0.9	0.9	1.1	628	125
WSH7	6/11/2019	1.142	1556	8.21	13.4			**5.51**	0.0244	0.9	1	0.9	1180	157
WSH7	7/29/2019	0.333	1664	8.61	16	< 0.03	0.68	**2.47**					1290	76
WSH7	9/3/2019	0.000												
WSH7	4/22/2020	3.064	1303	7.72	9.9			2.62	0.0637	1.2	1.1	1.1	980	65
WSH7	4/22/2020	3.064	1303	7.72	9.9	< 0.06	0.42	2.63					980	69
WSH7	6/2/2020	1.132	1179	8.2	17.3			**4.32**	0.0151	1	0.9	0.9	1050	142
WSH7	7/21/2020	0.018	1375	8.45	15.8	< 0.06	0.84	**3.15**					1340	121
WSH7	9/1/2020	0.000												
WSH7	4/22/2021	1.901	1758	8.5	3.4	< 0.06	0.171	0.43					1510	12
WSH7	4/22/2021	1.901	1758	8.5	3.4			0.442	0.168	0.44	0.41	0.47	1480	12
WSH7	6/15/2021	0.005	1836	8.35	12.4			**6.48**	0.0382	0.21	0.21	0.36	1400	197
WSH7	7/21/2021	0.000												
WSH7	9/9/2021	0.000												
WSH7	4/19/2022	2.088	1378	8.3	7.7	< 0.06	0.68	1.05					1090	89
WSH7	4/19/2022	2.088	1378	8.3	7.7			2.69	0.0604	1.03	0.98	1.1	1070	86
WSH7	6/21/2022	0.117	2917	8.15	19.1			0.494	0.0483	0.23	0.22	0.25	1450	10
WSH7	7/19/2022	0.000												
WSH7	9/6/2022	0.000												
WSH7	5/24/2023	3.31	1093	8.6	12.8	0.136	0.292	0.976	0.0238	0.75	0.78	0.86	910	41
WSH7	6/28/2023	0.045	1678	8.3	13.5			**1.64**	0.0259	0.69	0.6	0.67	1200	61
WSH7	7/18/2023	0.003	1774	8.1	16.3	0.079	0.713	**3.6**					1390	75
WSH7	9/7/2023	0												
Yampa Segment 13d Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	18.4	-	-	-	-
Yampa Segment 13d Standards - Chronic		-	-	-	-	-	-	1.11 (May-Feb) 3.04 (Mar-Apr)	2.618	4.6	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-	-	0.2*	20	-	-	-	-

Notes

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

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

Table 3. Surface water quality data at WSHF1 (SW-S2W-FG1) for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSHF1	5/2/2019	1.421	1291	8.65	13	< 0.03	0.57	**1.2**						1		1.1	512		988	66
WSHF1	5/2/2019	1.421	1291	8.65	13			**1.88**	0.0125	< 0.2	< 0.05	0.27	0.01	1	1	1.1	454	< 0.02	994	67
WSHF1	6/11/2019	2.141	2335	8.32	13.9			**1.57**	0.0295	< 0.2	< 0.05	0.19	0.01	0.7	1	0.6	1170	< 0.02	2010	50
WSHF1	7/29/2019	0.141	2550	8.52	15.9	< 0.06	0.77	**2.55**						0.8		0.6	1190		2160	81
WSHF1	9/3/2019	0.044	3176	8.61	20.2			**1.88**	0.286					0.3	0.2	0.3			2880	75
WSHF1	4/22/2020	1.358	1815	7.61	11.3			2.76	0.0378	< 0.2	< 0.05	0.64	0.01	1.4	1.2	1.1	782	< 0.08	1450	67
WSHF1	4/22/2020	1.358	1815	7.61	11.3	< 0.06	0.58	2.73						1.5		1.1	778		1460	77
WSHF1	6/2/2020	2.055	848	8.22	17.8			**5.6**	0.023	< 0.2	< 0.05	0.12	0.02	0.7	0.7	0.9	928	0.05	1610	180
WSHF1	7/21/2020	0.049	2368	8.38	15.9	< 0.1	0.85	**2.1**						0.2		0.4	1520		2580	64
WSHF1	9/1/2020	0.040	3466	8.32	21.8			**1.89**	0.269					0.2	< 0.2	0.2			3710	53
WSHF1	4/22/2021	1.099	2257	8.52	3.5	< 0.12	0.444	0.647						0.35		0.28	1130		2090	9
WSHF1	4/22/2021	1.099	2257	8.52	3.5			0.571	0.453	< 0.2	< 0.05	< 0.02	< 0.01	0.38	0.4	0.3	1110	< 0.02	2040	7
WSHF1	6/15/2021	0.047	2947	8.15	12.1			**1.59**	0.919	< 0.2	0.117	0.24	0.025	0.22	0.15	0.23	1510	< 0.02	2560	29
WSHF1	7/21/2021	0.011	4099	8.09	15.4	0.062	0.414	< 0.3						< 0.5		0.3	2350		4080	11
WSHF1	9/9/2021	0.000																		
WSHF1	4/19/2022	1.176	1598	8.34	8.4	< 0.06	0.624	2.08						1.11		1.08	734		1280	94
WSHF1	4/19/2022	1.176	1598	8.34	8.4			1.17	0.1	< 0.2	< 0.05	0.325	< 0.01	1.1	1.06	1.11	709	< 0.02	1280	82
WSHF1	6/21/2022	0.057	1870	8.08	10.2			0.296	0.396	< 0.2	< 0.05	< 0.02	< 0.01	< 0.2	0.2	< 0.2	1280	< 0.02	2350	< 5
WSHF1	7/19/2022	0.012	2971	8.14	16.1	< 0.12	0.162	0.184						0.27		0.23	1630		2970	7
WSHF1	9/6/2022	0.000																		
WSHF1	5/24/2023	1.43	1535	8.6	12.4	< 0.06	0.254	0.802	0.0187	< 0.2	< 0.05	0.127	< 0.01	0.74	0.79	0.84	805	< 0.02	1420	26
WSHF1	6/28/2023	0.077	2563	8	13.5			0.962	0.078	< 0.2	< 0.1	0.361	< 0.01	0.59	0.52	0.51	1180	< 0.02	1980	28
WSHF1	7/18/2023	0.015	2951	8.1	15.5	0.062	0.566	**1.39**						0.37		0.29	1410		2610	37
WSHF1	9/7/2023	0.012	2780	8.5	18.8			0.208	0.101					0.23	0.28	0.22			3040	7
Yampa Segment 13d Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	-	Varies***	100	0.05	18.4	-	-	-	0.002****	-	-
Yampa Segment 13d Standards - Chronic		-	-	-	-	-	-	1.11 (May-Feb) 3.04 (Mar-Apr)	2.618	0.01**	-	-	-	4.6	-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-	-	0.2*	-	-	100	10	20	-	-	-	-	-	-

Notes

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

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

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

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

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

Table 4. Surface water quality data at WSD5 (SW-S2W-SG5) for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSD5	5/2/2019	2.588	1447	8.66	9.3	< 0.03	0.13	0.25						0.8		0.8	490		1080	9
WSD5	5/2/2019	2.588	1447	8.66	9.3			0.21	0.0122	< 0.2	< 0.05	0.05	< 0.01	0.9	0.9	0.8	493	< 0.02	1050	9
WSD5	6/11/2019	0.348	2197	8.4	19.4			0.39	0.0566	< 0.2	< 0.05	< 0.02	< 0.01	0.4	0.4	0.4	964	< 0.02	1860	12
WSD5	6/11/2019	0.348	2197	8.4	19.4	0.06	0.23	0.38						0.4		0.4	968		1850	13
WSD5	7/29/2019	0.258	2452	8.38	15.6	< 0.06	0.1	0.14						0.4		0.4	1110		2130	6
WSD5	9/3/2019	0.000																		
WSD5	4/22/2020	2.222	2010	7.43	9.4			0.29	0.0341	< 0.2	< 0.05	0.04	< 0.01	0.9	0.8	1.1	846	< 0.02	1640	6
WSD5	4/22/2020	2.222	2010	7.43	9.4	< 0.06	0.12	0.33						0.9		0.8	860		1640	7
WSD5	6/2/2020	1.014	1710	8.06	16.4			0.66	0.368	< 0.2	< 0.05	< 0.02	< 0.01	0.4	0.3	0.4	906	< 0.02	1650	12
WSD5	7/21/2020	0.012	2192	7.99	17.3	< 0.1	0.73	1						0.2		0.3	1140		2170	18
WSD5	9/1/2020	0.000																		
WSD5	4/22/2021	1.149	2194	8.43	3.2	< 0.06	0.22	0.309						0.3		0.2	1010		1960	7
WSD5	4/22/2021	1.149	2194	8.43	3.2			0.292	0.214	< 0.2	< 0.05	< 0.02	< 0.01	0.3	0.31	0.22	1000	< 0.02	1980	7
WSD5	6/15/2021	0.000																		
WSD5	7/21/2021	0.000																		
WSD5	9/9/2021	0.000																		
WSD5	4/19/2022	1.205	1928	8.21	6.5	< 0.06	0.103	0.156						0.94		0.89	947		1690	7
WSD5	4/19/2022	1.205	1928	8.21	6.5			0.167	0.0274	< 0.2	< 0.05	< 0.02	< 0.01	0.98	0.83	0.9	966	< 0.02	1690	6
WSD5	6/21/2022	0.000																		
WSD5	7/19/2022	0.000																		
WSD5	9/6/2022	0.000																		
WSD5	5/24/2023	3.07	1611	8.4	13.2	0.0375	0.166	0.276	0.0788	< 0.2	< 0.05	0.227	< 0.01	0.48	0.55	0.53	846	< 0.02	1530	7
WSD5	6/28/2023	0.054	2517	8	14.4			0.403	0.336	< 0.2	< 0.1	0.03	< 0.01	0.24	0.29	0.25	1070	< 0.02	1880	< 5
WSD5	7/18/2023	0.002	2724	7.7	17.5	0.16	0.412	0.601						0.23		0.17	1070		2260	9
WSD5	9/7/2023	0																		
Yampa Segment 13d Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	-	Varies***	100	0.05	18.4	-	-	-	0.002****	-	-
Yampa Segment 13d Standards - Chronic		-	-	-	-	-	-	1.11 (May-Feb) 3.04 (Mar-Apr)	2.618	0.01**	-	-	-	4.6	-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-	-	0.2*	-	-	100	10	20	-	-	-	-	-	-

