COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

Partial Phase III Bond Release
SL7

Proposed Decision
and
Findings of Compliance
for the

Seneca II-W Mine
PERMIT NUMBER C-1982-057

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31 March 2021

Introduction

This document is the proposed decision of the Colorado Division of Reclamation, Mining and Safety (the Division or DRMS) in response to a request for a partial Phase III bond release over 367.0 acres of reclamation at the Seneca IIW Mine, Division file number C-1982-057. The package contains four parts as follows:

1. procedures and summary of the bond release process
2. criteria and schedule for bond release
3. observations and findings of the Division regarding compliance with the bond release requirements of the Colorado Surface Coal Mining and Reclamation Act and regulations promulgated thereunder; and
4. the Division's proposed decision on the request for bond release.

Detailed information about the review process can be found in the Act and the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining. All Rules referenced within this document are contained within the Regulations. Detailed information about the mining and reclamation operations can be found in the permit application on file at the Division offices, located at 1313Sherman Street, Room 215, in Denver, Colorado or on the Division's website: https://drms.colorado.gov/

The Seneca IIW Mine is a surface mine which was permitted and operated by Seneca Property LLC ("SPL"), a subsidiary of Peabody Investments Corporation. Surface ownership is predominantly private, with right of entry based on a variety of private leases, subleases and easements. The permit area also includes limited areas of federal surface managed by BLM, and the State of Colorado. Coal mined at Seneca IIW was owned by private interest, the State of Colorado, and the Federal government, under lease to Seneca Coal Company, LLC. The ownership of the land for which bond release has been requested is federal and private, and the coal ownership was federal and private. Reclamation for which bond release has been requested was conducted between 1990 and 2007.

I. PROCEDURES and SUMMARY of the REVIEW PROCESS

Seneca Property LLC applied for a partial bond release under the Colorado Surface Coal Mining and Reclamation Act following reclamation of the Seneca IIW Mine. The mine is located in Routt County, Colorado in land included within:

Township 5 North Range 88 West N½ - Mine Area
Section 9: Portions of SE¼NE¼, NE¼SE¼, and W½NE¼
Section 10: S ½S½NW¼, SW ¼, SE ¼, Portions of S½NE ¼
Section 11: Portions of S ½S ½NW¼
Section 14: Portions of SW¼, NW¼, and S ½S½NE¼
Section 15: All
Section 16: Portions of W½NE¼, SE¼NW¼, NE¼SW¼ and SE¼
Section 21: Portions of E½NE¼
Section 22: NW¼, NE¼, NE½SE¼, SW¼SE¼, Portions of N½SW¼ and SW¼SE¼
Section 23: NW¼, SW¼, W½E½, W½, E½E½
Section 26: W½, W½E½, and Portions of W½E½ SE¼
Section 27: E½
Section 34: NE¼, NE½SE¼, and Portions of N½S½SE¼
Section 35: NW¼, W½NE¼, N½SW¼, and Portions of N½S½SW¼, NW¼SE¼, SW¼SE¼ SE¼, NW¼NE¼ SE¼, and W½E½NE½.

All are located west of the 6th Principal Meridian, totaling 3,878.50 acres. The permit area can be found on the USGS Quadrangle 7.5 Minute Series Maps of Hayden Gulch, Hayden, Dunckley and Mt. Harris.

Table 1. Summary of Past Bond Releases at Trapper Mine and Acreage Adjustments

Submittal	Proposed Decision Date(s)	Released Area Ph I (acres)	Released Area Ph II (acres)	Released Area Ph III (acres)	Reduction in Liability
SL01	Withdrawn				$0.00
SL02	5 May 2010	721.90		0.0	$2,038,488.00
SL03	21 March 2011	412.35		0.0	$2,335,430.00
SL04	19 Dec 2013	127.65	0.0	0.0	$801,465.00
SL05	27 Aug 2014	0.0	800.80	0.0	$87,927.00
SL06	pending	0.0	379.50	816.6	$2,396,812.54
SL07	pending			367.00	

This permitting action represents an application for Phase III bond release comprising 367 acres of reclaimed land. The application for partial Phase III bond release was received by the Division on June 8, 2020. The application was deemed complete on June 15, 2020.Seneca Property LLC published notice of the bond release application in *Colorado Mountain News Media Steamboat Pilot* once weekly for four consecutive weeks,

beginning 9 July 2020. Seneca Property LLC also notified land owners within and adjacent to the mine permit area, and other interested parties of the application for bond release, as required by Rule 3.03.2(1).

No comments, written objections, or requests for an informal conference regarding the bond release application were received by the Division.

