



Public Service Commission

State of North Dakota

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January 4, 2012

Mr. D. Randall Crooke
Technical Group Manager
Falkirk Mining Company
P.O. Box 1087
Underwood, ND 58576-1087

Dear Mr. Crooke:

The Reclamation Division has completed a technical review of the application for Final Bond Release No. 3 to Permit NAFK-8705. The following items must be adequately addressed before the Reclamation Division recommends Commission action.

Attachment ii: General Information

1. Please correct the error in the first paragraph of Attachment ii, General Information, which incorrectly states that the bond release tract is located in the E $\frac{1}{2}$ of Section 20. (GAW/BEB)
2. A sentence in the third paragraph of page 1 of Attachment ii states that the northern edge of the bond release tract was not disturbed. Please clarify how many acres of each land use in this bond release application were not disturbed and are therefore not subject to revegetation performance standards. (GAW)

Attachment VII –Reclamation History

3. Under Management, please include the cropping history for the remainder of the area in Section 20 that is not included in this bond release application but was used to prove reclamation success of Tract 3B. This information is needed to determine if normal management practices were used on this tract. (GAW)

Attachment VII – Cropland Data

4. Please consider adding a cropland productivity summary table to the reclamation history for cropland. A summary table indicating the year, crop grown, the yield and adjusted standard for the years in which productivity is being demonstrated for each tract of cropland would be helpful and appreciated. (RLK)

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5. The yield data provided on the producer statement and GPS yield monitor printout provided for 2006 differ slightly and the field area indicated on the GPS printout is substantially larger than the field size. Please provide an explanation for the differences. (RLK)
6. The dates on the elevator scale tickets provided for the 2005 crop do not match the harvest date provided on the producer's yield sheet for 2005. The ADM – Benson Quinn scale report indicates delivery was made on 8/8/2005 and 8/10/2005 while the producer statement indicates the field was combined on 8/15/2005. Please confirm that the field harvest occurred for several days and completed on 8/15/2005 or provide another explanation for the discrepancy as appropriate. In the future, please provide the harvest start and end dates for entire field harvest information when combining spans more than one day. (RLK)
7. The field area indicated in the productivity data (producer sheets) for tract 3A is listed as 170 acres in 2005 and 180 acres in 2006. Please provide the actual planted/tilled acreage for the cropland in tract 3A and explain these discrepancies in harvested acreage between the years. (RLK)
8. Please include a 2010 Reclaimed Yields Falkirk Mine summary sheet in Attachment VIII, Cropland Data, for the 1986 revegetation period tract that provides an assessment of the weight of the wheat, dockage, total bushels and field size for 2010 as was done for the other years being used to demonstrate revegetation success. Please include dockage information associated with the field monitor harvest information if available. (GAW/RLK)
9. The last sentence of the summary information for the 1986 revegetation period area (subtract 3B) states that the tract yielded 40.0 bushels in 2005 and 53.7 bushels in 2010. However, the field monitor information included shows that the 2010 yield was 53.17 (53.2) rather than 53.7. Please review and correct as necessary or otherwise explain the value of 53.7. (GAW/RLK)
10. The GPS harvest summary for 2010 appears to indicate that several small areas in the field were not harvested and it is not clear how such areas were accounted for in determining the average yield for the field. The areas of a field that may not have been harvested possibly due to wetness or other conditions should be included in the average yield determination when providing entire field harvest information for bond release. Please include a description on how non-harvested areas are accounted for with the GPS harvest data and adjust the average yield for the field as appropriate. (RLK)
11. In the Adjusted Cropland Yield Standard for the area subject to the 1986 revegetation period, the last sentence indicates yield data is from 2005 rather than 2006 as indicated elsewhere in the application. Please revise as appropriate. (RLK)
12. The 2006 crop yield provided for the 1986 revegetation period is approximately 0.5 bu/ac greater than would be calculated based on the field size and total bushels reported on the producer's yield statement. Please review and revise as appropriate. (RLK)
13. The 2006 Grain Harvest Map (page 102) and the 2010 Grain Harvest Map (page 105) each depict an area in the N½ of Section 29 that was apparently harvested with the area in Section 20 (1986 revegetation period tract). It is unclear if the two tracts that are depicted as being harvested in Section 29 are included in the whole field harvest data for the Section 20 tract. Please indicate if

the whole field harvest data includes those tracts in Section 29 or only the area in Section 20. If the whole field harvest data includes the Section 29 areas, the yield from these areas must be accounted for in the calculation of the standard for Section 20. (Please note that the harvested tracts in Section 29 are not included in the unadjusted cropland yield standard for Section 20.) (DKM)

14. The table showing NASS average spring wheat values for McLean County has two errors. The 2007 yield is listed as 34.6 bu/ac and the 2002 yield is 26.8 but the correct values are 30.8 bu/ac and 27.4 bu/ac respectively. Please correct these errors. (GAW)
15. The Reclamation Division believes the wetland buffer zone area (tract 3B) is quite large and therefore the landowner must agree to the bond release of this tract in its current condition (i.e., as hayland that has not broken or had the rocks picked following breaking). In accordance with Policy Memorandum No. 10, please include written documentation from the landowner that specifically states that the landowner approves of bond releasing this cropland in its present state as hayland and include a discussion regarding this issue on page 3 of Attachment VIII. (GAW)
16. On page 3 of Attachment VIII, please discuss and justify the use of the reclaimed cropland area that is representing tract 3B. This needs to address the variability of the landscape forms, soil redistribution depths and reclamation ages as required by Policy Memorandum No. 10. (GAW)

