

May 14, 2014

Mr. James R. Deutsch  
Reclamation Director  
ND State Public Service Commission  
600 East Boulevard, Dept. 408  
Bismarck, North Dakota 58505

**RE: Revision 24 Technical Review Responses for Permit NAFK-9503**

Dear Mr. Deutsch:

Falkirk submits the following responses to the technical review items listed in your March 13, 2014 letter required to be addressed prior to recommendation to the Commission for approval.

**Section 1.5 - Identification of Interests and Rights of Entry**

- 1. The hyperlink to surface ownership consent Lease No. 03645 in Tract 51 does not appear to function, but the hyperlink for coal ownership consent for the same lease functions properly. Please repair the hyperlink as necessary. (WTG)***

The hyperlinks in Tract 51 have been re-established.

**Section 2.2 - Ground Water Hydrology**

- 2. Since ground water Monitoring Wells 319-1 and 319-2 have been destroyed by mining and will not be replaced, please remove those wells from Active Status in the Monitoring Schedule of Section 2.2.6. Since Monitoring Wells 241-1 and 349-1, 2, 3 will be replaced in the near future, their status can remain as active in the Monitoring Schedule, but should include a note in the comment box regarding future replacement. However, the Monitoring Well information spreadsheet in Section 2.2.16 and the Completion Details of Monitoring Wells spreadsheet in Section 2.2.20a lists the status of all of the above-mentioned wells as destroyed. Please update the Permit to provide accurate and consistent well status information in all of the spreadsheets. (BEB)***

Please see updated Sections 2.2.6, Ground Water Monitoring Plan, 2.2.16, Monitoring Well Information, and 2.2.20, Completion Details of Monitoring Wells.

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Falkirk Mining Company  
Randy Crooke

**Section 2.6 - Surface Water Information and Monitoring Plan**

- 3. Watershed modeling narrative in Section 2.6.5, Surface Water Probable Hydrologic Consequences, describes post-mining changes to subwatershed size and topography and the corresponding changes to modeled peak discharge and runoff volume at control points for subwatersheds as approved in Revision No. 20. Because of proposed changes with Revision No. 24, some of that narrative is now dated and erroneous. Please update the narrative so that it is current with the information provided on Tables 1 and 2 (4% & 10% events) of Section 2.6.5c, Surface Water PHC Data, and consider adding additional narrative regarding proposed changes to subwatersheds affected with this revision. (BEB/RLK)***

Section 2.6.5 was updated to match the information shown in the tables of Section 2.6.5c.

- 4. The legend in the Pre-Mining PHC Map, Section 2.6.5a, provides a label and symbol for a terrain modification boundary (pink line); however, Falkirk does not incorporate this boundary line in its pre-mining PHC maps and reference to a terrain modification boundary can be eliminated from the legend on the map. (BEB)***

The terrain modification boundary was inserted into Section 2.6.5a to match the label in the legend.

- 5. Please update the Post-Mining Hydrologic Consequences Map, Section 2.6.5b, so that the wetland locations, configurations, and contour lines agree with those shown on the Post-Mining Topography Map, Section 4.2.6b. (BAJ)***

Section 2.6.5b was updated with the new post-mine contour lines and post-mine wetlands.

**Section 3.1 - Operations Plan - General**

- 6. Please update the Waste Disposal narrative in Section 3.1.1, as well as the Pit Layout and Facilities Map, Section 3.1.5, to describe and depict the waste disposal operation and location(s) of burial for the concrete waste and trees from the old dragline erection pad, formerly located in Permit NAFK-8705 and reportedly buried in the active pit below Ramp R-0 in Permit NAFK-9503. (BEB)***

Please see the updated narrative in Section 3.1.1 and the updated Pit Layout and Facilities Map, Section 3.1.5.

7. ***Please update the Pit Layout and Facilities Map, Section 3.1.5, and the Extended Mining Plan Map, Section 3.1.6, to depict those areas that were “mined out” through 2013. (BEB)***

Please see the updated Section 3.1.5, Pit Layout and Facilities Map, and Section 3.1.6, Extended Mining Plan Map.