The Division scheduled and conducted a bond release inspection on 21 July 2020. The site inspection was conducted in accordance with Rule 3.03.2(2).). The Division notified the operator, surface owners, Bureau of Land Management (BLM), the Office of Surface Mining Reclamation and Enforcement (OSMRE), and the Colorado State Land Board of the inspection via certified mail. Attendees included:

- Miranda Kawcack, Seneca Properties LLC (SPL)
- Christine Belka, Office of Surface Mining Reclamation and Enforcement (OSMRE)
- Ana Lash, Hayden Library Director
- Christine Epp, Hayden Library Board
- Robin Reilley, GISP; Colorado Division of Reclamation, Mining, and Safety (DRMS)

DRMS conducted the bond release inspection with available sister agencies in attendance on 21 July 2020 and provided the associated inspection report to SPL, BLM, and OSMRE via electronic transmission on 30 July 2020. DRMS received the OSM inspection report from Christine Belka on 3 August 2020.

Reclamation for the requested Phase III SL7 bond release areas was conducted between 1990 and 2007. The reclamation parcels selected for the SL7 bond release were seeded between 1990 and 2002. The requested lands comprise bond release block 5 (BRB5), totaling 367 acres and includes 9 acres of permanent roads. The phase III areas represent the northern portion of the BRB. Map 1 submitted with the application illustrate the parcels requested for release. Reclamation activities are documented in the Annual Reclamation Reports submitted to DRMS. All areas in this application received formal phase I bond release through permitting action SL3 and phase II release through permitting action SL5.

Adequacy Review

Adequacy questions were provided to SPL on 20 August 2020 requesting a sediment demonstration, water quality information and additional data on TSS for ponds and outfalls. Updates to application pages were also requested to assure that the correct year of data had been submitted. The sediment demonstration and additional water quality information was received by DRMS on 12 January 2021.

II. CRITERIA and SCHEDULE for BOND RELEASE

The Division evaluated Seneca Coal Company's request for phase III bond release on 367 acres in the SL7 application. Under Colorado's Permanent Program, the process of releasing the reclamation bond for a mine site is explained in Rule 3.03 and further described in the Division's 1995 *Guideline Regarding Selected Coal Mining Bond Release Issues.* The bond release process involves three phases.

At Phase III, Rule 3.03.1(2)(c) states that:

> the final portion of performance bond, "shall be released when the permittee has successfully completed all surface coal mining reclamation operations in accordance with this approved reclamation plan, and

the final inspection procedures of 3.03.2 have been satisfied. This shall not be before the expiration of the period specified for revegetation responsibility in 3.02.3."

Rule 3.03.1(4) states:

"No bond shall be fully released until all reclamation requirements of these Rules and the Act are fully met...". The same rule further states, " No acreage shall be released from the permit area until all surface coal mining and reclamation operations on that acreage have been completed in accordance with the approved reclamation plan."

Permit Requirements: Success Standards

The Seneca IIW Mine reclamation plan calls for a minimum of four feet of suitable plant growth medium, including an average of 1.3 feet of topsoil to be placed on graded lands prior to revegetation where toxic or acid characteristics were encountered (Permit Tab 21). Otherwise, topsoil depths averaging 1.3 feet will be placed over graded spoil. The approved revegetation plan is discussed in Tab 22 of the Seneca IIW Mine's permit application package. Tab 22 describes the goals of reclamation, provides a revegetation plan and a description of how revegetation success will be demonstrated. The post mining land use approved for the site is for livestock grazing and wildlife habitat with a greater emphasis placed on livestock grazing. Attachment D of the SL7 bond release application includes a report and supporting documentation of how successful revegetation was measured. Attachment D was prepared by Cedar Creek Associates, Inc. (CCAI).

SPL and CCAI largely refer to the SL7 bond release area as Bond Release Block No. 5 (BRB5). BRB5 and the applicable reference areas were sampled and tested for revegetation success in 2018 and 2019. This sampling and testing effort was conducted for two of the last four years of the liability period for BRB5 in accordance with Rule 4.15.7(5). Of the entire bond release area, only 358 acres were sampled for revegetation success as 9 acres of the SL7 bond release area consists of permanent features such as roadways. The revegetation success standards for vegetation cover and production are based on a comparison of the revegetated area monitoring results to the applicable Extended Reference Area (ERA) weighted results. Woody plant density and species diversity success is based on technical performance standards. BRB5 is located on the northern portion of the Seneca IIW mine therefore the northern ERA was sampled. Details of the revegetation success criteria can be found in Tab 22 of the permit application package.

Sampling Methods

Cover sampling was conducted using the point-intercept method. CCAI sampled randomly located and randomly oriented sample points within BRB5 and the ERA. Transects at each sample point were fifty meters in length and one hundred points were sampled along each transect. Both first-hit and all-hit data was collected. These methods conform to the approved sampling plan outlined in Tab 22 and are in accordance with Rule 4.15.11(1)(a)(i).

Herbaceous production was sampled using one-half square meter ($0.5m^2$) circular plots within BRB-5 and the ERA. Each plot were randomly located behind the origin of the cover transect. Within each plot, all the herbaceous growth in a vertical projection was clipped and placed in labeled paper bags and grouped into lifeforms. Lichen, mosses, woody plant species and noxious weeds within the plot were not collected. Collected samples were oven dried at 105 degrees for 24 hours, then weighed. These methods conform to the approved sampling plan outlined in Tab 22 and are in accordance with Rule 4.15.11(1)(b)(i).

