



DEPARTMENT of AGRICULTURE and NATURAL RESOURCES

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October 24, 2022

Ken Nelson
Mine Manager
Wharf Resources (USA), Inc
10928 Wharf Rd
Lead, SD 57754

Dear Mr. Nelson,

We have conducted a review of the supplemental information for Wharf Resource's Large Scale Mine Permit application for the proposed Boston Expansion Project received by email on October 5, 2022, October 13, 2022, and October 17, 2022. Please take time to review the following procedural completeness and technical comments and make the necessary corrections to your mine permit application.

Procedural Completeness Comments

1. SDCL 45-6B-6(8)(b), ARSD 74:29:02:04(3), ARSD 74:29:02:05, and ARSD 74:29:07:02(7): Please provide a narrative description of the proposed depth and direction of mining along with a proposed timetable for mine sequencing. The response Wharf provided in the October 13, 2022, letter only gives additional information on the maximum depth of the Flossie Pit but does not provide a description of the depth for the remainder of the proposed mining areas or the direction in which mining operations will occur. Also, please include a proposed timetable for the mining for the proposed operation. {Example of information needed provided in Section 5.3.4 Pit Development and Sequencing, pg 98-101, American Eagle Mine Permit Application, 2011}. Also, the legend in Exhibit 23 should mention the extent of waste rock backfill.
2. SDCL 45-6B-7(8), SDCL 45-6B-10, ARSD 74:29:02:09 and ARSD 74:29:02:12: All maps in the mine permit application are required to comply with the requirements of SDCL 45-6B-10 and ARSD 74:29:02:12. ARSD 74:29:02:12(4) requires Wharf to identify on each map the statute and regulation it addresses. In your October 13, 2022, response letter, Wharf indicates Tables 1-1 and 1-2 were modified to include proper references to which exhibits fulfill the individual statutes and regulations. While this is good as it satisfies the requirements of ARSD 74:29:02:01, it does not fulfill the requirements of ARSD 74:29:02:12(4) which specifically requires Wharf to list each applicable statute and regulation on each map. Therefore, please submit updated maps in Exhibit B that meet these requirements.

3. SDCL 45-6B7(10)(4): Instead of making a reference in Table 1-1 that no such facilities are proposed for the Boston Expansion, please include a statement in the Operating Plan that no reservoirs, tailings ponds, tailings disposal sites, dams, dikes, and other such facilities will be constructed in the Boston Expansion area. The section and page of the Operating Plan where the statement is located should be referenced in Table 1-1.
4. SDCL 45-6B-10(2) and SDCL 45-6B-44: Please note the mine permit application will not be considered complete until DANR receives confirmation that adjacent landowners Ross and Amber Determan received a copy of the reclamation plan. Also, please explain what information regarding the reclamation plan was mailed to the Determans.
5. SDCL 45-6B-32 – Grant of permit if application in compliance with law – Grounds for denial: Please follow the enclosed example from another mine permit application and submit a narrative explaining how Wharf addressed each subsection of SDCL 45-6B-32. Also, subsection (7) of this statute states that if the operator is currently found to be in violation of the provisions of this chapter with respect to any mining operation in this state it may be grounds for denial of this permit. The department has previously explained to Wharf that it is currently in violation of SDCL 45-6B-41, SDCL 45-6B-87, and SDCL 34A-2 due to the current concentrations of selenium in False Bottom Creek, which are consistently above the acute selenium surface water quality standard. Please address this issue in this section. Finally, Section 1.2 does not directly address the suitability of the land for mining. Please include a clear, concise statement that addresses the suitability of the land for mining.
6. SDCL 45-6B-33—Unsuitable Land – No Permit Issued: Your revised application indicates that each subsection of this statute was addressed in Section 1.2. However, subsections 1, 2, 4, 5, and 6 were not addressed in this section. In addition, Table 1-1 lists the statute, but none of the subsections. Please address each of the following subsections and add a reference for all of the subsections to Table 1-1:
 - a. (1) – Please provide a clear, concise statement on whether it is or is not physically or economically feasible to reclaim land to be affected by the proposed operation.
 - b. (2) – Please provide a clear, concise statement on whether sedimentation of stream or lake beds, landslides, or water pollution can or cannot be feasibly prevented.
 - c. (4) – Please provide a clear, concise statement on whether the proposed operation will result in the loss or reduction of long-range productivity of aquifer, public, and domestic water wells, watershed lands, aquifer recharge areas, or significant agricultural areas.
 - d. (5) – Please provide a clear, concise statement on whether the biological productivity of the land is such that the loss would jeopardize threatened or endangered species of wildlife indigenous to the area.
 - e. (6) – Please provide a clear, concise statement stating whether adverse socioeconomic impacts of the proposed mining operation may outweigh the probable beneficial impacts of the operation.