Notes

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

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

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

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

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

Table 5. Surface water quality data at WSSF3 (SW-S2W-FG4) for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSSF3	5/1/2019	10.158	1114	8.31	7.2	0.35	0.0082	< 0.2	< 0.05	< 0.02	< 0.01	0.9	0.8	0.8	361	< 0.02	764	11
WSSF3	6/11/2019	1.337	1167	8.45	10	0.77	0.0273	< 0.2	< 0.05	< 0.02	< 0.01	0.4	0.5	0.3	344	< 0.02	836	21
WSSF3	7/17/2019	0.412	1330	8.37	22.6							0.2		0.2	405		940	
WSSF3	9/3/2019	0.000																
WSSF3	4/22/2020	9.786	1353	7.26	4.4							0.6		0.6	504		998	
WSSF3	4/22/2020	9.786	1353	7.26	4.4	**1.04**	0.0363	< 0.2	< 0.05	< 0.02	< 0.01	0.6	0.6	0.6	497	< 0.02	998	31
WSSF3	6/2/2020	0.618	962	8.06	13.1	**1.47**	0.0177	< 0.2	< 0.05	< 0.02	0.01	0.3	0.2	0.3	398	< 0.02	892	44
WSSF3	7/21/2020	0.000																
WSSF3	9/1/2020	0.000																
WSSF3	4/22/2021	3.122	1566	8.32	3.4							0.47		0.48	681		1250	
WSSF3	4/22/2021	3.122	1566	8.32	3.4	0.211	0.0437	< 0.2	< 0.05	< 0.02	< 0.01	0.49	0.45	0.46	639	< 0.02	1260	< 5
WSSF3	6/15/2021	0.000																
WSSF3	7/21/2021	0.000																
WSSF3	9/9/2021	0.000																
WSSF3	4/19/2022	3.159	1818	8.07	4.9							3.08		3.06	958		1650	
WSSF3	4/19/2022	3.159	1818	8.07	4.9	0.076	0.0114	< 0.2	< 0.05	< 0.02	< 0.01	3.09	2.83	2.94	949	< 0.02	1650	< 5
WSSF3	6/21/2022	0.000																
WSSF3	7/19/2022	0.000																
WSSF3	9/6/2022	0.000																
WSSF3	5/24/2023	8.850	876	8.3	10.5	0.228	0.039	< 0.2	< 0.05	< 0.02	< 0.01	0.55	0.49	0.49	315	< 0.02	712	9
WSSF3	6/28/2023	0.085	1410	8	10.5	0.29	0.0381	< 0.2	< 0.1	< 0.02	< 0.01	0.41	0.26	0.3	444	< 0.02	952	6
WSSF3	7/18/2023	0.013	1447	8.1	14.2							0.36		0.33	411		1050	
WSSF3	9/7/2023	0.000																
Yampa Segment 13e Standards - Acute		-	-	6.5 - 9.0	-	-	4.738	-	Varies***	100	0.05	18.4	-	-	-	0.002****	-	-
Yampa Segment 13e Standards - Chronic		-	-	-	-	1	2.618	0.01**	-	-	-	4.6	-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10	20	-	-	-	-	-	-

Notes

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

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

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

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

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

Table 6. Statistical summary of pre-mine and post mine total suspended solids at stream monitoring points.

Watershed	Time Period	Dates	Location	Total Suspended Solids (mg/L)			
				N	Mean	Min	Max
Dry Creek / Hubberson	Pre-Mine	Apr 1987 - Sept 1989	WSH7	8	73	6	214
		Apr 1979 - Sept 1989	WSHF1	86	314	3	14000
		Mar 1983 - Sept 1989	WSD5	45	260	8	5190
	Post Mine	Jan 2019 - Dec 2023	WSH9*	14	21	5	134
		Jan 2019 - Dec 2023	WSH7	17	85	10	197
		Jan 2019 - Dec 2023	WSHF1	22	51	< 5	180
		Jan 2019 - Dec 2023	WSD5	16	9	< 5	18
Sage Creek	Pre-Mine	May 1991 - Sept 1995	WSSF3	26	7	2	24
	Post Mine	Jan 2019 - Dec 2023	WSSF3	8	17	< 5	44

Note

* Monitoring at WSH9 was not initiated until after mining began in the watershed.

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

Table 7. Effluent water quality for NPDES Outfall 005 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TDS, Lab N MG/L	Cadmium PD UG/L	Chromium PD UG/L	Copper PD UG/L	Lead PD UG/L	Mercury T UG/L	Nickel PD UG/L	Silver PD UG/L	Zinc PD MG/L	Settleable Solids ML/L
NPDES5	10/16/2018	0.000																		
NPDES5	11/19/2018	0.000																		
NPDES5	12/3/2018	0.000																		
NPDES5	1/11/2019	0.000																		
NPDES5	2/11/2019	0.000																		
NPDES5	3/11/2019	0.000																		
NPDES5	4/15/2019	0.141	8.59	N			0.22		1.5	1.7	2200	< 0.05	< 0.5	0.9	< 0.1	0.0017	12	< 0.1	< 0.01	< 0.1
NPDES5	5/2/2019	0.133	8.52	N			0.29				2520									< 0.1
NPDES5	5/2/2019	0.133	8.52	N	< 0.06	0.07	0.54	2.9		2.9	2510									
NPDES5	6/10/2019	0.113	8.38	N			< 0.2				4060									< 0.1
NPDES5	7/29/2019	0.001	8.5	N	< 0.2	< 0.03	< 0.2	0.6		< 0.5	4300									
NPDES5	7/29/2019	0.001	8.5	N			< 0.2		0.6	< 0.5	4370	< 0.3	< 3	< 4	< 0.5	0.0007	< 8	< 0.5	< 0.01	< 0.1
NPDES5	8/5/2019	0.000																		
NPDES5	9/3/2019	0.000																		
NPDES5	10/23/2019	0.000																		
NPDES5	11/12/2019	0.000																		
NPDES5	12/3/2019	0.000																		
NPDES5	1/8/2020	0.000																		
NPDES5	2/4/2020	0.000																		
NPDES5	3/2/2020	0.000																		
NPDES5	4/22/2020	0.130	7.64	N	< 0.06	< 0.06	< 0.1	0.7		0.5	3090									
NPDES5	4/22/2020	0.130	7.64	N			< 0.1		0.6	0.4	3140	< 0.1	< 1	< 2	< 0.2	0.0012	18	< 0.2	< 0.02	< 0.1
NPDES5	5/5/2020	0.140	7.6	N			0.07				3690									< 0.1
NPDES5	6/1/2020	0.077	7.81	N			< 0.3				4390									< 0.1
NPDES5	7/21/2020	0.000																		
NPDES5	8/4/2020	0.000																		
NPDES5	9/2/2020	0.000																		
NPDES5	10/22/2020	0.000																		
NPDES5	11/2/2020	0.000																		
NPDES5	12/1/2020	0.000																		
NPDES5	1/11/2021	0.000																		
NPDES5	2/8/2021	0.000																		
NPDES5	3/22/2021	0.000																		
NPDES5	4/22/2021	0.000																		
NPDES5	5/17/2021	0.000																		
NPDES5	6/14/2021	0.000																		
NPDES5	7/21/2021	0.000																		
NPDES5	8/3/2021	0.000																		
NPDES5	9/9/2021	0.000																		
NPDES5	10/27/2021	0.000																		
NPDES5	11/8/2021	0.000																		
NPDES5	12/1/2021	0.000																		
NPDES5	1/10/2022	0.000																		
NPDES5	2/7/2022	0.000																		
NPDES5	3/23/2022	0.000																		
NPDES5	4/19/2022	0.036	8.8	N	< 0.12	< 0.12	0.132	1.32		1.53	2160									
NPDES5	4/19/2022	0.036	8.8	N			0.129		1.36	1.45	2120	< 0.05	< 0.5	0.86	0.16	0.00219	< 16	< 0.1	< 0.04	< 0.1
NPDES5	5/9/2022	0.025	8.39	N			< 0.12				3000									< 0.1
NPDES5	6/20/2022	0.000																		
NPDES5	7/19/2022	0.000																		
NPDES5	8/17/2022	0.000																		
NPDES5	9/6/2022	0.000																		
NPDES5	10/22/2022	0.000																		
NPDES5	11/16/2022	0.000																		
NPDES5	12/6/2022	0.000																		
NPDES5	1/23/2023	0.000																		
NPDES5	2/9/2023	0.000																		
NPDES5	3/21/2023	0.000																		
NPDES5	4/20/2023	0.582	8.2	N			0.403		1.49	1.29	1240	< 0.05	< 0.5	< 0.8	0.16	0.00258	< 8	< 0.1	< 0.02	< 0.1
NPDES5	5/24/2023	0.496	8.4	N	< 0.014	0.0343	< 0.12	0.87	1		3900									< 0.1
NPDES5	6/26/2023	0.000																		
NPDES5	7/18/2023	0.000																		
NPDES5	8/21/2023	0.000																		
NPDES5	9/7/2023	0.000																		