Woody plant density sampling occurred in the BRB5. Sampling occurred along 50 meter transects. All shrubs and root crowns located within the boundaries of the 2 meter by 50 meter quadrats (100 m^2) were tallied according to species and life stage as either seedling, mature or dead. Dead plants were recorded but did not contribute to woody plant density calculations. Two areas were sampled for woody plant density, "background" areas and "volunteer" areas. No fenced tree and shrub concentration areas were located within BRB-5. The woody plant density transects were co-located with the cover transects for the "background" areas. For the "volunteer" areas the woody plant density transects were randomly located and randomly oriented and were not co-located with the cover transects. These methods conform to the approved sampling plan outlined in Tab 22 and are in accordance with Rule 4.15.11(1)(c)(i).

Plant species frequency and density measurements were ascertained from the applicable cover sampling data. Sample adequacy was evaluated for each of the sampling efforts and statistical demonstrations for revegetation success for vegetation cover, herbaceous production, and woody plant density was conducted in accordance with Rule 4.15.11.

Extended Reference Area Performance Standard(s)
As discussed in the CCAI report, the allowable means for cover and production from each of the five reference areas are weighted in accordance with the original relative abundance of the vegetation types in the pre-mining landscape (11.0% aspen, 34.5% mountain brush, 31.3% sagebrush/snowberry, 12.8% steep mountain brush and 10.4% Western wheatgrass/alkali sagebrush) (page 7). Sample adequacy was not always achieved when sampling the ERA. In these instances, an "upward adjustment" is made to the appropriate ERA mean value. According to CCAI, the adjustment value can be calculated by using the confidence interval for 90% confidence or by way of rearranging the sample adequacy formula and solving for the detectable percent reduction then multiplying by the mean. The adjustment value is then added to the allowable mean. While not expressly outlined in Tab 22, this adjustment increases the success standard calculated from the ERA data, essentially setting a higher bar for reclamation success to be demonstrated.

Success Standards
Cover data is be collected from the above five described vegetation types within the ERA. The extent of herbaceous cover in each of the five vegetation types are represented by the "all-hit" measure of cover. An average of the herbaceous cover of the extended reference area types, weighted by their extent in the pre-mining area affected by mine disturbance will be calculated using "all-hit" total herbaceous vegetation cover data. This calculated weighted average mean cover from the ERA is used as the success standard. The revegetated area shall be considered acceptable if they are not less than 90 percent of the weighted average mean cover from the ERA.

Reclamation success for herbaceous production is evaluated by comparing herbaceous production in the reclaimed areas to the weighted herbaceous production value determined from sampling of the ERA. Reclamation success for herbaceous production shall be demonstrated when the value of the reclaimed area is greater than or statistically indistinguishable from 90 percent of the herbaceous production standard with 90 percent statistical confidence using a one - sample t -test.

There are five woody plant density technical standards; two mandatory standards for the overall reclaimed land and three other (secondary) standards for the concentrated shrub /tree establishment sites two of which must be satisfied. Overall average background density must be ≥ 200 stems per acre on 100% of the unfenced reclaimed

land (Mandatory Standard 1), with at least 10% of the un-fenced acreage, possessing ≥ 1,000 stems per acre (Mandatory Standard 2). Fenced woody plant density concentration areas are held to secondary standards (1-3, outlined in Tab 22 of the PAP). There are no fenced concentration areas within the BRB5, so the secondary standards are not applicable to the SL7 application.

The species diversity success standard uses data collected from cover sampling. Four tests are used to determine revegetation success for species diversity. Success is demonstrated by passing the first (A), and at least two of the remaining three (B, C, and D), tests. These tests are described at length in Tab 22 of the PAP and the CCAI revegetation monitoring report included as Appendix D of the SL7 application.

Drainage control at the site comprises armored reconstructed drainages, sedimentation ponds and stock tanks as well as various secondary containment measures including check dams, diversion ditches, sediment sumps, contour ditches, riprap, and vegetative sediment filters among other methods. Sedimentation ponds have all been designed to meet State and Federal regulations and to provide storage and treatment for runoff resulting from 10 year 24 hour precipitation events.

Protection of the hydrologic balance at the site comprises ground water and surface water monitoring for water quantity and water quality. The natural ground waters at the Seneca IIW mine comprise high concentrations of dissolved minerals and solids. It is expected that spoil utilized in reclamation will affect ground water quality as TDS (total dissolved solids), trends increase over baseline levels. Seven sediment ponds are utilized for controlling surface runoff from disturbed areas. Six of the ponds are NPDES surface monitoring sites. Monitoring occurs in Sage and Dry Creeks as well as Hubberson Gulch. Surface and groundwater monitoring installations will remain until final phase III bond release. Water rights have been protected and a water augmentation plan was put in place for the over appropriated Yampa River.

