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Via Certified Mail

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Re: Notice of Intent to Sue under the Resource Conservation and Recovery Act for Violations of the CCR Rule at Boswell Energy Center

Dear President Owen and Mr. Oachs,

This letter provides notice that Sierra Club, CURE, and the Minnesota Center for Environmental Advocacy ("MCEA") intend to file suit against Minnesota Power for violations of the Resource Conservation and Recovery Act ("RCRA") and associated federal regulations occurring at the Boswell Energy Center. Minnesota Power is storing Coal Combustion Residuals ("CCR"), commonly known as coal ash, in violation of federal regulations under RCRA. In July 2024, Minnesota Power illegally discharged an estimated 5.5 million gallons of coal ash-contaminated water from the facility into adjacent waterbodies. Minnesota Power also failed to publicly disclose a completed assessment of corrective measures for the July 2024 spill or to publish an online notice of the discharge, in violation of federal regulations under RCRA Sierra Club, CURE, and MCEA plan to file suit under RCRA's citizen suit provision, 42 U.S.C. §6972, and will seek declaratory and injunctive relief, civil penalties, and all other relief authorized by law for these violations.

I. Legal Background: EPA Requires the Closure of Unlined Coal Ash Surface Impoundments Pursuant to RCRA.

RCRA bans open dumping of certain solid wastes,[1] which by statute are broadly defined as "any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, resulting from industrial, commercial, mining, and agricultural operations, and from community activities."[2] In April 2015, the U.S. Environmental Protection Agency ("EPA") finalized a rule to regulate the disposal of CCR as a solid waste under subtitle D of RCRA (hereinafter "CCR Rule").[3] "One of the key programmatic goals of the CCR Rule is to ensure that the manner in which coal ash disposal units are closed will ensure that long-term . . . disposition of the coal ash will not adversely impact human health and the environment."[4] Among other requirements, the CCR Rule mandates that by April 2019, utilities initiate closure of unlined ponds storing CCR without adequate separation from groundwater or at high risk of leakage.[5]

Following a decision by the D.C. Circuit Court of Appeals that found EPA arbitrarily and capriciously allowed unlined ponds to continue receiving waste unless they leaked, the EPA updated the rule in September 2020 to require closure of *all* unlined ponds, and extended the deadline for closure to April 11, 2021.[6] Utilities could seek an extension of this deadline under two circumstances: (1) where the owner demonstrates the development of alternative capacity for the relevant waste streams is technically infeasible and the facility is otherwise in compliance with all CCR Rule requirements; or (2) where the owner committed to ceasing all coal combustion at the site by a date certain on or before October 17, 2028 (or October 17, 2023 for surface impoundments that are 40 acres or smaller).[7]

The CCR Rule also requires that pond closures follow certain standards. Utilities have two options for closing ponds: "removing and decontaminating all areas affected by releases from the CCR unit," or draining, stabilizing, and covering the remaining CCR in place in a manner that meets regulatory standards.[8] A CCR surface impoundment cannot be closed in place until the owner or operator can demonstrate that the method of closure will, *inter alia*, "control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off," "preclude the probability of future impoundment of water, sediment, or slurry," and "[b]e completed in the shortest amount

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[1] 42 U.S.C. § 6945.
[2] 42 U.S.C. § 6903(27) (defining "solid waste"); 25 U.S.C. § 3902(7) (defining "open dump").
[3] Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities, 80 Fed. Reg. 21,302 (Apr. 17, 2015) (amending 40 C.F.R § 257, 261) (hereinafter "CCR Rule").
[4] National Enforcement and Compliance Initiative, Protecting Communities from Coal Ash Contamination, Office of Enforcement and Compliance Assurance, U.S. EPA (Dec. 2023), https://www.epa.gov/system/files/documents/2023-12/ccr-enf-alert-2023.pdf.
[5] CCR Rule, 80 Fed. Reg. at 21,490 (promulgating 40 C.F.R. § 257.101(a)(1)).
[6] Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; A Holistic Approach to Closure Part A: Deadline to Initiate Closure, 85 Fed. Reg. 53,516 (Aug. 28, 2020).
[7] 40 C.F.R. § 257.103(f)(1), (2).
[8] *Id.* § 257.102(c), (d).

of time consistent with recognized and generally accepted good engineering practices."[9] Closure under any method and with or without an extension of the April 11, 2021 deadline must be completed within five years of the date closing activities commence.[10]

With respect to surface impoundments, federal regulations further require that any discharge from the units be handled "in accordance with the surface water requirements" of the Clean Water Act ("CWA") "under 40 C.F.R. § 257.3-3."[11] Section 257.3-3, in turn, prohibits the discharge of pollutants into waters of the United States unless authorized by a National Pollution Discharge Elimination System ("NPDES") permit.[12]

Placement of coal ash or operation of a surface impoundment in violation of the CCR Rule constitutes open dumping, in violation of RCRA.[13] The CCR Rule requires that "immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions."[14] "The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances."[15] Within 90 days after the selection of a remedy, "the owner must initiate remedial activities" including "establish[ing] and implent[ing] a corrective action groundwater monitoring program that . . . . documents the effectiveness of the corrective action remedy."[16] A notice that the assessment of corrective measures has been initiated, a completed assessment of corrective measures, "ongoing semiannual reports describing the progress in selecting and designing [the] remedy and the section of remedy report," and, where applicable, "notification that the remedy has been completed" must be posted on the owner or operator's public website.[17]

Individuals and organizations may initiate civil actions for RCRA enforcement (citizen suits), and in particular may enforce violations of rules promulgated pursuant to EPA's authority under RCRA, consistent with RCRA's citizen suit provision.[18] RCRA citizen suits may redress violations of "any permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to" the Solid Waste Disposal Chapter of the Act, 42 U.S.C. ch. 82. 42 U.S.C. § 6972(a)(1)(A). RCRA requires prior notice of such citizen suits.[19] This notice of intent to sue is provided to satisfy this requirement.

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[9] *Id.* § 257.102(d).
[10] *Id.* § 257.102(f)(1)(ii).
[11] *Id.* § 257.82(b).
[12] *Id.* § 257.3-3(a).
[13] *Id.* § 257.1(a)(2); *see also* 42 U.S.C. § 6945(a) (prohibiting the "open dumping of solid waste").
[14] *Id.* § 257.96(a).
[15] *Id.*
[16] *Id.* § 257.98(a)(1).
[17] *Id.* § 257.107(h)(7)-(10).
[18] 42 U.S.C. § 6972(a)(1)(A).
[19] 42 U.S.C. § 6972(c); 40 C.F.R. § 254.2.

II. Factual Background

On July 16, 2024, Minnesota Power discovered a spill from a pipe carrying wastewater from an onsite CCR storage pond ("Pond 4") to the Boswell Energy Center.[20] The wastewater discharged from the pipe leak saturated the surrounding soil and flowed 200 feet downhill to Blackwater Creek which feeds into Blackwater Lake.[21] These areas are a backwater lake system of the Mississippi River.[22] Minnesota Power initially reported that 1 million gallons were discharged but subsequently revised its estimate of the total discharge upward to 5.5 million gallons.[23] On information and belief, as a result of the July 2024 spill and/or other unpermitted discharges from the Boswell facility, sulfate levels in and around Blackwater Lake are in excess of 10 mg/L, in violation of Minn. R. 7050.0224. Blackwater Lake (WID 31-0561-00) is listed as a wild rice water subject to the wild rice standard.[24] On information and belief, discharges from the Boswell facility also resulted in elevated levels of boron in Blackwater Creek and Blackwater Lake.

In response to the July 2024 spill, the Minnesota Pollution Control Agency ("MPCA") issued a Notice of Violation ("NOV") to Minnesota Power on August 12, 2024, which required "the submission of a Remedial Plan (including ecological risk assessment, updated sampling plan, and target remediation values)."[25] The NOV also required "the submission of a long-term monitoring and response plan (LTRMP)" as well as "soil, groundwater and surface water

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[20] *See* U.S. EPA, *Pollution/ Situation Report, Minnesota Power Discharge – Removal Polrep, Final Removal Polrep,* at 2 (Dec. 31, 2024) (hereinafter "2024 EPA MN Power Pollution Report", provided as Attachment A hereto; *see also* Maria Vollom, *MN Power Now Estimates 5.5M Gallons of Ash Wastewater Leaked at Boswell Energy Center*, Fox 21 Local News (July 20, 2024), https://www.fox21online.com/2024/07/20/mn-power-now-estimates-5-5m-gallons-of-ash-wastewater-leaked-at-boswell-energy-center/.

[21] 2024 EPA MN Power Pollution Report at 2.

[22] *Id.*

[23] Maria Vollom, *MN Power Now Estimates 5.5M Gallons of Ash Wastewater Leaked at Boswell Energy Center*, Fox 21 Local News (July 20, 2024), https://www.fox21online.com/2024/07/20/mn-power-now-estimates-5-5m-gallons-of-ash-wastewater-leaked-at-boswell-energy-center/.

[24] *See* Minn. Pollution Control Agency, Wild Rice Producing Waters Online Search Tool, https://public.tableau.com/app/profile/mpca.data.services/viz/wild_rice_v4/Information. *See also* Minn. Pollution Control Agency, *Protecting Wild Rice Waters*, https://www.pca.state.mn.us/air-water-land-climate/protecting-wild-rice-waters (last visited Apr. 11, 2025).

[25] U.S. EPA, *On-Scene Site Coordinator*, *Minnesota Power Discharge*, https://response.epa.gov/site/site_profile.aspx?site_id=16571 (last visited Apr. 11, 2025).

monitoring activities and wild rice evaluation."[26] To date, neither Minnesota Power nor MPCA have made any documents pertaining to this NOV available to the public.[27]

In statements to the press, Minnesota Power identified the source of the spill as a pond used between 1980 and 2015.[28] Minnesota Power's currently operative Closure Plan for all surface impoundments at the Boswell site describes "Pond 4" (sometimes referred to as "Unit 4") as having "received sluiced [generation] Unit 4 fly ash and scrubber solids, and sluiced [generation] Unit 1 and 2 fly ash" until August 14, 2015.[29] The Closure Plan states that after that date, Pond 4 has "intermittently receive[d] co-mingled dry fly ash and scrubber solids from Unit 4 and dry fly ash from Unit 1 and 2 through 2018, and some bottom ash in 2019," and "occasionally received Unit 3 FGD scrubber solids."[30] Pond 4 was the source of the coal-ash contaminated liquids discharged into Blackwater Creek.[31]

According to its Closure Plan, Minnesota Power initiated closure of Pond 4 in June 2020[32] and intends to close Pond 4 with CCR in place in the western portion of the disposal area.[33] Closure of Pond 4 is ongoing and not scheduled to be completed until 2035, which is also when Minnesota Power plans to stop burning coal at Boswell Unit 4.[34] Dewatering of Pond 4 is

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[26] *Id*.

[27] Sierra Club submitted multiple public records requests to MPCA seeking documents related to the July 16, 2024, spill, the August 12, 2024, NOV, and associated remedial measures. MPCA has refused to produce any documents in response to these requests, asserting that all responsive records are confidential due to an ongoing investigation. However, in response to a federal Freedom of Information Act request, U.S. EPA has produced certain records related to the July 2024 spill and the resulting contamination in Blackwater Creek and Blackwater Lake.

[28] Dan Kraker, *1 Million Gallons of Ash Wastewater Spilled From Northern Minnesota Coal Plant*, MPR News (Jul. 17, 2024), https://www.mprnews.org/story/2024/07/17/ash-wastewater-spilled-at-northern-minnesota-coal-plant-1-million-galllons.

[29] Minnesota Power, Closure Plan and Post-Closure Care Plan for Coal Combustion Residuals (CCR) Surface Impoundments and Landfill, 6 (Apr. 1, 2025), https://mp-ccr.azurewebsites.net/Content/Facilities/Boswell/Closure_And_Post_Closure/BEC%20Closure%20Plan%20and%20Post-Closure%20Plan%20for%20CCR%20Surface%20Impoundments%20and%20Landfill%20Updated%20April%201,%202025.pdf, provided as Attachment B hereto (hereinafter "Boswell Closure Plan"). *See also* Minnesota Power, CCR Rule Compliance Data and Information, Boswell, https://mp-ccr.azurewebsites.net/Boswell.

[30] Boswell Closure Plan at 6. Pond 4 and the Bottom Ash Disposal Area are "managed as one unit for closure purposes and are collectively referred to as the East Surface Impoundment." *Id.* at 5. Placement of bottom ash in this area continued through September 2022. *Id.* at 7. CCR material in the discharge may therefore have included bottom ash as well as fly ash and scrubber solids.

[31] *See* 2024 EPA MN Power Pollution Report at 2.

[32] Boswell Closure Plan at 19.

[33] *Id.* at 10 (Table 3-3).

[34] *Id*. at 3, 19.

scheduled to continue until 2032.[35] On information and belief, Minnesota Power's closure schedule is designed to enable liquids from Pond 4 to be used for the operation of Boswell Unit 4.[36] The unpermitted and unlawful discharge that occurred on or around July 16, 2024 was from a pipe that transported liquids from Pond 4 to Boswell Unit 4.

