

BHP Navajo Coal Company

September 27, 2011

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**Re: Navajo Mine Permit Number NM-0003F; Rev 1105
BNCC Navajo Area IV North Mine Revision (OSM No. NM-0003-F-R03)
Technical Evaluation Response- Navajo Mine Area IV North**

Dear Ms. Steele,

BHP Navajo Coal Company (BNCC) is submitting for your review and approval eight (8) copies of the responses to the technical deficiencies identified in the Area IV North revision submittal.

During the technical evaluation (ARMS No. 11/03/24-05) of the Area IV North Revision, OSM identified several deficiencies that have been addressed. A summary of each technical deficiency is described below in italics with BNCC's response following each deficiency identified.

The deficiencies with the bond were addressed in this letter; however, the bond itself was submitted on September 23, 2011 as a unique revision (Rev 1119). The bond is not included with this package.

Chapter 3

- All references need to be fully documented including those in Table 3.1 in the reference section.*

BNCC Response –All references have been added to the reference section of Chapter 3, including those in Table 3.1.

2. *Expand discussion of the Programmatic Agreement and what it includes particularly regarding on-going commitments.*

BNCC Response –The discussion of the Programmatic Agreement has been updated. See pages 3-7 and 3-8.

3. *Last paragraph - in addition to what is presented expand discussion of ongoing commitments including handling of discoveries, completion of report reviews etc. Refer back to the P A.*

BNCC Response –The discussion of ongoing commitments, including the handling of discoveries and completion of report reviews has been completed.

Chapter 4

4. *BNCC must update Table 4-5 and remove Monitor Site NM-4B and add Monitor Site NM-4C.*

BNCC Response – Table 4-4 and Table 4-5 have been updated to reflect the relocation of Monitoring Site NM04B to NM04C

Chapter 6 and PHC

5. *Provide the groundwater model report of the pictured Cliffs Sandstone, which supports PHC predictions. It is recommended that the report be included in the permit application as a stand-alone attachment. The groundwater report documentation should include a discussion of the conceptual hydrologic model, model calibration, model predictions, and a sensitivity analysis.*

BNCC Response: BNCC has updated the NM-0003F permit to include the report titled "Navajo Mine Area IV Groundwater Modeling Report" prepared by Norwest Corporation (25 August 2011). The report is included as Appendix 11-WW.

The groundwater modeling report included a discussion of the conceptual hydrologic model of Area IV, model calibration, model predictions, and a sensitivity analysis. The report has also been updated to address OSM comments as discussed between OSM, Norwest Corporation, and BNCC.

6. *Use a selenium method detection limit that can be used to assess compliance with Aquatic and Wildlife Habitat Designated Use Chronic Water Quality Standard of 0.002 mg/L.*

BNCC Response: BNCC has coordinated with our laboratory and water samples will be analyzed at a method detection limit below the Navajo Nation EPA water quality selenium standard of 0.002 mg/l.

- 7. The Navajo Nation 2007 Surface water Quality Standards became effective March 26, 2009. Discussion of the Navajo Nation 2004 Surface Water Quality standards is acceptable; however, the permit should reflect if the discussion is related to the 2004 or 2007 standards and the 2007 [standards] are the enforceable standards.*

BNCC Response: BNCC has removed the references to the 2004 Navajo Nation Environmental Protection Agency (NNEPA) Surface Water Quality Standards, and has replaced them with the enforceable NNEPA 2007 Surface Water Quality Standards.

- 8. Provide surface water quality data for surface water monitoring locations NB-1, NB-2, CD-1, and CD-2. Currently only averages are provided. OSMRE requests the data from the individual samples. Additionally, please provide surface water quantity data for all active and historical surface water monitoring locations in electronic format.*

BNCC Response: On September 12, 2011, BNCC provided OSM the historic surface water quality results for the monitoring stations NB-1, NB-2, CD-1, CD-2, AT-1, and AT-2 in an electronic format. The historic surface water quantity data for the same surface monitoring stations is being provided to OSM as a spreadsheet attached to this Technical Evaluation response.