Alluvial Valley Floors
A 1990 AFV study evaluated the Dry, Grassy and Sage Creek drainages around the Seneca IIW permit area with respect to their potential as AVF's. As intermittent streams, Dry and Sage Creeks have insufficient carrying capacity to remove sediment built up from fans emanating from tributaries and sediment from valley slopes. The lower reaches comprise alluvium with limited water availability although there exist areas of flood irrigation. AVFs do exist adjacent to and downstream of the Seneca property. There is hydraulic communication with two subirrigated fields in the Dry Creek drainage as well as flood irrigated fields in the Sage Creek drainage. A determination was made that any subirrigated sites are distant to the permit boundary lying some miles to the north.

Post Mining Land Use
The approved post mining land use for the lands applicable to SL7 is rangeland/wildlife habitat. The reclamation plan and the approved revegetation standards are designed to achieve the approved post mining land use. Livestock grazing has occurred on the sites reclaimed lands since 2007. Topsoil depth replacement information was included in the SL5 Phase II bond release application that was approved in 2014.

Post Mine Land Use
Post mining land use comprise livestock grazing and wildlife habitat. Grazing encompasses the majority of the reclaimed lands as granted by landowners. Grazing numbers range between 104 and 230 cow calf pairs.

Anecdotal comments by livestock operators to reclamation management personnel indicate satisfaction with the reclaimed grazing resource and resulting animal performance. Wildlife frequents the site and wildlife monitoring conducted from 1994 through 2010. Monitoring through 2007 focused on large game, upland birds, raptors and predators. Elk and mule deer are commonly observed throughout the year making use of forage and cover on the reclaimed areas. Spring and summer sightings of elk cow calf pairs are frequent. Annual monitoring reports through 2007 indicate steadily increasing numbers of elk and mule deer. DRMS inspections routinely note the presence of big game, especially lactating elk, upland birds and raptors. Annual reclamation reports submitted to DRMS present wildlife monitoring results. DRMS finds the operator has reclaimed the SL7 bond release block to support the post mine land use.

III. OBSERVATIONS and FINDINGS

The evaluation of this bond release application (SL7), included the bond release inspection, a review of the permit requirements and regulatory criteria, and review of past inspection reports, annual reclamation and hydrology reports. During the bond release inspection, participants walked through all parcels requested for bond release making visual assessments of compliance with the requirements as described above in Section II of this document. The 21 July 2020 inspection report details the findings from the inspection. A summary of the observations is discussed below.

The bond release inspection comprised a joint inspection for SL6 and SL7. Several maintenance items were identified during the inspection. These items were outlined in the findings document for SL6. All items were addressed by SPL and at the next DRMS inspection of the site were found to be adequately addressed. Ponds and stock ponds were in good repair and have received permanent designation from the Division of Water Resources. The requested release areas report surface runoff to sediment ponds # 005 and 006. Constructed drainages observed where found well armored and stable with established vegetation on banks and grasses taking hold in the channel.

The water quality monitoring plan referenced in Tab 15 and associated appendices of the permit document has undergone several updates over the years with the most recent update associated with permitting action TR82 in 2016. Several reductions in monitoring were granted as a result of TR82. Additionally, several parameters were suspended in 2010 as a result of TR69. The suspended parameters will be analyzed one year prior to final bond release.

367.0 acres of lands requested in the Phase III Bond release application (SL7), have been approved for Phase II release in previous permitting actions. Final vegetation reclamation success was evaluated for vegetative cover, herbaceous productivity, species diversity and woody plant density. Hydrologic impacts were also evaluated.

Vegetation Results

Tables 2 and 4, of the CCAI report included in Appendix D of the SL7 application, include two summary tables. These tables are shown below for reference.

Table 2. 2018 Assessment of the BRB-5 for Compliance with Phase III Performance Standards

Parameter	Mean Allowable BRB-5	90% of Standard	Sample Size	Sample Adequacy Met	Testing Result	Method or Rule
Cover (%)	55.5	37.9	32	Yes	PASS	Direct Comparison, Rule 4.15.11 (2)(a)
Production (lbs/acre)	1862.0	695.5	32	No	PASS	One sample t-test of the "reverse null" hypothesis, Rule 4.15.11 (2)(C)
Woody Plant Density						
Mandatory Standard 1 (stems/acre)	819.5	180.0	32	No	PASS	One sample t-test of the "reverse null" hypothesis, Rule 4.15.11 (2)(C)
Mandatory Standard 2 (stems/acre)	2165.1	900.0	75	No	PASS	Direct Comparison, Rule 4.15.11 (3)(b)(i)
Species Diversity						
Test A (%)	25.8	60.0	32	Yes	PASS	No single species will comprise greater than 60% relative cover
Test B (species/100m^2)	25.2	23.6	32	Yes	PASS	The BRB must exceed the probability-adjusted density standard
Test C (%)	86.0	63.0	32	Yes	PASS	The BRB must exceed the similarity of the species density by life form standard
Test D (Number of Species vs. species/100m^2)	56.0	26.7	32	Yes	PASS	Total cumulative # of native species > or = avg ref area native species density (# species/100 sq.m.)