III. Minnesota Power Is Violating the CCR Rule at the Boswell Site.

A. Minnesota Power's delayed closure of Pond 4 and inadequate Closure Plan violate the CCR Rule.

Under the CCR Rule, once a utility has initiated closure of an unlined surface impoundment, that closure must "[b]e completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices,"[37] but in any case, no later than five years after it was initiated.[38] Minnesota Power initiated closure of Pond 4 in June 2020. [39] Accordingly, closure must be completed by June 2025. However, Minnesota Power's current Closure Plan does not anticipate closure will be complete until 2035, and that dewatering, specifically, will continue through 2032.[40] Under the operative Closure Plan, Minnesota Power will not complete the closure process within the mandated five years, and it has neither provided any explanation as to why a sooner closing date is not viable nor sought an extension of the closure deadline. Thus, Minnesota Power is not closing Pond 4 "in the shortest amount of time consistent with…good engineering practices."[41] As such, both Minnesota Power's Closure Plan and ongoing handling of CCR-contaminated liquids within Pond 4 violate 40 C.F.R. § 257.102(d) and (f) rendering Pond 4 as an open dump in violation of RCRA.[42]

While owners or operators may seek limited extensions of the closure deadlines for surface impoundments in certain circumstances, Minnesota Power has not demonstrated that it is eligible for or requires any such extension for Pond 4. The CCR Rule provides that "[t]he timeframes for completing closure of a CCR unit . . . may be extended if the owner or operator can demonstrate that it was not feasible to complete closure of the CCR unit within the required timeframes due to factors beyond the facility's control."[43] This demonstration "must include a narrative discussion providing the basis for additional time."[44] The Closure Plan states that Minnesota Power plans to seek up to five extensions of the Pond 4 closure deadline,[45] but on information and belief, Minnesota Power has neither sought nor received a time extension in

[35] *Id.* Figure 3.
[36] *See id.* at 8, 10.
[37] 40 C.F.R. § 257.102(d).
[38] 40 C.F.R. § 257.102(f)(1)(ii).
[39] Boswell Closure Plan at 19.
[40] *Id.* at Figure 3.
[41] *See* 40 C.F.R. § 257.102(d).
[42] 40 C.F.R. § 257.1(a)(2) (any violation of the CCR Rule constitutes open dumping under RCRA); 42 U.S.C. § 6945(a) (prohibiting the "open dumping of solid waste").
[43] 40 C.F.R. § 257.102(f)(2)(i).
[44] *Id.*
[45] Boswell Closure Plan at 19 fn. 4.

compliance with 40 C.F.R. § 257.102(f)(2). Moreover, the Company has not demonstrated that it would be infeasible to complete closure of Pond 4 by June 2025 due to factors beyond the Company's control.

Minnesota Power has also failed to prepare a written closure plan that complies with the requirements of 40 C.F.R. § 257.102(b). The fact that Minnesota Power's Closure Plan does not contemplate closing Pond 4 within the mandated 5-year timeline is itself a violation of the regulation. Furthermore, Minnesota Power has not complied with the requirement that "if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified" in the rules, "the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought . . ."[46]

Minnesota Power's Closure Plan fails to include any "site-specific information, factors and considerations that would support any time extension sought under" § 257.102(f)(2). The Closure Plan makes it clear that Minnesota Power does not plan to close Pond 4 within five years, and in fact, plans to seek multiple extensions and complete closure by 2035. The Plan states in a footnote that the "[c]ompletion date of closure activities for East Surface Impoundment Unit 4 Disposal Area assumes use of [an] initial 5-year period and up to five subsequent 2-year extensions due to large quantity of water requiring [sic] to be dewatered to facilitate closure activities."[47] However, the Plan provides no substantive explanation of why it would be infeasible to dewater this quantity of water by the deadline. Under the CCR Rule, the "[t]ime required to dewater a CCR unit due to the volume of CCR contained" may be a factor in considering extensions,[48] but the Rule also makes clear that extensions can only be justified if timely closure is "not feasible" due to "factors beyond the facility's control."[49]

Here, Minnesota Power has not demonstrated infeasibility. First, Minnesota Power has clearly stated that it plans to continue operating Boswell Unit 4 until 2035.[50] The Closure Plan asserts that "Factors Affecting Surface Impoundment Closure Approach and Timing" include "[d]ewatering rates, *which are dependent on the operation/water consumption of the Unit 4 generating unit*."[51] Therefore, the Plan shows that the rate of dewatering depends on how Minnesota Power chooses to operate Unit 4, which is a factor within the Company's control.

Second, the Closure Plan does not provide any additional "site-specific information, factors and considerations" demonstrating that 2025 closure is infeasible or that the proposed extension of the Unit 4 closure deadline to 2035 is necessary. Accordingly, the Closure Plan in no way justifies a delayed closure of Pond 4 and it is therefore in violation of the CCR Rule.

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[46] 40 C.F.R. § 257.102(b)(1)(vi).
[47] Boswell Closure Plan at 19 fn. 4.
[48] 40 C.F.R. § 257.102(f)(2)(i)(B).
[49] *Id.* § 257.102(f)(2)(i)
[50] *See* Minnesota Power 2025-2039 Integrated Resource Plan, 69 (March 3, 2025), https://www.edockets.state.mn.us/documents/%7BA0446195-0000-C339-B88F-8CE00FEBADAA%7D/download?contentSequence=0&rowIndex=1.
[51] Boswell Closure Plan at 10, Table 3-2 (emphasis added).

Minnesota Power's violation of the standards governing the closure of unlined coal ash ponds and adoption of an unlawful closure plan is a violation of the standards, regulations, conditions, requirements, and/or prohibitions which were established pursuant to sections 1008(a)(3) and 4004(a) of RCRA as codified at 42 U.S.C. § 6907 and 42 U.S.C. § 6944, respectively, and are part of 42 U.S.C. ch. 82.

B. Minnesota Power has not publicly disclosed an assessment of corrective measures or publicly posted a timely notice of the spill as required by the CCR Rule.

Minnesota Power has violated Section 257.96 of the CCR Rule by failing to announce that it initiated an assessment of corrective measures, failing to publicly disclose a completed assessment, and failing to disclose progress reports on the selection and design of a remedy for the spill at Boswell Energy Center. As noted above, the CCR Rule requires that "immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions."[52] Further, "[t]he assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances," in which case "[t]he 90–day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days."[53] In order to obtain this extension, "[t]he owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration [of the need for additional time] is accurate."[54]

Here, the Boswell coal ash spill was detected in July 2024. Per the CCR Rule's 90-day deadline, Minnesota Power was required to complete an assessment of corrective measures by October 2024, unless it was able to demonstrate a need for an additional 60 days. It is unclear whether Minnesota Power attempted to demonstrate a need for a 60-day extension.[55] In any event, even if it had received an extension, the assessment of corrective measures would have been due no later than December 2024. The deadline for completion of the assessment of corrective measures has now passed.

Sierra Club specifically requested copies of any assessment of corrective measures associated with the July 2024 Boswell spill via public records requests to MPCA and Freedom of Information Act ("FOIA") requests to U.S. EPA, but neither agency has produced any such assessment. One document produced by U.S. EPA references a "remedial plan" which the

[52] 40 C.F.R. § 257.96(a).
[53] *Id.*
[54] *Id.*
[55] MPCA has refused to respond to Sierra Club's public records requests regarding the July 2024 spill.

document states was "partially approved" in December 2024,[56] but to date no such remedial plan has been publicly disclosed and the public has no information as to its progress or efficacy.

Minnesota Power violated Section 257.107(h) of the CCR Rule by failing to post on its publicly accessible CCR website (1) a notice of the spill, (2) a notice that it had initiated an assessment of corrective measures, and (3) a completed assessment of corrective measures.[57] The owner or operator of a CCR unit must post a notification on their website within 30 days of detecting a violation of a groundwater protection standard.[58] The owner or operator must also post a notification to the website within 30 days of initiating an assessment of corrective measures, and must post the completed assessment of corrective measures to the website when finished.[59] As of the date of this letter, Minnesota Power had not posted a notice of the spill on its public CCR website,[60] nor has the Company posted a notification that it has initiated an assessment of corrective measures related to the spill or publicly disclosed a completed copy of the assessment.

Finally, Minnesota Power failed to address the July 2024 spill in its 2024 groundwater monitoring and corrective action report. Section 257.90(e) requires annual groundwater monitoring and corrective action reports which "must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered" for the preceding calendar year and "discuss actions to resolve the problems."[61] Section 257.96 of the CCR Rule also requires that if an owner or operator seeks an extension of the 90-day deadline to complete an assessment of corrective measures, the required demonstration to justify that extension must be included in the annual groundwater monitoring and corrective action report.[62]

On or around January 31, 2025, Minnesota Power posted on its CCR website its 2024 annual groundwater monitoring and corrective action report for Boswell Energy Center.[63] However, Minnesota Power's 2024 annual report does not include any discussion of the coal ash spill which occurred at Boswell Energy Center in July 2024, nor does it describe any corrective actions to address the spill. While the 2024 annual report describes groundwater monitoring

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[56] 2024 EPA MN Power Pollution Report.
[57] *See also* Minnesota Power, CCR Rule Compliance Data and Information, Boswell, https://mp-ccr.azurewebsites.net/Boswell.
[58] 40 C.F.R. § 257.107(h)(8), (d).
[59] *Id.* § 257.107(h)(7), (8).
[60] *See also* Minnesota Power, CCR Rule Compliance Data and Information, Boswell, https://mp-ccr.azurewebsites.net/Boswell.
[61] 40 C.F.R. § 257.90(e).
[62] *Id.* § 257.96(a).
[63] Minnesota Power, 2024 Annual Groundwater Monitoring and Corrective Action Report: Boswell Energy Center Coal Combustion Residuals (CCR) Surface Impoundment (Jan. 2025), https://mp-ccr.azurewebsites.net/Content/Facilities/Boswell/Groundwater_Monitoring/BEC%202024%20Annual%20Groundwater%20Monitoring%20and%20Corrective%20Action%20Report%20-%20All%20CCR%20Units.pdf.

conducted in October 2024 which detected arsenic at statistically significant levels above the groundwater protection standard at five wells, the report makes no mention of the July 2024 release.[64] The report only states that an assessment of corrective measures under Section 257.96(a) is "not applicable in [the] 2024 report" without further explanation.[65] The report concludes that "[n]o issues were encountered in 2024."[66] The July 2024 spill should have been discussed in the report.[67] Minnesota Power acknowledges the spill in a different document, the 2024 Annual Surface Impoundment Inspection Report, which states that an "accidental break in [the] piping occurred in mid-2024" at the "Unit 4 disposal area pond water recovery system," which resulted in "water recovery efforts from the pipe leak."[68] The groundwater monitoring report makes no mention of this.

IV. Sierra Club, CURE, and MCEA Intend to File a Citizen Suit.

The violations described in this letter are continuing. Minnesota Power's delay in closing Pond 4 and reliance on its unlawful Closure Plan are ongoing. Minnesota Power's failure publicly disclose a completed assessment of corrective measures for the July 2024 coal ash spill into Blackwater Lake, Blackwater Creek, and the Mississippi River or to report the spill on its website is also ongoing. In response to these ongoing violations, Sierra Club, CURE, and MCEA intend to file a citizen suit under RCRA seeking injunctions requiring closure of Pond 4 in a manner and on a timeline that reflects best engineering practices and timely disclosure of a completed assessment of corrective measures to address the July 2024 spill, as required under the CCR Rule. Sierra Club, CURE, and MCEA may seek additional prohibitory and mandatory injunctive relief as well as all other appropriate relief, including but not limited to the assessment of civil penalties and the award of attorneys' fees and costs.

Sierra Club, CURE, and MCEA have standing because some of their members and/or supporters reside close to Blackwater Lake, Blackwater Creek and/or downstream of these tributaries along the Mississippi River and use the impacted water bodies for recreational activities such as boating, fishing, and manoomin (wild rice) gathering. These members and supporters suffer from surface water contamination due to the improper storage and handling of liquids within Pond 4 and the July 16, 2024 spill at the Boswell Energy Center site. The water contamination resulting from improper coal ash storage and the Boswell coal ash spill has negatively impacted Sierra Club members' and CURE, and MCEA supporters' use and enjoyment of Blackwater Creek, Blackwater Lake, and the Mississippi River. These members and supporters have been forced to limit their recreational use of these water bodies due to the

[64] *Id*. at iii, 7, 8.
[65] *Id*. at 4.
[66] *Id.* at 6. 40 C.F.R. § 257.90(e).
[67] 40 C.F.R. § 257.90(e).
[68] Minnesota Power, 2024 Annual Surface Impoundment Inspection Report, Minnesota Power Boswell Energy Center, at 3 (Jan. 2025), https://mp-ccr.azurewebsites.net/Content/Facilities/Boswell/Operating_Criteria/BEC%202024%20Annual%20Surface%20Impoundment%20Inspection%20-%20All%20CCR%20Units.pdf.

lack of public information about the extent, nature, and severity of that contamination, the status and timing of remediation efforts, and the implications for the environment and for public health and safety. Some members and supporters have also been forced to obtain alternative sources of drinking water and/or filtration systems in response to valid concerns about pollution from the Boswell facility impacting the safety of drinking water drawn from the Mississippi River.

The relief requested in this lawsuit would redress these issues by requiring Minnesota Power to make public an assessment of the coal ash spill and its environmental impacts, publicly disclose the status of corrective measures to address contamination of these water bodies with coal ash, remediate existing toxic conditions and elevated effluent levels in these water bodies, and prevent future contamination by ensuring the removal of CCR liquids from Pond 4 on a timely basis.

The addresses of the parties giving notice are: Sierra Club, 2101 Webster Street, Suite 1300, Oakland, CA 94612; CURE, 117 South 1st Street, Montevideo, MN 56265; MCEA, 1919 University Ave. W #515, St. Paul, MN 55104. Contact information of counsel is provided below.

V. Conclusion

Should Minnesota Power fail to demonstrate compliance with RCRA and the CCR Rule at Boswell Energy Center within 60 days, Sierra Club, CURE, and MCEA intend to jointly file a citizen suit pursuant to 42 U.S.C. § 6972(a)(1)(A). If Minnesota Power believes that any information in this letter is inaccurate, please inform counsel for the parties as soon as possible. Please direct all communications regarding this matter to the undersigned.