Table 7. Effluent water quality for NPDES Outfall 005 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TDS, Lab N MG/L	Cadmium PD UG/L	Chromium PD UG/L	Copper PD UG/L	Lead PD UG/L	Mercury T UG/L	Nickel PD UG/L	Silver PD UG/L	Zinc PD MG/L	Settleable Solids ML/L
NPDES5	10/27/2023	0.000																		
NPDES5	11/6/2023	0.000																		
NPDES5	12/5/2023	0.000																		
NPDES5	1/10/2024	0.000																		
NPDES5	2/1/2024	0.000																		
NPDES5	3/26/2024	0.000																		
NPDES5	4/23/2024	0.094	8.5	N			0.234		0.93	0.91	2080	< 0.05	< 0.5	0.88	< 0.1	0.00178	11.2	< 0.1	< 0.02	< 0.1
NPDES5	5/28/2024	0.045	8.3	N	0.0491	0.0299	< 0.3	< 0.5	0.3	0.4	4030									< 0.1
NPDES5	6/10/2024	0.002	8.4	N			< 0.06				4360									< 0.1
NPDES5	7/9/2024	0.000																		
NPDES	Daily Max		6.5 - 9.0	10*	-	-	Report	-	Report	-	Report	Report	Report	Report	Report	Report	Report	Report	Report	0.5
Limit	Monthly Avg.		NA	NA	-	-	1	-	4.6	-	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	18.4	-	-	-	9.2	1773	50	281	-	1513	22	0.565	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	4.6	-	-	-	1.2	231	29	11	0.01	168	3.5	0.428	

Note

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

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

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

Table 8. Effluent water quality for NPDES Outfall 006 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Manganese PD MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES6	10/16/2018	0.043	8.68	N			0.1	0.06		< 0.2	< 0.2		3940	< 0.1
NPDES6	11/19/2018	0.043	8.53	N			< 0.1			< 0.5	< 0.5		4270	< 0.1
NPDES6	12/3/2018	0.044	7.77	N			0.2			< 0.1	< 0.5		4000	< 0.1
NPDES6	1/10/2019	0.043	7.76	N			0.18	2.02		< 0.2	< 0.2		3840	< 0.1
NPDES6	2/11/2019	0.042	7.78	N			0.21			0.9	0.2		3780	< 0.1
NPDES6	3/11/2019	0.042	7.81	N			0.21			0.3	< 0.2		3520	< 0.1
NPDES6	4/4/2019	0.029	7.79	N			0.15	0.15		1.2	1.2		1160	< 0.1
NPDES6	5/2/2019	0.762	8.19	N			0.09			1.6	1.7		1970	< 0.1
NPDES6	5/2/2019	0.762	8.19	N	< 0.03	0.03	0.09		1.6		1.7	< 5	1960	< 0.1
NPDES6	6/10/2019	0.274	8.13	N			0.06			1.4	0.8		3760	< 0.1
NPDES6	7/29/2019	0.121	8.2	N	< 0.2	0.11	< 0.2		< 0.5		< 0.5	6	4030	< 0.1
NPDES6	7/29/2019	0.121	8.2	N			< 0.2			0.3	< 0.5		4060	< 0.1
NPDES6	8/5/2019	0.117	8.19	N			< 0.2			< 0.5	< 0.5		4080	< 0.1
NPDES6	9/3/2019	0.116	8.28	N			< 0.2			0.2	< 0.5		4210	< 0.1
NPDES6	10/23/2019	0.107	8.66	N			< 0.2	0.05		3.8	< 0.5		4020	< 0.1
NPDES6	11/11/2019	0.101	8.42	N			0.08			0.3	0.2		3810	< 0.1
NPDES6	12/3/2019	0.099	8.02	N			< 0.2			0.1	0.1		4260	< 0.1
NPDES6	1/8/2020	0.070	7.96	N			0.11	1.56		0.2	0.1		3870	< 0.1
NPDES6	2/17/2020	0.069	8.08	N			0.15			0.9	0.2		3900	< 0.1
NPDES6	3/2/2020	0.070	8.05	N			0.13			1.2	0.2		3760	< 0.1
NPDES6	4/22/2020	0.717	7.26	N			< 0.1			2	1.9		2380	< 0.1
NPDES6	4/22/2020	0.717	7.26	N	< 0.1	< 0.06	< 0.1		2.2		2	< 5	2400	
NPDES6	5/5/2020	0.558	7.79	N			0.11	0.19		1.7	1.5		3140	< 0.1
NPDES6	6/1/2020	0.277	7.8	N			< 0.3			0.6	0.5		4020	< 0.1
NPDES6	7/21/2020	0.121	8.04	N			< 0.3			3.6	< 0.5		4190	< 0.1
NPDES6	7/21/2020	0.121	8.04	N	< 0.3	0.13	< 0.3		< 0.5		< 0.5	10	4090	
NPDES6	8/3/2020	0.121	8.03	N			0.08	0.133		0.2	0.3		4190	< 0.1
NPDES6	9/1/2020	0.116	8.08	N			0.09			0.2	0.1		4310	< 0.1
NPDES6	10/22/2020	0.114	8.13	N			< 0.3	0.026		< 0.5	< 0.5		4220	< 0.1
NPDES6	11/2/2020	0.110	8.58	N			< 0.12			0.17	< 0.2		3850	< 0.1
NPDES6	12/1/2020	0.099	8.55	N			< 0.3			< 0.5	< 0.5		4400	< 0.1
NPDES6	1/11/2021	0.094	8.16	N			0.244	1.67		0.24	0.25		3990	< 0.1
NPDES6	2/8/2021	0.091	8.06	N			0.228			< 0.1	< 0.2		3850	< 0.1
NPDES6	3/22/2021	0.070	8.12	N			0.313			0.59	0.51		2100	< 0.1
NPDES6	4/22/2021	0.113	8.33	N			0.434	0.274		0.3	0.26		3800	< 0.1
NPDES6	4/22/2021	0.113	8.33	N	0.127	0.379	0.38		0.21		0.28	5	3800	
NPDES6	5/17/2021	0.100	8.09	N			0.199			0.16	0.22		3860	< 0.1
NPDES6	6/14/2021	0.061	8.04	N			< 0.3			< 0.5	< 0.5		4060	< 0.1
NPDES6	7/21/2021	0.076	8.18	N			< 0.3	0.0368		< 0.1	0.22		4400	< 0.1
NPDES6	7/21/2021	0.076	8.18	N	0.082	0.119	< 0.3	0.0389	< 0.5		0.17	12	4390	
NPDES6	8/3/2021	0.070	8.08	N			0.136			0.17	0.22		3940	< 0.1
NPDES6	9/9/2021	0.031	8.13	N			0.088			0.18	0.16		3890	< 0.1
NPDES6	10/27/2021	0.034	8.38	N			< 0.06	0.00982		< 0.1	< 0.2		3880	< 0.1
NPDES6	11/8/2021	0.045	8.37	N			< 0.12			< 0.2	< 0.1		3730	< 0.1
NPDES6	12/1/2021	0.031	8.27	N			0.259			< 0.2	< 0.2		3840	< 0.1
NPDES6	1/10/2022	0.041	8.11	N			< 0.12	**2.69**		0.31	< 0.2		3780	< 0.1
NPDES6	2/7/2022	0.041	8.14	N			0.122			< 0.2	< 0.2		3880	< 0.1
NPDES6	3/23/2022	0.038	8.14	N			< 0.12			0.33	< 0.2		3650	< 0.1
NPDES6	4/19/2022	0.119	8.16	N			0.466	0.071		1.54	1.59		1430	< 0.1
NPDES6	4/19/2022	0.119	8.16	N	< 0.06	0.125	0.472		1.57		1.6	19	1450	
NPDES6	5/9/2022	0.113	8.27	N			< 0.12			0.96	1.2		2460	< 0.1
NPDES6	6/20/2022	0.090	8.11	N			< 0.12			< 0.2	0.26		3840	< 0.1

