STATE OF COLORADO

Reilley - DNR, Robin <robin.reilley@state.co.us>

Review AHR Seneca IIW

1 message

Reilley - DNR, Robin <robin.reilley@state.co.us> Tue, May 27, 2025 at 3:15 PM
To: "Kawcak, Miranda" <MKawcak@peabodyenergy.com>, Robin Reilley - DNR <robin.reilley@state.co.us>

Dear Ms. Kawcak,

Please find DRMS's review of the 2023/2024 water year AHR for the Seneca IIW site. There are two adequacy questions pertaining to abandoned monitoring sites that require a response for the TOJ permitting action.

Thank you

Robin Reilley, M.S. GISP
Environmental Protection Specialist II

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P 303.866.3567|
F 303.832.8106
Physical Address: 1313 Sherman Street St., Suite 215, Denver, CO 80203
Mailing Address: DRMS Room 215, 1001 E 62nd Ave, Denver, CO 80216
robin.reilley@state.co.us | http://mining.state.co.us

Review_AHR_2024WR_SenecaIIW.pdf
115K

Review of Annual Hydrology Report

Mine: Seneca IIW Mine
Permit No: C1982057
Report Year: 2023
Date Received: 2 April 2025

Date Reviewed: 27 May 2025
Reviewed By: R. Reilley
Submitted By: Seneca Property, LLC

Requirement	Requirement citation	Comment
1. Filing frequency of hydrology report	CDRMS regulation 4.05.13(4)(c)	The Annual hydrology Report is required to be submitted yearly.
2. Timely filing of hydrology report	CDRMS regulation 4.05.13(4)(c)	The Annual hydrology Report is required to be submitted by 28 February and was received by the Division on 2 April 2025 via electronic submittal.
3. Filing frequency of NPDES Discharge Monitoring Reports	NPDES permit CO-0000221	Filling is quarterly
4. Timely filing of Discharge Monitoring Reports	NPDES permit CO-0000221	Filling is quarterly, and reports were generally relayed to DRMS in a timely manner.
5. Filing frequency of pond reports	CDRMS regulation 4.05.9(17)	The sediment ponds associated with C 1982057 include 05, 06, 09, 015, 016 and 017. Quarterly pond inspections were conducted in the appropriate quarter.
6. Timely filing of pond reports	CDRMS regulation 4.05.9(17)	Quarterly pond inspection reports were generally received by the Division within an appropriate time frame.
7. Content of pond reports	CDRMS regulation 4.05.9(15)	Content appeared adequate.
8. Sampling frequency of NPDES outfalls	NPDES permit CO-0000221	Monitoring frequency for NPDES water quality sites is monthly. Monitoring frequency for surface water sites is generally semiannual. Surface water sites follow NPDES parameters list. It appears that frequency for sampling was complied with. Suspended site WHS7 was monitored during the water year.
9. Parameters to be sampled for NPDES reporting	NPDES permit CO-0000221	According to table 2 of Appendix 5 of the Permit, suspended parameters were scheduled for sampling in this water year for termination of jurisdiction bond release. It appears that suspended WHS7 was monitored, however it does not appear that monitoring for all parameters on the permit's long list (Table 2 Appendix 5) were monitored i.e. potentially dissolved Cd, Cu, Cr, Pb, Ni, Ag, Zn, among others.
10. NPDES discharge limitations	NPDES permit CO-0000221	The Seneca Mine discharged from Ponds 05, 06, 015, 016, and 017 during the water year. Based on a Memorandum of Understanding between the Division of Reclamation, Mining and Safety and the Water Quality Control Division (WQCD), the WQCD will be responsible for enforcing CDPS permit conditions.