Attachment IX – Wetland Data

17. In the Wetland Data narrative, please indicate the approximate total acreage and number of seasonal wetlands that were present on this tract prior to mining. In other words, address whether or not the three reclaimed seasonal wetlands are replacing all of the acreage that existed on this tract or Section 20 prior to mining or if these wetlands are also replacing wetland acreage that existed on other permitted lands. The narrative should also indicate if there were any temporary wetlands present on the tract prior to mining and if any were reclaimed or if any features have formed that could function as replacement temporary wetlands. (GAW)
18. In the Wetland Data narrative, please include data or otherwise demonstrate that erosion is being controlled on the lands contiguous to the reclaimed wetlands as required by the Revegetation Success Standards document (Section II-H-8), for third and fourth stage bond release. (GAW)
19. Please include a map that delineates the entire watershed for each of the three reclaimed seasonal wetlands as required by the Revegetation Success Standards Document (Section II-H-9). The last sentence in the first paragraph of the Wetlands Data narrative states that the contributing watersheds have received final grade approval but it is not clear if the entire watersheds have been reclaimed or if there are any sediment ponds, haulroads or other features within the watershed of the reclaimed wetlands. (GAW)
20. Item No. 7 of the fourth stage bond release requirements for wetlands in the Revegetation Success Standards Document requires wetland vegetation data (species list and delineated zonation) and aerial photography during each of the last three years of the responsibility period but only information from 2009 has been included. Please provide the required information. (GAW)

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21. Please include the name or names of the person(s) who completed the wetland species and zonation lists with wetland data provided. (GAW)
22. The photograph that is provided of wetland R-W20-03 in the application is labeled as wetland R-W21-03. Please re-label the photograph. (BEB)

Attachment XI – Hydrologic Assessment, Section 1. Introduction

23. The first paragraph in Section 1 – Introduction, provides a listing of North Dakota Century and Administrative Codes referencing hydrologic protection performance standards of which the hydrologic assessment addresses; however, NDAC 69-05.2-12 is listed twice in the sentence and perhaps the intent was to list either NDAC 69-05.2-09 or NDAC 69-05.2-14, both of which are also required to be evaluated during bond release application and have been adequately addressed in the assessment. Please review and revise the listing as deemed necessary. (BEB)

Attachment XI – Hydrologic Assessment, Section 2. Ground Water Resources

24. The addition of calculated hydraulic head data in the water level spreadsheet that is presented in the assessment provides for a logical and useful means of presenting ground water resource and hydrologic response information. We appreciate the additional effort that was undertaken in the hydrologic assessment to provide this data. To further this concept into a graphical representation we ask (but don't require) that the ground water monitoring well screened intervals, or preferably the base of the monitored hydrostratigraphic units be graphically represented in the water level hydrographs of monitoring wells that are provided in the application. Please consider this request. (BEB)
25. Please attempt an explanation of the strange and radical fluctuations during the period of record for water levels of reclamation monitoring well RP-24C. This base of spoils well located just east Subtract 3A was basically dry from 1988 through 2003 with the exception of the 3rd quarter 1999 in which over 32 feet of hydraulic head was recorded in the column, and again the well recorded no measurable volume of water again for another five years until the 1st quarter 2004 at which time a hydraulic head of 33 feet was recorded and the hydraulic head has continued consistent recovery to approximately 40 feet at the present time. (BEB)
26. In support of hydrologic assessment narrative that is provided, please incorporate into the water quality spreadsheet additional and/or more recent water quality analyses for reclamation monitoring wells RP-24B and RP-24C, as well as reclamation monitoring well RP-28-2 and its nested Hagel B component-monitoring well RP-28-1. Of these three base of spoils reclamation monitoring wells, only one-years worth of water quality data has been provided for RP-24B and it appears the remaining data set for this and the other wells may have been unintentionally excluded. (BEB)
27. Narrative on page 9 of Section 2.3.2, Water Level Responses, provides a link to the "Monitoring Well Levels" spreadsheet but the link doesn't work. Please repair the link. (BEB)
28. Detailed assessment of ground water quality responses to mining and reclamation, Section 2.4, provides links to the water quality time series plots and the tabular data in the assessment and it

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appears the two links have been reversed. Please repair the links so that they open to their correct locations. (BEB)

29. Narrative in the second paragraph of Section 2.4.2 states that within the Underwood Coal Field, nitrate concentrations are low and well within the 10 mg/l limit set for human consumption; however, this statement may need to be revised somewhat considering that the data show nitrate levels associated with ground water monitoring well 055-2 has recorded a median nitrate level of around 37 mg/l over the period of record (both pre- and post-mining) with highest concentrations measured at 75 mg/l. Please consider revising the narrative. (BEB)
30. Please add to the narrative of Section 2.8 of the hydrologic assessment to clarify Falkirk's intention for the 3 or 4 ground water monitoring wells and lysimeters that are located adjacent to, and within constructed wetland R-W20-01 in the bond release tract. (GAW/BEB)

Attachment XI – Hydrologic Assessment, Section 3. Surface Water Resources

31. Please add to the narrative in Section 3.2.2 by briefly describing and summarizing any NDPDES discharge monitoring points that were in place within or adjacent to the bond release tract, the years of their control, and violations (if any). This would satisfy the requirements of NDAC 69-05.2-12-12(7)(b). (BEB)

If you have any questions, please contact this office.

Sincerely,



James R. Deutsch
Director
Reclamation Division