Sincerely,

/s/ Patrick Woolsey

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Attachments:

Attachment A: U.S. EPA, Region V, Pollution/ Situation Report, Minnesota Power Discharge – Removal Polrep, Final Removal Polrep (Dec. 31, 2024)

Attachment B: Closure Plan and Post-Closure Care Plan for Coal Combustion Residuals Surface Impoundments and Landfill (Updated April 1, 2025)

Attachment A

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Minnesota Power Discharge - Removal Polrep
Final Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #2**
Pollution Report Final
Minnesota Power Discharge
D534
Cohasset, MN

To:
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Malcolm Grieve, US EPA
Stephen Wolfe, U.S. EPA
Mark Durno, U.S. EPA
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Reena Bowman, U.S. FWS
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Craig Weingart, MPCA
Tom Burri, MN DNR
Lucy Harrington, MN SHPO
Amanda Gronhovd, MN State Archaeologist
John Linder, Itasca County EM
Max Peters, City of Cohasset

From: David Morrison, On-Scene Coordinator
Date: 12/31/2024
Reporting Period: July 26, 2024 - December 30, 2024

1. Introduction

1.1 Background

Site Number:	D534	**Contract Number:**	
D.O. Number:	1404933	**Action Memo Date:**	
Response Authority:	CERCLA	**Response Type:**	Emergency
Response Lead:	STATE	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	7/16/2024	**Start Date:**	7/16/2024
Demob Date:	8/6/2024	**Completion Date:**	12/30/2024
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	MNDO 221831
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category
Emergency Response

1.1.2 Site Description

At 11:30 am on July 16, 2024, a release of coal ash contact water was discovered at the Boswell Energy Center near Cohasset, MN. The discharge flowed from a pipeline failure overland into Blackwater Creek which feeds into Blackwater Lake. Theses areas are a backwater Lake system of the Mississippi River. It was later determined that approximately 5.5 million gallons of supernate ash slurry water was discharged.

1.1.2.1 Location

Minnesota Power (an Allete, Inc. Company) operates the Boswell Energy Center (BEC) in proximity to the Mississippi River in Itasca County near Cohasset, Minnesota. The facility address is 1210 NW 3rd St, Cohasset, MN 55721. This area is nearby and downstream of the Leech Lake Band of Ojibwe (LLBO) Reservation and within the 1855 Treaty Rights Area. The spill location is at (47.265892, -93.656717).

1.1.2.2 Description of Threat

Approximately 5.5 million gallons of supernate leaked from an underground pipe joint. The pipeline is a return-water reuse pipeline originating from a discontinued coal slurry pond (Pond 4). The decommissioned pond was mainly affiliated with coal combustion residuals (CCR) and more specifically from air scrubber residues. The released pond water saturated the surrounding soil at the pipe failure and flowed approximately 200 feet downhill into Blackwater Creek on its western shore.

Blackwater Creek, Blackwater Lake and the Mississippi River in the “Mississippi headwaters area” contains an abundance of sensitive natural resources and Tribal cultural resources. There are many dense and sparse stands of wild rice throughout the area including Blackwater Creek and Blackwater Lake. These wild rice beds are of significant ecological and cultural importance to Minnesota Tribal Nations and to local communities. Water levels in this area are controlled by the Pokegema Dam Reservoir System.

Wild rice is found primarily in low-sulfate waters. The State of MN water quality standard is 10 mg/l for sulfates. Previous testing of the Pond 4 water has shown total sulfate in the range of 14,000 mg/l. An initial sample collected from pond 4 during this response found concentrations of 19,700 mg/l total sulfate. The supernate water also had elevated boron, so this was added to the chemicals of concern to be investigated.

A compounding problem. Sulfur in the environment changes states based on aerobic and anoxic conditions. Sulfates can change to sulfides and vice-versa and there can be intermediate forms in the sulfite family and aquatic plant toxicity varies between the forms. Of particular concern is the accumulation of sulfides in sediments and pore water which can affect wild rice at different stages of its life cycle. Significant sulfur loading to the ecosystem could produce chronic or acute stress to aquatic life.

Initial testing of source water for other CCR-related potential contaminants of concern (COC) has not indicated additional COCs at this time. Some of the parameters tested include metals, PCBs, PAHs, Semi-volatiles; DRO/GRO, and VOCs.

Over the course of the summer, contaminants were spreading out into Blackwater Lake. There are likely a variety of causes for this migration including: natural dissipation, fall turnover, strong NW winds, and the Pokegama Dam drawdown in advance of winter operations.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

An emergency responder from MPCA and a FOSC from USEPA arrived on site July 16th to assess the discharge and monitor/support/oversee the response. Initial testing of surface waters in Blackwater Creek found elevated levels of sulfates and boron migrating into the wetland areas. On November 12, the MPCA issued a Notice of Violation (NOV) to MN Power which included corrective action requirements and began a transition from removal/emergency response program oversight to longer-term remedial program oversight by the State.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

During the summer and fall (before ice freeze up), MN Power conducted several mitigation efforts as noted below. A summary of initial actions including release stabilization, baseline vegetative imagery, a wild rice baseline ecological survey, a resources at risk evaluation, emergency NHPA/NAGPRA consultations with THPOs/SHPOs and initial excavation of soils, water quality monitoring and sampling, and released water recovery (pumping from Blackwater Creek wetland) can be found in the initial pollution report.

2.1.2 Response Actions to Date (July 26 - December 30, 2024)

- Final Soil Excavation. Phase 4 excavation of contaminated soils was completed by July 31st followed by clean backfilling and site restoration. A total of 2,225 tons of soils were removed and later sent to a permitted landfill.

- Contaminant migration stabilization. Silt curtains were maintained and added in Blackwater Creek wetland to minimize contaminated sediment movement. In addition, the USACE helped to support the response by operating the Pokegama dam near the top of its operating window to stagnate the hydrodynamics of the system and keep the water levels as high as possible to prevent flushing of contaminants out into Blackwater Lake. As winter water level drawdown began on September 18, sulfate concentrations further out in Blackwater Lake began to increase. Following approvals through MIAC, MN DNR, and MPCA **a temporary inflatable dam was installed** at the Old Highway 6 Bridge on November 21 to prevent further migration of contaminants. The dam is operating at about 3 to 4 inches of head and sulfate concentrations have been decreasing to lower levels on the order of <5 mg/l in Blackwater Lake.

- Blackwater Creek pumping. Efforts to recover higher sulfate water from the wetlands along the western shoreline of Blackwater Creek were on-going until freeze up around November 1. Pumping operations to the supernate pond stopped on 9/13 due to the pond reaching the maximum working elevation. Approximately 15.6 million gallons were returned to pond 4. To date, a total of approximately 19,666,470 gallons of water has been pumped from the discharge area and sent back to the facility pond or to a thermal evaporator.

- Monitoring and sampling. On-going efforts to define the nature and extent of the COCs in the environment continues following an approved SAP and includes ground water sampling, wetland sediment sampling, pore water sampling and surface waters sampling. In very broad terms, within the main contaminant footprint, surface water concentrations are on the order of 150 mg/l, Sediment concentrations are on the order of 10,000 mg/l, Pore water concentrations are on the order of 3,000 mg/l and groundwater concentrations are on the order of 6,000 mg/l for sulfates. Typical background surface water concentrations in the area were found to be about 1.33 mg/l. Due to winter conditions the frequency of the monitoring has been reduced.

• Vegetative and bathymetric surveys. On going continual assessment of aquatic conditions was conducted throughout the growing season. In addition, a wetland areas delineation was conducted and a bathymetric survey of Blackwater Creek was completed in anticipation of potential sediment recovery/dredging cleanup operations.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

A Notice of Federal Interest (NOFI) was issued to MN Power/Allete, Inc. EPA Enforcement staff have been notified of this incident.

On August 12th, the MPCA issued a Notice of Violation (NOV) to Minnesota Power.
Among the corrective actions required were:

- 30 days to submit a remedial plan (including ecological risk assessment, updated SAP, and target remediation values). This was partially approved on December 11.

- 30 days to submit a long-term monitoring and response plan (LTRMP). This was to include soil, groundwater and surface water monitoring activities and wild rice evaluation. The EPA requested that Tribal environmental and cultural resource officials be included in the development of these plans. MN Power submitted a copy of the LTRMP to the LLBO Tribe and MIAC for review (12/18/24).

The State of MN and USFWS have not initiated an NRDAR process for this incident.

2.1.4 Progress Metrics
Based upon concentration analyses and initial estimates of sulfate mass balance (lost and recovered), it is estimated that approximately 410,000 kg (452 tons) of SO4 was released from Pond 4. Recovery to-date is approximately on the order of 18,000 kg (19.8 tons) of SO4 through recovered water and soil.

Waste Stream	***Medium***	***Quantity***	***Treatment***	***Disposal***
soil	Upland soils	2,225 tons (1589 CY)		General Waste Landfill (Keewatin/Hibbing)
Recovered Water	Waste water	19,666,470gallons	Holding Pond 4 or facility treatment.	

Regional Metrics		
This is an Integrated River Assessment. The numbers should overlap.	Miles of river systems cleaned	1.2 miles
	Cubic yards of contaminated sediments removed and/or capped	1589 CY
	Gallons of oil/water recovered	19,666,470 gal.
	Acres of soil/sediment cleaned up in floodplains and riverbanks	5 - Acres TBD
Stand Alone Assessment	Number of contaminated residential yards cleaned up	N/A
	Number of workers on site	
Contaminant(s) of Concern	Sulfate, Boron	
Oil Response Tracking		
Estimated volume	Initial amount released	N/A
	Final amount collected	
CANAPS Info	FPN Ceiling Amount	
	FPN Number	
	Body of Water affected	

Administrative and Logistical Factors (Place X where applicable)					
	Precedent-Setting HQ Consultations (e.g., fracking, asbestos)		Community challenges or high involvement		Radiological
	More than one PRP		Endangered Species Act / Essential Fish Habitat issues		Explosives
	AOC	X	Historic preservation issues		Residential impacts
	UAO		NPL site		Relocation
	DOJ involved		Remote location		Drinking water impacted
	Criminal Investigation Division involved		Extreme weather or abnormal field season	X	Environmental justice
X	Tribal consultation or coordination or other issues		Congressional involvement		High media interest
	Statutory Exemption for $2 Million		Statutory Exemption for 1 Year		Active fire present
	Hazmat Entry Conducted – Level A, B or C	X	Incident or Unified Command established		Actual air release (not threatened)
	CID confirms Criminal Charges Have Been Filed				

Green Metrics			
	Metric	**Amount**	**Units**
	Solid waste reused on-site	N/A	
	Solid waste recycled	1589	Cubic Yards, landfill daily cover
	Inflatable Dam and silt curtain reuse	400' dam; 1,000'+ curtain	linear feet

2.2 Planning Section

2.2.1 Anticipated Activities

- Implement approved Remedial Plan in accordance with MPCA's enforcement compliance Schedule.

- Develop a Long-Term Monitoring and Response Plan with Federal, Tribal, State and local Organizations. Implement approved LTRMP in accordance with schedule.

2.2.1.1 Planned Response Activities

Minnesota Power is planning on conducting:

1. Winter sediment dredging (Feb 2 – March 14) to recover contaminated sediments from Blackwater Creek and shoreland area wetlands. The planned recovery will be using an amphibious excavator in an expected five-acre footprint. Initial estimates expect recovery of up to 20,000 cubic yards of substrate. Restoration efforts to include reseeding with approved seed mixes in spring.

2. Conducting an upland excavation and ground water capture trench (April).

3. Permits needed/initiated for Remediation

   a. Wetland and NWP

   b. 401 Water Quality Certification

   c. DNR Public Water Work Permit

   d. DNR Water Appropriation

   e. Section 106 SHPO and Tribal Consultation and Surveys

   f. NHIS and IPAC surveys

4. Contingency Planning. Work with Tribal and State Officials to develop remedial alternatives if winter work is not achievable.

2.2.1.2 Next Steps

- The EPA will continue to support Federal, Tribal, and State Organizations as necessary.

- EPA can provide water programs' support to the MPCA for longer term incident follow-up.

2.2.2 Issues

Black Water Lake is a large and robust wild rice wetland complex. This release presents risks to Tribal resources in ceded territory. Additionally, Tribes involved in the response have self-identified this to be an Environmental Justice (EJ) concern to their Tribes. Nearby sensitive areas were found to include Tribal burial grounds initiating NHPA and NAGPRA consultation related to any excavation or land disturbance work at the site.

2.3 Logistics Section

N/A

2.4 Finance Section

2.4.1 Narrative

EPA has not mobilized START or ERRS contractors for this response.

2.5 Other Command Staff

2.5.1 Safety Officer

OSC David Morrison acting as Safety Officer for EPA

2.5.2 Liaison Officer

OSC David Morrison acting as Liaison Officer for EPA

2.5.3 Information Officer

EPA Public Information Officer notified of incident and available to support media inquiries as necessary.

3. Participating Entities

3.1 Unified Command

Responsible Party led cleanup with regulatory (State) oversight.

3.2 Cooperating or Vested Interest Agencies

U.S. EPA
U.S. FWS
U.S. DOI
U.S. BIA
U.S. ACOE
MPCA
MN DNR
MN State Historic Preservation Office
MN OSA, State Archaeologist
MN Indian Affairs Council (MIAC)
Itasca County EM
City of Cohasset

3.3 Tribes with Interest in Itasca County, MN

Regional Interest

Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe

Fond Du Lac Band of Lake Superior Chippewa

Grand Portage Band of Lake Superior Chippewa

Leech Lake Band of the Minnesota Chippewa Tribe

Lower Sioux Indian Community, Minnesota

Mille Lacs Band of Ojibwe

Minnesota Chippewa Tribe

Prairie Island Indian Community

Shakopee Mdewakanton Sioux Community

Red Lake Nation

Upper Sioux Community, Minnesota

White Earth Band of Minnesota Chippewa

1854 Treaty Authority

National Interest

Apache Tribe of Oklahoma

Cheyenne and Arapaho Tribes, Oklahoma

Fort Belknap Indian Community of the Fort Belknap Reservation of Montana

Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan

Menominee Indian Tribe of Wisconsin

4. Personnel On Site

EPA OSC: David Morrison
EPA START: none
EPA ERRS: none

5. Definition of Terms

BEC – Boswell Energy Center. A coal-fired power plant in Cohasset, Minnesota

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

CWA - Clean Water Act

ERRS – Emergency and Rapid Response Services

FOSC – Federal On Scene Coordinator

HASP - Health and Safety Plan

IC – Incident Commander

IPaC – U.S. FWS Information for Planning and Consultation

LLBO – Leech Lake Band of Ojibwe

MIAC – Minnesota Indian Affairs Council

MNP – Minnesota Power, operator of the Boswell Energy Center

MPCA – Minnesota Pollution Control Agency

NAGPRA – Native American Graves Protection and Repatriation Act

NHIS – MN DNR Natural Heritage Information System

NHPA – National Historic Preservation Office

NRDAR – Natural Resources Damage Assessment and Restoration

OSC - Federal or State On Scene Coordinator

PRP - Potentially Responsible Party

RCRA - Resource Conservation and Recovery Act

SAP – Sampling and Analyses Plan

SHPO – State Historic Preservation Office

Sulfates - S04 compound, can typically remain in solution

Sulfides - sulfur mineral compounds, typically insoluble, known aquatic toxicity/H2S conversions.