8. ***A hyperlink in the second full paragraph of Page 3 of Section 3.5.1, Transportation Narrative, provides a hyperlink intended for Section 3.5.18, Riverdale Access Road Profile, but actually takes the reader to Section 3.6.18, Design of Sedimentation Pond P-R09-02. Please redirect the hyperlink. (BEB)***

The hyperlink in Section 3.5.1 has been redirected to Section 3.5.18.

9. ***Falkirk is proposing to construct a large MSHA class pond (P-R06-01) in Section 6 that will destroy significant acreage of woodlands rather than four smaller ponds (P-R33-01, P-R33-02, P-R06-01, and P-R06-02) as previously planned that minimized effects to woodland acreage. Please reconsider constructing this large pond rather than 4 smaller ponds as originally proposed or consider moving the location of the proposed MSHA pond further north to minimize disturbance to woodlands. (NDAC 69-05.2-13-05) (GAW)***

Falkirk plans to move forward with the proposed MSHA Pond P-R06-01. The embankment has been shifted north which reduces the number of woodland acres which will be disturbed.

### **Section 3.3.2 - Blasting Plan Map**

10. ***The Blasting Plan Map, Section 3.3.2, does not depict the revised mine plan as proposed with this revision. Please revise as appropriate. (RLK)***

Please see the updated Blasting Map, Section 3.3.2.

### **Section 3.6 - Operations - Surface Water Management**

11. ***Please add Pond P-R25-03 to the Pond and Diversion Construction and Reclamation Schedule, Section 3.6.1d. (BAJ)***

Section 3.6.1d was updated and Pond P-R25-03 was added to the schedule.

- 12. Please correct the location information for Ponds P-R05-01 and P-R05-02 in Section 3.6.27. The location is listed as the SE¼ of Section 5, T145N, R83W and should be listed as Section 5, T144N, R83W. (BAJ)**

Section 3.6.27 and Section 3.6.28 were updated with the correct township for Ponds P-R05-01 and P-R05-02.

- 13. Please correct the Township/Range location for Pond P-R04-01 in Section 3.6.15. The T/R should be listed as T144N, R83W. (BAJ)**

Section 3.6.15 was updated with the correct township for Pond P-R04-01.

- 14. Please correct in the Table of Contents in the Water Management Section, Section 3.6.15, Details of Sedimentation Pond P-R04-01, as Section 3.6.15a is labeled as “Details of Sedimentation Pond P-R01-01” and should be changed to Pond P-R04-01. (BAJ)**

Section 3.6.15 and Section 3.6.15a in the Table of Contents in the Water Management Section have been corrected.

- 15. Please provide preliminary information for Ponds P-R05-05 and P-R05-06 located in Section 5, T144N, R83W. Preliminary information must also be provided for the Section 6, T144N, R83W ponds (P-R06-01, P-R06-03, and P-R06-04); the Section 7, T144, R83W ponds (P-R07-01, P-R07-02, and P-R07-03), and the Section 12, T144N, R83W ponds (P-R12-01, P-R12-02, and P-R12-03). (NDAC 69-05.2-09-09.1.b) (BAJ)**

Referencing NDAC 69-05.2-09-09(1)(b)

- a. The purpose of the structure (the purpose of our sedimentation ponds) is stated in Section 3.6.1. They are constructed for the purpose of collecting and treating surface water runoff in order to prevent additional contribution of suspended solids to water downstream of areas impacted by mining operations.
- b. A typical cross-section of the proposed structure (a typical cross-section of proposed sedimentation ponds) is provided in Section 3.6.1c.
- c. The name and size of watersheds affecting the structure (the watersheds which contribute to proposed sedimentation ponds) are listed in the table of Section 3.6.1d. They are also depicted in Section 3.6.1a Total Water Management Map.
- d. Other preliminary hydrologic and geologic information (hydrologic information pertaining to the watersheds of this mine area) is provided in Section 2.6. Geologic information is provided in Section 2.3.

- 16. Please review the Total Water Management Plan Map, Section 3.6.1, and the Worst Case Bond Plan Map, Section 4.2.4b. Section 3.6.1 shows a large MSHA pond identified as P-R06-01 in Section 6, T144N, R83W. Section 4.2.4b shows two smaller ponds in the same area, identified as P-R06-01 and P-R06-02. Please correct as necessary. (BAJ)**

Section 4.2.4b has been updated to match the proposed future ponds shown in Section 3.6.1a.

