



Public Service Commission

State of North Dakota

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November 2, 2011

Mr. Donn Steffen
Environmental Manager
Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523

Dear Mr. Steffen:

The Reclamation Division has conducted technical review of the application for Final Bond Release No. 5 to Surface Mining Permit NACT-9101 at the Freedom Mine. The following items must be satisfactorily addressed before we recommend Commission approval of this application.

Attachment I – Final Bond Release Tract Map

1. Please revise Attachments Ia and Ib, Final Bond Release Tract Maps for Tracts 1 and 2, to only show the boundaries of the proposed bond release tracts. Outlining previously bond released areas on these maps is confusing. The hard copy of Attachment Ib identifies the bond release boundary to include a portion of the Harmony Lake Recreation Area. (GAW)

Attachment V – Surface Ownership, Land Use and Soil Depths Map

2. Please label the topsoil respread thickness for the associated disturbance areas in Section 18, Attachment Vc, where topsoil was stripped and respread to reclaim subsoil stockpiles, access trails, and surface water diversions as defined by the violet outlines. Information provided in a Coteau AutoCAD drawing indicates that the topsoil respread thickness in these areas was 11.3 inches. It is not necessary to label the topsoil respread thickness in areas that were occupied by topsoil stockpiles. (WTG)
3. Please revise Attachment Vc to remove the temporary and ephemeral wetland symbol from the area of cropland north of conservation shelterbelt SB-18-01. The small depression that supports wetland vegetation represented by the symbol was identified as a differential settling feature during the September 29, 2011 bond release inspection, and Coteau has committed to repairing the feature prior to final bond release. (WTG)

Attachment VI – Contour and Revegetation Map

4. Attachment VIb, Contour and Revegetation Map for Tract 2, shows all of the original tree plantings along the north boundary of the tract but only about 1 acre is being a considered conservation tree planting. Please correct this inconsistency. (GAW)

Attachment VII- General Information

5. Spaer bed ground water monitoring wells MP97-P03A and MW-2B are both listed in the Ground Water Analysis Table in Attachment VII as NA in the (*to year-end 2006*) ground water elevation range and total dissolved solids range columns. However, we request that the elevation and TDS ranges for these two wells be incorporated into the table to provide a general water elevation and water quality comparison with the data that is provided for these wells between 2007 and 2011. Please update the table to includes water elevation and TDS ranges for these wells from inception to year-end 2006. (BEB)
6. Please update the Ground Water Analysis Table in Attachment VII with water level and water quality data for Beulah bed ground water monitoring well MP97-P03B. This well is located only a short distance north of Section 16 and is also positioned down-gradient in the southeast to northwest ground water flow regime of this hydrostratigraphic unit. Please add the requested information for this monitoring well to the table. (BEB)
7. Please update the Ground Water Analysis Table in Attachment VII with available water level and water quality data for ground water monitoring well MW-9, using the same format as provided for the other ground water monitoring wells in the table. This ground water monitoring well was retained to provide long-term hydrologic data and is positioned down-gradient of several water-bearing units within the bond release tract. We ask that available information be incorporated into this bond release package for monitoring well MW-9. (BEB)
8. Please include a narrative(s) or reference the appropriate section of the permit that demonstrates the surface water impoundments are adequately sized for its intended purposes (i.e. for livestock watering and the number of animal unit days the stock ponds are usable). NDCC 38-14.1-24(7)(a) (MDB)
9. Please include documentation indicating the water level is stable in the surface water impoundments. This can be documented based on observations noted during the quarterly and annual pond inspections required by NDCC 38-14.1-24(7)(d). (MDB)
10. Please include pond maintenance agreements which are signed by the landowner for the three stockponds and spoils pond SSP-D18-01 located within the bond release tracts as required by NDCC 38-14.1-17(7)(c)(2). (MDB)
11. Please include correspondence from Mercer County indicating that the reclaimed County Road (County Road No. 27) and the section line corridors included in this bond release application are acceptable to the County. (GAW/MDB)
12. In the southwest quarter of Section 17 the road does not follow the statutory section line. Since the road does not follow the section line, the landowner could prevent public use where it is outside of the 66 foot statutory right-of-way. At this time Coteau is proposing to leave the road as a permanent road which will be left open to the public. This being the case, please secure the