Table 8. Effluent water quality for NPDES Outfall 006 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Manganese PD MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES6	7/19/2022	0.078	8.01	N			0.119	0.183		1.15	0.28		3840	< 0.1
NPDES6	7/19/2022	0.078	8.01	N	< 0.12	0.108	0.116		0.63		0.28	11	3830	
NPDES6	8/17/2022	0.054	8.47	N			< 0.12			0.35	< 0.2		3900	< 0.1
NPDES6	9/6/2022	0.049	8.63	N			< 0.3			0.14	< 0.1		3960	< 0.1
NPDES6	10/20/2022	0.046	8.53	N			< 0.06	0.00732		< 0.1	0.19		4010	< 0.1
NPDES6	11/16/2022	0.043	8.51	N			< 0.3			< 0.1	< 0.5		4020	< 0.1
NPDES6	12/5/2022	0.039	8.46	N			< 0.12			< 0.1	0.11		3870	< 0.1
NPDES6	1/22/2023	0.040	8.41	N			< 0.12			0.22	< 0.2		3780	< 0.1
NPDES6	2/9/2023	0.000	7.9	N			< 0.12			< 0.2	< 0.2		3540	< 0.1
NPDES6	3/21/2023	0.055	7.7	N			< 0.12	0.528		0.28	< 0.2		3690	< 0.09
NPDES6	4/19/2023	0.947	8	N			**1.32**			2.12	2.05		876	< 0.1
NPDES6	5/24/2023	0.645	8.3	N	< 0.12	0.088	0.132		1.13	1	0.99	6	3840	< 0.1
NPDES6	6/26/2023	0.124	7.9	N			0.149			0.2	0.31		3960	< 0.1
NPDES6	7/18/2023	0.09	7.9	N	< 0.12	0.189	0.166	0.045	0.23	< 0.2	0.27	6	4200	< 0.1
NPDES6	8/21/2023	0.06	8	N			< 0.12			< 0.2	< 0.2		4380	< 0.1
NPDES6	9/7/2023	0.06	8.1	N			< 0.3			0.25	< 0.5		4300	< 0.1
NPDES6	10/27/2023	0.053	8.1	N			< 0.12	< 0.02		0.23	< 0.5		3940	< 0.1
NPDES6	11/6/2023	0.052	8.3	N			< 0.12			< 0.5	0.47		4000	< 0.1
NPDES6	12/5/2023	0.05	8.4	N			0.13			< 0.5	< 0.5		4180	< 0.1
NPDES6	1/10/2024	0.045	8.4	N			0.159	0.91		< 0.2	< 0.2		3970	< 0.1
NPDES6	2/1/2024	0.056	8.3	N			0.154			0.3	0.55		3890	< 0.1
NPDES6	3/26/2024	0.056	8.2	N			0.14			1.09	0.95		2290	< 0.1
NPDES6	4/23/2024	0.27	8.1	N			0.307	0.0616		1.9	1.72		1410	< 0.1
NPDES6	5/28/2024	0.212	8.2	N	0.109	0.0974	< 0.12		0.54	0.48	0.59	12	3620	< 0.1
NPDES6	6/10/2024	0.174	8	N			0.095			0.3	0.37		3780	< 0.1
NPDES6	7/9/2024	0.085	7.9	N	< 0.12	0.129	0.143	0.049	< 0.5		0.26	5	3830	< 0.1
NPDES	Daily Max		6.5 - 9.0	10*	-	-	Report	Report	-	Report	-	-	Report	0.5
Limit	Monthly Avg.		NA	NA	-	-	1	Report	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	4.738	18.4	-	-	-	-	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	2.618	4.6	-	-	-	-	

Note

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

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

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

Table 9. Effluent water quality for NPDES Outfall 016 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES16	10/16/2018	0.029	8.61	N			0.05		0.7	0.8		2340	< 0.1
NPDES16	11/19/2018	0.029	8.54	N			< 0.04		1.4	1.5		2530	< 0.1
NPDES16	12/3/2018	0.029	8.26	N			< 0.04		1.4	1.8		2470	< 0.1
NPDES16	1/10/2019	0.030	8.11	N			0.04		1.7	1.7		2450	< 0.1
NPDES16	2/11/2019	0.030	8.08	N			0.05		2.8	2.1		2490	< 0.1
NPDES16	3/11/2019	0.030	8.03	N			< 0.04		2.2	1.5		2290	< 0.1
NPDES16	4/4/2019	0.031	8.01	N			0.04		2.4	2.5		1300	< 0.1
NPDES16	5/2/2019	0.494	8.29	N			0.31		1	1		1260	< 0.1
NPDES16	5/2/2019	0.494	8.29	N	< 0.03	0.07	0.31	1		0.9	5	1260	
NPDES16	6/10/2019	0.222	8.26	N			0.11		1.7	1.3		2070	< 0.1
NPDES16	7/29/2019	0.150	8.31	N			0.06		1.1	1.2		2210	< 0.1
NPDES16	7/29/2019	0.150	8.31	N	< 0.06	0.05	0.06	1.2		1.1	6	2210	
NPDES16	8/5/2019	0.131	8.31	N			0.14		1.1	1.3		2280	< 0.1
NPDES16	9/3/2019	0.128	8.45	N			0.09		0.9	0.9		2390	< 0.1
NPDES16	10/23/2019	0.122	8.86	N			< 0.06		1.3	1.1		2380	< 0.1
NPDES16	11/11/2019	0.116	8.63	N			< 0.06		1.4	1.2		2340	< 0.1
NPDES16	12/3/2019	0.112	8.24	N			< 0.06		1.6	1.5		2470	< 0.1
NPDES16	1/8/2020	0.077	8.17	N			0.04		2.1	2		2420	< 0.1
NPDES16	2/17/2020	0.076	7.98	N			< 0.06		2.4	2.1		2480	< 0.1
NPDES16	3/2/2020	0.077	8.01	N			0.07		2.6	2.7		2440	< 0.1
NPDES16	4/22/2020	0.491	7.74	N			0.42		1.4	1.3		1290	< 0.1
NPDES16	4/22/2020	0.491	7.74	N	< 0.06	0.09	0.48	1.5		1.3	8	1270	
NPDES16	5/5/2020	0.572	7.36	N			0.09		1.4	1.3		1650	< 0.1
NPDES16	6/1/2020	0.219	7.82	N			< 0.1		1.4	1.4		2050	< 0.1
NPDES16	7/21/2020	0.142	8.17	N			< 0.1		1.7	1.3		2290	< 0.1
NPDES16	7/21/2020	0.142	8.17	N	< 0.1	0.1	0.1	1.1		1.2	10	2270	
NPDES16	8/3/2020	0.129	8.18	N			0.07		1.2	1		2310	< 0.1
NPDES16	9/1/2020	0.108	8.12	N			0.07		0.8	0.9		2390	< 0.1
NPDES16	10/22/2020	0.106	8.27				< 0.12		0.7	0.91		2420	< 0.1
NPDES16	11/2/2020	0.103	8.45	N			< 0.12		1.07	1		2360	< 0.1
NPDES16	12/1/2020	0.101	8.62	N			< 0.12		1.11	1.19		2530	< 0.1
NPDES16	1/11/2021	0.097	8.26	N			< 0.12		1.53	1.53		2490	< 0.1
NPDES16	2/8/2021	0.095	8.25	N			< 0.12		1.4	1.54		2440	< 0.1
NPDES16	3/22/2021	0.078	8.35	N			0.094		1.92	2		1870	< 0.1
NPDES16	4/22/2021	0.155	8.48	N			0.153		1.33	1.26		2130	< 0.1
NPDES16	4/22/2021	0.155	8.48	N	< 0.12	0.1	< 0.12	1.48		1.37	< 5	2130	
NPDES16	5/17/2021	0.126	8.34	N			0.068		0.95	0.95		2140	< 0.1
NPDES16	6/14/2021	0.091	8.17	N			0.128		0.65	0.8		2320	< 0.1
NPDES16	7/21/2021	0.041	8.3	N			< 0.12		0.3	0.69		2330	< 0.1
NPDES16	7/21/2021	0.041	8.3	N	< 0.06	< 0.06	< 0.12	0.72		0.7	13	2340	
NPDES16	8/3/2021	0.040	8.48	N			0.512		0.54	1.04		1810	< 0.1
NPDES16	9/9/2021	0.026	8.47	N			< 0.06		0.35	0.45		1900	< 0.1
NPDES16	10/27/2021	0.031	8.56	N			< 0.06		0.21	0.25		2000	< 0.1
NPDES16	11/8/2021	0.034	8.62	N			< 0.12		< 0.2	0.23		1990	< 0.1
NPDES16	12/1/2021	0.025	8.6	N			< 0.12		0.26	0.24		2150	< 0.1
NPDES16	1/10/2022	0.031	8.27	N			< 0.06		0.56	0.52		2370	< 0.1
NPDES16	2/7/2022	0.042	8.21	N			< 0.12		0.54	0.56		2390	< 0.1
NPDES16	3/23/2022	0.040	8.21	N			< 0.12		0.74	0.82		2260	< 0.1
NPDES16	4/19/2022	0.186	8.25	N			**1.5**		1.05	1.18		838	< 0.1
NPDES16	4/19/2022	0.186	8.25	N	< 0.06	0.335	**1.74**	1.1		1.07	59	830	
NPDES16	5/9/2022	0.146	8.23	N			0.1		0.75	0.79		1570	< 0.1
NPDES16	6/20/2022	0.140	8.24	N			< 0.12		0.35	0.44		2060	< 0.1

