



Public Service Commission

State of North Dakota

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Kevin Cramer
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Executive Secretary
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600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
Web: www.nd.gov/psc
E-mail: ndpsc@nd.gov
TDD 800-366-6888 or 711
Fax 701-328-2410
Phone 701-328-2400

January 21, 2009

Mr. D. Randall Crooke
Otter Creek Mining Co., L.L.C.
PO Box 1087
Underwood, ND 58576-1087

Dear Mr. Crooke:

The Reclamation Division has conducted a completeness review of Otter Creek Mining Company's application for Surface Coal Mining Permit No. NAOC-0802 for the Otter Creek Mine in Oliver County, North Dakota. The permit application and associated documents were received by the Commission on December 23, 2008, and as of today, January 21, 2009, 91 days of the Commission 120 day review period remain. The following items must be satisfactorily addressed before the Reclamation Division can deem the application complete. Please note our rationale for many of the items is based on the requirement in NDAC 69.05.2-05-02(1) that information be presented clearly and concisely.

Newspaper Advertisement

1. The name of the mining company should include the "LLC" designation in the first line on page 1 and in the address on page 9 since that is its registered name. (SAS)
2. The public notice indicates that mining operations will be conducted within 100 feet of the outside right-of-way of the south side of the section line trail between Section 25, T143N, R85W, and Section 36, T142N, R85W. It appears that this should be Section 36, T143N, R85W as both sections are located within the same township. The same correction should be made to Section 1.3.6 (Relationship to Areas Designated Unsuitable); however, you may delay changing Section 1.3.6 until the technical review. (DKM)

Section 1.0 – Introductory Information

3. The permit application form lists 5,409.1 total acres to be permitted and the rest of the submittal indicates a total permit acreage of 5,490.09 which appears to be the correct total. Please correct the application form. (BEB)

4. In Section 1.5.1, the coal leases for the following tracts are with BNI Coal: Tract 17 (#02235), Tract 18 (#02235), and Tract 22 (#02237, #2238, & #2236). Pursuant to NDCC 38-14.1-14(1)(k), please provide a valid coal lease with North American Coal Royalty Corporation (or other subsidiary) or a proper lease assignment demonstrating that the Otter Creek Mining Company has the right to mine these tracts. (DKM)
5. The lease document for Claudia A. Albers, Lease No. 02259 (Tract 15), is incomplete. Only the first page of the document is available. Please provide a copy of the entire document. (SAS)

Section 2.2 – Ground Water Hydrology

6. Section 2.2.25 is labeled as containing *Time Series Hydrographs for Selected Wells* although when activated, the link displays the geophysical logs from Section 2.2.15. Please repair the link to enable the well hydrographs to be displayed. (BEB)
7. A substantial amount of the geophysical logs of monitoring wells that are provided in Section 2.2.15 do not include density measurements. NDAC-69-05.2-08-06(1)(d) indicates geophysical logs are to include measurements of gamma ray and density. Many of the described geophysical logs do provide measures of gamma ray, resistance and self potential, but not density. Most of the monitoring well drillholes that do not provide measures of density are shallow wells screened in alluvium and a handful that are screened in the coal seams and deeper sandstone aquifers. Please provide the density data if available, or provide rationale for not obtaining or including density information in the submittal. (BEB)
8. Please review the mathematical calculation for expected pit water inflows from the Kinneman Creek and Hagel Beds during mining processes as described on page 6 of Section 2.2.2. The transmissivity conversion from cubic feet per day to gallons per minute ($13,000 \times 0.005195$) should equal 67.5 GPM/1,000 ft. of highwall, as opposed to 675 GPM/1,000 ft. of highwall as calculated in the narrative. The conversion formulas are correct but the product appears to be a calculation or transcription error that is off by an order of magnitude. Please review this calculation and determine if changes to the predicted radius of influence of mine pit water drawdown, the probable effects of mining on wells and springs or any other ground water or surface water hydrology issues including the PHC narratives and operations sections require any modifications based on an expected lower rate of pit water inflow, pending your review of this item. (BEB)
9. A hyperlink in the narrative within the 4th paragraph of Section 2.2.2 describes hydrostratigraphic cross-sections presented in Section 2.2.9 to demonstrate the hydrostratigraphic units in the regional and local context, and separately the first paragraph of the *Ground Water Hydrologic Setting* narrative also references hydrologic units of the Otter Creek Field in Section 2.2.9; however, the Section 2.2.9 links provided are for the certified wells and developed springs map. Perhaps the intent was to provide a link to the Geologic Cross-Sections Map of Section 2.3.15. Please review and redirect the links to Section 2.3.15 if this was your intention. (BEB)