**Section 4.1.2 - Post-Mining Land Use Map**

- 17. Please revise the boundary of the strip of hayland located in the NE¼ of Section 6, T144N, R83W to show the hayland area through the recreated drainageway area as it previously existed. (GAW)**

Please see the updated Post-Mining Land Use Map, Section 4.1.2.

- 18. The Post-Mining Land Use Map incorrectly shows that Falkirk is converting cropland located in the SE¼ of Section 3, T144N, R84W that is not going to be disturbed by mining activities to native grassland but the Pre- and Post-Mining Land Use Acreage tables, Section 4.1.3, are not being updated. Please review and revise as necessary. (GAW)**

Please see the updated Post-Mining Land Use Map, Section 4.1.2. Falkirk is returning the land to the same land use acres and boundaries as existed pre-mine.

- 19. The Pre- and Post-Mining Land Use Acreage tables, Section 4.1.3, indicate that the farmsteads located in the SE¼ of Section 28 and the SE¼ of Section 32, T145N, R83W are going to be present post-mining, but the Post-Mining Land Use Map, Section 4.1.2, shows that these farmsteads are not going to exist after mining. The Pit Layout and Facilities Map shows a 500-foot setback from the farmsteads, and we realize that Falkirk is probably planning to purchase or move these farmsteads; however, the information provided in Section 4.1 should be consistent. Please review and update to provide clarity. (GAW)**

Please see the updated Pre- and Post-Mining Land Use Acreage Tables, Section 4.1.3. Farmsteads in Section 21 & 25, T145N, R83W were updated to show cropland replacing the farmstead acreage. Section 32, T145N, R83W listed above was correctly depicted in the tables as not going back as a farmstead post-mine.

- 20. Wetlands located in the SE $\frac{1}{4}$  of Section 35, NW $\frac{1}{4}$  of Section 33, NE $\frac{1}{4}$  of Section 20, SW $\frac{1}{4}$  of Section 17, SW $\frac{1}{4}$  of Section 8, SE $\frac{1}{4}$  and SW $\frac{1}{4}$  of Section 9, and NW $\frac{1}{4}$  and NE $\frac{1}{4}$  of Section 5, T145N, R83W are depicted and, in most instances, outlined with a wetland buffer zone as if they are reclaimed seasonal or more permanent wetlands, but they are not labeled as such. Please review and revise as necessary to provide clarity. (GAB)**

Please see updated Section 4.1.2, Post-Mining Land Use Map. The wetlands have been labeled.

- 21. Wetland W-NE25-2 is depicted on the Post-Mine Land Use Map and a design plan for this wetland is included in Section 5.2.2, but this feature does not appear to have been constructed when the haulroad was reclaimed. Please review and revise if necessary. (GAW)**

Please see updated Section 5.2.2, Wetlands Design Details. As discussed with Mr. Welch on April 30<sup>th</sup>, the wetland was inadvertently not reclaimed. However, an adjacent wetland (W-NW25-01) is larger than its post-mine design. Therefore, the increased acreage of W-NW25-01 will account for the unreclaimed W-NE25-2. A note has been added to the design details of W-NW25-01.

- 22. Please show replacement woodland acreage for the area affected by proposed MSHA Pond P-R06-01 if this pond will be constructed as proposed. (GAW)**

Please see updated Section 4.1.2, Post-Mining Land Use Map. 1.6 acres of replacement woodlands have been added to Section 6.

#### **Section 4.2.4 - Reclamation Bond / Cost**

- 23. None of the hyperlinks that are provided in Section 4.2.4 work. Please repair all hyperlinks that connect to Sections 4.2.4a and 4.2.4b. (BEB)**

All hyperlinks provided in Section 4.2.4, have been repaired.

- 24. Sediment Ponds P-R01-01 and P-R01-02 and their related diversions need to be included in the worst case situation under Associated Disturbance that is provided in Section 4.2.4 because they are now planned for construction in 2016. Additionally, Pit Water Pond PW-R07-06 is scheduled for construction in 2017 and since the worst case condition has now been determined to occur in the 4<sup>th</sup> quarter of 2017, it is reasonable to assume the pond will have been constructed by that time of year and should be considered in the worst case liability. Please review and revise this section as necessary as**

***well as making concurrent changes to associated disturbance areas on the Worst Case Bond Map. (BEB)***

These ponds and diversions are associated with the mining of the Tavis seam on the western edge of NAFK-9503. Due to current variability in the delivery and quality requirements at the power plant, the years of mining the Tavis area may change. Therefore, the bond cost for these ponds will be added in a later revision that includes the Tavis Pits in west Riverdale. The bond costs will likely be updated in 2015.