7. SDCL 45-6B-39 and ARSD 74:29:07:06: Please note the mine permit application will not be considered complete until DANR receives proof of consultation from the Lawrence County NRCS office that it was consulted during development of the seed mix.
8. SDCL 45-6B-40 and ARSD 74:29:07:07: Wharf has indicated it does not plan to create a Bald Mountain topsoil stockpile. In Exhibit 27, it shows that all topsoil from the Boston Expansion area will be hauled to the Juno topsoil stockpile. However, in Sections 5.3.3 and 6.2.1, there are several references to "topsoil stockpiles". Please verify whether other topsoil stockpiles will be created for Boston Expansion topsoil. If not, please remove all references to "topsoil stockpiles" in these sections.
9. SDCL 45-6B-41 and ARSD 74:29:02:11(9), and ARSD 74:29:07:09: Instead of referring to Wharf's Storm Water Pollution Prevention Plan (SWPPP), Wharf needs to include in the mine permit application the sections of the plan that would address erosion and sedimentation control in the Boston Expansion area. Also, please verify if the Boston Expansion area is included in the current SWPPP. In addition, please submit a conceptual map showing potential erosion and sediment control structures for the expansion area. Finally, in the mine permit application, Wharf addresses permanent diversions, but it does not clearly address the status of storm water diversions. Does Wharf plan on installing any storm water diversions? If so, each subsection of ARSD 74:27:07:09 needs to be addressed.
10. SDCL 45-6B-92(2): In Section 3.12.6, Wharf discusses fish life propagation which applies to all streams statewide. However, it does not discuss cold water fish life propagation waters which is a separate standard under South Dakota water quality laws that applies only to certain streams. Since there are streams classified as coldwater fisheries that could be impacted by the Boston Expansion project, please discuss mitigation of impacts to coldwater fish life in those streams.
11. ARSD 74:2902:01: The following references in Tables 1-1 and 1-2 need to be revised:
 - a. In Table 1-1, Wharf needs to list each subsection of SDCL 45-6B-33. It also needs to remove the references to SDCL 45-6B-33.2 through 33.8 as they address requirements for small scale mine permits and the Request for Determination of Special, Exceptional, Critical, or Unique Lands and do not apply to this mine permit application.
 - b. In Table 1-2 under ARSD 74:29:07:04(2), Section 6.11.2.6 is referenced. However, this section addresses fencing instead of erosion control. Also, under ARSD 74:29:07:08(4), Section 6.11.2.5 is referenced. However, this section addresses sediment and erosion control during the postclosure period. Since this regulation covers the removal of temporary erosion and sediment control during final reclamation, this reference needs to be changed.
12. ARSD 74:29:02:03: Exhibit 4B shows mining claims, but it must be revised to clearly identify mineral ownership in the same way Exhibit 4A clearly identifies surface ownership. Exhibit 4B is also titled "Boston Expansion Acreage" which implies the map only shows the expansion acreage. A separate map titled "Boston Expansion Mineral Ownership" should be submitted

showing the mining claims and clearly identifying mineral ownership of all claims, including those with 50 percent Homestake ownership.