Additionally, BNCC has updated Figure 7-2 (Location Map Surface Water Monitoring Locations) has been updated to include the inactive and historic monitoring locations, NB-1, NB-2, CD-1, CD-2, AT-1, and AT-2. The Upper and Lower Pinabete Arroyo and Upper and Lower No Name Arroyo surface water monitoring stations are not included in Navajo Mine's Surface Water Monitoring Program. However, these four non-SMCRA monitoring stations have been included on the revised figure for reference.

- 9. Provide an expanded discussion of Bitsui Wash surface water quantity and quality. Discussion of NAPI hydrologic influences would be helpful.*

BNCC Response: BNCC has expanded the probable hydrologic consequences discussion of the Bitsui Wash. The Bitsui Wash is an intermittent to perennial stream, depending upon NAPI activities, in northern part of Area I, outside of Navajo Mine's Surface Mining Control and Reclamation Act Permanent Program permit area. The historic surface water quality data for monitoring stations NB-1 and NB-2 were provided to OSM on February 12, 2011. The historic surface water quantity data for monitoring stations NB-1 and NB-2 are included as an electronic spreadsheet with this response letter.

10. Coordinate with OSMRE to verify hydrologic monitoring datasets are complete.

BNCC Response: On September 12, 2011, BNCC provided OSM compiled spreadsheet for all surface water and groundwater quality results. These compiled spreadsheets replace the previous submitted spreadsheets.

11. Identify locations (if any) where water replacement was provided to mitigate hydrologic impacts. Also please provide locations and estimates of potable water supplied to area residents.

BNCC Response: BNCC supplies both potable and non-potable water at numerous sites around the mine permit to offset temporary loss of water features and as a good neighbor. These water supply sites include both potable water hose spigots and livestock tanks. BNCC has created a new exhibit in Chapter 11. Exhibit 11-168 displays the locations of the various livestock tanks and potable water sources BNCC provides to the local residents. BNCC refills the livestock tanks upon request of the residents. Approximately 500,000 gallons were provided to the local residents for livestock watering in 2010. BNCC does not have an estimate on usage of the potable water by local residents BNCC is in the process of adding water meters to these locations and other selected livestock tanks, and will coordinate with OSM as more information on water usage is collected.

12. Provide the watershed contributing areas for surface water impounding structures.

BNCC Response: The watershed contributing areas for surface water impounding structures are presented in Table 11-5A through Table 11-5AL and Exhibit 11-13B, Exhibit 11-13C, Exhibit 11-13D, Exhibit 11-13E, Exhibit 11-13E-1, and Exhibit 11-13F.

13. Provide a chronological history [of] CCB disposal by area.

BNCC Response: Exhibit 11-149 contains the historic coal combustion byproducts (CCB) material placement areas on Interim and Permanent Program lands. BNCC received CCB material from 1971 through January 2008. BNCC is no longer placing CCB material in mine backfill and does not have any operational plans to place CCB material within the SMCRA permit area. BNCC was not required to maintain records for detailed CCB placement by mine area; therefore, the records to respond to this technical evaluation deficiency do not exist.

14. *Identify active users of San Juan alluvial water in the Waterflow and Fruitland communities that withdrawal water from the south side of the San Juan alluvium in this area.*

BNCC Response: As part of the Navajo Nation Water Rights Settlement, the New Mexico Office of State Engineer (NMOSE) (http://www.ose.state.nm.us/legal_ose_proposed_settlements_sj_notice2010.html (accessed 20 September 2011)) identified wells within the proximity of the Navajo Mine permit area. Many of the wells identified in NMOSE Navajo Nation Water Rights Settlement Agreement were previously identified in the "Groundwater Operations Manual and Well survey for Navajo Mine and Vicinity" completed by Metric Corporation (1991). BNCC utilized the information collected and compiled by the NMOSE, Metric Corporation, and previous described information to update Appendix 6.E.

15. *Reinstate surface water quantity monitoring on Chinde Wash, and quality and quantity monitoring on Cottonwood Wash*

BNCC Response: BNCC will coordinate with OSM to reinstate surface water quantity along the Chinde Wash and surface water quality and quantity monitoring along the Cottonwood Arroyo.

16. *Address imbedded comments found in the probable hydrologic consequences (PHC) Section text and Chapter 6 and Chapter 7 supporting documents.*

BNCC Response: BNCC has addressed all of OSM's embedded comments in Chapter 6 and Chapter 7 supporting documents and in the PHC Section text.