- 25. Related to changes made regarding the above-listed deficiency, which is likely to include the planned adjacent SPGM storage area in the NE¼ of Section 2, T145N, R84W in Permit NAFK-9503, we ask that you expand the Worst Case Bond Map further to the west so the entire NAFK-9503 permit boundary is visible on the map. Also, extending the map an additional half-mile or so to the south will allow enough room on the map to show the entire southern boundary of Permit NAFK-9503. (BEB)***

Please see the response above.

- 26. Please update the length of primary haulroads to be reclaimed to 171,700 ft. The length was calculated from the primary roads shown on Plate 4.2.4b, Worst Case Bonding Map. The costs for haulroad gravel and haulroad grading will need to be updated as well. (BAJ)***

Please see the updated narrative and calculations in Section 4.2.4.

- 27. Please add Ponds P-W28-01, P-W29-04, and P-W30-03 to the Worst Case Bond Plan Map, Section 4.2.4b. Please note that reclamation costs are included for the ponds, but the date of reclamation is not clear in the water management section of Permit NAFK-8705. (BAJ)***

P-W28-01 is being transferred to the city of Underwood for water management with the French Drain. This pond would not be reclaimed in a worst case scenario. The reclamation of Ponds P-W29-04 and P-W30-03 are scheduled for 2014 as shown in the Surface Water Management Plan, Section 3.6.1, of NAFK-8705, Revision 35. The reclamation costs have been removed from the table.

- 28. Please add Pond P-E14-01R to the worst case reclamation costs. It appears that portions of the pond will be reclaimed as mining disturbance and part as associated disturbance. However, a portion of the pool area (approximately 13 acres) will likely need grading and SPGM respread. This should also be shown on the Worst Case Bonding Map, Section 4.2.4b. (BAJ)***

Please see the updated map and calculations in Section 4.2.4.

**29. Please update the SPGM respread haul distance information for the following areas of Mining Disturbance in Permit NAFK-9503: (BAJ)**

- a) **Section 1, T144, R84W: Stockpile locations for respreading this tract are given as Sections 4/36. However, the haul distance is given as 3,000 ft. This should be approximately 15,000 ft. depending on what pile is used. Please review and update as necessary.**

Please see the updated calculations in Section 4.2.4. The stockpile location was listed incorrectly. The SPGM will come from the SPGM storage area adjacent to the disturbance in Section 1.

- b) **Section 9, T144N, R83W: Please increase the haul distance for TS-541 and SS 262 from 1,600 to 1,800 ft.**

Please see the updated calculations in Section 4.2.4. The distance was updated to 1,800 feet.

- c) **Section 26, T145N, R83W: Please increase the haul distance for TS-455 from 1,500 to 2,100 ft. and increase the haul distance from SS-210 (both piles) to 1,500 ft.**

Please see the updated distances in the calculations in Section 4.2.4.

- d) **Section 28, T145N, R83W: Stockpiles SS-156/160/178/182/186/268. Most of the subsoil that is designated for Section 28 is stored in Section 24, T145N, R83W, Section 19, T145N, R82W, and Section 30, T145N, R82W. The Reclamation Division has determined the haul distance should be increased from 17,500 ft. to 22,000 ft.**

Please see the updated distances in the calculations in Section 4.2.4.

- e) **Section 29, T145N, R83W: Please increase the haul distance from 1,500 ft. to 14,600 ft. for Stockpile 455, and increase the haul distance from 1,500 ft. to 14,000 ft. for Stockpile 210.**

Please see the updated distances in the calculations in Section 4.2.4. Section 29 would be respread with TS and SS from Section 21.

- f) Section 35, T145N, R83W: Please increase the haul distance from Stockpiles SS-210/244/258 from 2,200 ft. to 4,400 ft.*

Please see the updated distances in the calculations in Section 4.2.4.