13. ARSD 74:29:06:02: Please follow the enclosed example from another mine permit application and submit a narrative explaining how Wharf addressed each subsection of ARSD 74:29:06:02.
14. ARSD 74:29:07:18: In Section 6.1, please describe the experience the Wharf staff has in developing and implementing reclamation plans.
15. ARSD 74:29:07:02(3): Please address the view shed from Nevada Gulch. The department has re-evaluated site VP 3 NW referenced in the draft visual assessment and has determined the site does contain a significant view of the proposed Boston Expansion area from Nevada Gulch. The department apologizes for this confusion but feels it may be easiest to address this concern by reincluding this site into the overall analysis. Please note that VP-4 does not adequately address the view of the proposed Boston Expansion Area from Nevada Gulch as an analysis of the line of site for this photo shows that it would only address a very small portion of the easternmost corner of the proposed Boston Expansion Area.

Technical Comments

1. Section 2.0, page 15: Please note any acreages discussed for assessing proposed expansion acreages need to clearly distinguish those acreages within the existing permit boundary versus those in the new permit boundary, except when discussing the total acreage amount. They should also be discussed separately as much as possible. As such, please clarify the following:
 - a. In the fourth sentence of the third paragraph of this section, Wharf states "The Boston Expansion area has a permit area estimated to be 47.4 acres in size." Please clarify whether this is permit boundary acreage or permitted affected acreage and modify the sentence with the correct terminology.
 - b. Also, please clarify if the acreage in the fifth sentence is permitted affected acreage.
 - c. Finally, in the last sentence, is the permit boundary to permitted affected acreage ratio of 1:1.03 for the Boston Expansion area or the entire mine site? If it is just for the Boston expansion area, the ratio of permit boundary (47.4 acres) to permitted affected (40.6 acres) acreage, the ratio should be 1:1.17.

The 7.6 acres of new affected acreage within the current mine permit boundary should be accounted for separately from the new permit boundary acreage.

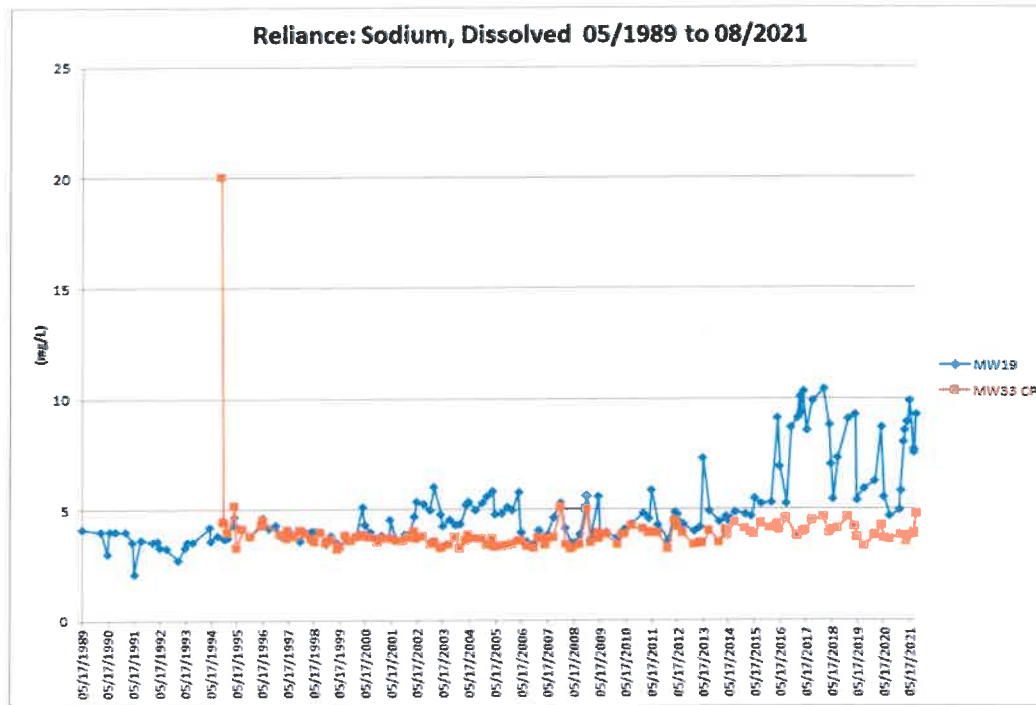
2. Section 3.3.3, page 40-41: This statement is made, "nitrate concentrations above 10 mg/L have only been observed in MW-19 in the past 5 Years." Please note that this is incorrect. Nitrates were also noted above 10 mg/L several times from 2002-2005 and 2011-2013.
3. Section 3.7.3, page 54: In the last paragraph of this bat section, please add an explanation of why temporary and permanent closures of the mine openings were done.