Chapter 11 – Operation Plan

17. *BHP, please note: Exhibit 11-13E was submitted in the proposal package but was not listed in the insertion instructions for the permit.*

BNCC Response - This was addressed in the letter dated March 22, 2011 on the third page. "Remove and replace Exhibit 11-13E (Area III Impoundment and Pond Location/Watershed Areas) and replace with updated exhibits submitted on 15 Feb 2011. Exhibit was included in the original submittal, however the 15 Feb 2011 cover letter did not include any instructions for removal and replacement. "

18. *Submit a mining schedule or plan for the portion of Area IV North that will be disturbed, or explain why this was not submitted.*

BNCC Response - Exhibit 12-03 showing the mining disturbance schedule in Area IV North for the permit term was included in the original submittal.

19. *The maps have not been certified. Need to certify and resubmit Exhibit 11-08.*

BNCC Response - 30 CFR 780.13 and 30 CFR 816.61 through 816.86 does not specify certification of blasting plans by a Professional Engineer or Land Surveyor. The certification of Exhibit 11-08, Sheet 1 & 2 is not required.

20. *Ponds did not show or label the "bottom of pond" elevation and/or the "maximum water level" elevation. Check pond as-built drawings to ensure that all necessary details are now shown.*

BNCC Response – The as-built drawings of the ponds in Area 4 North were checked. All the necessary information (pond bottom elevation, maximum water level elevation, as-built capacity, etc.) are presented on the drawings. The as-built capacity for each pond was also compared to the required design runoff volume; all the ponds have sufficient capacity to retain the design runoff volume.

21. *Relabel Pond 401(405) East on Exhibit 11-13F and resubmit exhibit.*

BNCC Response - The sub-watershed that was incorrectly labelled on Exhibit 11-13F was corrected and included with this submittal.

22. *There are no pond information tables for Ponds 406 and 407. Submit Pond information tables for Ponds 406 and 407.*

BNCC Response – Ponds 406 and 407 are highwall impoundments and therefore, located in Table 11-7 on page 11-60.

23. *The insertion instructions list this Exhibit 11-159D as a design. Perhaps BHP meant to submit the designs for these structures. This is unclear. Clarify whether the design or the as-built should have been submitted. Check and re-label any applicable materials as such, resubmit exhibits if necessary.*

BNCC Response - The as-built drawing of Pond 409 and 410 was inadvertently submitted. Exhibit 11-159D is included with this submittal showing the design data.

24. *Is this primary road at the north edge of Exhibit 11-12F, the "A4N Haulroad" or the "East & West Perimeter Road"? It is labeled as either of these on different exhibits. Additionally, The yellow-shaded primary road at the top of Exhibit 11-84 is not labeled. Label the primary road as "A4N Haulroad" or "East & West Perimeter Road" correctly and consistently on Exhibit 11-12F, Exhibit 11-84, and all other applicable exhibits. Label the primary road as "A4N Haulroad" or "East & West Perimeter Road" correctly and consistently on Exhibit 11-12F, Exhibit 11-84, and all other applicable exhibits.*

BNCC Response - For consistency, the two segments of primary roads at the northern edge of Area 4 North were labelled "A4N West perimeter Road" and "A4N East Perimeter Road"; Exhibits 11-12F, 11-13F, 11-84 and Table 11-11 were revised accordingly.

Chapter 12- Bond: The pages referenced below are not included with this submittal. The comments are addressed, but the bond was submitted as Rev 1119 on September 23, 2011.

25. *BNCC does not present an exhibit showing pre-mine topography for Area 4 North, though some topography is shown on the submitted Exhibit 12-03. This information, a pre-mine topographic map of Area 4 North in the form of an Exhibit should be submitted to OSM prior to any further disturbance in Area 4 North.*

BNCC Response –A pre-mine topographic map has been created and is included in this submittal. See Exhibit 12-34D.

26. *Page 12-5a shows removal of reference to disposal of CCB's. However, the pages don't align properly with what is currently in the approved PAP. The page with the CCP disposal information is actually 12-5b (approved 9/21/2009).*

BNCC Response - The text editing for the Contemporaneous Reclamation revision changed the content of the pages. The revision submitted shows the CCB disposal information on page 12-5a.