Table 9. Effluent water quality for NPDES Outfall 016 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES16	7/19/2022	0.043	8.18	N			0.072		0.71	0.43		1950	< 0.1
NPDES16	7/19/2022	0.043	8.18	N	< 0.06	< 0.06	< 0.06	0.55		0.43	6	1920	
NPDES16	8/17/2022	0.038	8.55	N			< 0.12		0.35	0.39		2120	< 0.1
NPDES16	9/6/2022	0.037	8.77	N			< 0.12		0.3	0.28		2250	< 0.1
NPDES16	10/20/2022	0.034	8.59	N			0.079		0.18	0.25		2300	< 0.1
NPDES16	11/16/2022	0.033	8.53	N			< 0.12		0.27	0.49		2400	< 0.1
NPDES16	12/5/2022	0.033	8.47	N			< 0.12		0.46	0.46		2390	< 0.1
NPDES16	1/22/2023	0.032	8.42	N			< 0.12		0.8	0.89		2430	< 0.1
NPDES16	2/9/2023	0.000	8	N			< 0.12		0.96	0.98		2310	< 0.1
NPDES16	3/21/2023	0.018	7.9	N			< 0.12		1.33	1.26		2290	< 0.08
NPDES16	4/20/2023	0.741	8	N			0.195		1.12	0.98		1150	< 0.1
NPDES16	5/24/2023	0.738	8.3	N	< 0.06	< 0.06	< 0.06	0.87	0.96	0.83	< 5	1930	< 0.1
NPDES16	6/26/2023	0.103	7.8	N			0.086		1.01	0.98		2110	< 0.1
NPDES16	7/18/2023	0.061	7.9	N	0.08	0.203	0.215	0.81	0.73	0.76	7	2410	< 0.1
NPDES16	8/21/2023	0.056	8.2	N			0.213		0.55	0.51		2420	< 0.1
NPDES16	9/7/2023	0.037	8.2	N			0.194		0.61	0.53		2380	< 0.1
NPDES16	10/27/2023	0.037	8.3	N			< 0.12		0.65	0.62		2290	< 0.1
NPDES16	11/6/2023	0.036	8.4	N			< 0.12		0.69	0.84		2370	< 0.1
NPDES16	12/5/2023	0.035	8.4	N			< 0.06		1.41	1.13		2420	< 0.1
NPDES16	1/10/2024	0.035	8.4	N			< 0.06		1.47	1.71		2450	< 0.1
NPDES16	2/1/2024	0.036	8.3	N			0.062		1.85	1.81		2420	< 0.1
NPDES16	3/26/2024	0.041	8.3	N			0.075		1.97	1.79		1670	< 0.1
NPDES16	4/23/2024	0.351	7.9	N			**1.17**		0.78	0.72		676	< 0.1
NPDES16	5/28/2024	0.236	8.2	N	0.0756	0.0599	0.089	0.85	0.76	0.86	< 5	1920	< 0.1
NPDES16	6/10/2024	0.200	8.2	N			< 0.06		0.85	0.69		1980	< 0.1
NPDES16	7/9/2024	0.053	8	N	< 0.12	< 0.12	< 0.12	0.85		0.78	< 5	2240	< 0.1
NPDES	Daily Max		6.5 - 9.0	10*	-	-	Report	-	Report	-	-	Report	0.5
Limit	Monthly Avg.		NA	NA	-	-	1	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	4.6	-	-	-	-	

Note

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

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

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

Table 10. Effluent water quality for NPDES Outfall 017 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES17	10/16/2018	0.003	8.86	N			0.18		1.1	1.4		1940	< 0.1
NPDES17	11/19/2018	0.002	8.74	N			0.06		1.3	1.5		2080	< 0.1
NPDES17	12/3/2018	0.002	8.67	N			0.12		0.9	1		1880	< 0.1
NPDES17	1/10/2019	0.003	8.17	N			0.12		0.7	0.8		1610	< 0.1
NPDES17	2/11/2019	0.003	7.87	N			0.12		0.9	0.9		1680	< 0.1
NPDES17	3/11/2019	0.003	7.86	N			0.15		1.1	0.7		1630	< 0.1
NPDES17	4/4/2019	0.007	7.83	N			0.15		1.2	1.3		1020	< 0.1
NPDES17	5/2/2019	0.404	8.3	N			0.41		0.8	1		338	< 0.1
NPDES17	5/2/2019	0.404	8.3	N	< 0.03	0.11	0.41	0.8		0.8	6	338	
NPDES17	6/10/2019	0.218	8.73	N			0.12		0.8	0.7		406	< 0.1
NPDES17	7/29/2019	0.097	8.6	N			0.1		1.1	1.2		830	< 0.1
NPDES17	7/29/2019	0.097	8.6	N	< 0.03	0.07	0.09	1.4		1.3	< 5	824	
NPDES17	8/5/2019	0.015	8.66	N			0.16		1.2	1.3		890	< 0.1
NPDES17	9/3/2019	0.006	8.6	N			0.1		2	2.1		1600	< 0.1
NPDES17	10/24/2019	0.005	8.91	N			0.18		2.5	2.3		2200	< 0.1
NPDES17	11/11/2019	0.004	8.74	N			0.07		0.7	0.7		1060	< 0.1
NPDES17	12/3/2019	0.003	8.34	N			0.07		1.4	1.2		1500	< 0.1
NPDES17	1/8/2020	0.004	8.3	N			0.08		1.3	1.3		1260	< 0.1
NPDES17	2/17/2020	0.004	8.19	N			0.07		2.1	1.8		1270	< 0.1
NPDES17	3/2/2020	0.004	8.1	N			0.09		2	2.1		1210	< 0.1
NPDES17	4/22/2020	0.404	7.43	N			0.61		1.6	1.4		668	< 0.1
NPDES17	4/22/2020	0.404	7.43	N	< 0.06	0.15	0.59	1.8		1.5	10	660	
NPDES17	5/5/2020	0.438	7.07	N			0.47		0.9	0.9		304	< 0.1
NPDES17	6/1/2020	0.223	7.38	N			0.26		0.8	0.8		472	< 0.1
NPDES17	7/21/2020	0.014	8.64	N			0.14		2.7	3		1300	< 0.1
NPDES17	7/21/2020	0.014	8.64	N	< 0.06	0.08	0.1	2.9		3	6	1280	
NPDES17	8/3/2020	0.006	8.67	N			0.31		3.2	2.5		1450	< 0.1
NPDES17	9/1/2020	0.000											
NPDES17	10/22/2020	0.002	8.24				< 0.12		2.31	2.81		2500	< 0.1
NPDES17	11/2/2020	0.003	8.49	N			0.219		2.17	2.24		2310	< 0.1
NPDES17	12/1/2020	0.002	8.67	N			< 0.12		1.91	2.26		2470	< 0.1
NPDES17	1/11/2021	0.002	8.21	N			0.164		2.18	2.26		2360	< 0.1
NPDES17	2/8/2021	0.002	8.31	N			0.254		1.44	1.57		1750	< 0.1
NPDES17	3/22/2021	0.006	8.29	N			0.177		1.38	1.33		1450	< 0.1
NPDES17	4/22/2021	0.063	8.59	N			0.317		1.88	1.95		1680	< 0.1
NPDES17	4/22/2021	0.063	8.59	N	< 0.06	0.242	0.331	2.24		1.95	12	1660	
NPDES17	5/17/2021	0.041	8.53	N			0.218		2.03	2.27		1770	< 0.1
NPDES17	6/14/2021	0.001	8.36	N			0.282		1.84	1.97		1820	< 0.1
NPDES17	7/21/2021	0.000											
NPDES17	8/3/2021	0.000											
NPDES17	9/9/2021	0.000											
NPDES17	10/27/2021	0.000											
NPDES17	11/8/2021	0.000											
NPDES17	12/1/2021	0.000											
NPDES17	1/10/2022	0.000											
NPDES17	2/7/2022	0.000											
NPDES17	3/23/2022	0.000											
NPDES17	4/19/2022	0.065	8.46	N			0.859		0.95	1.01		1110	< 0.1
NPDES17	4/19/2022	0.065	8.46	N	< 0.06	0.241	0.961	0.91		0.95	18	1090	
NPDES17	5/9/2022	0.060	8.37	N			0.262		1.36	1.43		692	< 0.1
NPDES17	6/20/2022	0.041	8.45	N			0.156		0.66	0.7		684	< 0.1
NPDES17	7/19/2022	0.002	8.49	N			0.061		0.69	0.6		762	< 0.1