- g) Section 36, T145N, R83W: Please increase the haul distance from Stockpile SS-244 from 1,100 Ft. to 1,400 f*

Please see the updated distances in the calculations in Section 4.2.4.

**30. Please update the SPGM respread summary, haul distance, and other information for the following areas of Mining Disturbance in Permit NAFK-8405: (BAJ)**

- a) Section 11: Please increase the haul distance for Stockpile 223 from 9,000 ft. to 11,600 ft.*

Please see the updated distances in the calculations in Section 4.2.4.

- b) Section 12: Please calculate 41,199 cubic yards with a 16,900 ft. haul for Stockpile 497 and 1,334,000 cubic yards with a 7,200 ft. haul from the Section 18 stockpiles. Please note that Stockpile 497 (TS) is used to respread Sections 12, 13, 15, and 16. Using Stockpile 497 to respread Section 15 only would deplete this pile (our records show that this pile has slightly more than 417,200 cubic yards). Also, Stockpile 224 is used for respread in Sections 11, 13, 15, and 16, and there is not enough subsoil in the pile to respread these areas. It also seems unlikely that Falkirk would add to Stockpiles 224 and 497 because of their location. If this is the case, then please include other sources of SPGM for respreading these areas.*

Please see the updated piles and distances in the calculations in Section 4.2.4.

- c) Section 16: The SPGM Respread Hours Summary - Mining Disturbance Acres shows 1.6 acres of mining disturbance that will require topsoil and subsoil respread. The Worst Case Bond Plan Map, Section 4.2.4b, shows this area to be approximately 11 acres. Please correct as necessary.*

Please see the updated distances in the calculations in Section 4.2.4.

- d) Section 15: SPGM Respread Hours Summary - Mining Disturbance Acres states there are 318 acres of mining disturbance. The Reclamation Division calculates that the mining disturbance acres should be 331 acres. Please correct.*

Please see the updated acres in Section 4.2.4. The acreage was recalculated to 342.6 acres.

**31. Please update the SPGM respread hours summary, haul distance, and other information for the following areas of Associated Disturbance in Permit NAFK-9503: (BAJ)**

- a) Section 1, T144N, R83W: Please include SPGM respread hours and stockpile source for the 10.3-acre Section 1 SPGM storage area that is shown on the Worst Case Bond Plan Map.**

Please see updated Section 4.2.4.

- b) Section 5, T144N, R83W: Please include SPGM respread hours and stockpile source for the 33.9 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map.**

Please see updated Section 4.2.4.

- c) Section 6, T144N, R83W: Please include SPGM respread hours and stockpile source for the 2.45 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map.**

Please see updated Section 4.2.4.

- d) Section 9, T144N, R83W: Please include SPGM respread hours and stockpile source for the 59 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map.**

Please see updated Section 4.2.4.

- e) Section 15, T145N, R83W: From the Worst Case Bond Plan Map, Section 4.2.4b, the Reclamation Division calculates 35.25 acres of roads instead of the 27.9 acres as listed in the SPGM respread hours summary. Please correct.**

After further review, it appears that the 27.9 acres of roads is correct.

- f) Section 20, T145N, R83W: Please include SPGM respread hours and stockpile source for the 12.88 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map, Section 4.2.4b.**

Please see updated Section 4.2.4.

- g) Section 21, T145N, R83W: Please include SPGM respread hours and stockpile source for the 35.47 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map, Section 4.2.4b.**  
Please see updated Section 4.2.4.

- h) Section 22, T145N, R83W: Please increase the acres for subsoil stockpiles from 5.8 acres to 9.8 acres (Stockpile 276 is 9.8 acres).**

Please see updated Section 4.2.4.

- i) Section 23, T145N, R83W: Please review the haul distance for haulroad reclamation in Section 23. Stockpiles 295 and 449 are used for topsoil respread and a 6,500 foot haul distance is used. The Reclamation Division suggests that haul distances be provided for each pile rather than grouping the two piles together since each pile has vastly different haul distances (approximately 1,000 ft. for Stockpile 449 and approximately 10,500 ft. for Stockpile 295) using existing trails and haulroads**

Please see updated Section 4.2.4. The piles have been split up to provide separate haul distances.