10. Please add to the narrative of *Ground Water Resources and Use* in the Probable Hydrologic Consequences narrative in Section 2.2.5 specific to water supply information associated with water wells in Sections 15 and 23 that provide water to the City of Center, as well as to other irrigation wells in Section 23. The average reported yearly water use for the ten-year period of 1998 to 2007 was 129 acre-feet from three appropriation permits located in Sections 15 and 23. Due to the importance of these public water supply and irrigation wells that are located hydrologically down gradient from proposed mining activities adjacent to the Square Butte Creek Aquifer, and the definition of “adjacent area” in NDAC 69-05.2-01-02(1), we feel the PHC should address the mine’s potential impact on the City of Center’s water supply and any potential water supply issues to other appropriated users of this important ground water resource. NDAC 69-05.2-08-06(1)(b). (BEB & WTG)

Section 2.3 – Description of Geology

11. The *Overburden Characteristics Narrative* in Section 2.3.5 provides a hyperlink to Section 2.3.8 but doesn’t work. Please repair or enable the link. (BEB)
12. We are unable to find elevation information for the 72 drillhole locations provided on the *Drillhole Location Map* in Section 2.3.14 and on the *Drillhole Information Checklist* in Section 2.3.6a. Narrative in Section 2.3.6 states that tabular data of some 194 drillholes in Section 2.3.6b includes information for all drillholes used for geological investigation including the 72 mapped drillholes; however, data for the 72 holes is not included in Section 2.3.6b, and we are unable to find the elevation information elsewhere in the application. Please incorporate elevation data for the 72 drillholes into Section 2.3.6b, into a separate table or on the map in Section 2.3.14 as required by NDAC 69-05.2-08-02(d). (BEB)

Section 2.6 – Surface Water Information and Monitoring Plan

13. Most of the html hyperlinks in the Surface Water Information narrative sections do not work. Please check all links and repair as necessary. (BEB)
14. Please create a hyperlink for Section 2.6.3 – Compilation of Hydrologic Data – within the Table of Contents for Section 2.6 that is currently only accessible through the Windows Explore directory. (WTG)
15. Please review the map referenced in the last paragraph of Section 2.6.1 – Surface Water Hydrologic Conditions. The text references Section 2.6.5a, but it appears that it should reference Section 2.6.4 instead because the watersheds described are not shown on Section 2.6.5a. It also appears that Section 29, rather than Section 28, should be described as being in the northern portion of the permit area because Section 28 lies outside of the permit area. (WTG)

16. It appears that Table 1 of Section 2.6.2 - Watershed Descriptions – currently describes watersheds from a different permit, possibly from the Falkirk Mine, rather than describing the Otter Creek permit area watersheds. Please provide the information for the proposed permit area. In addition the parenthetical statement in Section 2.6.2 should be revised to sentence format and the section should reference Section 2.6.4 for a depiction of the watersheds. (WTG)
17. Please make the following changes to Section 2.6.4 – Surface Water Features and Monitoring Sites Map: (1) Change the stock pond water sampling point symbols to something other than a cross to improve legibility; and, (2) Label all of the stock pond and spring sampling points so they can be cross-referenced with other information. Given that township and range boundaries are shown on the map, it will be adequate to label the points as type, section number, and number within the section. (WTG)
18. Please insert the number of developed and in-use springs and seeps in the third paragraph of page 1 in Section 2.6.5 – Probable Hydrologic Consequences. (WTG)
19. Please correct footnote 2 for Table 1 in Section 2.6.5 – Probable Hydrologic Consequences. There does not appear to be a Table 1 in Section 2.7.1, and Table 3 in Section 2.6.3 provides water quantity, not quality, data. (WTG)