Sulfites - a family of sulfur compounds including SO3/SO2/H2SO3

Supernate – A term for supernatant water or decanted water meaning the return water was drawing from the top of the pond to minimize solids.

START - Superfund Technical Assistance & Response Team

THPO – Tribal Historic Preservation Office

UC – Unified Command

USCG – United States Coast Guard

USEPA - United States Environmental Protection Agency

USFWS – United States Fish and Wildlife Service

6. Additional sources of information

6.1 Internet location of additional information/report
https://response.epa.gov/Minnesota Power Discharge
6.2 Reporting Schedule
Final Report

7. Situational Reference Materials

MPCA - Framework for developing and evaluating site-specific sulfate standards for the protection of wild rice (December 2023).

MPCA - Selected Water Quality Characteristics of Minimally Impacted Streams from Minnesota's Seven Ecoregions (February, 1993).

MN DNR Remote Sensing mapping project for wild rice (test version):
https://lspaete.users.earthengine.app/view/wildricetest1


UnitedRentals.com

Attachment B

Compliance with 40 CFR Part 257 Subpart D §257.102, §257.104 and §257.105 and NPDES/SDS Permit MN0001007

Closure Plan and Post-Closure Care Plan for Coal Combustion Residuals (CCR) Surface Impoundments and Landfill

Prepared for
Minnesota Power
Boswell Energy Center

Prepared by
Barr Engineering Co.

April 1, 2025

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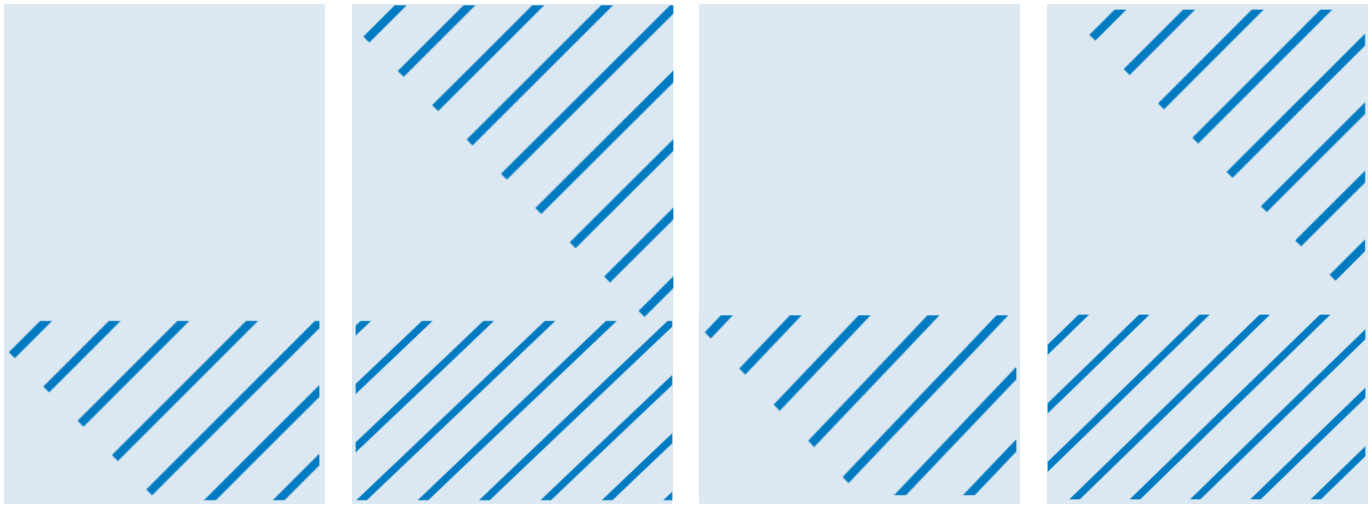

Certification

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR Part 257 Subpart D and the requirements of NPDES/SDS Permit MN0001007, attest that this Coal Combustion Residuals facility Closure Plan and Post-Closure Care Plan have been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR Part 257 Subpart D §257.102, §257.104, and §257.105 and NPDES/SDS Permit MN0001007. I certify that the plans are adequate for this facility and that procedures for recordkeeping and reporting have been established. I further certify that the design of the landfill and surface impoundment final cover systems as described in this Closure Plan are in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR Part 257 Subpart D §257.102.

I certify that this document was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Thomas J. Radue, P.E.
Barr Engineering Co.
MN PE #: 20951

April 1, 2025
Date

Revision	Date	Summary of Revisions
0	October 17, 2016	Initial Plan Placed in Operating Record
1	April 17, 2018	Updates to Status of Old Bottom Ash Pond
2	October 30, 2020	Updates to Pond 4 Closure Timing
3	November 16, 2022	Updates to Impoundment Cease Receipt Dates
4	September 08, 2023	Added Closure Schedule and Additional Closure Plan Detail
5	April 1, 2025	Updates to Address New NPDES/SDS Permit MN0001007 (2/1/2025)

Boswell Energy Center CCR Surface Impoundments and Landfill Closure Plan and Post-Closure Care Plan

April 1, 2025

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Abbreviations

BEC	Boswell Energy Center
CCR	Coal Combustion Residuals
CFS	Carbon-Free Standard
FGD	Flue Gas Desulfurization
LLDPE	Linear-Low-Density Polyethylene
MDNR	Minnesota Department of Natural Resources
MP	Minnesota Power
MPCA	Minnesota Pollution Control Agency
NPDES/SDS	National Pollutant Discharge Elimination System/State Disposal System
OBAP	Old Bottom Ash Pond
PUC	Public Utilities Commission
QPE	Qualified Professional Engineer
WSD	Wastewater Spray Dryer

1 Introduction

Coal Combustion Residuals (CCR) are subject to Federal Standards for Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments per 40 CFR Part 257 Subpart D (CCR Rule). Under §257.102 and §257.104, existing CCR surface impoundments and landfills are required to have a Closure Plan and Post-Closure Care Plan (Plan) certified by a qualified professional engineer (QPE). Further, Minnesota Pollution Control Agency (MPCA) National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit MN0001007 (issue date February 1, 2025) also sets forth facility closure and post-closure requirements. The purpose of this report is to document criteria for conducting closure and post-closure care of CCR units at the Minnesota Power Boswell Energy Center. This plan is periodically reviewed and amended as needed in accordance with §257.102(3) and §257.104(d)(3) and state permits.

Minnesota Power (MP) operates Boswell Energy Center (BEC) located in Cohasset, Minnesota. CCR at BEC was historically managed in a three-surface impoundment facility consisting of the Unit 3, Unit 4, and Bottom Ash Surface Impoundments and the CCR Landfill. Currently, the CCR Landfill continues to receive CCR and remains active, but the Unit 3, Unit 4, and Bottom Ash Surface Impoundments no longer receive CCR so are now inactive. These impoundments do retain ponded water remanent from past operations and from direct precipitation but are undergoing dewatering in conjunction with their closure. Because the Unit 4 and Bottom Ash Surface Impoundment have the potential to intermix waters through a permeable internal dike and because the overall closure footprint of these two impoundments can be minimized as described in subsequent sections, these two units are being closed in unison as the East Surface Impoundment. A formerly inactive surface impoundment, the Old Bottom Ash Pond (OBAP) south of the impoundments discussed herein, underwent closure by removal of CCR. The projected quantity of CCR to be managed annually in the CCR Landfill is presented in Table 1-1.

Table 1-1 Summary of CCR Generation Rates (cubic yards/year)

Source	Jan. 1, 2025 – Jan. 1, 2028	Jan. 1, 2028 – Dec. 31, 2029	Dec. 31, 2029 – Jan. 1, 2032	Jan. 1, 2032 – Dec. 31, 2034
Unit 3 Bottom Ash	17,500	17,500	0	0
Unit 3 FGD Solids	16,000	16,000	0	0
Unit 4 Fly Ash and FGD Solids	80,000	80,000	80,000	80,000
Unit 4 Bottom Ash	20,000	20,000	20,000	20,000
Totals	**133,500**	**133,500**	**100,000**	**100,000**

(1) Unit 3 fly ash generation is assumed to be 70,000 cubic yards per year, with all beneficially used offsite.
(2) Unit 4 ash generation rate projections based on 3.25 million mega-watt-hour annual electric power generation.
(3) Assumes cessation of power generation by Unit 3 at the end of 2029.
(4) Timing and quantities subject to change.

This document constitutes the Closure Plan and Post-Closure Care Plan for the remaining active CCR unit (landfill) and inactive Unit 3 and East Surface Impoundments under the CCR rule and the requirements of the NPDES/SDS permit. MP has previously submitted closure plans to the MPCA for these sites and has previously posted revisions 1 through 4 of this Closure and Post-Closure Care Plan on MP's publicly accessible CCR compliance website.

1.1 Closure Plan Requirements

Pursuant to the CCR Rule §257.102, the requirements of the closure plan are:

> *(b) Written Closure Plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The written closure plan must include, at a minimum:*
>
> *(b)(i) A narrative description of how the CCR unit will be closed in accordance with this section.*
>
> *(b)(ii) If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with paragraph (c) of this section.*
>
> *(b)(iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with paragraph (d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.*
>
> *(b)(iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.*
>
> *(b)(v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by paragraph (d) of this section at any time during the CCR unit's active life.*
>
> *(b)(vi) A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in paragraph (f)(1) of this section, the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under paragraph (f)(2) of this section.*

Within NPDES/SDS Permit MN0001007, the requirements for surface impoundment closure and reclamation are summarized as:

> *5.39.48* and *6.35.2 The Permittee shall submit to the MPCA for approval, within 60 days of permit issuance, an Ash Pond Final Closure Plan. This shall include a plan to provide a final cover system to minimize erosion and infiltration from the ash pond area, construction schedules, a description of the proposed cover, cover material types and quantities, maintenance schedules, provisions for perpetual maintenance, if required, and any other information that the MPCA requires to determine if the plan is adequate to minimize environmental impacts.*

1.2 Post-Closure Care Plan Requirements

Pursuant to the CCR Rule §257.104, the requirements of the post-closure plan are:

> *(d) Written post-closure plan—(1) Content of the plan. The owner or operator of a CCR unit must prepare a written post-closure plan that includes, at a minimum, the information specified in paragraphs (d)(1)(i) through (iii) of this section.*
>
> *(d)(i) A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed;*
>
> *(d)(ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and*
>
> *(d)(iii) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer, and notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator's publicly accessible Internet site.*

NPDES/SDS permit requirements for post-closure care are listed in the preceding section.

1.3 Minnesota Power Approach to Closure at Boswell Energy Center

MP works to comply with state and federal requirements when designing, permitting, constructing, and evaluating the structural integrity of CCR management facilities, as well as evaluating potential impacts to groundwater, surface water, and air. The preparation and sharing of this Closure Plan and Post-Closure Care Plan is a primary means of engaging regulators throughout the process and is intended to allow state and federal risk managers the opportunity to provide valuable input and guidance to ensure a successful operation and subsequent closure.

MP has been reducing its reliance on coal for electrical generation as part of its EnergyForward strategy, as outlined in its latest Integrated Resource Plan (IRP) filed on March 1, 2025 with the Minnesota Public Utilities Commission (PUC). If approved, this plan will add new renewable energy sources and energy storage, meet increasing demand for energy, reduce carbon emissions, and cease coal use at BEC by 2035. The plan aims to achieve a 90% renewable annual energy portfolio, demonstrating Minnesota Power's proposed actions for a sustainable path to compliance with Minnesota's Carbon-Free Standard (CFS) passed into law in 2023.

As more renewables and other energy sources have been incorporated into the MP fleet, the amount of CCR generated has decreased and is expected to continue to decrease over time. New environmental regulations, as well as Minnesota's PUC requirements, may further impact CCR generation rates. Further, with state and national energy drivers and outcomes changing rapidly, reliability concerns could require either additional, or less than anticipated, coal-based generation. Therefore, potential variations in CCR generation rates will continue to be considered during facility closure, including periodic review and updates to this plan.

In addition to potentially lowering the amount of CCR generated, MP also limits the amount of CCR landfilled by beneficially using CCR as allowed by regulations (see §257.53 Definitions for Beneficial Use and CCR Rule §257 Preamble). This does, or could, include encapsulated use in cement-based products, wallboard or other construction materials, agricultural amendments, and on-site use to facilitate surface grading, contouring, and stabilization for CCR unit closure. Implicit in this closure plan is that the Bottom Ash Disposal Area of the East Surface Impoundment will be clean closed by removing all bottom ash from there and using it to create the required slopes and grades to facilitate overall closure of the East Surface Impoundment. Furthermore, if allowed by the CCR Rule in the future, dry bottom ash from the Unit 3 and Unit 4 dry bottom ash management system described herein will be placed to facilitate closure of ash delta areas. Benefits of use of CCR materials include reducing overall footprint and volume of CCR management units, reducing the carbon footprint required to close CCR impoundments by reducing the need to import virgin materials to stabilize CCR and attain required closure grades, and facilitating efforts to close the units as soon as feasible. Wherever and whenever possible, MP will include use of CCR materials into closure plans so that stored CCR material can potentially be re-used. Environmental considerations will be adequately addressed for each CCR use determination for closure.