- j) Section 25, T145N, R83W: For the reclamation of the ponds and heat enclosure pad, Stockpile 377 is referenced as a source. However, our records and the Worst Case Bond Plan Map, Section 4.2.4b, do not show a Stockpile 377. Also, we believe the haul distance from Stockpile 375, listed as 2,100 ft. should actually be 2,700 ft. (pile centroid to pond centroid). The haul distance from Stockpile 375 to the heat enclosure pad is listed as 2,100 ft., whereas the Reclamation Division measures the haul distance to be approximately 5,600 ft. For respreading subsoil stockpiles in Section 25, Stockpile 303 is used with a haul distance of 2,700 ft. The Reclamation Division measures the haul distance at 4,400 ft. However, our records indicate that Stockpile 303 only has 5,784 cubic yards of material, far short of the 32,751 cubic yards required for respread. Another pile will need to be designated to respread the subsoil pile locations. For the haulroad topsoil respread, the distance is listed as 2,500 ft. The Reclamation Division calculates the distance to be approximately 3,500 ft. (centroid of Stockpile 375 to the centroid of Section 25 haulroad). Please correct as necessary.**

Please see updated Section 4.2.4. Topsoil Piles 375 and 377 were located adjacent to each other. They have since been combined into Pile 375. The reference to 377 has been removed.

- k) Section 26, T145N, R83W: From the Worst Case Bond Plan Map, Section 4.2.4b, the Reclamation Division calculates 30.42 acres of roads instead of the 8.0 acres as listed in the SPGM respread hours summary. The haul distance from Stockpile 509 to respread Section 26 haulroads is listed as 2,700 ft. The Reclamation Division calculates the haul distance to be approximately 3,800 ft. Please correct.**

Please see updated Section 4.2.4. Falkirk recalculated 29.4 acres of roads. The haul distance has been changed to 3,800.

- l) Section 27, T145N, R83W; The haul distance to respread haulroads in Section 27 from Stockpile 525 is listed as 10,500 ft. The Reclamation Division calculates the haul distance to be approximately 12,500 ft. using existing haulroads and across the mining disturbance area. The haul distance for pond reclamation in Section 28 is listed as 5,400 ft., but the Reclamation Division calculates the haul distance to be approximately 6,200 ft. using existing haulroads and across the mining disturbance area. Please correct.**

Please see updated Section 4.2.4. The haul distances have been updated.

- m) Section 28, T145N, R83W: The haul distance to respread haulroads in Section 27 from Stockpiles 583/585 is listed as 5,400 ft. The Reclamation Division calculates the haul distance to be approximately 6,300 ft. using existing haulroads and across the mining disturbance area. Please correct.**

Please see updated Section 4.2.4. The haul distances have been updated.

- n) Section 32, T145N, R83W: Please include SPGM respread hours for the 4.6 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map, Section 4.2.4b.**

Please see updated Section 4.2.4.

- o) Section 33, T145N, R83W: Please include SPGM respread hours for the 2.45 acres of SPGM storage area that is shown on the Worst Case Bond Plan Map, Section 4.2.4b.**

Please see updated Section 4.2.4. The pond and pile were deleted to show the change to large MSHA Pond located in Section 6.

- p) Section 4, T144N, R83W: Please review the stockpiles listed for pond reclamation in Section 4 (Stockpiles 391, 377, 375). The haul distance over existing roads/trails is over 11,000 feet from Stockpile 391 to Pond P-R04-02, and the haul distance from Stockpile 375 to Ponds P-R04-03 and P-R04-04 is approximately 13,000 ft. There is no Stockpile 377. The haul distance for SPGM respread of the pond overburden areas in Section 4 is listed as 500 ft. This is satisfactory for the pond overburden area in the NE<sup>1</sup>/<sub>4</sub> of Section 4 (Stockpiles 535 and 260), but the haul distance for reclamation of the pond overburden area in the SW<sup>1</sup>/<sub>4</sub> of Section 4 is approximately 1,200 ft. for Stockpiles 262 and 541. A 500-ft. haul distance is currently listed. Please correct.*

Please see updated Section 4.2.4. The topsoil piles listed were incorrect and have been updated. Also, the haul distances have been updated.