- proper easements in order to allow the road to remain open to the public after the property is sold. (MDB)
13. Sentences in the third paragraph of page 5 and the first paragraph of Attachment VII states that Kentucky bluegrass is a dominant species in the wet meadow zone of constructed wetlands CW-16-04 and CW-17-02 as indicated in Attachments VIII d and VIII g. This appears to be an error. It seems unlikely that *Poa pratensis* could tolerate such saturated conditions, but more likely that *Poa palustris* would be growing in the wet meadow zone. Please review and correct as necessary. (GAW)
 14. Please expand the wetland discussion to include a brief description of the wetland designs (i.e. depth, watershed size in relation to wetland size) and discuss if the wetlands are exhibiting characteristics of the class that they were designed to become, as required by on page II-H-8 of our Guidelines document. Please also discuss surface water quality of the wetlands, (i.e. fresh, brackish, etc.), and discuss how the species composition of the constructed wetlands zones compare to Stewart and Kantrud vegetational zones. (GAW)
 15. Please include water quality data for the reclaimed seasonal wetlands for the last three years of the responsibility period as required in Section II-H-8 of the Revegetation Success Standards Document (RSSD). The RSSD requires data for major cations, anions, iron and other information not included in the table on page 4 of Attachment VII. Also please include a discussion of the results of the water quality data in comparison to Stewart and Kantrud information or premine data. (GAW)
 16. Please revise the post-mining temporary wetland discussion on page 6 of Attachment VII to account for changes that may have occurred after completing drainage improvement repairs. Attachments Va, b & c, should be reviewed and updated accordingly. The discussion should mention whether the temporary wetland features can be tilled or hayed through where located on cropland or hayland. (GAW/WTG)

Tract 1

Attachment VIIIa – Site History, Management, and Vegetation

17. Please include bookmarks in Attachments VIII b through VIII j-1 so that the information can be more easily located. (GAW)
18. The last paragraph on page 1 of Attachment VIII a states there are 0.36 acres of temporary wetlands on Tract 1. Please review and update if the repairs completed in the fall of 2011 have altered the acreage associated with these features. It is not clear why all of the features noted during the final bond release inspection were not identified as temporary wetlands. All areas where water temporarily ponds should be identified and listed as temporary wetlands. (GAW)
19. Please update the last sentence on page 2 of Attachment VIII a to clarify if a variance to the 10-year revegetation period was granted by the PSC for the 2.5 acre repair area. (GAW)
20. On page 2 of Attachment VIII a, Vegetation Management and Production, please discuss the settling repair work that was completed on Tract 1 in 2005, 2006 and 2007 as documented by the Freedom Mine Annual Maps. (WTG)

21. Please expand the cropland control area discussion to include information documenting that the cropland control area was been managed the same as the reclaimed cropland. (GAW)
22. In Attachment VIIIa – Vegetation Management and Production, the management summary for 2010 indicates that the flax crop produced 4,369.9 pounds/acre. This appears to be an error as this number is equal to the total bushels of flax for 2010 provided in Attachment VIIIb-1 – Yield Calculations. Please correct as appropriate. (RLK)
23. In Attachment VIIIa – Vegetation Management and Production (Tract 1) and Attachment VIIIh – Vegetation Management and Production (Tract 3), the Reclamation Division requests that the table provided under heading “Yield Information” indicate the actual crops grown for each year in which data is presented. If the yield for the actual crop grown (such as flax) was converted to the equivalent wheat yield, that needs to be clearly stated. (RLK)