27. *Approved page 12-5c should be updated to reflect the revised backfilling dates for each of the pits including the recently approved Dixon mining and topsoil schedule (and its effects on other pit mining/reclamation schedules).*

BHP Response - Page 12-5c was removed with the Contemporaneous Reclamation revision submitted in September 2009. The updated backfill schedule by pit is presented on Table 12-2 (page 12-6). The updated schedules by year and pit for regrade, topsoil and mitigation, and revegetation are presented on Figures 12.2-2, 12.2-3 and 12.2-4, respectively.

28. *Page 12-18b has been modified to include a discussion on the past practices of CCB disposal. No further disposal of CCB is planned at the Navajo Mine; this section of text is included to discuss the disposal as a historical practice. However, there is no text that includes a statement of how much CCB material had been buried in the past. BHP should include a statement that quantifies the amount of CCB material that had been disposed of at Navajo Mine along with a map that shows the locations of disposal.*

BNCC Response - The locations of the CCB disposal areas are presented on Exhibit 11-149. The amount of CCB material disposed of was not tracked, the total volume can be estimated but the degree of accuracy would be questionable.

29. *Section 12.9.2 beginning on page 12-42 does not align with sections in the currently approved permit. Specifically, the 2nd half of paragraph 1 and paragraph 2 of Section 12.9.2.1 are actually on page 12-43 in the current PAP. Correct this discrepancy.*

BNCC Response - Section 12.9.2 is on page 12-42 in the approved PAP.

30. *The proposed page 12-48 does not align with the sections in the currently approved PAP. Rather, what was submitted on this page should align with Section 12.9.2.2.5, but the text differs and doesn't replace what is currently in this section. The last paragraph of the 1st section of this page does address soils replacement in Area 4 North. Correct this discrepancy.*

BNCC Response –Page 12-48 does align with the sections in the currently-approved PAP.

31. *Appendix 12-c was not reviewed for its technical correctness in this evaluation. It will be reviewed by a hydrologist. However, OSM noted several things within the text. Specifically: Page 1, 2nd paragraph, 2nd sentence - The number of prediction points has been reduced, as PP26 & PP27 have been removed from in this submittal. In this proposal, the last prediction point is PP 30. However, it should be noted that in the currently approved PAP located in OSM's Library, 32 prediction points are indicated to be in use differing from the version of the PAP on OSM's website which indicates there are 38 prediction points in use. Please verify that the current proposal has the correct number of prediction points in use, and that those that have been removed from use have been supported by discussion.*

BNCC Response –A discussion on the predictions points removed has been added to Appendix 12-C.

32. *Tables C & E - It is noted in other versions, that there was a "PP31", yet it is not included in the new submittal, nor is there any discussion about its removal. Please address this missing information.*

BNCC Response – A discussion on the predictions points removed has been added to Appendix 12-C.

33. *Page 2, 2nd paragraph, last line - Reference to Table 11 C is incorrect. The text should reference Table 11-16D (page 11-171d (4/97)). Correct this error.*

BNCC Response –The reference to Table 11-C has been changed to Table 11-16D.

34. *Page 3 references RS Means "Heavy Construction Cost Data - 2009". However this proposed submittal actually includes costs from both the 2009 and the 2011 editions of RS Means (the newer costs added for the proposed Area 4 North). Please add reference to the use of the RS Means 2011 edition as the source of the newly submitted demolition costs.*

BNCC Response - The riprap costs was inflated from 2009 to 2011. Changes reflect current prices using appropriate reference guides with the exception of one component (the cost of the geotextile fabric) which used an inflation rate based the 2009 value from RS Means "Heavy Construction Cost Data – 2009".

35. *OSM should require that future reclamation costs reflect the amount of mitigation required in the permit, as stated in the reclamation plan's Root-zone Sampling (Appendix 12-B and Section 12.3.1).*

BNCC Response – The mitigation rates have been modified to reflect the amount of mitigation required in the permit.

36. *OSM must require BHP to update the amount of their Letter of Credit to reflect the amount of the reclamation cost estimate.*

BNCC Response – The letter of credit is being modified to cover the increased reclamation cost estimate.