- q) Section 29, T145N, R83W: From the Worst Case Bond Plan Map, Section 4.2.4b, the Reclamation Division calculates 15.6 acres of respread for Pond R29-01. The SPGM respread hours summary shows 5.6 acres. Also, two SPGM storage areas are also shown on the Worst Case Bond Plan Map, Section 4.2.4b, that total 9.64 acres but are not included in SPGM Respread Hours Summary. An overburden pile of 5.9 acres is listed in the SPGM Respread Hours Summary, but is not shown on the Worst Case Bond Plan Map. Please correct.*

Please see updated Section 4.2.4. The SPGM storage areas were added and the pond acreage was also updated. However, the overburden storage area was/is shown on the map. It is located adjacent to Pond P-R29-01.

**32. Please update the SPGM respread summary and haul distance information for the following areas of Associated Disturbance in Permit NAFK-8405: (BAJ)**

- a) Section 7, T146N, R82W: The stockpile listed for reclamation of the portions of ponds in Section 7 is listed to be in Section 12. However, nearly all of Section 12 is mining disturbance and no stockpiles are shown on the Worst Case Bond Plan Map, Section 4.2.4b. Please show the source of SPGM for Section 7 pond reclamation on the Worst Case Bond Plan Map.*

Please see updated Section 4.2.4. The TS and SS piles used and their distances were updated.

- b) Section 10, T146N, R82W: Please add SPGM respread hours for the 4.1-acre SPGM storage area shown on the Worst Case Bond Plan Map, Section 4.2.4b.**

Please see updated Section 4.2.4.

- c) Section 11, T146N, R82W: Please add SPGM respread hours for 2.8-acre SPGM storage area shown on the Worst Case Bond Plan Map, Section 4.2.4b.**

Please see updated Section 4.2.4.

- d) Section 13, T146N, R82W: A 3,500-ft. haul distance is shown for reclamation of the Section 13 diversions. The Reclamation Division calculates that this distance is approximately 5,000 ft. using a route through mining disturbance. The haul distance for topsoil respread on the Section 13 overburden pile is listed as 11,500 ft. The Reclamation Division calculates this distance at approximately 12,600 ft. Please correct as necessary.**

Please see updated Section 4.2.4. The piles used to respread the OB storage area were incorrect. The correct piles have been listed and their distances have been updated.

- e) Section 15, T146N, R82W: Please add 1.7 acres of topsoil respread for subsoil Stockpile 230 and also add SPGM respread hours for the 2.8-acre SPGM storage area shown on the Worst Case Bond Plan Map, Section 4.2.4b. The haul distance for reclamation of the Section 15 ponds should be approximately 750 ft. instead of the 500 ft. that is listed. The haul distance to reclaim the portion of haulroad in Section 15 appears to be 1,100 ft., not 500 ft. as listed (distance from Stockpile 230. Please correct.**

Please see updated Section 4.2.4.

- f) Section T146N, R82W: For pond reclamation in Section 23, Subsoil Stockpile 240 is listed as the source. However, Stockpile 240 is not shown on the Worst Case Bond Plan Map, Section 4.2.4b and stockpile list from the 2012 Annual Map also do not show a Stockpile 240. For respread of subsoil stockpiles and overburden piles in Section 23, Stockpile 277 is listed as the source, but there is no Stockpile 277 shown on the Worst Case Bond Plan Map, Section 4.2.4b, and it is not listed on the 2012 Annual Map. Please correct as necessary.**

Please see updated Section 4.2.4. The piles used to respread the above listed areas have been revised.

**Section 4.2.6b - Post-Mining Contour Map**

- 33. Please revise the Post-Mining Contour Map, Section 4.2.6b, to show the permit boundary more prominently. In many instances, the permit boundary cannot be seen on this map. (GAW)**

Please see revised Post-Mining Contour Map, Section 4.2.6b.

- 34. Falkirk is proposing much steeper slopes around a hill located on cropland in the northwest corner of Section 6, T144N, R83W and the northeast corner of Section 1, T144N, R84W than what was previously approved or existed prior to mining. Please revise so slopes are no steeper than that which was previously approved in this area. (NDCC 38-14.1-24(3)) (GAW)**

Please see revised Post-Mining Contour Map, Section 4.2.6b.