Cropland

24. Please include the soil mapping units and the total area approved for the control area on the maps of the cropland control area, Attachment VIIIb-2. If the control area consists of several soil mapping units and if only a portion of the control area was used in any of the years being used to demonstrate revegetation success, then adjust the control area expected yield accordingly. (GAW)
25. Please include relevant copies of the unadjusted yield standards calculations and control area expected yield calculations in the bond release application rather than simply referring to the Consolidated Vegetation Success Standards Document. All information pertaining to the calculation of these standards in the CVSS must be included in the bond release application. (GAW)
26. We recommend including an additional year of data demonstrating revegetation success of the reclaimed cropland given that the 2008 yields are exceptionally low. The control area only produced 7.4 bushels of wheat per acre in 2008, but ND Ag Statistics data shows that the Mercer County average was 21.5 bushels per acre. Otherwise, please explain the reasons (such as hail damage) for the very low yields on the control and reclaimed areas. (GAW)
27. Please add a footnote to the tables on page 1 of Attachment VIIIb-1 to indicate the conversion factor and its basis for converting the flax yields to the equivalent spring wheat yields. Also, the actual per acre flax yields should be provided before converting them to the equivalent spring wheat yields. (JRD)
28. It is not clear how the total bushel value of 7,681.1 was determined on Attachment VIIIb-1, page 2. The net wheat amount is correctly listed as 6,606 bushels and the test weight was appropriately adjusted. Please update the 2009 cropland productivity standards, page 2 of Attachment VIIIb, accordingly. (GAW)
29. In the 2008 cropland productivity standard, Attachment VIIIb, please show how the control area yield, climatic correction factor, and actual yield of the reclaimed land values were calculated. None of the values listed can be re-calculated using the values provided. (GAW)

30. The field boundary of the control area in Section 5 is different than that shown in the CVSS. Please revise the calculated expected yield of the control area, Page 1 of Section B-7 of the CVSS, and include copies in the bond release application. The expected yield of the control area was based on 35.15 acres but a portion of this area is not even cultivated. Please correct. (GAW)
31. In Attachment VIIIb – Cropland Productivity Standards, the weighted average equation is missing the multiplication (*) symbol and Unadjusted Yield Standard (UYS) for the Non-Prime Respread Acres for the 3 years used to prove reclamation success. Please correct accordingly. It was noted that the calculations contained the appropriate data. (RLK)
32. In Attachment VIIIb-2 – Cropland Management Sheets, for 2009 it was noted that there was a substantial difference in the harvest dates for the reclaimed cropland in tract 1 (6/18/09) and the control area (9/23/09). It appears that the 6/18/09 date is an error. Please footnote the worksheet accordingly or provide a note outlining the circumstances causing the difference in harvest dates. It does appear the reclaimed cropland would also meet the production standard using Correction Method 1. (RLK)
33. In Attachment VIIIb-2 – Cropland Management Sheets, no harvest dates were provided for the reclaimed field in Tract 1 or the control area for the 2010 flax crop. Please provide this information if available. (RLK)

Hayland

34. Please round hayland tonnage yields to two decimal points rather than to just one tenth given that a tenth of a ton is 200 lbs. Update Attachments VIIIc and VIIIc-2, Hayland Productivity Standards and Yield Calculations, accordingly. (GAW)
35. The adjusted production standard listed in Attachment VIIIc cannot be calculated using the unadjusted yield standard and climatic correction factor values provided. Please make the necessary corrections. (GAW)
36. Please include documentation or correspondence from the farm cooperators of Tract 1 that the bale numbers provided in Attachment VIIIc-2, Hayland Yield Calculations, are correct, and provide documentation showing how the bale weights were determined (scale weight ticket). It seems highly unlikely that both Miller and Weisz made an identical number of bales for two consecutive years and that the bales weights went from 1170 lbs to 613 lbs and 1400 lbs to 414 lbs. Please include cooperator explanations of the bale size and weights. (GAW)
37. Please include a map of the hayland that shows which portions of the tract were hayed by Miller, Weisz and Fandrich. (GAW)

Tract 2

Attachment VIIIe – Vegetation Management and Production

38. The Liability Period narrative on page 4 of Attachment VIIIe states that data from 2006 and later can be used since this corresponds to year six of the liability period and that the 10-year date is 2010. However, NDAC 69-05.2-22-07 requires data beginning “after year six”. Attachment VIb, Contour and Revegetation Map, shows that the orphan spoil tree planting was in 2001. Please