Table 10. Effluent water quality for NPDES Outfall 017 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	Iron** D MG/L	Iron** PD MG/L	Iron TR MG/L	Selenium** D UG/L	Selenium PD UG/L	Selenium** TR UG/L	TSS** N MG/L	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES17	7/19/2022	0.002	8.49	N	< 0.06	< 0.06	0.07	0.78		0.62	5	748	
NPDES17	8/17/2022	0.001	8.81	N			0.397		0.44	0.61		852	< 0.1
NPDES17	9/6/2022	0.000											
NPDES17	10/22/2022	0.000											
NPDES17	11/16/2022	0.000											
NPDES17	12/12/2022	0.000											
NPDES17	1/22/2023	0.001	8.47	N			0.143		0.41	0.44		1220	< 0.1
NPDES17	2/9/2023	0.000	7.4	N			0.165		0.35	0.5		1210	< 0.1
NPDES17	3/21/2023	0.020	7.8	N			0.213		0.56	0.57		1240	< 0.09
NPDES17	4/20/2023	0.564	7.9	N			0.375		1.65	1.59		540	< 0.1
NPDES17	5/24/2023	0.477	8.7	N	< 0.06	0.087	0.185	0.73	0.72	0.6	< 5	292	< 0.1
NPDES17	6/26/2023	0.021	8.5	N			0.186		0.84	0.94		574	< 0.1
NPDES17	7/18/2023	0.018	8.7	N	< 0.06	0.13	0.158	1.2	1.15	1.2	8	890	< 0.1
NPDES17	8/21/2023	0.001	8.9	N			0.081		1.09	1.13		1020	< 0.1
NPDES17	9/7/2023	0.001	8.9	N			0.377		1.23	1.16		1190	< 0.1
NPDES17	10/27/2023	0.000											
NPDES17	11/6/2023	0.003	8.8	N			0.219		1.05	1.15		1340	< 0.1
NPDES17	12/5/2023	0.003	8.8	N			0.166		0.88	0.74		1240	< 0.1
NPDES17	1/10/2024	0.003	8.8	N			0.151		0.73	0.79		1120	< 0.1
NPDES17	2/1/2024	0.003	8.7	N			0.122		0.67	0.51		1570	< 0.1
NPDES17	3/26/2024	0.000											
NPDES17	4/23/2024	0.126	8.2	N			**1.03**		0.87	0.8		338	< 0.1
NPDES17	5/28/2024	0.129	8.4	N	0.179	0.134	0.231	0.54	0.45	0.62	5	308	< 0.1
NPDES17	6/10/2024	0.084	8.7	N			0.218		0.46	0.41		344	< 0.1
NPDES17	7/9/2024	0.020	8.7	N	< 0.06	0.097	0.161	0.99		0.83	< 5	626	< 0.1
NPDES Limit	Daily Max		6.5 - 9.0	10*	-	-	Report	-	Report	-	-	Report	0.5
	Monthly Avg.		NA	NA	-	-	1	-	4.6	-	-	Report	Report
Yampa Segment 13d Standards - Acute			6.5 - 9.0	-	-	-	-	18.4	-	-	-	-	
Yampa Segment 13d Standards - Chronic			-	-	-	-	Mar-Apr 3.040 May-Feb 1.110	4.6	-	-	-	-	

Note

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

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

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

Table 11. Effluent water quality for NPDES Outfall 015 for the period of January

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES15	10/16/2018	0.001	8.53	N	430	
NPDES15	11/19/2018	0.001	8.52	N	482	
NPDES15	12/3/2018	0.001	8.5	N	456	
NPDES15	1/10/2019	0.001	8.27	N	486	< 0.1
NPDES15	2/11/2019	0.001	8.25	N	536	< 0.1
NPDES15	3/11/2019	0.001	7.68	N	536	< 0.1
NPDES15	4/4/2019	0.004	7.71	N	548	< 0.1
NPDES15	5/20/2019	0.126	8.41	N	332	< 0.1
NPDES15	6/10/2019	0.110	8.25	N	346	< 0.1
NPDES15	7/17/2019	0.032	8.63	N	374	< 0.1
NPDES15	8/5/2019	0.015	8.66	N	374	< 0.1
NPDES15	9/3/2019	0.014	8.62	N	418	< 0.1
NPDES15	10/23/2019	0.013	8.7	N	472	< 0.1
NPDES15	11/11/2019	0.009	8.87	N	466	< 0.1
NPDES15	12/16/2019	0.006	8.1	N	488	< 0.1
NPDES15	1/8/2020	0.006	8.24	N	510	< 0.1
NPDES15	2/3/2020	0.004	8.13	N	570	< 0.1
NPDES15	3/2/2020	0.005	8.11	N	526	< 0.1
NPDES15	4/22/2020	0.126	7.27	N	410	< 0.1
NPDES15	5/19/2020	0.136	8.13	N	330	< 0.1
NPDES15	6/1/2020	0.111	7.13	N	378	< 0.1
NPDES15	7/21/2020	0.012	8.44	N	418	< 0.1
NPDES15	8/3/2020	0.011	8.47	N	434	< 0.1
NPDES15	9/1/2020	0.010	8.48	N	434	< 0.1
NPDES15	10/22/2020	0.001	8.43	N	494	< 0.1
NPDES15	11/2/2020	0.002	8.61	N	506	< 0.1
NPDES15	12/1/2020	0.002	8.61	N	544	< 0.1
NPDES15	1/11/2021	0.001	8.34	N	558	< 0.1
NPDES15	2/8/2021	0.001	8.1	N	556	< 0.1
NPDES15	3/22/2021	0.003	8.1	N	508	< 0.1
NPDES15	4/22/2021	0.006	8.37	N	500	< 0.1
NPDES15	5/17/2021	0.003	8.44	N	528	< 0.1
NPDES15	6/14/2021	0.000				
NPDES15	7/21/2021	0.000				
NPDES15	8/3/2021	0.000				
NPDES15	9/9/2021	0.000				
NPDES15	10/27/2021	0.000				
NPDES15	11/8/2021	0.000				
NPDES15	12/1/2021	0.000				
NPDES15	1/10/2022	0.000				
NPDES15	2/7/2022	0.000				
NPDES15	3/22/2022	0.000				
NPDES15	4/19/2022	0.000				
NPDES15	5/9/2022	0.003	8.44	N	582	< 0.1
NPDES15	6/20/2022	0.003	8.08	N	562	< 0.1
NPDES15	7/19/2022	0.001	8.34	N	494	< 0.1
NPDES15	8/17/2022	0.000				
NPDES15	9/6/2022	0.000				
NPDES15	10/22/2022	0.000				
NPDES15	11/16/2022	0.000				
NPDES15	12/5/2022	0.000				
NPDES15	1/22/2023	0.000				
NPDES15	2/10/2023	0				
NPDES15	3/21/2023	0.029	7.3	N	574	< 0.08
NPDES15	4/19/2023	0.288	8.4	N	414	< 0.1
NPDES15	5/24/2023	0.217	8.1	N	314	< 0.1
NPDES15	6/26/2023	0.019	8.1	N	358	< 0.1
NPDES15	7/18/2023	0.003	8.5	N	338	< 0.1
NPDES15	8/21/2023	0.003	8.6	N	358	< 0.1
NPDES15	9/7/2023	0.002	8.1	N	390	< 0.1
NPDES15	10/27/2023	0.002	8.1	N	444	< 0.1
NPDES15	11/6/2023	0.002	8.7	N	458	< 0.1
NPDES15	12/5/2023	0.001	8.7	N	476	< 0.1
NPDES15	1/10/2024	0				
NPDES15	2/1/2024	0				
NPDES15	3/26/2024	0				

Table 11. Effluent water quality for NPDES Outfall 015 for the period of January

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y/N	TDS, Lab N MG/L	Settleable Solids ML/L
NPDES15	4/23/2024	0.07	7.9	N	358	< 0.1
NPDES15	5/28/2024	0.075	8	N	302	< 0.1
NPDES15	6/10/2024	0.064	8.2	N	344	< 0.1
NPDES15	7/9/2024	0.015	8.2	N	392	< 0.1
NPDES Limit	Daily Max		6.5 - 9.0	10*	Report	0.5
	Monthly Avg.		NA	NA	Report	Report
Yampa Segment 13e Standards - Acute			6.5 - 9.0	-	-	
Yampa Segment 13e Standards - Chronic			-	-	-	

Note

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

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

Table 12. Summary of total suspended solids results for samples collected at the Dry Creek Watershed NPDES Outfalls between 2019 and 2023.