Section 2.7 – Pre-Mining Land Use and Vegetation

20. NDAC 69-05.2-08-08(1)(c)(4) requires a detailed description of the number and arrangement of trees and shrubs, probable age of trees, height of trees and characteristics of the understory vegetation for woodland communities. The vegetation guidelines [Standards for Evaluation of Revegetation Success and Recommended Procedures for Pre and Post Mine Vegetation Assessments] further clarify that the number of trees and shrubs may be estimated from density measurements. The information included in Appendix VII characterizes the understory vegetation and provides an assessment of woodland canopy and herbaceous cover, but does not characterize the woodland communities in terms of species composition or density, probable age or height of trees. Please include the required information in the application. (GAW)
21. Please depict the areal extent of the woodland communities by woodland type or mapping units, i.e. trees, tall shrubs and low shrubs as required by NDAC 69-05.2-08-08(1)(a)(4) and the acreage of each woodland type for each surface owner as required by NDAC 69-05.2-08-08(1)(c)(1). Exhibits 2.7.2 and 2.7.2a identify woodland areas but not site types, and Section 2.7.3, Appendix II, does not show acreage by woodland type. (GAW)

Section 2.8 – Soil Resources

22. The *Map Unit Acreage Summary by Tract* spreadsheet in Section 2.8.2e when opened displays a password protected window. Please repair the link. (BEB)

23. Please create a hyperlink for Section 2.8.3 – Prime Farmlands – in the Section 2.8 Table of Contents. This section is currently only accessible through the Windows Explore directory. (WTG & SAS)
24. Please correct the hyperlink to Section 2.8.2b (other suitable strata investigation) in the last paragraph on page 2 of Section 2.8.1 – Soils Narrative. As currently configured, it incorrectly links to Section 2.8.2d (SPGM volume summary). (WTG)
25. Please correct the section reference and hyperlink in the fifth paragraph on page 3 of Section 2.8.1 – Soils Narrative – that references the SPGM Respread Map. As currently written and configured, it incorrectly refers and links to Section 2.8.2c (Soil Survey Map). (WTG)

Section 3.1 – Operation Plan - General

26. NDAC 69-05.2-05-08(1) states that the “permit area shall be no larger than a logical pit sequence and include lands used for activities incidental to coal extraction”. However, there are several large tracts within the proposed permit area that are a quarter section or larger in size where no mining or support activities are proposed. These are the SE¼ and NW¼ of Section 2, SW¼ of Section 5, and the tracts proposed to be permitted in Section 20, all of Section 29, and the SW¼ and N½ of Section 35. Please provide the details of any disturbances proposed in these areas and clearly depict the anticipated disturbance boundary on the appropriate maps as required by NDAC 69-05.2-09-02. Also, if specific disturbances are planned for these areas, the surface owners of these tracts must be re-notified as required under NDCC 38-18-06(1) as that notice “must sufficiently disclose the plan of work and operations to enable the surface owner to evaluate the extent of the land disturbance on the surface owner’s use of the property”. The maps that were previously provided to the surface owners did not provide the required information. If no disturbances are currently planned for some or all of the tracts listed above, they should be deleted from the proposed permit area. (JRD)
27. Please provide the appropriate details for utilizing the 300,000 cubic yards of boxcut spoil in the facilities area and haulroad as briefly discussed in Section 3.1.1. This needs to include the appropriate maps and cross-sections as required by NDAC 69-05.2-09-14(1). Also, it was noted that the typical haulroad cross-section in Section 3.5.3 indicates the road embankment will be built up using subsoil rather than spoil, which is inconsistent with the statement in Section 3.1.1. Documentation needs to be provided to demonstrate that all of the boxcut spoil will be used in the construction of the facilities and haulroad. If all of the boxcut spoil will not be used for these construction activities, other boxcut spoil placement areas must be described and shown on the pit layout map. Also, please provide plans for the placement of boxcut spoils from the short pit extension (approximately 750 feet) that will be located in the SW¼ of the SE¼ of Section 32 as shown in the 2010 mining block and from the nearly 5000 feet of boxcut pits shown in the 2012 and 2013 mining blocks. (JRD)