Requirement	Requirement Citation	Comment
11. Basic Standards for Surface Water	CWQCC regulations 31.1.11	The monitoring program includes 5 surface water (sampling June through sites, 6 NPDES sites (monthly sampling) and 9 springs with annual monitoring. Monitoring results are analyzed against CWQCD agricultural use as formulated in Regulation 31 by CDPHE. Two native springs and one spoil discharged below the 5gpm flow rate where sampling would be not be indicated during water year 2023. None of the Agricultural Use Standards were exceeded at the native or spoil springs.
12. Instream Numeric Standards	CWQCC regulation 33.0	NPDES monitoring sites exist within the Sage Creek, and Hubberson Gulch/Dry Creek basins: WSD5, WHSF1, WSH9, WSSF3, native springs WSPG7, WSPG46, WSPG47, WSPG50 and; NPDES 5, NPDES 6, NPDES 9, NPDES 15, NPDES 16, NPDES and various spoil springs. The receiving stream standard for Sage Creek is on Segment 13e of the Yampa River basin and, on Segment 13d of the Yampa River basin for Hubberson Gulch/ Dry Creek basin. The stream standards for Sage Creek and Dry Creek are based on aquatic life standards. Seneca IIW's NPDES discharge limitations are based on constituents in Senecas' effluent, likely to cause an exceedance of Segment 3e and 3d's numeric standards. Appendix D of the 2024 report compares standards to water quality collected from NPDES points and stream sites in the Hubberson Gulch/ Dry Creek Basin. Comparisons are made between CDPHE agricultural use standards (Reg 31) and segment specific aquatic life standards. Water quality collected for both the native and spoil springs are compared to the CWQCC agricultural use standards established in CDPHE Regulation 31. None of the agricultural use standards were exceeded at the native or spoil springs in 2024. The iron standard (total recoverable) was exceeded in the Dry Creek watershed. The exceedances were compliant with the Yampa aquatic life standard. Iron exceedances are likely the result of high suspended solids. Iron exceedances were not outside values measured prior to mining, and are an order of magnitude less than instream concentrations. Premining samples exhibited elevated manganese and total recoverable iron values. Stream points were within all agricultural use standards and Segment 13d aquatic life standards. No other exceedances occurred in the Yampa Segment 13d. In the Sage Creek watershed there were no exceedances

		on the aquatic life or agricultural use standards in segment 13e. A high level mercury test with a method detection limit of 0.2 ug/l for streams was run. All high level test values this water year were less than the detection limit.
13. Sampling frequency at surface water	Tab 15, Table 1 of CDRMS mining permit C1982057	The report indicates that all frequencies were met **with the exception of WHS7** that was not sampled. This site appears to have been suspended but required surface water sampling one year prior to termination of jurisdiction.
14. Parameters to be sampled at surface water sites	Tab 15, Table 2 CDRMS mining permit C1982057	Parameters to be sampled are conductivity (umhos/cm), pH (units), temperature (C), total recoverable iron (mg/l), dissolved manganese (mg/l), total mercury (ug/l), dissolved nitrate (mg/l), dissolved nitrite (mg/l), total ammonia (mg/I), dissolved selenium (ug/l), dissolved sulfate (mg/l), total sulfide (mg/l), total suspended solids (mg/I) and total dissolved solids (mg/l). All required parameters were analyzed.
15. Sampling frequency of ground water monitoring wells	Tab 15, Appendix 15-3a, Table 1 of CDRMS mining permit C1982057	14 ground water wells are sampled. Ground water samples are collected from WHAL7-2, WOV14, WOV17, WOV25, WW14, WW l 7, WW25, WSOV25, WSC25, WWCOV25, WWC25, WWCU25 and, DCAL02 (the ground water point of compliance) on an annual basis, all measurements were well below the standards set. Appendix B of the AHR provides monitoring data. Given that this AHR covers the 2023-2024 water year, suspended monitoring sites should have been monitored as per the permit over the water year as it represents the one year prior to termination of jurisdiction bond release. Suspended wells comprise: WHAL10, WDAL11, WSAL12, WSAL 13, and WSAL14. DRMS notes that these wells were not sampled.

Requirement	Requirement citation	Comment
16. Interim Narrative Standard for Ground Water	CWQCC regulation 41	As per permit section Appendix 3b, and TR63 it was determined that bedrock groundwater points of compliance are unwarranted at the Seneca IIW Mine. Well WHAL 7-2 monitors Hubberson Gulch alluvium downstream of NPDES outfalls, 06, 16 and 17. Well DACL02 serves as the Seneca IIW Mine's Dry Creek Alluvial ground water point of compliance. Ambient values for site DACL02 met all the Reg. 41 standards during the 2023 water year. The manganese ground water point of compliance standard (2.55 mg/l) was not exceeded. The maximum manganese value observed at any well site was 0.289 mg/l. Pre mining manganese values often exceeded the standard.
17. Parameters to be analyzed in ground water samples	Tab 15, Appendix 15-3a, Table 3 of CDRMS mining permit C1982057	Parameters sampled comprise conductivity (umhos/cm), pH (units), temperature (C), dissolved fluoride (mg/I), dissolved iron (mg/I), dissolved manganese (mg/I), dissolved nitrate (mg/I), dissolved nitrite (mg/l), dissolved selenium (ug/l), dissolved sulfate (mg/l) and total dissolved solids (mg/l). At measured sites all parameters were met.
18. Basic Standards for Ground Water	CWQCC regulations 41.4 and 41.5	Seneca IIW Mine did not generate significant amounts of leachates in 2024. Agricultural ground water standards were not exceeded this water year at the Seneca IIW mine.
19. Restoration of ground water recharge to approximate pre-mining rate	CDRMS regulation 4.05.12(3)	For the 2024 water year, it appears that water levels at all wells fell within their historic ranges. All alluvial wells displayed seasonal water level fluctuations in response to periods of precipitation recharge. Static water levels were all within historic ranges. Well WSC25 was not monitored in 2024 due to a damaged casing. Spoil springs (totaling five) may reduce groundwater recharge by diverting groundwater flow to surface flow.