MP has also taken steps to reduce water discharges, especially those wastewaters in contact with CCR materials, by seeking to manage ash disposal and closure activities in such a way that minimizes the impact on surface water and groundwater. This includes water conservation practices, re-use/recycling of water within plant processes and for dust control, water treatment, and transition to flue gas desulfurization scrubber solids slurry dewatering and dry bottom ash management systems. This entails the following, all of which must be evaluated and weighed against regulatory, safety, reliability, and operational considerations:

- Managing engineered CCR landfills and impoundments to reduce contact of CCR with water that might otherwise be discharged to surface waters,
- Ensuring placement of CCR and associated waters is directed to the units or locations that represent the highest level of protection for the environment,
- Reducing water inventory in surface impoundments, and
- Any other measures that allow MP to manage its CCR in such a way that further reduces potential environmental impacts.

This Closure Plan and Post-Closure Care Plan is prepared with the objective of maintaining ongoing operation of the CCR Landfill to safely manage newly generated CCR, in parallel with timely dewatering and closure of the CCR surface impoundments. This Closure Plan and Post-Closure Care Plan seeks to ensure adequate time to properly dewater and close CCR units, to maintain adequate structural stability of surface impoundment embankments, allow re-use of CCR materials when allowed by the CCR Rule, and allow re-use of CCR-related wastewaters that otherwise might be discharged.

2 CCR Units

BEC has an active CCR landfill which receives all CCR wastes from the facility which are not beneficially used as previously described. Inactive units include the Unit 3 CCR Surface Impoundment and the East CCR Surface Impoundment. These CCR units are shown on Figure 1. As initiation of closure of the CCR surface impoundments:

- BEC placed a Notice of Intent to Close the Unit 4 Surface Impoundment (which is part of the East Surface Impoundment) in its Operating Record on October 30, 2020.
- BEC placed a Notice of Intent to Close the Unit 3 Surface Impoundment in its Operating Record on September 17, 2022.
- BEC placed a Notice of Intent to Close the Bottom Ash Surface Impoundment (which is part of the East Surface Impoundment) in its Operating Record on September 17, 2022.

BEC's Old Bottom Ash Pond (OBAP) has been closed by removal of CCR. BEC placed the Old Bottom Ash Pond Notification of Closure by Removal of CCR certification in its Operating Record on April 17, 2019. BEC's OBAP, which now consists of open meadow and a wetland area, was located south of the other CCR units that are shown on Figure 1.

As noted earlier, water in the Bottom Ash and Unit 4 Surface Impoundments can migrate through the permeable granular dike separating the units based on the water level differential in the units. This condition will persist throughout closure, and therefore the impoundments are managed as one unit for closure purposes and are collectively referred to as the East Surface Impoundment. The bottom ash area of the East Surface Impoundment is planned to be clean closed, utilizing the bottom ash on the Unit 4 ash delta to achieve the required closure grades and slopes, minimizing the overall closure footprint for the East Surface Impoundment and the overall site.

Completion of final closure of the East Surface Impoundment will be based on the closure initiation date of 2020 as previously established for Pond 4 and will be achieved as soon as technically feasible.

Table 2-1 identifies the maximum inventory of CCR on-site over the active life of each unit, the largest area of each CCR unit ever requiring cover, and the area of each CCR unit still requiring final cover. The following sections provide an overview of each CCR unit.

Table 2-1 Summary of CCR Quantities and Surface Area

Unit	Estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit (§257.102(b)(iv)) (cubic yards) [1]	Estimate of the largest area of the CCR unit ever requiring a final cover at any time during the CCR unit's active life (§257.102(b)(v)) (acres) [5]
CCR Landfill [1]	1,150,000	62 (49)
Unit 3 Surface Impoundment [2] [3] [4]	3,560,000	57 (57)
East Surface Impoundment [2] [4]	10,020,000	230 (182)

(1) Landfill estimate based on Nov. 8, 2024 ground survey, plus estimated capacity consumption Nov. 8, 2024 through February 2025.
(2) Estimates based on June 2019 bathymetric and ash delta topographic surveys in Unit 3 Surface Impoundment and Unit 4 and Bottom Ash Disposal Areas, 2021 bathymetric surveys in Unit 3 Surface Impoundment and Unit 4 Disposal Area, and 2023 bathymetric survey in Bottom Ash Disposal Area. Estimates rounded to nearest 10,000 cubic yards.
(3) The Unit 3 and East Surface Impoundments are inactive and do not receive newly generated CCR.
(4) Excludes areas targeted for clean closure.
(5) Values in parenthesis, rounded to the nearest acres, are areas remaining to be final covered as of publish date of this Plan.

2.1 Unit 3 Surface Impoundment

The Unit 3 Surface Impoundment is located immediately northwest of the plant and is part of the inactive CCR management system at BEC. The Unit 3 Surface Impoundment formerly received wet Unit 3 fly ash and flue gas desulfurization (FGD) scrubber solids slurry. The impoundment surface area is approximately 142 acres, of which approximately 85 acres will be clean closed by consolidating CCR into the northern portion of the impoundment footprint, placing final cover on the CCR, then grading and vegetating the natural soil surface exposed by the CCR relocation. This CCR surface impoundment, as well as the adjacent CCR surface impoundment subsequently described, was constructed in 1980. The Unit 3 Surface Impoundment ceased receipt of CCR and initiated closure on September 17, 2022.

2.2 East Surface Impoundment

The East Surface Impoundment is located immediately northwest of the plant and consists of the Unit 4 and Bottom Ash Disposal Areas. Through mid-August 2015, the Unit 4 Disposal Area regularly received sluiced Unit 4 fly ash and scrubber solids, and sluiced Unit 1 and 2 fly ash. Units 1 and 2 were retired in 2018 as part of MP's EnergyForward strategy. Unit 4 dry ash management systems became operational August 14, 2015; subsequently, the Unit 4 disposal area no longer received sluiced Unit 4 scrubber solids and sluiced Unit 1 and 2 fly ash but did intermittently receive co-mingled dry fly ash and scrubber solids from Unit 4 and dry fly ash from Unit 1 and 2 through 2018, and some bottom ash in 2019, relocated from the Bottom Ash Disposal Area. The Unit 4 Disposal Area occasionally received Unit 3 FGD scrubber solids, primarily to maintain impoundment water levels to the desired elevation in the Unit 3 Surface Impoundment. The Unit 4 Disposal Area also received other low-volume wastes and underwent periodic recovery and beneficial use of cenospheres. The Unit 4 Disposal Area surface area is approximately 289 acres, 59 acres of which are planned for clean closure. Closure of the exposed ash delta in this section of the impoundment has been initiated. Approximately 19.6 acres of the exposed delta were closed in 2020, 11.5 acres were closed in 2022, with an additional 15.8 acres of the delta area closed in 2023, as shown rounded to the nearest acre on Figure 1.

The other component of the East Surface Impoundment is the Bottom Ash Disposal Area. This section of the East Surface Impoundment formerly received bottom ash from BEC Units 3 and 4 and non-CCR

wastewater. The surface of the Bottom Ash Disposal Area is approximately 62 acres. This area is planned for clean closure. The Bottom Ash Disposal Area ceased receipt of non-CCR waste streams in November 2021. Placement of all remaining CCR waste streams in the Bottom Ash Disposal Area ceased and closure was initiated on September 17, 2022.

2.3 CCR Landfill

The CCR Landfill is located immediately northwest of the plant. The landfill regularly receives dry scrubber solids and fly ash from Unit 4, occasionally but rarely fly ash from Unit 3, Unit 3 dewatered FGD solids, and Unit 3 and Unit 4 dewatered bottom ash. Most of the Unit 3 fly ash is beneficially used off-site as a cement replacement in the manufacture of ready mix and precast concrete. The surface area of the CCR Landfill is approximately 62 acres. This landfill is closed incrementally as areas are filled to final grade. Approximately 7 acres of the landfill was closed in 2018, with an additional 6 acres of the landfill closed in 2024, as shown on Figure 1.

3 Closure Plan

Closure Plan requirements are listed in Section 1.1 of this Closure Plan and Post-Closure Care Plan document. The Closure Plan must be integrated with the ongoing operations plan for CCR management at BEC. Future operations will require:

- Continued beneficial use of dry CCR and landfilling of dry CCR that is not beneficially used,
- Use of bottom ash on site for closure material and permanent storage of bottom ash that is not used for closure,
- Future (potentially) beneficial use of dewatered FGD scrubber solids and permanent storage of FGD scrubber solids that are not beneficially used, and
- Ongoing compliance with MPCA and MDNR permit requirements in parallel with CCR Rule compliance.

Accomplishing CCR Unit closure requirements while maintaining ongoing plant operations and CCR management will entail removal of remaining water ponded in the Unit 3 and East Surface Impoundments and modifications to each existing CCR Unit as subsequently described.

3.1 Surface Impoundment Water Removal

The surface impoundment closure schedule is affected by the quantity of water currently retained within each impoundment. In November 2024, bathymetric surveys of each impoundment were conducted, with the corresponding water surface elevation at the time of survey and the resulting water volume presented in Table 3-1.

Table 3-1 Surface Impoundment Water Volumes

Surface Impoundment	Water Surface Elevation at Time of Bathymetric Survey (ft., amsl) (1)	Ponded Water Volume at Time of Bathymetric Survey (gallons) (2)
Unit 3	1306.6	95,000,000
East Surface Impoundment – Unit 4 Disposal Area	1315.1	690,000,000[1]
East Surface Impoundment – Bottom Ash Pond	1300.3	51,000,000

(1) Represents the aggregation of the water volume in the main Unit 4 Disposal Area at the eastern end of the surface impoundment with the water volume from several small, isolated ponding areas atop CCR fill areas within the Unit 4 Disposal Area.
(2) Excludes volume of pore water that may drain from CCR in the impoundment as the water surface drops during impoundment dewatering.

Removal of ponded water, and any pore water draining into the pond areas during their dewatering, currently is and/or is planned to be by:

- Pond water return to the plant site for use in plant site operations and air quality control systems.
- Pond water return to the plant site for evaporation via the permitted wastewater spray dryer (WSD).
- Pond 3 water use for dust emissions control at the CCR Landfill.

- Unit 4 Disposal Area water use for ash conditioning at the on-site ash silos prior to delivery of the moisture conditioned ash to and placement in the CCR Landfill.

There is currently no NPDES-permitted discharge of pond water occurring. MP continues to evaluate additional pond water consumption and treatment options. If additional viable options are identified, modifications of affected permits will be pursued. Currently, the pond dewatering rate controls the pond closure schedule. The closure sequencing (size and/or location of closure areas) may periodically change if the pace of pond dewatering changes.

3.2 Closure of Unit 3 and East Surface Impoundments

The Unit 3 and East Surface Impoundments have liners meeting past regulatory requirements and exceed the original performance standards of the April 17, 2015 CCR Rule (40 CFR Part 257 §257.71) clay liner requirements (Liner Evaluation, Barr 2016). In August 2020, the CCR Part A Final Rule ("Part A Rule") was published, requiring use of composite liner systems for CCR surface impoundments. Although the Unit 3 and East Surface Impoundment have liners that meet previous regulatory requirements and performance standards, they are not composite liners, therefore requiring MP to cease placing newly generated CCR and non-CCR waste streams in the units.

The Part A Rule required impoundments that do not meet the liner requirements to cease receipt of CCR and non-CCR waste streams as soon as technically feasible, but not later than April 11, 2021, and then close the CCR units in accordance with the requirements of §257.102. However, 40 CFR Part 257 §257.103 of the Part A Rule grants facilities the option to submit a demonstration to EPA for an extension of the cease receipt deadline of April 11, 2021. MP submitted a "no alternative capacity demonstration" to EPA on November 16, 2020, requesting an extension of the cease receipt date for the Unit 3 Pond and Bottom Ash Disposal Area to spring 2022. The submittal detailed plans to convert BEC Unit 3 FGD scrubber solids management system and Unit 3 and Unit 4 bottom ash management systems from wet sluicing to dry handling to eliminate the need for impoundments, as well as construction of a new non-CCR wastewater pond. On January 11, 2022, EPA deemed MP's demonstration complete. Per EPA's request, on February 28, 2022, MP provided EPA with updates to project timelines and cease receipt dates contained in its November 16, 2020 Part A no alternative capacity demonstration. The dry conversion projects are complete, and MP ceased receipt of CCR on September 17, 2022. MP also withdrew its Part A Application on September 18, 2022.

MP assessed the CCR Rule requirements; the outcomes of this assessment and the changing CCR generation rate and mix (dry CCR vs. wet CCR) at BEC results in closure of surface impoundments. Considerations that control closure approach and timing are presented in Table 3-2.

Post-dry conversion, dewatered bottom ash from Unit 3 and Unit 4 and dewatered FGD scrubber solids are landfilled on-site and/or beneficially used as allowed by the CCR rule and state regulations.

Per previous sections of this Closure Plan, closure of the exposed ash delta in the East Surface Impoundment has been initiated and will continue in subsequent years, consistent with considerations presented in Table 3-2.

Table 3-2 Factors Affecting Surface Impoundment Closure Approach and Timing

Unit 3 Surface Impoundment [1] [2]	East Surface Impoundment [1] [2]	
	Unit 4 Disposal Area	Bottom Ash Disposal Area
The presence of up to an estimated 95,000,000 gallons of liquid within the Unit 3 Surface Impoundment that must be removed to facilitate closure.	The presence of up to an estimated 690,000,000 gallons of liquid within the Unit 4 Disposal Area that must be removed to facilitate closure.	The presence of up to an estimated 51,000,000 gallons of liquid within the Bottom Ash Disposal Area that must be removed to facilitate closure.
Dewatering rates, which are dependent on the operation/water consumption of the Unit 4 generating unit.		
The need for incremental closure to facilitate redirection of clean stormwater run-off.		
The large surface areas of the Unit 3 and East Surface Impoundments and the large quantity of construction material required for closure.		
The flat slope (0.5% to 1.0%) of the Unit 3 Surface Impoundment and Unit 4 Disposal Area ash deltas and the need to increase final slope to facilitate surface water runoff after closure.		Use of bottom ash as a construction material for closure.
Limited construction season duration in the region of the country in which BEC is located.		

(1) Estimates of liquid volumes remaining are rounded to the nearest 1,000,000 gallons and are current as of November 2024.
(2) Liquid volume estimates are pond water volumes only. Not included is the water in the CCR pore spaces that may drain into the ponds and require management as part of pond dewatering and closure.