- correct this error and explain the 10-year revegetation requirements for each post-mining land use in the tract. (GAW)
39. In Attachment VIIIe, Vegetation Management and Production, under the Orphan Spoil and Conservation Shelterbelt narratives, please discuss if the conservation tree plantings (SB-17-02 and SB-17-01) have successfully established. During the field inspection, it appeared that only a few species have established in both plantings and only a portion of the original orphan spoils tree and shrub plantings survived. Although no specific tree planting standards apply to these conservation plantings, a ground cover standard still applies and there needs to be discussion about whether or not the planting has established successfully, i.e. species growing, canopy cover and understory vegetation, general health and reproduction of established species. In other words, these conservation plantings need to be properly characterized and assessed. (GAW)
 40. Conservation Shelterbelt narrative discusses how 8 acres of this tree planting was converted to native grassland without starting the 10-year revegetation responsibility period (native grassland not destroyed when planted). Please indicate the distance between the 12 distinct plantings. A sentence in the Conservation Shelterbelt narrative indicates there were only 3 rows. This is not correct as there were 12 plantings or belts and each was comprised of many rows. (GAW)
 41. In Attachment VIIIe, Vegetation Management and Production, please discuss if the temporary wetlands in the orphan spoil are functioning as intended. Although no specific wetland standards apply, the cover standard applies and there must be a discussion about whether the reclamation has been successful. (GAW)

Native Grassland

42. Please review the 2010 native grassland climatic correction factor, page 4 of Attachment VIII f. A value of 1.03 was calculated using an annual weighted yield of 2,069 lbs/acre but the two reference areas yielded 2,026 and 2,012 lbs per acre in 2010. Please correct as necessary, including the 2010 productivity standard. (GAW)
43. Please discuss who collected the native grassland and orphan spoil sampling data being used to demonstrate revegetation success. In the future, please include the name(s) of the person who collected the cover and production data used to demonstrate reclamation success. (GAW)
44. Please review the sample adequacy calculations listed at the end of the native grassland productivity data in Attachments VIII f-1 and Attachments VIII f-2 and correct the t-values used in Method 2, two stage sampling technique. The t-value or “degrees of freedom” that must be used is the number of samples minus one (n-1) rather than n. Please correct these errors even though the results do not change. (GAW)
45. The relative species composition listed in the 2009 cover data of the native grassland reference areas in Attachment VIII f-2 were incorrectly calculated as the values total more than 100%. Please recalculate these values and update the mean amount of Kentucky bluegrass listed in Attachment VIII e. (GAW)
46. In Attachment VIII f-2, the relative species composition percent values listed for the 2010 Silty reference area located in Section 9 are incorrect. Please correct the values listed. (GAW)

47. In Attachment VIIIIf-1, please recalculate the relative species composition values for the reclaimed native grassland in 2009. The total pin hits value of 2011 is listed in the total cover column and 2019 hits are shown in the table but only 200 ten-point frames were used. Thus, it appears the total live hit values may be incorrect. Please correct and update the diversity and seasonality values listed in Attachment VIIIe, accordingly. (GAW)
48. Please update the diversity table on page 7 of Attachment VIIIe to clearly list how much Kentucky bluegrass is included in the "Native" Plant Species Composition values. A native species value of 100% is listed in 2009, but the data shows that smooth brome and forbs comprised 13.9% of the relative composition. (GAW)
49. It appears forbs are being counted towards meeting the 65% native grass diversity requirement, page 7 of Attachment VIIIe. Please provide justification for this given that many non-native forbs have been observed growing on this property, (i.e. Canada thistle, sweet clover, black medic, etc.). Native forbs must be listed separate from non-native forbs if they are going to be counted towards the diversity standard. (GAW)

Tract 3

Attachment VIIIh, Vegetation Management and Production

50. A sentence in the last paragraph on page 1 of Attachment VIIIh, states that there are 0.1 acres of temporary wetlands located on the reclaimed cropland. This feature was repaired in the fall of 2011 because conventional tillage equipment could not traverse the feature. It is not clear if this feature will continue to function as a temporary wetland. Please review and correct if necessary. Another sentence in this paragraph mentions seasonal wetlands and references Attachments VII and V but there are no reclaimed seasonal wetlands shown on this tract. Please edit this sentence to provide clarity. (GAW/WTG)
51. In Attachment VIIIh, Vegetation Management and Production, under the Orphan Spoil and Conservation Shelterbelt narratives, please discuss if the conservation tree plantings (SB-18-01, SB-18-02 and SB-18-03) have successfully established. During the field inspection it appeared that only a few species have established in these plantings and that only a portion of the original orphan spoil tree and shrub plantings survived. Although no specific tree planting standards apply to these conservation plantings, a ground cover standard still applies and there needs to be discussion about whether or not the planting has established successfully, i.e. species growing, canopy cover and understory vegetation, general health and reproduction of established species. In other words, the conservation plantings need to be properly characterized. (GAW)
52. The fifth paragraph on page 5 of Attachment VIIIh states that two small wetlands were constructed in the re-disturbed orphan spoil. However, only one feature is shown on Attachment V. Please correct this error and discuss if the wetlands are functioning as intended. Also, please discuss the types of vegetation in these wetlands and if they were designed as temporary or more permanent features. (GAW)