Total Suspended Solids (mg/L) 2019 - 2023				
Location	**N**	**Mean**	**Min**	**Max**
NPDES6	12	8.5	<5	19
NPDES16	12	11.2	<5	59
NPDES17	11	7.7	<5	18

Note

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

Table 13. Total suspended solids at the NPDES Outfalls for the five-year period prior to their drainage status change to reclamation.

Total Suspended Solids (mg/L)						
Watershed	**Location**	**Sample Period**	**N**	**Mean**	**Min**	**Max**
Dry Creek	NPDES5	Nov 2001 - Oct 2006	12	17.8	<5	50
	NPDES6	Nov 2001 - Oct 2006	58	10.6	<5	28
	NPDES16	June 2005 - May 2010	59	6.4	<5	14
	NPDES17	June 2005 - May 2010	57	7.6	<5	36
Sage Creek	NPDES9	Nov 2001 - Oct 2006	3	7.7	<5	12
	NPDES15	Nov 2001 - Oct 2006	35	9.4	<5	30

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

Table 14. Comparison of water quality statistics for well DCAL-02 for the period of January 1, 2019 - December 31, 2023 to compliance groundwater quality standards

Location	Date	Static Water Level FT BTOC	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Fluoride N MG/L	Iron D MG/L	Manganese D MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	TDS, Lab N MG/L
DCAL-02	5/7/2019	8.97	1850	7.36	11.4	0.3	0.3	1.32	< 0.02	< 0.01	< 1	680	1510
DCAL-02	5/19/2020	9.11	2160	7.24	11.6	0.3	0.31	1.38	< 0.02	0.01	< 2	660	1590
DCAL-02	5/13/2021	9.86	1970	7.32	11.2	0.26	0.223	1.46	< 0.02	< 0.01	< 2	664	1540
DCAL-02	5/3/2022	9.62	2140	7.46	10.5	0.35	0.611	1.46	0.032	< 0.01	< 2	657	1520
DCAL-02	6/22/2023	9.54	2020	7.5	11.4	0.29	1.16	1.38	0.021	< 0.01	< 2	617	1540
Seneca II-W GWPOC Standards*		-	-	6.5 - 8.5	-	2	8.06	2.55	10	1	20	1511	3195

Notes

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

Bold Exceeds groundwater quality standard

Table 15. Statistical summary of pre-mine and post mine total recoverable iron at stream monitoring points.

Watershed	Time Period	Dates	Location	Total Recoverable Iron (mg/L)			
				N	Mean	Min	Max
Dry Creek / Hubberson	Pre-Mine	Apr 1987 - Sept 1989	WSH7	8	1.90	0.21	7.80
		Apr 1979 - Sept 1989	WSHF1	89	9.10	0.15	240.00
		Mar 1983 - Sept 1989	WSD5	46	6.18	0.21	106.00
	Post Mine	Jan 2019 - Dec 2023	WSH9	14	0.96	0.18	4.93
		Jan 2019 - Dec 2023	WSH7	17	2.52	0.43	6.48
		Jan 2019 - Dec 2023	WSHF1	22	1.56	< 0.3	5.60
		Jan 2019 - Dec 2023	WSD5	16	0.37	0.14	1.00
Sage Creek	Pre-Mine	May 1991 - Sept 1995	WSSF3	25	0.22	< 0.02	1.09
	Post Mine	Jan 2019 - Dec 2023	WSSF3	8	0.55	0.08	1.47

Note

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

TABLE 16. Total recoverable iron measured during Dry Creek synoptic watershed monitoring events.

Dry Creek TR Iron (mg/L)								
Date	**WSH9**	**NPDES17**	**NPDES16**	**WSH7**	**NPDES6**	**WSHF1**	**NPDES5**	**WSD5**
5/2/2019	0.52	0.41	0.31	2.14	0.09	1.54	0.415	0.23
7/29/2019	0.25	0.095	0.06	2.47	< 0.2	2.55	< 0.2	0.14
9/3/2019	NF	0.1	0.09	NF	< 0.2	1.88	ND	NF
4/22/2020	2.27	0.6	0.45	2.625	< 0.1	2.745	< 0.1	6.5
7/21/2020	0.67	0.12	0.1	3.15	< 0.3	2.1	ND	1
9/1/2020	NF	ND	0.07	NF	0.09	1.89	NM	NF
4/22/2021	0.305	0.324	0.137	0.436	0.407	0.609	ND	0.3005
4/19/2022	4.93	0.91	1.62	1.87	0.469	1.625	0.1305	0.1615
7/19/2022	0.416	0.0655	0.066	NF	0.1175	0.184	ND	NF
5/24/2023	0.177	0.185	< 0.06	0.976	0.132	0.802	< 0.12	0.276
7/18/2023	1.13	0.158	0.215	3.6	0.166	1.39	ND	0.601
9/7/2023	NF	0.377	0.194	NF	< 0.3	0.208	ND	NF

Note

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

The average of the TR Iron is used for samples with duplicate analysis

ND : No Discharge

NF : No Flow

NM : Not Monitored

Table 17. Water quality data for spoil spring WSSPG1 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Nitrite N. N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSSPG1	6/12/2019	0.015	4378	7.95	10.2	0.3	2.1	< 2	0.2	< 0.5		4270	32
WSSPG1	6/3/2020	0.014	3396	7.86	13.4	0.3	0.125	< 0.5	< 0.5	< 0.5		4420	6
WSSPG1	6/16/2021	0.000											
WSSPG1	6/22/2022	0.012	3814	7.91	11.6	0.406	0.412	< 0.5	< 0.5	< 0.5		4260	5
WSSPG1	6/29/2023	0.011	4653	7.7	14.1	0.166	1.91	< 0.2	< 0.2	< 0.2		4590	8
Agricultural Use Standards		-	-	-	-	-	0.2*	20	-	-	10	-	-

Notes

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

Bold Analyte exceeds the Agricultural Use Water Quality Standard

Table 18. Water quality data for spoil spring WSSPG2 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
WSSPG2	6/12/2019	0.005	2091	7.52	11.3	0.14	0.011	< 0.2	< 0.05	4.66	0.01	4.4
WSSPG2	6/3/2020	0.028	2537	8.12	14.2	0.9	0.0301	< 0.2	0.06	3.21	0.02	1.7
WSSPG2	6/16/2021	0.025	4260	7.97	17.2	0.094	0.708	< 0.2	0.067	< 0.02	< 0.01	< 0.5
WSSPG2	6/22/2022	0.029	2897	7.81	12	1.14	0.0313	< 0.2	< 0.05	< 0.02	< 0.01	0.51
WSSPG2	6/29/2023	0.004	3272	7.8	17.2	< 0.12	0.0124	< 0.2	< 0.1	1.42	< 0.01	1.74
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSSPG2	6/12/2019	4.3	3.4	1610	< 0.02	3020	14
WSSPG2	6/3/2020	2.1	2	1480	< 0.02	2930	88
WSSPG2	6/16/2021	0.16	0.39	2580	< 0.02	4250	10
WSSPG2	6/22/2022	0.51	0.76	1490	< 0.02	2790	41
WSSPG2	6/29/2023	3.5	1.77	1450	< 0.02	2790	9
Agricultural Use Standards		-	-	-	-	-	-