At the time that surface impoundment closures were initiated, the primary activities presented in Table 3-3 ensued or will ensue.

Table 3-3 Surface Impoundment Closure Activities

Unit 3 Surface Impoundment	East Surface Impoundment	
	Unit 4 Disposal Area	Bottom Ash Disposal Area
Unit 3 and East Surface Impoundments water consumption, reuse, and/or treatment and discharge.		
In-place closure of existing exposed CCR delta area within the northeastern portion of the Unit 3 Surface Impoundment.	In-place closure of exposed CCR delta area within the western portion of the disposal area.	On-site use of bottom ash to provide construction traffic access and support impoundment closure activities.
Consolidation (moving CCR northward to smaller footprint for cover) and reclamation of existing CCR within the southern portion of the Unit 3 Surface Impoundment to the extent practicable.	Consolidation (moving CCR westward to smaller footprint for cover) of existing CCR within the central and eastern portion of the disposal area to the extent practicable.	Clean closure of Bottom Ash Disposal Area by using bottom ash in impoundment closure.
The ash delta in the northeastern portion of the Unit 3 Surface Impoundment will be sloped to facilitate surface water runoff from the final cover. Once cover soils are placed, the area will be vegetated and surface water runoff controls, sedimentation basins, and other best practices for erosion and sediment control will be utilized to facilitate discharge of clean surface water runoff from the closed CCR Unit.	The ash delta in the western portion of the disposal area will be sloped to facilitate surface water runoff from the final cover. Once cover soils are placed, the area will be vegetated and surface water runoff controls, sedimentation basins, and other best practices for erosion and sediment control will be utilized to facilitate discharge of clean surface water runoff from the closed area.	Sloping of clean closed areas to facilitate surface water runoff. Clean closure will include regrading and vegetation establishment on re-exposed natural soils at the base of the disposal area.

Unit 3 Surface Impoundment	East Surface Impoundment	
	Unit 4 Disposal Area	Bottom Ash Disposal Area
To preclude development of future pond areas, except as may be specified for sediment control, breaches will be made in the southern and/or western embankment. Excavated embankment materials will be utilized as needed for on-site CCR Unit closure activities.	To preclude development of future pond areas, except as may be specified for sediment control, breaches will be made in the northeastern and/or eastern embankment. Excavated embankment materials will be utilized as needed for on-site CCR Unit closure activities.	To preclude development of future pond areas, except as may be specified for sediment control, breaches will be made in the perimeter embankment. Excavated embankment materials will be utilized as needed for on-site CCR Unit closure activities.

Portions of the surface impoundments are designated for clean closure. To date, CCR relocation from these areas to consolidate CCR and reduce impoundment footprints has been by hydraulic dredging in the eastern portion of the Unit 4 Disposal Area and mechanical dredging in the Bottom Ash Disposal Area. Hydraulic or mechanical dredging and/or mechanical excavation after impoundment dewatering will be used for remaining CCR excavation and relocation.

Portions of the CCR in the Unit 3 and East Surface Impoundment are saturated and potentially thixotropic (subject to liquefaction when mechanically manipulated). Therefore, it may be necessary to utilize a solidifying admixture for mixing with the saturated CCR to improve its handling characteristics, strength, and stability prior to its relocation, and to facilitate final sloping and contouring of the CCR. If allowed by the CCR rule, Unit 3 and/or Unit 4 dry CCR would be utilized for this purpose. Additionally, bottom ash contained within the East Surface Impoundment has been and will continue to be used for this purpose (within the East Surface Impoundment only). If Unit 3 and/or Unit 4 dry CCR material use is not allowed, an alternate admixture (and/or CCR placement approach) will be identified if needed. Once mixed, the CCR mixture will be transported and placed above the CCR delta on the northeastern portion of the Unit 3 Surface Impoundment and/or within the dewatered western portion of the East Surface Impoundment. Placement of the mixed CCR at these locations will aid in achieving adequate slope for the final cover that will subsequently be placed. Alternatively, in place of using an admixture to solidify saturated CCR, mechanical dewatering equipment and/or spreading and drying CCR on areas of the delta above water could be utilized to stabilize CCR.

Confirmation of CCR removal will be visual. CCR will be removed until the natural soils below the CCR are encountered. The natural soils underlying the site, typically brown to dark brown clays and silts and occasionally black peat, tend to be readily distinguishable from the gray and light gray and tan CCR materials. Once cleaned, areas undergoing clean closure will be revegetated. This will generally occur over the southern portion of the Unit 3 Surface Impoundment, over the eastern portion of the Unit 4 Disposal Area of the East Surface Impoundment, and in the Bottom Ash Disposal Area of the East Surface Impoundment.

The Unit 3 and East Surface Impoundments' delta areas will be incrementally covered. If allowed by the CCR rule, dry ash from Unit 4 and possibly Unit 3 will be beneficially used as needed to ultimately facilitate sloping and stabilization for closure of the entire Unit 3 and East Surface Impoundment ash deltas. The fill plan is intended to make the best possible use of dry or dewatered CCR as the material used to grade the existing ash deltas and to prepare them for final closure. If use of dry ash is not allowed, then imported soils will be used. CCR will be consolidated to minimize cover area to the extent possible. For those portions of the Bottom Ash Disposal Area of the East Surface Impoundment designated for clean closure, mechanical dredging may be used for bottom ash removal and/or

consolidation prior to dewatering. If beneficial to facilitate closure after completion of impoundment dewatering, mechanical equipment will be utilized for the remainder of CCR excavation and relocation.

For the Unit 3 and East Surface Impoundments, the cover over any CCR left in place consists of (in closed areas) and will consist of a low permeability hydraulic barrier layer and suitable overlying granular cover and rooting zone and topsoil cover soils. Once cover soils are placed, and consistent with cover construction to date, the covered areas will be vegetated and surface water runoff controls, sedimentation basins, and other best practices for erosion and sediment control will be utilized to facilitate discharge of clean surface water runoff from the closed CCR Units.

Closure of the Unit 3 and East Surface Impoundments will:

- Achieve incremental surface impoundment closure,
- Minimize erosion from the cover,
- Provide sedimentation for surface water runoff,
- Provide for surface discharge of non-contact stormwater,
- Restore cleaned closed areas for future development or green space, and
- Minimize overall impacted footprint by consolidating CCR into smaller areas.

To provide for the direct discharge of stormwater from filled and closed areas to surface water, runoff from the closed areas will be segregated from as -yet uncovered ash fill areas by placing a barrier layer over ash fill materials and by using surface water runoff control berms, ditches, and sedimentation basins. Long-term erosion control will be provided by vegetative cover and a series of side slope intersection dikes/ditches and conveyance pipes. These features will help prevent soil erosion along closed slopes by intercepting and conveying runoff from the closed slopes to perimeter drainage ditches.

3.3 Closure of CCR Landfill

The existing CCR Landfill, located northwest of the plant, will continue to receive CCR from Unit 4 and from Unit 3 when CCR is not beneficially used. Unit 4 fly ash may also be beneficially used, rather than landfilled, if appropriate beneficial uses are found that meet regulatory, technical, and economic requirements.

The existing CCR Landfill is subject to MPCA NPDES/SDS permit conditions and is undergoing incremental development and closure per this Closure Plan and Post-Closure Care Plan. This generally entails placement of CCR in the northern and western portion of the landfill, progressing southward and eastward over time, with cover then placed on filled portions of the landfill, progressing as areas reach permitted fill grades. Cover design for the Unit 3 and East Surface Impoundments, and for the CCR Landfill, is described in the following section.

3.4 Cover Design and Material Types and Quantities

Final cover design for CCR Unit closure (for portions of units with CCR remaining, not clean closed) includes the following primary components:

- Hydraulic Barrier (to preclude infiltration of precipitation); geomembrane or alternative hydraulic barrier

- Drainage Layer (to facilitate lateral drainage of infiltrated precipitation)

- Topsoil and Rooting Zone Cover Soils (to support grassed cover surface)
- Grass Cover (to minimize erosion and support evapotranspiration of precipitation)
- Surface Water Runoff Controls (to divert clean surface water runoff to select discharge locations)

Figure 2 provides a schematic of a typical final cover system for the close-in-place areas of the CCR surface impoundments and for the CCR landfill. Some variations from this typical section may occur, such as variation in rooting zone and topsoil thickness. For the landfill, the finished surface of the placed CCR typically provides a suitable foundation layer for the geomembrane, such that the buffer layer typically is not used below the geomembrane. Further, as noted in the summary list above but not depicted in Figure 2, surface water runoff controls are also utilized, including drainage ditches, piping, catch basins, and riprapped drainage ways as needed to convey clean surface water runoff to select discharge locations while also protecting cover soils from erosion. Mulch blanket or disc-anchored mulch is placed to temporarily control erosion until the vegetative cover becomes established and erosion-resistant.

Alternative cover designs that may be considered over the course of closure include:

- Alternative manmade or natural hydraulic barrier materials
- Alternative drainage layer and vegetated cover systems

This closure system meets the requirements of §257.102(d). It will:

(i) Control, minimize or eliminate, to the maximum extent feasible, post- closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated runoff to the ground or surface waters or to the atmosphere;

(ii) Preclude the probability of future impoundment of water, sediment, or slurry;

(iii) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure period;

(iv) Minimize the need for further maintenance of the CCR unit; and

(v) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

The closure system will further meet the requirements of §257.102(d)(3)(i) or §257.102(d)(3)(ii), summarized as follows:

<u>For §257.102(d)(3)(i)</u>

(A) The permeability of the final cover system will be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 x 10^{-5} cm/sec, whichever is less.

(B) The infiltration of liquids through the closed CCR unit will be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.

(C) The erosion of the final cover system will be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.

(D) The disruption of the integrity of the final cover system will be minimized through a design that accommodates settling and subsidence.

For §257.102(d)(3)(ii)

(A) The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraphs (d)(3)(i)(A) and (B) of this section.

(B) The design of the final cover system must include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in paragraph (d)(3)(i)(C) of this section.

(C) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.

The cover system depicted on Figure 2 meets the requirements stated above, including providing the necessary soil cover thickness, providing the geomembrane as a barrier to infiltration, using a Linear-Low-Density Polyethylene (LLDPE) geomembrane (or engineer-approved equivalent) which is tolerant of strain imposed by differential settlement of the closed CCR surface, if settlement occurs, and supporting establishment of an erosion-resistant vegetated cover layer to protect from wind and water erosion.

Per Figure 1, portions of the East Surface Impoundment and the Unit 3 Surface Impoundment delineated for closure of CCR in place are segmented for phased closure. These impoundments are inactive and segments will receive final cover as pond dewatering continues and surface areas are final graded and prepared for final cover construction. The CCR landfill is also segmented for phased closure. The landfill is active, with segments being closed as they are filled to final grade with newly generated CCR. Any water treatment residuals derived from treating surface impoundment waters in conjunction with their dewatering will be stabilized and landfilled in the existing CCR landfill. The size and location of closure segments will periodically be adjusted as needed to accommodate changing in-field conditions (e.g., landfill areas filled to grade more quickly or slowly than planned, surface impoundments dewatered more quickly or slowly than anticipated). Table 3-4 through Table 3-6 present the current phased closure sequencing, closure acreages (rounded to nearest whole acre), and the estimated quantities of the primary closure construction materials.

Table 3-4 East Surface Impoundment Closure Sequencing and Construction Material Quantities

Phase (Year)	Area (acres)	Geomembrane Qty (sq. ft.)	Drainage Layer Qty (cu. Yd.)	Rooting Soil Qty (cu. Yd.)	Topsoil Qty (cu. Yd.)
1 (2020)	20	880,000	33,000	22,000	11,000
2 (2022)	12	530,000	20,000	13,000	7,000
3 (2023)	16	700,000	26,000	18,000	9,000
4 (2025)	20	880,000	33,000	22,000	11,000
5 (2026)	23	1,010,000	38,000	25,000	13,000
6 (2027)	32	1,400,000	52,000	35,000	18,000
7 (2028)	23	1,010,000	38,000	25,000	13,000
8 (2029)	17	750,000	28,000	19,000	10,000
9 (2030)	19	830,000	31,000	21,000	11,000
10 (2031)	20	880,000	33,000	22,000	11,000
11 (2032)	16	700,000	26,000	18,000	9,000
12 (2034)	12	530,000	20,000	13,000	7,000
Totals	**230**	**10,100,000**	**378,000**	**253,000**	**130,000**

Table 3-5 Unit 3 Surface Impoundment Closure Sequencing and Construction Material Quantities

Phase (Year)	Area (acres)	Geomembrane Qty (sq. ft.)	Drainage Layer Qty (cu. Yd.)	Rooting Soil Qty (cu. Yd.)	Topsoil Qty (cu. Yd.)
1 (2029)	27	1,180,000	44,000	30,000	15,000
2 (2030)	30	1,310,000	49,000	33,000	17,000
Totals	**57**	**2,490,000**	**93,000**	**63,000**	**32,000**

Table 3-6 CCR Landfill Closure Sequencing and Construction Material Quantities

Phase (Year)	Area (acres)	Geomembrane Qty (sq. ft.)	Drainage Layer Qty (cu. Yd.)	Rooting Soil Qty (cu. Yd.)	Topsoil Qty (cu. Yd.)
1 (2017)	7	310,000	12,000	8,000	4,000
2 (2024)	6	270,000	10,000	7,000	4,000
3 (2027)	7	310,000	12,000	8,000	4,000
4 (2029)	8	350,000	13,000	9,000	5,000
5 (2031)	8	350,000	13,000	9,000	5,000
6 (2032)	8	350,000	13,000	9,000	5,000
7 (2034)	9	400,000	15,000	10,000	5,000
8 (2035)	9	400,000	15,000	10,000	5,000
Totals	**62**	**2,740,000**	**103,000**	**70,000**	**37,000**

3.5 Closure Area Inspections and Maintenance

MP and its independent consultants periodically inspect the existing surface impoundment interior and perimeter embankments, associated pumping and piping systems, and closed and covered areas of the East Surface Impoundment and CCR Landfill. Table 3-7 provides a summary of primary inspection items and frequency of inspection.