4. Section 3.10.3, page 65: The following information from Wharf's October 5, 2022, response letter should be added to the Noise Mitigation Strategies section:

Most residents can expect mining noises to continue at present levels and the Boston Expansion will not increase their current noise levels. The closest few residents in the northwestern-most corner of the subdivision nearest the Boston Expansion could expect temporary increases in mining noise associated with vegetation removal, berm construction, and initial blasts at the top of the ridgeline in the Boston Expansion area. After the upper benches are complete noise levels are expected to return to near-present conditions.

5. Section 3.12.1, page 68: In this section, Wharf states if reseeded reclamation areas do not show adequate growth after two years, analyses of the placed topsoil will be conducted to determine soil nutrient levels and appropriate fertilization requirements. The fertilizer requirements should be determined before the topsoil is placed, not after. Therefore, this statement needs to be revised to reflect this.
6. Section 5.3.2, page 81: In this section, Wharf states that the Boston Expansion area will be stripped in three phases of approximately 16 acres each. Please show the location of these three phases on a map. Also, since mining will begin in the west end of the Boston Pit, how does Wharf plan to stabilize the current topsoil windrows and stockpiles and the current exploration area in the east end of the Boston Expansion until Phase 2 and 3 areas are stripped? (Note: If following the example outlined as Item #1 above, this will be addressed as well. This section can be corrected as needed, to match the information supplied in Section 5.3.4.)
7. Section 6.2.1.1, page 94: In the fourth paragraph of this section, Wharf states the southwestern edge of the expansion area coincides with a draw, oriented northwest, in the Annie Creek watershed. Will this draw be disturbed or impacted during mining?
8. Section 7.0, Proposed Technical Revisions: In our July 2022 comment letter, we asked Wharf to remove "slash piles" from the "modifying topsoil stripping plans and storage" technical revision category and make it a separate category. However, we notice it was not included in the technical revision list in the revised application. Does Wharf want slash piles included as a technical revision category?
9. Appendix B, Exhibit 5: Please submit a map showing the underground workings only in the Boston Expansion area. Please submit Exhibit 5 in at least an 11 x 17 format instead of 8 x 11 format.
10. Appendix B, Exhibit 6: There is a typo on this exhibit. In the Section-Township-Range coordinates provided on the map, the Range is currently identified as 20E. This should be changed to 2E.