Figure 1. 2018 Results from CCAI, Appendix D of SL7 Application

Table 4. 2019 Assessment of the BRB-5 for Compliance with Phase III Performance Standards

Parameter	Mean Allowable BRB-5	90% of Standard	Sample Size	Sample Adequacy Met	Testing Result	Method or Rule
Cover (%)	72.3	38.8	32	Yes	PASS	Direct Comparison, Rule 4.15.11 (2)(a)
Production (lbs/acre)	2090.5	632.9	32	No	PASS	One sample t-test of the "reverse null" hypothesis, Rule 4.15.11 (2)(C)
Woody Plant Density						
Mandatory Standard 1 (stems/acre)	677.9	180.0	32	No	PASS	One sample t-test of the "reverse null" hypothesis, Rule 4.15.11 (2)(C)
Mandatory Standard 2 (stems/acre)	1296.1	900.0	75	No	PASS	Direct Comparison, Rule 4.15.11 (3)(b)(i)
Species Diversity						
Test A (%)	36.9	60.0	32	Yes	PASS	No single species will comprise greater than 60% relative cover
Test B (species/100m^2)	26.8	22.5	32	Yes	PASS	The BRB must exceed the probability-adjusted density standard
Test C (%)	87.0	63.0	32	Yes	PASS	The BRB must exceed the similarity of the species density by life form standard
Test D (Number of Species vs. species/100m^2)	44.0	25.2	32	Yes	PASS	Total cumulative # of native species > or = avg ref area native species density (# species/100 sq.m.)

Figure 2. 2019 Results from CCAI, Appendix D of SL7 Application

Cover

In 2018, for BRB-5, introduced perennial cool season grasses were the predominate life form, consisting mainly of sheep fescue (*Festuca ovina*), and intermediate wheatgrass (*Thinopyrum intermedium*), two species used for grazing. Introduced perennial forb were the next predominate life form consisting mainly of Alfalfa (*Medicago sativa*), also used for grazing. The predominant cool season native grasses included basin wildrye (*Leymus cinereus*), and western wheatgrass (*Pascopyrum smithi).* Noxious weeds were observed at the site but they did not contribute significant amounts of vegetative all-hit cover. Total average all-hit vegetation cover was 64.9%. Allowable all-hit herbaceous vegetation cover was 55.5% after removing excess annual/biennial cover and noxious weeds. Average species density was 36.5 species per $100m^2$.

In 2019, for BRB-5, introduced perennial forbs were the predominant lifeform observed followed by native perennial cool season grasses. Introduced perennial forbs were comprised primarily of alfalfa. Native perennial cool season grasses were comprised primarily of western wheatgrass and basin wildrye. Introduced perennial cool season grasses were predominately comprised of sheep fescue. Noxious weeds were observed at the site but they did not contribute significant amounts of vegetative all-hit cover. Total average all-hit vegetation cover was 81.4%. Allowable all-hit herbaceous vegetation cover was 72.3%. Average species density was 28.9 species per $100m^2$.

For the ERA, the 90% success standard was found to be 37.9% and 38.8% cover in 2018 and 2019 respectively. The Allowable all-hit vegetation cover for both 2018 and 2019 in the BRB5 exceeded the success standard, sample adequacy was demonstrated for the reclaimed area and therefore in accordance with Rule 4.15.11(2)(a), revegetation success in term of vegetation cover has been achieved.

Production

In 2018 in the BRB5 the total herbaceous production was found to be 1,862.0 pounds per acre, all of which was allowable. Of this, 876.4 pounds were native perennial cool season grasses, 524.4 pounds were introduced perennial forbs, and 293.8 pounds were introduced perennial cool season grasses. Native perennial forbs (55.2 pounds per acre), introduced annual grasses (43.0 pound per acre), native annual and biennial forbs (37.6 pounds per acre), and introduced annual and biennial forbs (31.6 pounds per acre) contributed similar amounts to production.

In 2019, for BRB5, the total herbaceous production was 2,090.5 pounds per acre, all of which was allowable. Of this, 1,182.4 pounds were introduced perennial forbs, 589.0 pounds were native perennial cool season grasses, and 243.5 pounds were native perennial forbs. Introduced annual and biennial forbs (56.8 pounds per acre), native annual and biennial forbs (14.0 pound per acre), and introduced annual grasses (4.8 pounds per acre) also contributed to total production.