Notes

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

Bold Analyte exceeds the Agricultural Use Water Quality Standard

Table 19. Water quality data for spoil spring WSSPG3 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
WSSPG3	6/12/2019	0.047	4890	6.87	12.4	< 0.2	1.73	< 0.2	0.11	0.62	0.03	0.2
WSSPG3	6/3/2020	0.046	3586	6.58	13.8	0.4	1.58	< 0.2	0.17	0.2	< 0.01	< 0.5
WSSPG3	6/16/2021	0.035	4139	6.62	11.7	0.434	1.88	< 0.2	0.288	< 0.02	< 0.01	< 0.2
WSSPG3	6/22/2022	0.046	3738	6.78	11	0.522	1.78	< 0.2	0.398	< 0.02	< 0.01	< 0.2
WSSPG3	6/29/2023	0.018	4403	6.5	13.9	1.37	1.02	< 0.2	0.637	0.075	< 0.01	< 0.2
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSSPG3	6/12/2019	0.2	< 0.5	2620	< 0.02	4830	7
WSSPG3	6/3/2020	0.4	0.4	2660	< 0.02	4620	< 5
WSSPG3	6/16/2021	< 0.2	< 0.2	2230	< 0.02	3900	10
WSSPG3	6/22/2022	< 0.1	< 0.2	2230	< 0.02	3930	5
WSSPG3	6/29/2023	< 0.2	< 0.2	2320	< 0.02	4040	10
Agricultural Use Standards		-	-	-	-	-	-

Notes

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

Bold Analyte exceeds the Agricultural Use Water Quality Standard

Table 20. Water quality data for spoil spring WSSPG4 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
WSSPG4	6/12/2019	0.061	3965	8.14	12.6	0.07	0.482	< 0.2	< 0.05	1.19	0.02	1.1
WSSPG4	6/3/2020	0.059	3203	7.96	15	0.4	0.78	< 0.2	0.11	0.57	0.03	0.3
WSSPG4	6/16/2021	0.032	4279	8.07	16.2	< 0.3	0.59	< 0.2	< 0.05	0.04	< 0.01	< 0.5
WSSPG4	6/22/2022	0.038	3706	8.08	11.9	< 0.12	0.358	< 0.2	< 0.05	0.023	< 0.01	< 0.2
WSSPG4	6/29/2023	0.036	4350	7.8	17	0.347	0.303	< 0.2	< 0.1	0.175	< 0.01	< 0.2
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSSPG4	6/12/2019	0.8	0.9	2180	< 0.02	3650	7
WSSPG4	6/3/2020	0.5	0.3	2260	< 0.02	3870	31
WSSPG4	6/16/2021	< 0.5	< 0.5	2630	< 0.02	4320	7
WSSPG4	6/22/2022	0.33	< 0.2	2320	< 0.02	3900	< 5
WSSPG4	6/29/2023	< 0.2	< 0.2	2370	< 0.02	4060	6
Agricultural Use Standards		-	-	-	-	-	-

Notes

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

Bold Analyte exceeds the Agricultural Use Water Quality Standard

Table 21. Water quality data for spoil spring WSSPG5 for the period of January 1, 2019 - December 31, 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
WSSPG5	6/12/2019	0.543	2401	7.14	11.6	0.53	1.13	< 0.2	0.34	0.02	< 0.01	< 0.1
WSSPG5	6/3/2020	0.533	1836	6.91	13.1	0.7	1.16	< 0.2	0.43	< 0.02	< 0.01	< 0.2
WSSPG5	6/15/2021	0.005	1836	8.35	12.4	1.33	1.48	< 0.2	0.438	0.04	0.01	< 0.2
WSSPG5	6/21/2022	0.069	2720	7.04	11.8	0.309	1.19	< 0.2	0.358	0.057	< 0.01	< 0.2
WSSPG5	6/28/2023	0.085	2604	6.9	12.7	0.188	1.33	< 0.2	0.266	0.129	< 0.01	< 0.2
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
WSSPG5	6/12/2019	< 0.1	< 0.1	864	< 0.02	1930	8
WSSPG5	6/3/2020	0.1	< 0.2	988	< 0.02	2000	5
WSSPG5	6/15/2021	< 0.1	< 0.2	1090	< 0.02	2220	15
WSSPG5	6/21/2022	< 0.1	< 0.2	1050	< 0.02	2260	6
WSSPG5	6/28/2023	< 0.1	< 0.2	1040	< 0.02	2030	< 5
Agricultural Use Standards		-	-	-	-	-	-

Notes

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

Bold Analyte exceeds the Agricultural Use Water Quality Standard

Column

See Proof on Next Page

AFFIDAVIT OF PUBLICATION

State of Pennsylvania, County of Lancaster, ss:

Nichole Seitz, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Steamboat Pilot & Today, that the same weekly newspaper printed, in whole or in part and published in the County of Routt, State of Colorado, and has a general circulation therein; that said newspaper has been published continuously and uninterruptedly in said County of Routt for a period of more than fifty-two consecutive weeks next prior to the first publication of the annexed legal notice or advertisement; that said newspaper has been admitted to the United States mails as a periodical under the provisions of the Act of March 3, 1879, or any amendments thereof, and that said newspaper is a weekly newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.
That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said weekly newspaper for the period of 4 insertions; and that the first publication of said notice was in the issue of said newspaper dated 11 Sep 2024, 18 Sep 2024, 25 Sep 2024, 2 Oct 2024 in the issue of said newspaper.

That said newspaper was regularly issued and circulated on those dates.

PUBLICATION DATES:

Sep. 11, 2024

Sep. 18, 2024

Sep. 25, 2024

Oct. 2, 2024

Total cost for publication: 482.68

Nichole Seitz

(Signed)_____

VERIFICATION

State of Pennsylvania
County of Lancaster

Commonwealth of Pennsylvania - Notary Seal
Nicole Burkholder, Notary Public
Lancaster County
My commission expires March 30, 2027
Commission Number 1342120

Subscribed in my presence and sworn to before me on this: 10/03/2024

Nicole Burkholder

_____
Notary Public
Notarized remotely online using communication technology via Proof.

PUBLIC NOTICE

Seneca Property, LLC, 29515 Routt County Road 27, Oak Creek, Colorado 80467, has requested final release of Liability on the remaining 107.9 acres of its reclaimed lands at the Seneca II West Mine *(CDRMS Permit No. C 1982-057, approved December 31, 1985)* .

The Seneca II-West Mine is located approximately seven miles south of the Town of Hayden, Colorado, off of Routt County Road 53. The specific area to which this bond release request applies is included within the Permit Area located as follows:

T5N, R88W
Section 9 : Portions of SE¼ NE¼ , NE¼ SE¼ , & W½ NE¼
Section 10: S½ S½ NW¼, SW¼, SE¼ , Portions of S½ NE¼
Section 11: Portions of S½ S½ SW¼
Section 14: Portions of SW¼, NW¼, & S½ S½ SE¼
Section 15: ALL
Section 16: Portions of W½ NW¼, SE¼ NW¼, NE¼ SW¼, SE¼
Section 21: Portions of E½ NE¼
Section 22: NW¼, NE¼, N½ SE¼, SW¼ SE¼, Portions of N½ SW¼, & SW¼ SE¼
Section 23: NW¼, SW¼, W½ E½, W½ E½ E½
Section 26: W½, W½ E½, & Portions of W½ E½ NE¼ and W½ E½ SE¼
Section 27: E½
Section 34: NE¼, N½ SE¼, & Portions of N½ S½ SE¼
Section 35: NW¼,W½ NE¼, N½ SW¼, & Portions of N½ S½ SW¼, NW¼ SE¼, NW¼ SW¼ SE¼, NW¼ NE¼ SE¼ and W½ E½ NE¼

All located west of the 6th Principal Meridian; totaling 3,878.5 acres, of which 107.9 acres for final release are requested in the Bond Release Application (SL-8). The USGS 7.5 Minute Quadrangle maps for Hayden Gulch, Dunckley and Mt. Harris contain the described affected area.

A Corporate Surety Bond in the amount of $ 316,698.60 is currently in place and its entirety is being requested for release. Pursuant to Rule 3.01.1, a permittee may request Phase I bond Release upon successful completion of backfilling, regarding, and drainage control in accordance with the approved reclamation plan. A permittee may request Phase II bond Release upon the establishment of vegetation which supports the approved postmining land use and which meets the approved success standard for cover, pursuit to Rule 4.15.8. A permittee may request Phase III Bond Release upon completion of all surface mining operations in accordance with the approved reclamation plan, and the final inspection and procedures of Rule 3.03.2 have been satisfied, achieving postmining land used of Rangeland. Phase III shall not be released prior to a ten year liability period specified for vegetation responsibility and success. The portion of the mine for which Bond Release is being requested consists of permanent roads, permanent ponds, and successfully reclaimed areas. Reclamation of the disturbed mining areas and demolition of non-permanent structures occurred throughout the reclamation phases from 1993 through 2013. The approved reclamation plan can be viewed in its entirety in the Seneca II West Mine Permit Application Package located at the Twentymile Mine Office, Oak Creek, Colorado.

A copy of the SL-8 bond release application is available for public inspection at the Twentymile Mine Office, 29515 Routt County Road 27, Oak Creek, Colorado 80467. Written comments or objections or requests for public hearing or informal conference concerning this application may be submitted to, and additional information obtained from, the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203-2273, (303) 866-3567. Comments must be received within 30 days of the last publication of this notice or within 30 days of the onsite inspection, whichever is later.

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