28. Narrative in Section 3.1.1 indicates there are no known abandoned underground mines located within the permit area. NDAC 69-05.2-08-02(1)(j) requires that adjacent areas to the permit be included in the identification process as well. Also, NDAC 69-05.2-08-02(1)(k) requires the identification of abandoned surface mines be identified in the permit and adjacent areas in addition to abandoned underground mines. If none have been identified, please note that in the same narrative of Section 3.1.1. If either underground or surface mines have been identified within the permit or adjacent areas, please provide their location on a map and supplement the narrative of Section 3.1.1 with descriptive information concerning the mine(s). (BEB)
29. In the third paragraph on page 4 of Section 3.1.2, the hyperlink should be to Section 2.8.4 (projected respread depths map), rather than to Section 2.8.3 (prime farmlands narrative). (WTG)

Section 3.5 – Operations – Transportation Facilities

30. Please include design plans for the haulroad which is included in the reclamation cost estimate. (MDB)

Section 3.6 – Operations – Surface Water Management

31. Please include the design drawings for Ponds P-05-01 and P-05-02 as both are needed in calculating reclamation costs for setting the bond amount and both ponds will be constructed in the first permit term. The design narratives are included but the drawings are not present. (MDB)
32. There are two total water management plan maps in the Windows Explore directory of the permit. The one titled “3-6-1a Water Management-36 x 36.dwf” appears to be the correct version; however, Section 3.6.1a is hyperlinked to the other map. Please delete the incorrect version and make sure the right map is linked to Section 3.6.1a. (WTG)

Section 4.0 – Post-Mining Land Use and Revegetation

33. Many of the hyperlinks in the narrative in Sections 4.1.1 and 4.1.5, Post-Mining Land Use Narrative and Revegetation Procedures and Establishment, do not work properly. Please enable the hyperlinks. (GAW)
34. If additional preference statements have been received since the application was filed, please include them in the application along with a discussion on the consideration that was given to any requested land use changes. (GAW & SAS)

Section 4.1 – Post-Mining Land Use and Revegetation

35. Please include the design criteria in Section 4.1.1 that will be used for culverts in reclaimed section line trails. NDAC 69-05.2-09-06. (MDB)

Section 4.2 – Reclamation – General

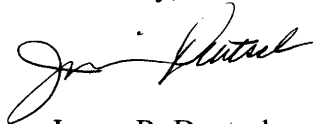
36. Please provide elevations on the Post-Mining Contour Map of Section 4.2.6b and the Post-Mining Area Slope Map of Section 4.2.7b. (MDB)
37. In reviewing the proposed post-mining topography on Map 4.2.6b, it seems obvious that the post-mining topographic plan was developed by just assuming the removal of the coal seam to be mined and applying a swell factor to the overburden thickness in the coal removal areas. No adjustments were made due to the displacement of overburden material that occurs in a typical dragline mining operation, including the boxcut spoil placement areas and final pit areas. Please develop a more realistic grading and post-mining topographic plan that includes the cross-sections and volumetric calculations or other information to show the proposed topography can be achieved as required by NDAC 69-05.2-09-11(3). This also needs to include plans for removing or otherwise re-contouring areas where the 300,000 cubic yards of boxcut spoil is placed in 2010 during the construction of the shop/office complex and other facilities. (NDAC 69-05.2-09-11(4)). (JRD)

Section 5.2.1 – Wetlands

38. Tables 1, 2, 3 and 4 are referenced in the Pre-Mining Wetland Narrative, Section 5.1.1, but they could not be found. These tables apparently provide summary information about wetland size, classification, water quality and spring/seep water quality results. Please include the tables in the application. (GAW)

The 120-day review period is suspended until all of the items above have been satisfactorily addressed. If you have any questions, please contact this office.

Sincerely,



James R. Deutsch
Director
Reclamation Division