Table 3-7 Surface Impoundment and CCR Landfill Inspection Items Summary

Surface Impoundment Inspection Items and Frequencies		CCR Landfill Inspection Items and Inspection Frequencies	
Pond Water Levels	• Continuously via Automated Water Level Monitoring System • Visually During Daily Inspections by Operations Team	• On Operational Fill Area – CCR Fill Sequencing/Geometry and Fill Compaction, Erosion and Dust Control, and Surface Water Run-on and Run-off Control	• Daily by Operations Team • Weekly by Operations Team • Periodic by Operations Manager • Annually by Independent Consultant
Interior and Exterior Embankment Slope Conditions (erosion, stability, vegetation conditions, signs of seepage, animal burrows, signs of movement and cracking, settlement, tree growth)	• Daily by Operations Team • Periodic by Operations Manager • Monthly During Instrumentation Monitoring • Annually by Independent Consultant	• On Closed and Covered Landfill Areas – Slope Stability, Vegetation Quality and Density, and Erosion and Surface Water Runoff Control	• Daily by Operations Team • Weekly by Operations Manager • Annually by Independent Consultant

Post-closure care of the facility is described in Section 5. While portions of the facility remain operational, in addition to routine facility inspections, the closed areas of the CCR Landfill and East Surface

Impoundment are subject to routine maintenance. The maintenance tends to be observation/inspection driven. The primary occurrences of this are:

- Mowing: Exterior slopes of perimeter embankments and the closed and covered areas of the CCR Landfill and East Surface Impoundment are grass-covered. Based on year-by-year growing conditions, these areas are mowed to limit grass height, to limit establishment of shrubs and trees, and to limit cover for burrowing animals like groundhogs that can disrupt the integrity of the closure systems.

- Tree Removal: While establishment of trees on embankment slopes and covered areas often have limited detrimental effects on system performance, any trees that do establish are periodically removed so as not to interfere with routine maintenance activities such as mowing, and so as not to disrupt embankment and cover system performance in the long term, such as if large trees toppled or decayed and created zones of reduced cover performance.

- Erosion Control: Erosion tends to occur most frequently during initial embankment and cover construction before vegetation becomes established. Any areas of erosion identified during the periodic inspections noted in Table 3-7, particularly those that if left unmitigated would lead to even more significant damage, are promptly repaired. In conjunction with erosion control, any drainage channels that have sediment deposits to the extent they interfere with ditch performance are cleaned and restored to their design condition.

- Animal Control: The perimeter embankments of the surface impoundments are prone to occasional inhabitation by groundhogs that develop burrows into the embankments. Because the embankment slopes are relatively flat creating robust embankment geometry, because the surface impoundments are clay lined, and because burrow depths tend to be shallow relative to overall embankment geometry, such burrows are not deemed a significant threat at this facility. However, groundhog burrows that are identified during inspections typically are filled and the grass mowed to discourage groundhog inhabitation of the surface impoundment embankments.

Other as-needed or semi-routine maintenance items include cleaning and general maintenance of site access roads.

3.6 Recordkeeping

§257.102(b)(2), Written closure plan, states*, "No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written closure plan."* The plan is considered complete when it is placed in the facility operating record.

Since October 17, 2016, MP has maintained a copy of the most recent version of the Closure Plan in the facility's operating record. According to §257.102(b)(3), MP *"must amend the written closure plan whenever: there is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or before or after closure activities have commenced, or unanticipated events necessitate a revision of the written closure plan."* MP *"must amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, the owner or operator must amend the current closure plan not later than 30 days following the triggering event."* The amended plan is considered complete when it has been placed in the facility's operating record.

MP will retain a copy of each applicable file derived from this Closure Plan *"for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study,"* in accordance with §257.105(b); however, *"only the most recent closure plan must be maintained in the facility's operating record irrespective of the time requirement specifie*d" in §257.105(b).

3.7 Reporting

When successive amendments to this Closure Plan are placed in the operating record, they will be made publicly available on the MP CCR website in compliance with §257.107(i)(4), Publicly Accessible Internet Site Requirements. Additionally, to comply with 40 CFR §257.106(i)(4), Notification Requirements, MP will "*notify the State Director [see Post-Closure Care Plan Section 5.7]… when [the closure plan] has been placed in the operating record and on the owner or operator's publicly accessible internet site."*

4 Closure Schedule

Anticipated phased closure timing for the East Surface Impoundment, the Unit 3 Surface Impoundment, and the CCR Landfill is shown on Figure 1 and in Table 3-4 through Table 3-6. The overall schedule of closure activities since inception of the CCR Rule are summarized in Table 4-1.

Table 4-1 Surface Impoundment Closure Schedule

Milestone	Unit 3 Surface Impoundment	East Surface Impoundment		Old Bottom Ash Pond	CCR Landfill
		Unit 4 Disposal Area	Bottom Ash Disposal Area		
Final Receipt Date of CCR and non-CCR Waste Streams	September 17, 2022 *See Note 1*	September 30, 2020	September 17, 2022 *See Note 1*	Inactive at Start of CCR Rule *See Note 2*	Landfill Operations Continuing to 2035
Initiate Incremental Closure & Reclamation – within 30 Days of Final Receipt	Initiated September 17, 2022	Initiated in June 2020	Initiated September 17, 2022	Oct. 2016 *See Note 2*	Incremental Closure Initiated April 2018, Concurrent with Ongoing Landfill Operations
Development of Detailed Closure Plans	Rev. 5 April 2025	Rev. 5 April 2025	Rev. 5 April 2025	n/a	Rev. 5 April 2025
Closure, and Closure Monitoring & Documentation	September 17, 2022 to March 31, 2031	Through September 30, 2035	September 17, 2022 to March 31, 2033	Oct. 2016	Initiated April 2018 – Ongoing
Closure Activities Complete	March 31, 2031 or as otherwise required by the CCR Rule	September 30, 2035, or as otherwise required by the CCR Rule *See Note 4*	March 31, 2033, or as otherwise required by the CCR Rule	*See Note 3*	2 years after end of life of landfill (end of life currently projected as 2035) or as otherwise required by the CCR Rule
End of Post-closure Period	30 years after Closure is complete or as otherwise required by the CCR Rule	30 years after Closure is complete or as otherwise required by the CCR Rule	30 years after Closure is complete or as otherwise required by the CCR Rule	NA (for clean closure)	30 years after Closure is complete or as otherwise required by the CCR Rule

Notes:
(1) Notification of intent to initiate closure made on September 17, 2022.
(2) Notification of intent to initiate closure of Old Bottom Ash Pond made on December 15, 2015.
(3) Notification of closure of Old Bottom Ash Pond made on April 17, 2019.
(4) Completion date of closure activities for East Surface Impoundment assumes use of initial 5-year period and up to five subsequent 2-year extensions due to large quantity of water requiring to be dewatered to facilitate closure activities.

This phased closure schedule is updated as appropriate with each amendment to (revision of) this closure plan. Figure 3 provides step-by-step activities to accomplish the CCR surface impoundment closures. Primary activities include:

- Impoundment Dewatering: Table 3-1 reports the approximate quantity of water contained in each surface impoundment on the date noted. Impoundment dewatering in each impoundment is

ongoing and will continue until dewatering is complete. Primary methods of water consumption are listed in Section 3.1. Further, portions of the CCR surface impoundments that have final cover in place (part of the CCR landfill and Unit 4 Disposal Area) are designed to shed non-contact clean surface water to on-site sediment control basins and then to the environment. This avoids adding clean surface water runoff to the water inventory in the surface impoundments, such that the only water additions to the impoundments are by direct precipitation.

- Clean Closure: Per Figure 1 and Figure 3, portions of each surface impoundment are planned for clean closure, which consists of completion of impoundment dewatering, followed by removal of CCR down to natural pre-existing grade. CCR removed for clean closure is consolidated into areas that will subsequently receive final cover. Clean closure will occur in portions of the Unit 3 Surface Impoundment and in the Unit 4 Disposal Area of the East Surface Impoundment. All of the Bottom Ash Disposal Area of the East Surface Impoundment will also be clean closed.

- Footprint Consolidation: Reduction of the areas requiring final cover is achieved by CCR fill area footprint consolidation. This includes hydraulic dredging of CCR from the eastern portion of the Unit 4 Disposal Area to relocate it to and consolidate it with CCR in the western portion of the Unit 4 Disposal Area. This dredging was completed in 2021. Some relocation of CCR from the southern portion of the Unit 3 Surface Impoundment to the northern portion of the Unit 3 Surface Impoundment will also be performed to reduce the overall area of final cover required.

- Closure Design, Bidding, Construction, and Documentation: Per Figure 1 and Figure 3, the surface impoundment areas requiring final cover will be constructed in phases, with each phase generally subdivided into design, bidding, and construction. The phased cover approach is driven in part by the limited duration of each construction season in northern Minnesota. It is preferable to fully complete a phase of cover and begin shedding clean surface water runoff, instead of having larger areas of final cover potentially be incomplete for a longer duration. The phased cover approach also accounts for the need for impoundment dewatering to advance sufficiently ahead of efforts to construct cover atop areas recently dewatered.

- Documentation: The final activity for each phase of closure is documentation of closure, whether for clean closure or close-in-place. Documentation generally entails confirmation during construction that CCR is removed from planned clean closure areas and that construction materials and completed construction comply with plans and specifications. Reports are prepared that contain photographs, test data, survey data, and all other phase-by-phase closure data.

Figure 1 and Figure 3 will periodically be updated to reflect any changes in the planned closure schedule.

5 Post-Closure Care Plan

This Post-Closure Care Plan has been developed to satisfy the requirements of §257.104, written Post-Closure Care Plan, and MPCA NPDES permit requirements applicable to MP's CCR surface impoundments and CCR Landfill at BEC. The requirements of the NPDES permit and §257.104 are listed in Section 1.1 of this Closure Plan and Post-Closure Care Plan document. MP is responsible for the post-closure of the site in accordance with state-issued permits and §257.104. The post-closure period begins on the date of final closure certification and continues for a period of 30 years from the date of final closure of the entire CCR unit. Areas undergoing clean closure are excluded from this plan. The following subsections describe the inspection, maintenance, and monitoring activities required during the post-closure period.

5.1 Inspection

In the spring and fall of each year following final closure of a CCR unit, a routine inspection of the site will be performed and include the following activities:

- Evaluate settlement of final cover
- Inspect for soil loss from erosion and examine the quality of vegetation
- Inspect the groundwater monitoring system for damage or degradation
- Inspect leachate collection systems (if any) for damage or degradation
- Inspect the drainage control facilities for evidence of erosion or accumulation of sediment
- Evaluate the effectiveness of site security procedures
- Inspect facility dikes for damage or degradation

In addition to routine cover inspection, the facility cover vegetation will be evaluated for overall health and effectiveness.

5.2 Maintenance

Corrective measures will be taken if inspection of the site reveals problems with the cover systems, monitoring systems, security system, perimeter embankments, or vegetation. If substantial erosion, settlement, or subsidence occurs, additional soil cover will be placed and compacted to ensure proper runoff and measures will be taken to prevent further occurrence of the problem.

If there are any areas where the cover vegetation is poorly established or otherwise stressed, reseeding and/or vegetation growth and development measures will be instituted, and an adequate turf established. Damage to vegetation will be prevented by maintaining any drainage channels for maximum flow capacity. Vegetation will also require periodic surface care maintenance such as mowing to prevent shrub growth. Supplemental cover soil will be placed to repair the effects of erosion or settlement as soon as practicable. The bare soil will be reseeded, fertilized, and mulched (if needed). These areas will be inspected periodically to ensure vegetative growth has been re-established.

Routine maintenance and repair, where necessary, will be required on equipment crucial to evaluating and maintaining the integrity of the CCR unit. This may include but is not limited to monitoring wells, leachate collection systems, and stormwater runoff control infrastructure.

5.3 Groundwater Monitoring

Routine groundwater monitoring will be performed during the post-closure period in accordance with the groundwater monitoring program required in the state-issued permit and the requirements of §257.90 through §257.98.

5.4 Contact Information

Below are the current contacts regarding post-closure activities:

Environmental Contact:
Ms. Melissa Weglarz
Minnesota Power
30 West Superior Street
Duluth, MN 55802
Tel.: 218.355.3321
E-mail: mweglarz@mnpower.com

Engineering Contact:
Mr. Scott Schwake
Minnesota Power
1259 NW 3rd Street
Cohasset, MN 55721
Tel.: 218.313.4272
E-mail: dschwake@mnpower.com

Contact information will be updated as necessary prior to and during the post-closure period.

5.5 Planned Use of Property

MP will reserve the option as to the final use of the property (to the extent of limitations imposed by state-issued permits and §257.104) so long as they retain ownership. No use of the site by MP will be considered that would be detrimental to the closure systems, surface water drainage systems, and groundwater monitoring wells. If necessary, a demonstration for future planned uses will be certified by a qualified professional engineer that *"demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment"* as prescribed in §257.104(d)(iii). Furthermore, *"notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator's publicly accessible Internet site."*

5.6 Recordkeeping

§257.104(d)(2), Written Post-Closure Care Plan, states*, "No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written post-closure plan."* The plan is considered complete when it is placed in the facility's operating record. MP has placed and maintains a copy of the most recent version of the Post-Closure Care Plan in the facility's operating record.

According to §257.104(d)(3), MP *"must amend the written post-closure care plan whenever: there is a change in the operation of the CCR unit that would substantially affect the written post-closure care plan in effect; or before or after closure activities have commenced, if unanticipated events necessitate a revision of the written post-closure care plan."* Consistent with this revision to the post-closure care plan, MP will continue to *"amend the post-closure care plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure care plan. If a written post-closure care plan is revised after post-closure care activities have commenced for a CCR unit, the owner or operator must* [will] *amend the current post-closure care plan no later than 30 days following the triggering event."* The amended plan will be considered complete when it has been placed in the MP facility's operating record.

MP will retain a copy of each applicable file derived from this Post-Closure Care Plan *"for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study,"* in accordance with §257.105(b); however, *"only the most recent Post-Closure Care Plan must be maintained in the facility's operating record irrespective of the time requirement specifie*d" in §257.105(b).