- 35. Falkirk is proposing greater acreage of steeper slopes in the NW¼ of Section 12 than existed prior to mining, but appear to be less steep than what was previously approved. Please consider reducing the slope steepness further in this area as required by NDCC 38-14.1-24(3). (GAW)**

Please see revised Post-Mining Contour Map, Section 4.2.6b.

- 36. Falkirk is proposing steeper slopes on cropland areas located in the N½ of the NE¼ and the E½ of the NW¼ of Section 33 than what was previously approved, and they are also steeper than that which existed prior to mining. Please reduce the slope steepness in these areas as required by NDCC 38-14.1-24(3). (GAW)**

Please see revised Post-Mining Contour Map, Section 4.2.6b.

- 37. Although the surface owner has requested that the pre-mine cropland in the SW¼ of Section 32, T144N, R83W be seeded to native grassland, please revise the post-mine topography to show that the pre-mine capabilities of the cropland in this tract is being restored as required by NDAC 38-14.1-24(2). In other words, please revise the topography so that 24 acres of cropland could be restored on this tract as existed prior to mining. (GAW)**

Please see the updated narrative on page 4 in Section 4.1.1, Post-Mining Land Use Narrative.

**Section 5.2 - Post-Mining Wetlands**

**38. Permit narrative in Section 5.2.1, Post-Mining Wetland Design Narrative, describes that because evaporation greatly exceeds precipitation at Falkirk, seasonal and semi-permanent wetlands with small watershed areas are designed with a minimum depth of three feet to maintain water during periodic dry years which is a reasonable design criterion. However, details for 13 of the 19 wetlands proposed with this revision have design depths of 2 feet in the wetland basin and almost half of those are designed to be only 1 foot deep. We realize that most of the proposed reconstructed wetlands with this revision are replacing temporary wetlands, but several of them, such as SW27-01 and NW28-01, appear to be replacements for larger, pre-mine seasonal wetlands. The watershed areas for most of the designed wetlands are relatively small, averaging about 115 acres, and several of them are as small as 15-30 acres. Please review your proposed wetland designs compared with watershed size and your permit narrative and consider updating the design details for some of those wetlands (both temporary and seasonal) if deemed appropriate so that wetland reconstruction efforts at Falkirk is a successful endeavor. (BEB)**

Wetland designs in Section 5.2.2 have been updated.

**39. The western portion of reclaimed Wetland W-NW27-01 is not shown on the wetland design details, Page 24 of 70, of Section 5.2.2. Please revise to show the entire basin area of the wetland. (GAW)**

Section 5.2.2 has been revised to display the entire W-NW27-01 wetland.

**40. Created Wetland W-NE23-2 is depicted differently in the wetland design details of Section 5.2.2 compared to how it is shown on the Post-Mining Land Use Map, Section 4.1.2. The shape of the wetland basin appears to be a mirrored image of the drawing. Please review and correct as necessary. (GAW)**

Please see updated Post-Mining Land Use Map, Section 4.1.2.

**Other:**

**41. In the future, whenever changes to post-mining topography are proposed it would be appreciated if the specific areas being updated are identified in the permit, either in the Revision List of Changes of Section 1.1.3 (by providing T/R, Section and, if necessary, 1/4 Section locations) and/or by providing temporary shading or hatching of the affected, updated areas on applicable maps. Reclamation Division staff have spent many**

Mr. James R. Deutsch  
May 14, 2014  
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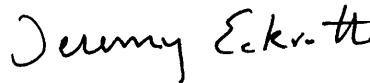
***hours attempting to determine the topographic changes proposed by this revision within this 17,000-acre permit area. Please commit to providing future topographic changes to the permit in a manner that will narrow down our review area, and more clearly identify the affected/updated areas. (BEB/GAW/WTG)***

Falkirk will hatch or identify any future changes to the post-mining topography. The small changes that were made as part of this revision were not hatched because the specific areas were described in the related deficiencies.

42. Updated first paragraph on Page 100 of Section 1.2.4, Newspaper Publication Notice, to state that the notification would be published in The McLean County Independent and The Bismarck Tribune newspapers only.
43. Added Certificate of Insurance for 02/01/2014 - 02/01/2015 and Cancellation Endorsement to Section 1.2.5, Certificate of Liability Insurance.

Sincerely,

**THE FALKIRK MINING COMPANY**



for D. Randall Crooke  
Environmental Manager

DRC/tjv