Ninety percent of the area weighted production standard was 695.5 and 632.9 pounds per acre for 2018 and 2019 respectively. In 2018 and 2019, the BRB-5 allowable herbaceous production exceeded the performance standard but sample adequacy was not achieved. Therefore, CCAI performed a one-sample t-test of the reverse null hypothesis that the total allowable herbaceous production is from the BRB-5 is less than or equal to 90% of the weighted area performance standard derived from the ERA. This hypothesis was rejected in both cases in 2018 and 2019 and therefore the BRB-5 passes the revegetation success standard for production in accordance with Rule 4.15.11(2)(c).

Woody Plant Density

In 2018, regarding "background" woody plant density, the total density was found to be 819.5 stems per acre. Native shrubs were the dominate contributor, consisting primarily of mountain snowberry (*Symphoricarpos rotundifolius*), and big sagebrush (*Artemisia tridentate*). Regarding "volunteer" concentration area density, total density was 2,165.1 stems per acre. The primary species found within this area was mountain snowberry, big sagebrush, Wood's rose (*Rosa woodsia*), Saskatoon serviceberry (*Amelanchier alnifolia*) and rubber rabbitbrush (*Chrysothamnus nauseosus*).

In 2019, regarding "background" woody plant density, the total density was found to be 677.9 stems per acre. Native shrubs were the dominate contributor, consisting primarily of mountain snowberry, big sagebrush, and Wood's rose. Regarding "volunteer" concentration area density, total density was 1,296.1 stems per acre. The primary species found within this area was mountain snowberry, big sagebrush, Wood's rose, and Saskatoon serviceberry.

The mean woody plant density in BRB5 exceeded 90% of the both Mandatory Standard 1 and 2. However, sample adequacy was not achieved for the background area sampling in either 2018 or 2019.

Therefore, reclamation success under Phase III for woody plant density is demonstrated by passing a one-sample t-test of the "reverse null" hypothesis that the woody stem density found in the BRB5 is less than the performance standard. This hypothesis was rejected in both cases in 2018 and 2019 and therefore the BRB-5 passes the revegetation success standard for woody plant density in accordance with Rule 4.15.11(2)(c). It should be noted that CCAI conducted a normality test for the background area sample data and consequently conducted a square root transformation of the data for the success calculations for the hypothesis test. While this normality test and transformations are not addressed in the Rules, it was found that the same successful results would have been achieved using the raw/un-transformed values.

In 2018, the mean density in the "volunteer" concentration area of the BRB-5 (2,165.1 stems per acre) exceeded 90% of the mandatory performance standard 2 (900 stems per acre). In 2019, the mean density in the "volunteer" concentration area of the BRB-5 (1,296.1 stems per acre) exceeded 90% of the mandatory performance standard 2 (900 stems per acre). Thus, revegetation success for the WPD mandatory performance standard 2 under Phase III was demonstrated in 2018 and 2019. Given that 75 samples were taken in the BRB5 volunteer concentration woody plant density area during both years, a direct comparison of reclaimed area mean to standard is allowed under Rule 4.15.11(3)(b)(i)).

Species Diversity

With regard to Mandatory Test A, that no single species comprise greater than 60% relative cover in the BRB5. The most abundant single species, Alfalfa, was 25.8% relative all-hit cover in 2018 and 36.9% relative all-hit cover in 2019, far below the 60% threshold of concern. Mandatory Test A passes for 2018 and 2019 data.

For Alternative Test B, a total species density test was conducted for the BRB-5. The probability-adjusted density standard was 23.6 and 22.5 species per 100 m^2 in 2018 and 2019 respectively. The mean total species density for BRB5 was 25.2 and 26.8 species per 100 m^2 in 2018 and 2019 respectively. Since the reclaimed area value was greater than the standard, Alternative Test B is passed for 2018 and 2019 data.