5.7 Reporting

5.7.1 Pursuant to CCR Rule (40 CFR Part 257 Subpart D)

When successive amendments to the plan are placed in the operating record they will be made publicly available on the MP CCR website in compliance with §257.107(i)(12), Publicly Accessible Internet Site Requirements.

Additionally, to comply with §257.106(i)(12), Notification Requirements, MP will "*notify the State Director… when [the post-closure care plan] has been placed in the operating record and on the owner or operator's publicly accessible internet site."*

Furthermore, to comply with §257.104(e), "*no later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit must prepare a notification verifying that post-closure care has been completed. The notification must include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the post-closure care plan. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by §257.105(i)(13)."*

The findings of the post-closure care inspections will be included in the facility's annual report provided to the MPCA. The report will summarize the conditions observed, corrective actions taken, maintenance activities, and monitoring activities performed during the post-closure care period.

Notifications to the State Director will be made to:

> Minnesota Pollution Control Agency
> CCR.Notifications.PCA@state.mn.us

5.7.2 Pursuant to NPDES Permit MN0001007 (Paragraphs 5.39.48, 5.39.50, 5.45.191 and 6.35.2)

To comply with 5.39.48, if significant revisions to the closure plan are necessary, an updated plan will be submitted to the MPCA within 60 days.

To comply with 5.39.50, MP will submit an annual progress report for the preceding calendar year describing the closure status of the ash ponds. This report will be included as part of the groundwater monitoring report due March 1 of each year.

To comply with 5.45.191, MP will notify the MPCA of a significant reduction or cessation of any closure or post-closure care activity described in this plan at least 180 days before the reduction or cessation.

To comply with 6.35.2, upon completion of the closure activities described in this plan, MP will record with the register of deeds a detailed closure description, including a plat.

6 References

The following constitutes a list of references containing information utilized in preparation of this report. Referenced documents are contained in MP project files and/or are publicly available documents and are not attached hereto.

Minnesota Power, 2007. Minnesota Power Boswell Energy Center – Unit 3 Dry Ash Placement and Incremental Closure Plan, August 2007.

Minnesota Power, 2015. Minnesota Power Boswell Energy Center – Old Bottom Ash Pond Notification of Intent to Close. Posted to Minnesota Power CCR Web Site, December 2015.

Barr Engineering Co., 2016. CCR Surface Impoundments Liner Evaluation. Prepared for Minnesota Power and Posted to Minnesota Power CCR Web Site, October 2016.

Barr Engineering Co., 2018. Old Bottom Ash Pond Liner Evaluation. Prepared for Minnesota Power and Posted to Minnesota Power CCR Web Site, April 2018.

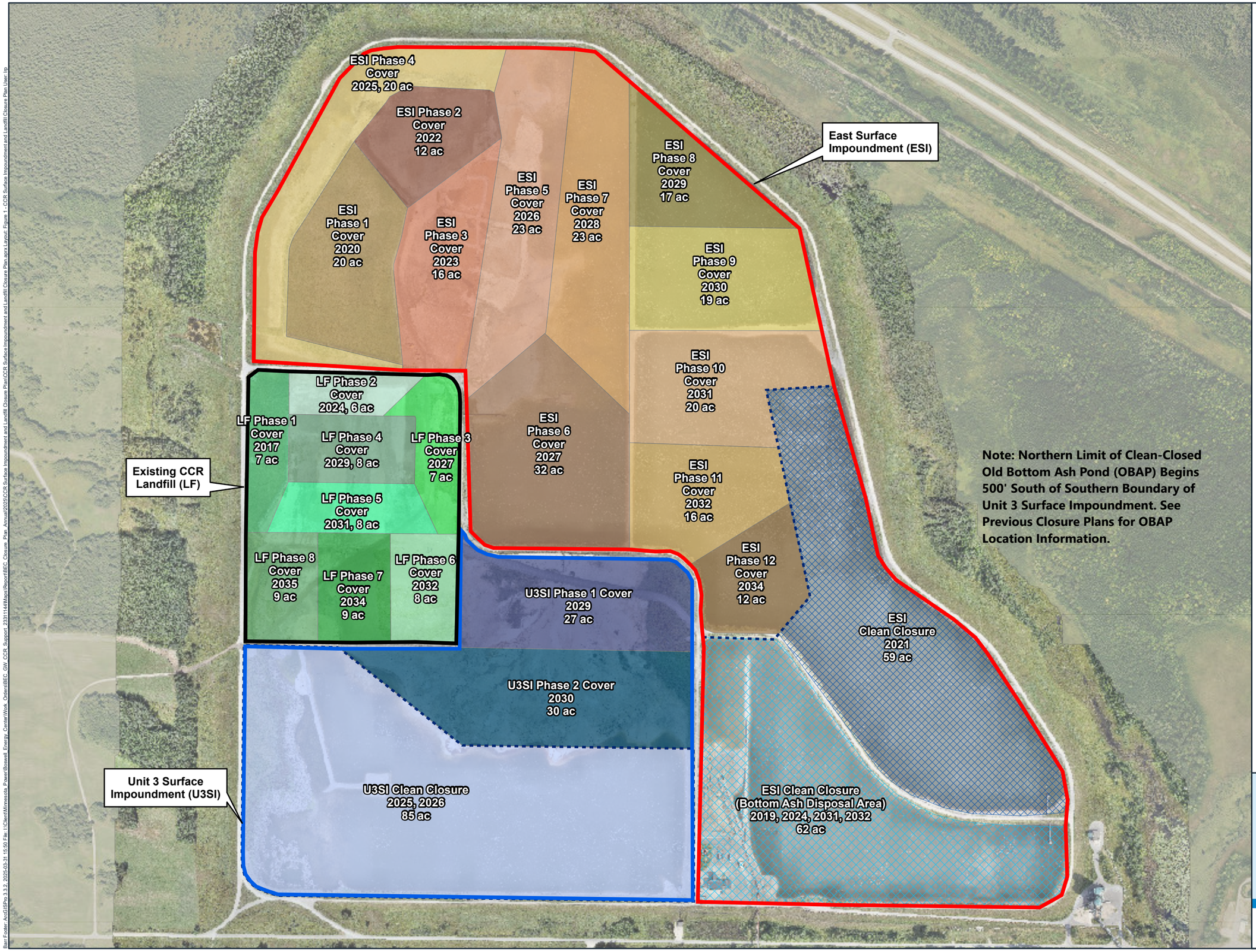
Barr Engineering Co., 2019. Old Bottom Ash Pond – Notification of Closure by Removal of CCR. Prepared for Minnesota Power and Posted to Minnesota Power CCR Web Site, April 2019.

Barr Engineering Co., 2020. Unit 4 CCR Surface Impoundment – Notification of Intent to Close. Prepared for Minnesota Power and Posted to Minnesota Power CCR Web Site, October 2020.

Barr Engineering Co., 2022. CCR Bottom Ash Surface Impoundment – Notification of Intent to Close. Prepared for Minnesota Power and Posted to Minnesota Power CCR Web Site, September 2022.

Barr Engineering Co., 2022. Unit 3 CCR Surface Impoundment – Notification of Intent to Close. Prepared for Minnesota Power and Posted to Minnesota Power CCR Web Site, September 2022.

Figures



CCR Surface Impoundment and Landfill Closure Plan
Boswell Energy Center
Minnesota Power
Cohasset, MN

FIGURE 1

BARR

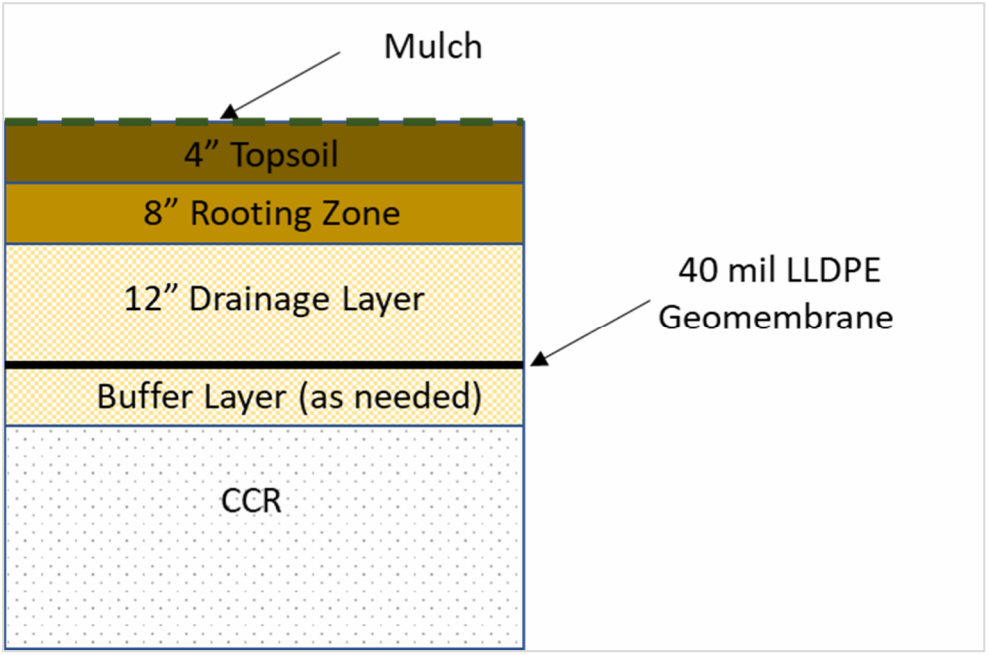
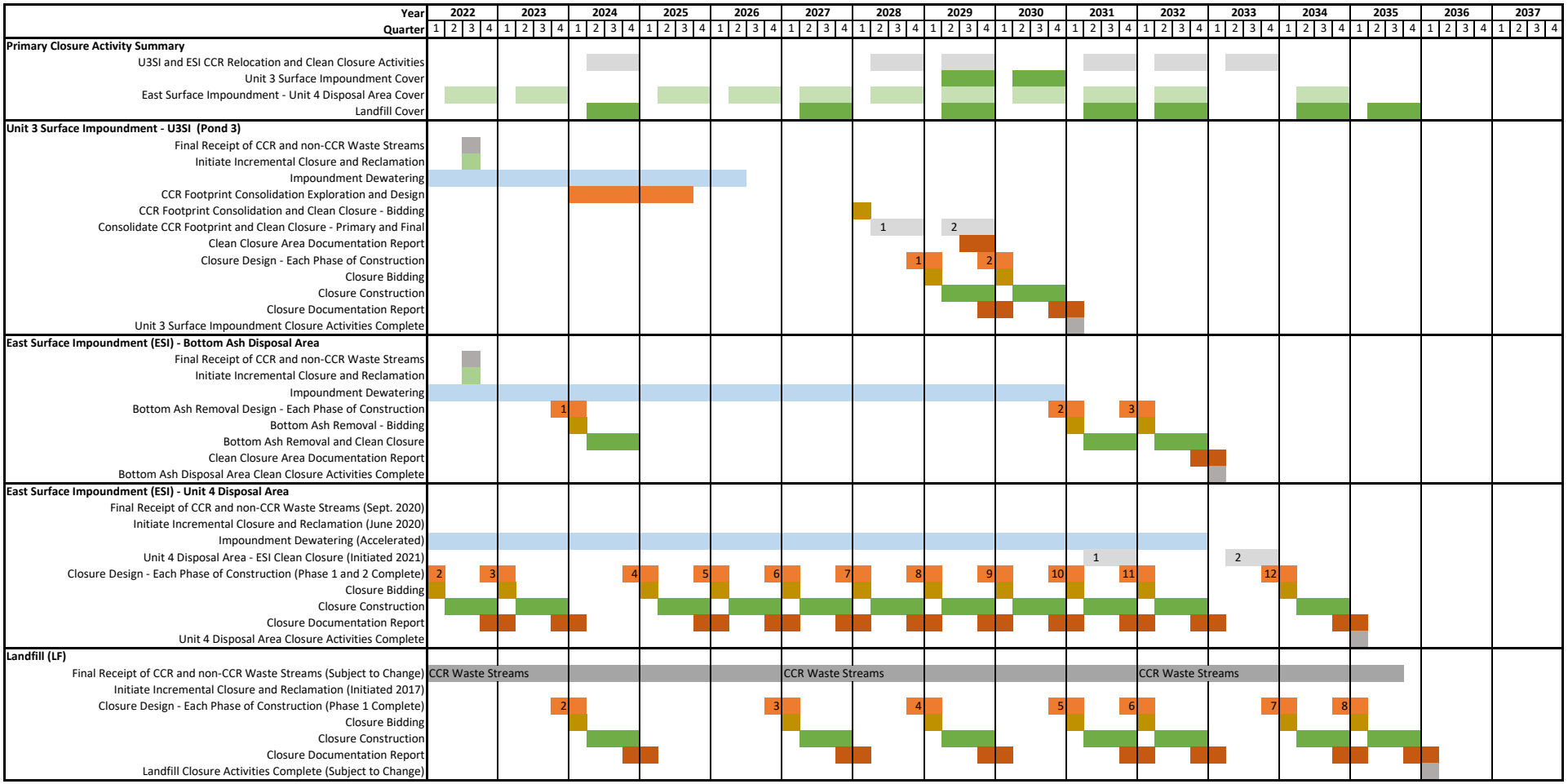


Figure 2 **CCR Surface Impoundment and Landfill Typical Cover Section**

Figure 3 April 1, 2025 Boswell Energy Center Closure Plan - CCR Surface Impoundment and Landfill Closure Sequencing



Schedule Considerations:

1) East Surface Impoundment - Unit 4 Disposal Area closure schedule is constrained by the impoundment dewatering rate. Dewatering rate is based on water consumption/operation of Unit 4. Schedule shown assumes accelerated dewatering.
2) Schedule must preserve unclosed areas for deposition/consolidation of CCR from clean closure areas.
3) Embankment removal as source of construction material is not presented on this schedule.
4) Regulatory agency interface and approvals are managed as needed and not identified as specific stand-alone activities on the schedule above.