11. Photos were provided for all sound monitoring sites addressed in the Sound Baseline Survey except for SND-07. Even though the original photo was corrupted and not available, Wharf should take a photo of SND-07 and include it in the survey.
12. In the Baseline Sound Study, Section 4.1, there are comments on recording vehicle backup alarms during the study for sites SND-04 and SND-06. Please confirm that none of these alarms were associated with mining activity.
13. Appendix F, Groundwater Characterization Study, Section 3.5.2: The report states “No detections from any sample collected from the three baseline monitoring wells over the last 5 years: ...total cadmium, total copper, total gold, total selenium, total silver, total zinc, ...” This statement is somewhat misleading, as these parameters were not sampled in MW-19 and MW-33 during this time frame. Also, please note that if there is a dissolved metal concentration result in the analyses, there will also be a total metal value associated with the sample, even if the total metal constituent was not analyzed for.
14. Appendix F, Groundwater Characterization Study, Section 3.5.2: The report states “nitrate concentrations above 10 mg/L have only been observed in MW-19 in the past 5 years”. Historical data review indicates this is not an accurate statement. Also, the statement regarding nitrate concentrations showing only “minor fluctuations” in MW-19 seems to be understated. Nitrate concentrations were below 2 mg/L for the first 10 years of data currently available to DANR, in MW-19. In comparison, the last five years of the data from the report show the highest value as 18.6 mg/L while the lowest was 5.78 mg/L.
15. Appendix F, Groundwater Characterization Study, Section 3.5.2: The report states “Sodium values have had minor fluctuations. The increases and decreases at MW-33 and MW-19 mirror each other.” When a historical overview of the data is reviewed this statement appears to be incorrect and in fact there appears to be a marked increase in sodium values within MW-19 as compared to MW-33 over the past five years. See graph below.



16. Your response to #19 of the August 16, 2022, DANR comment letter does not fully address the question presented. The state would have required one year of analysis on the three baseline wells MW-19, MW-33, and MW-66, if that sampling had been done monthly for a full suite of baseline parameters. However, neither MW-19 nor MW-33 have a full year of the appropriate baseline analysis in their history. The DANR approved the use of a minimum of five years, in lieu of the one year of baseline outlined in regulation, for both MW-19 and MW-33 since these wells have an established sampling history extending back decades. DANR's available data history for MW-19 begins in 1989 and in 1994 for MW-33. DANR requested MW-66 have twelve months of baseline sampling since it lacked the minimum five years required to meet DANR's exception. During analysis, it is up to Wharf and RESPEC to ensure the five-year timeline reviewed and presented is adequate to address the necessary detail of analysis for each site. Therefore, the previous question still stands. It is commonly considered appropriate when evaluating results in water analyses to use comparable time frames during the analysis. Water quality parameters may increase or decrease because of both dry or wet conditions, which have the potential to be shown in the rise and fall of ground water levels at the site. Why are the two different time frames utilized between Section 2.5 and 3.5 of the report? Does extending the time frame in Section 3.5 of the report change the final evaluation for any of the wells? Also, since the potentiometric map presented in the report was calculated prior to MW-66 being drilled, how was the potentiometric map impacted when additional data available for this well is added to the calculations for the map?
17. Appendix F, Groundwater Characterization Study, Section 3.5.3: The report states, "Historical impacts to groundwater from previous mining activities are evidenced in elevated occurrences of nitrate in MW-19 (Figure 3-3) and arsenic in MW-66." Please confirm that elevated arsenic concentrations in this well are a result of mining activities in this area and not a result of

mineralization within the rock. Figure 2-4 of the report indicates this well is upgradient of current mining activities.

18. Appendix F, Groundwater Characterization Study: There is an inappropriate name and a typo on pages A-4 and A-7 of this study. The sample site is referred to using an antiquated, derogatory name (it should be referred to as "War Eagle"). This sample site is incorrectly listed as being in a miscellaneous drainage. This site is located at the top of the Cleopatra Creek drainage within 10 yards of the NPDES sample location on this same drainage. Also, in Tables E-1 and E-5, please provide a footnote on the tables indicating the water level data provided for 2000-2006 are annual averages.

We are still reviewing all the information that was sent to us on October 5, 12, and 17, 2022. If we have any additional comments we will try to provide them to you by October 31, 2022.

When providing responses to this and any potential future letters, please do not resubmit a new copy of the complete application. All future response may be addressed directly in future response letters and/or with attached corrected pages or sections for the permit application or baseline reports.

If you have questions on the contents of this letter, please feel free to contact Eric Holm or myself at (605) 773-4201.

Sincerely,

\s/

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