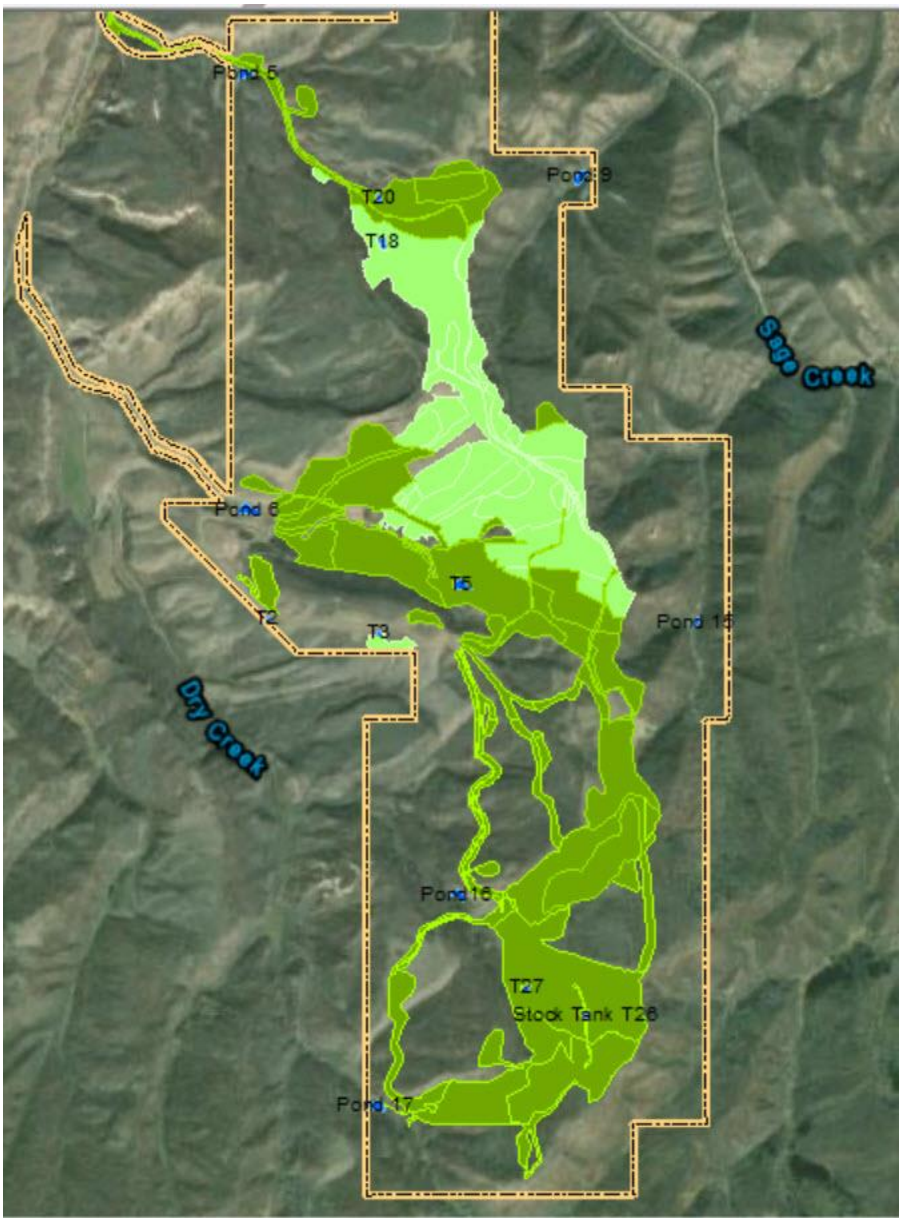
For Alternative Test C, a similarity index test was conducted to compare the BRB5 to the ERA life form species density values. CCAI noted the performance standard for this test is 90% of 70% (63%), however in accordance with Tab 22, page 12 the performance standard should be 90% of 75% (67.5%). The similarity index was 86% and 87% in 2018 and 2019 respectively which exceeded the approved success standard of 67.5%. Alternative Test C was passed for both 2018 and 2019.

For Alternative Test D, the total number of native species encountered at an adequate number of samples within BRB5 (based on allowable all-hit herbaceous cover and species density), was compared to the area weighted native species density standard (based on the extended reference areas). In 2018 the total number of native species encountered in the first sixteen $100m^2$ samples was 56. In 2018 the total number of native species encountered in the first fourteen $100m^2$ samples was 56. The 2018 area weighted native species density standard was 26.7 species per 100 m^2. In 2019 the total number of native species encountered in the first fourteen $100m^2$ samples was 62. In 2019 the total number of native species encountered in the first seven $100m^2$ samples was 44. The 2019 area weighted native species density standard was 25.2 species per 100 m^2. Alternative Test D is passed for the 2018 and 2019 data.

In summary, Mandatory Test A was passed as were Alternative Tests B, C and D. Thus, the species diversity test as a whole is passed for the 2018 and 2019 BRB-5 and revegetation success for species diversity for Phase III is demonstrated.

Conclusion

The applicable revegetation success standards for BRB5 have been met. Based on this finding, the applicant has successfully established diverse vegetation that will be conducive to the post mine land use of livestock grazing and wildlife habitat. According to SPL, livestock grazing has been conducted on the mine's reclaimed lands since 2007 and stocking rates have been developed using ongoing revegetation monitoring data. SPL reports on grazing practices occurring at the site in the annual reclamation reports. Also, wildlife species have been observed by DRMS staff utilizing the reclaimed area. Given the findings in this document and the documented use of the reclaimed area for livestock grazing and wildlife, it appears the post mine land use has been achieved. Map I below illustrates the Phase III bond release areas associated with SL6 (proposed 25 March 2021), and SL7.



Map I: *SL7 bond release block is depicted in light green, the dark green area depicts the SL6 bond release block.*

Evaluation of Hydrologic Impacts

Rule 3.03.2(2) requires the Division to evaluate hydrologic impacts prior to releasing reclamation liability. This evaluation considers whether pollution of surface or subsurface water is occurring and the probability of future occurrence of such pollution. The Division's evaluation based on Annual Hydrology Reports, and pond inspections is summarized below. Drainage structures are routinely inspected and cleaned out as necessary. The SPL monitoring plan can be referenced in Tab 15 and *Probable Hydrologic Consequences* are discussed in Tabs 16, 17 and 18.