Cropland

53. The first section of the cropland discussion, page 6 of Attachment VIIIh, Vegetation Management and Production mentions Section 16 rather than Section 18. Please correct this error. (GAW)

54. The cropland productivity standards were calculated using 80.8 acres of non-prime farmland and 19.7 acres of undisturbed farmland, as well as 53.76 acres of prime farmland. However, the CVSS Dakota Star Regional Cropland Standard was developed using 109.97 acres of non-prime farmland in Section 18. Page 5 of Section B-1 of the CVSS states that undisturbed acreage will be added when calculating the standards at the time of bond release which is why it makes sense to include the 19.7 acres of non-disturbed land in the bond release application. We understand that 27.8 acres of prime farmland came from Section 17 and that 23 acres was associated disturbance. Please clarify why the Regional Standard was developed using 109.97 acres non-prime cropland in Section 18 if only 80.8 acres were disturbed. (GAW)
55. Please clarify why the unadjusted yield standard, Attachment VIIIi, Cropland Productivity Standard, was developed using 154.26 acres when Attachment VIIIi-3 shows that only 146 acres were farmed in 2010 and 2008 and a value of 139.36 acres is being used in 2007 while the map in Attachment VIIIi-3 shows that 131.1 acres were farmed that year. The yield calculations, Attachment VIIIi-2, show that 148 acres were farmed in 2008 and 2010 and 133.1 acres in 2007. (GAW)
56. Attachment VIIIi, Cropland Productivity Standard, lists the NDASS Annual County Yield for spring wheat as 29.3 bu/ac; however, this value should be 29.8 bu/ac. Please correct this error. (GAW)
57. The 2007 yield calculation, Attachment VIIIi-2, shows that the reclaimed tract yielded 29.5 bu/acre; however, it appears the total bushels listed is not correct after making the adjustments for dockage and test weight. It appears the total bushels should be 3,854.6 rather than 3,921.1. The adjustment reduced the yield to 28.96 bu/acre. Please review and correct as necessary, including Attachment VIIIi-2 and Attachment VIIIi. (GAW)

Re-disturbed Orphan Spoil

58. Please include cover data from the undisturbed orphan spoil from which the standard is being developed. Data from only the re-disturbed spoil is included in Attachment VIIIj. (GAW)

General

59. If other changes are being made to Attachments VIIIId-1 and VIIIg-1, please place the wetland identification numbers, legal description section numbers, quarter-line/section-line boundaries, and appropriate bond release boundaries on these maps. Also, please include this information on maps for future bond releases. (GAW)
60. It is recommended that all of the wetland information be included in Attachment VIII, Site History, Management and Vegetation. Currently, the wetland information is split between Section VII and VIII. (GAW)

It would be less confusing if the cropland productivity standards were not converted from crops such as flax and barley to the equivalent spring wheat yields. Given that control areas are being used, a direct comparison of the seeded crops should be used to demonstrate revegetation success. In the future, please provide these calculations in the bond release applications (including the summary tables). Also, please be reminded that only barley or oats should be used for proving reclamation success for one of the three years on reclaimed prime farmland according to the revegetation success standards. We noted that flax

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was used in 2010 to demonstrate reclamation success on the cropland tract in Section 16 that includes reclaimed prime farmland.

The items identified in our October 11, 2011 letter will also have to be addressed before we recommend approval of this final bond release application. Please let us know when the repair work has been completed so that it can be inspected.

If you have any questions, please contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "James R. Deutsch", written in a cursive style.

James R. Deutsch
Director
Reclamation Division