Instructions for the replacement of updated permit contents follow:

<u>Revisions</u>	<u>Comments/Instructions</u>
<i>Table of Contents</i>	Remove and replace the entire Table of Contents
<i>Ch. 3 Vol. 2, Text</i>	Remove and replace Chapter 3 (Cultural Resources) with the new Chapter 3.

Ch. 4 Vol. 2, <i>Table</i>	<p>Remove and replace Table 4-4 (Air Monitoring Stations and Locations) on with the revised table;</p> <p>Remove and replace Table 4-5 (Air Monitoring Siting Information) with the revised table.</p>
Ch. 6 Vol. 7 <i>Text</i>	<p>Remove and replace pgs 6-1 and 6-36 with revised pages.</p> <p>Add page 6-36b with revised page.</p>
Ch. 6 Vol. 7 <i>Table</i>	<p>Remove and replace Table 6.4-1 (Non-Navajo Mine wells adjacent to the Lease Boundary) with revised Table on page 6-36a.</p>
Ch. 6 Vol. 7 <i>Appendix</i>	<p>Remove and replace Appendix 6E (Wells on and Near the Permit Area) with the revised appendix;</p> <p>Remove and replace Appendix 6G (Baseline Groundwater Update for Area IV North) with revised appendix;</p> <p>Remove and replace Appendix 6G Table 2 (Water Quality Criteria with revised table in Appendix 6G.</p>
Ch. 7 Vol. 8 <i>Figure</i>	<p>Remove and replace Figure 7-2 (Surface Water Monitoring Station LocationMap) with revised figure.</p>
Ch. 11 Vol.12, <i>Table</i>	<p>Remove and replace Table 11-11 (Primary Road Segments) with the revised table.</p>
Ch. 11 Vol.12, <i>PHC</i>	<p>Remove and replace Section11.6 (Probable Hydrologic Consequences) on pages 11-144 through 334 with revised pages.</p>
Ch. 11 Vol 13B <i>Appendix</i>	<p>Add Appendix WW (Area IV Groundwater Modeling Report) with revised appendix;</p> <p>Add Appendix XX (Neck Arroyo Post Mine SedCad) with revised appendix.</p>
Ch. 11 Vol.14, <i>Exhibit</i>	<p>Remove and replace Exhibit 11-12F (Area IV North Culvert Down Drainage Structure Locations and Watershed Areas) with revised exhibit;</p> <p>Remove and replace Exhibit 11-13F (Area IV North Impoundment and Pond Locations/Watershed Areas) with revised exhibit.</p>
Ch. 11 Vol 18 1of2 <i>Exhibit</i>	<p>Remove and replace Exhibit 11-84 (Area IV North Roads and Railroads) with revised exhibit.</p>

- Ch. 11 Vol 18a 3of3
Exhibit **Add Exhibit 11-159D (Area 4 North Pond 409 & 410 Design) following Exhibit 11-159 (Area 4 North Pond 409 & 410 As-built). The existing structure is currently included in approved permit, (as-built submitted 01 Feb 2011)**
- Ch. 11 Vol. 18A 3of3,
Exhibit **Add new Exhibit 11-166 (Navajo Mine Plts with Monitoring Wells and PCS Potentiometric Surface)**

Add new Exhibit 11-168 (Community Livestock tanks and Potable Water Sources)
- Ch. 12 Vol 19 *Text* **Remove and replace pages 12-18b and 12-18c with revised pages;**

Remove and replace pgs 12-47 and 12-48 with revised pages. Mitigation rates were not accurately reflected on pages 12-47 and 12-48. Therefore, these pages are also included with this submittal to ensure accurate mitigation rates are reflected in our permit. Pages 12-47 and 12-48 were part of the Bond Submittal (Rev 1119) sent on September 23, 2011. In order to make sure the revisions are consistent, pages 12-47 and 12-48 are the same for this submittal and the Bond Submittal.
- Ch. 12 Vol 22 *Exhibit* **Remove and replace Exhibit 12-34D (Area IV North Pre-Mine Area) with revised exhibit.**

If you have any questions regarding this submittal, please contact Kent Applegate at (505) 598-3269

Yours sincerely,



C. Kent Applegate
Superintendent NEPA Process