Ground Water Impacts

The ground water point of compliance well (GWPOC), monitors well DCAL02 screened in Dry Creek alluvium and located north of the permit boundary. Standards for this well were established in 2009 through Technical Revision TR63. For the years 2015 through 2019 water quality at DCAL02 has consistently met water quality standards with the exception of dissolved iron. The iron standard was established at 8.06 mg/L. Samples collected over the previous five years indicate no statistically significant change in the dissolved iron concentrations when compared to the baseline range (6.96 – 11.1mg/L, a mean of 8.59 mg/L), established in 1998. As dissolved iron comprises the only ground water quality exceedances, this suggests that Dry Creeks' alluvium ambient iron concentrations are above the standard, and the elevated iron is not indicative of an offsite impact to the groundwater system. DRMS finds that the groundwater iron measured falls within the range established with baseline data.

Surface Water

Instream numeric standards for Dry Creek reference the Colorado Water Quality Control Commission's (CWQCC), Yampa River Segment 13d for upper Dry Creek and Yampa River Segment 13e for Sage Creek. For the upper Dry Creek segment total recoverable iron excursions have occurred numerous times at points WSH7 and WSHF1 over the last five years exceedances of pre mine conditions occurred once. Monitoring at outfalls 016 and 017 upstream of points WSH7 and WSHF1, was significantly less than the standard. It appears that the elevated iron is unrelated to runoff from the mine site. No other water quality excursions have occurred between 2015 and 2019 in the upper Dry Creek Segment.

Spoil Springs

Five spoil springs are monitored at the site and results are compared to the CWQCC Agricultural Use surface water standard CDPHE Regulation 31. No Agricultural Use standards (manganese), were exceeded at any of the spoil springs.

For Sage Creek Segment 13e no water quality excursion occurred during the past five years.

Permit requirement of the Colorado Department of Public Health and Environment (CDPHE), set monitoring protocol for the NPDES outfalls at the site. Six outfalls are located within the SL7 Phase III bond request. Over the past five years (2015 through 2019), total recoverable iron was exceeded once in 2016, coinciding with a runoff event. Exceedances in the period from February through May fall under the temporary modifications that allow for excursions of iron during spring runoff events. No other exceedances of NPDES limits occurred during this time period.

Protection of the Hydrologic Balance

All ponds and stock tanks have been approved by the Division of Water Resources to remain as permanent structures. Permanent pond demonstrations have been made for Ponds 006, 016 and 017 and reclamation in their watersheds has not yet been released.

Replaced plant medium and topsoil should exhibit infiltration rates exceeding that of premining soils, thus reducing sheet flow and associated erosion and sediment transport.

Summary and Conclusions
Based upon a review of the mine permit, the applicant's bond release application, site inspections, water quality monitoring results, the Division finds that Seneca Property LLC has successfully completed all surface coal mining reclamation operations in accordance with the approved reclamation plan and met all requirements of the Act and the Rules (Rule 3.03.2).

IV. PROPOSED DECISION

Based on the observations above, the Division proposes to approve Seneca Property LLC's request for a Phase III bond release for the Seneca IIW Mine. This proposed decision will release the applicant from all reclamation work on 367.0 phase III acres as designated on Map 1, *Bond Release Delineation Map* submitted with the SL7 application.

The Division holds a performance bond of $3,790,697.28 for the Seneca IIW Mine. The current required surety amount is $3,790,697.28. This SL7 application requests 367.0 acres of final Phase III release. Based on the last annual reclamation report submitted by Seneca Property, LLC, 1,291.5 acres have been affected at the site. The current applicable cost per acre of affected land is $2,935.11 ($3,790,697.28 ÷ 1,291.5 acres); therefore, the total applicable bond for the 367.0 acre SL7 bond release block is $1,077,186.14. Once SL7 is approved, the remaining liability at the site will be $2,713,511.14. The Division has issued a proposed decision for the SL6 application that is still pending final issuance after the public comment period closes. DRMS proposed to release $2,396,812.54 through the SL6 bond release approval. As SL6 and SL7 are being proposed and issued by The Division nearly simultaneously, the net liability post approval/issuance of both permitting actions amounts to $316,698.60. This amount would be sufficient to complete reclamation at the site.

Any person with a valid legal interest which might be adversely affected by this proposed decision may request a formal public hearing before the Mined Land Reclamation Board in accordance with Rule 3.03.2(6). Public notice of this proposed decision will be published twice in the *Colorado Mountain News Media -Steamboat Pilot* for two weeks as soon as possible. Requests for public hearing must be submitted to the Division in writing within thirty days of the first publication in the Colorado Mountain News Media -Steamboat Pilot. If no hearing is requested within those thirty days, the Division's decision will become final.