Requirement	Requirement Citation	Comment
20. Prevention of adverse impacts to ground water systems outside permit area	CDRMS regulation 4.05.11(1)	Compliance with the Basic Standards for ground water (item 18), indicates the permittee is preventing adverse impacts to ground water quality outside the permit area. Monitoring data indicate the permittee is preventing impacts to water quantity outside the permit area. Hydrology reports indicate that water level at all wells are within historic ranges. All alluvial wells showed seasonal water level fluctuations in response to periods of precipitation or, lack thereof. Overburden and coal well water levels are fluctuating in response to precipitation recharge and ground water flow from the reclaimed mine pits.
21. Prevention of impacts to ground water that adversely impact post-mining land use	CDRMS regulation 4.05.11(2)	As discussed in item 20 above, no material damage has occurred.
22. Minimize disturbance to hydrologic balance within and adjacent to the permit area	CDRMS regulation 4.05.1(1)	The disturbance to the hydrologic balance within and adjacent to the permit area caused by mining and reclamation at the Seneca IIW Mine is the minimum that can be expected from a reclaimed surface mine at this location. The operators' use of best management practices indicates minimization of disturbance to the hydrologic balance.
23. Adequacy of surface water monitoring program	CDRMS regulation 4.05 .13(2)	The current surface water monitoring program continues to adequately address the protection of the hydrologic balance.

Requirement	Requirement Citation	Comment
25. Prevention of material damage to the hydrologic balance outside the permit area	CDRMS regulation 4.05.1(1)	**Surface Water:** A prediction was made that increases in TDS would be observed at various stream sites during the irrigation season (June-September). Predicted TDS values trended lower than predicted in the Dry Creek watershed. In the Sage Creek watershed where exceedances were observed the location receives drainage from the Yoast Mine permitted 12 years later. Comparing the specific Yoast site with the specific Seneca site and averaging the values indicates values less than predicted. In general TDS concentrations remained within the Seneca IIW predictions and within the historical range for the 2024 Water Year. **Ground Water:** In TAB 17 of the PAP, predictions were made as to the expected TDS increases to be observed at various monitoring wells. Predicted TDS values exceeded at two wells WOV17 and WW14 respectively, 4420 mg/l a downtick form WY 2023 of 4610. mg/l. and 4450 mg/l. The predicted values are 4295mg/l and 2630 mg/l respectively. Premining TDS values 8043 mg/l for WOV17. In general TDS concentrations remained within the Seneca IIW predictions and within the historical range. **Spoil Springs:** TDS values for springs are presented in Appendix E.1 of the AHR. Agricultural Use standards were not exceeded. No material damage has occurred, as discussed in item 20, above. Agricultural Use surface and ground water standards were, in general, within compliance except for previously mentioned excursions. Baseline information shows several parameter concentrations in excess of both irrigation and livestock standards.
26. Agreement of observed hydrologic impacts with probable hydrologic consequences projected in the permit	CDRMS regulation 2.05.6(3) and requirement to keep current, CDRMS regulation 2.03.3(1)	No local or regional impacts were identified in the AHR. This observation is consistent with the PHC.

Adequacy Questions:

1. It appears that suspended surface water site WSH7 was monitored, however it does not appear that monitoring for all parameters on the permit's long list (Table 2 Appendix 5) were monitored i.e. potentially dissolved Cd, Cu, Cr, Pb, Ni, Ag, Zn, among others.

Please provide sampling data for this monitoring site.

2. Suspended wells comprise: WHAL10, WDAL11, WSAL12, WSAL 13, and WSAL14. DRMS notes that these wells were not sampled.

Please provide sampling data for these wells to comply with termination of jurisdiction sampling as per the permit.