

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

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26 April 2013

David G. Anderson, P.L.S.
Western Fuels-Colorado, LLC
12050 N. Pecos Street, Suite 100
Westminster, CO 80234

**Re: New Horizon North Mine (Permit No. C-2010-089)
Technical Revision No. 1 (TR-01) Pond NHN-001 As-Built Certification
Second Preliminary Adequacy Review**

Dear Mr. Anderson:

The Division has reviewed the April 9, 2013 adequacy responses provided by Western Fuels-Colorado, LLC (WFC) for this Technical Revision. Each of the Division's adequacy items has been satisfactorily addressed, although one new concern has been identified, as described in Surface Water Hydrology Item 9, below.

As you will recall, the review process for the Pond NHN-001 as-built plans originally began with an application for a Minor Revision (MR-02). The Division issued an adequacy review for MR-02 on December 17, 2012, and requested that the application be withdrawn and replaced by a Technical Revision. The TR-01 application was received on January 28, 2013, and an adequacy letter (building upon items identified in the MR-02 review) was issued on March 11, 2013.

The following section itemizes the adequacy comments made by the Division as a result of our review of the MR-02/TR-01 application(s), and the resolution of each. Please prepare and submit a response package addressing the remaining issue.

Rule 2.05.3(4) and 4.05.9 Ponds and Impoundments

Surface Water Hydrology

1. DRMS: *January 28, 2013 response accepted.*
2. DRMS: *January 28, 2013 response accepted.*
3. DRMS: *January 28, 2013 response accepted.*
4. DRMS: *January 28, 2013 response accepted.*

5. DRMS (Dec. 17, 2012): *Please include design information for the emergency spillway channel to indicate the flow depth and demonstrate adequate embankment height to ensure 1' of freeboard, as required by Rule 4.05.9(7)(d).*

WFC (Jan, 28, 2013): The four SEDCAD runs for the as-built pond show no discharge through the emergency spillway, therefore no emergency spillway flow is indicated for use in calculating freeboard. The minimum freeboard resulting from there four SEDCAD runs occurs during the 25yr-24hr seep holes closed case, where the peak pool stage elevation is 5,676.62 ft. This provides for 2.88 feet of freeboard to the top of the dam at 5,679.5 ft. The emergency spillway has been built to the elevation of 5,677.5, two feet lower than the top of the dam embankment. The approved Pond NHN-001 design done by Arcadis included a 25yr-24hr SEDCAD run assuming no flow through the primary spillway, resulting in a flow depth through the designed 10 ft. wide, 2:1 side slope emergency spillway of 0.18 ft. The resulting freeboard in such a scenario is 1.82 ft. In this worst case situation, where the primary spillway would become blocked, the emergency spillway as built would still have greater than the required 1.0 of freeboard. The emergency spillway channel as-built is a rip-rapped trapezoidal channel, 10 ft. wide with 2h:1v or flatter side slopes.

DRMS (Mar. 11, 2013): *The response adequately addressed our concern with demonstrating adequate freeboard in the emergency spillway channel. The design information provided, however, does not accurately reflect the as-built configuration. Map 2.05.3(4)-6, the text on page 2.05.3(4)-6, and the SEDCAD reports all indicate that the emergency spillway is an open channel flowing southward over the embankment. Photographs of the constructed spillway, taken on December 12, 2012, indicate that the emergency spillway has been blocked on the south side, forcing flow through a drop structure to the county road culvert.*

In accordance with Rules 4.05.6(5) and 4.05.9(2) pertaining to supporting calculations, documents, and drawings and spillway design requirements, please revise Map 2.05.3(4)-6, page 2.05.3(4)-6, and the SEDCAD model to indicate that the emergency spillway is a drop inlet structure. The barrel length and slope should include the entire culvert length to its outlet on the other side of the county road, and the riser height should correspond to the elevation of the spillway channel bottom relative to the county culvert invert. On Map 2.05.3(4)-6, a spillway detail should be provided, and the outlet end of the culvert should be shown.

WFC (Apr. 9, 2013): Map 2.05.3(4)-6 has been revised to show the drop inlet structure and the associated barrel to its outlet. Detail has also been added to correctly reflect this condition. SEDCAD modeling has also been revised to reflect the drop inlet structure.

DRMS: April 9, 2013 response accepted.

6. DRMS: *January 28, 2013 response accepted.*

7. DRMS: *January 28, 2013 response accepted.*
8. DRMS (Mar. 11, 2013): The spillway configurations and dimensions used in the revised SEDCAD designs appear to conflict with those shown on Map 2.05.3(4)-6 and the photographs taken by the Division on December 12, 2012.
 - a. Map 2.05.3(4)-6 indicates that the length of the primary spillway barrel is 100'. The SEDCAD run is based on a length on 150'. *Please revise the map and/or design as necessary to reflect the actual length of the barrel.*
 - b. Map 2.05.3(4)-6 indicates that the diameter of the primary spillway barrel is 24". The SEDCAD run is based on an 18" diameter. *Please revise the map and/or design as necessary to reflect the actual diameter of the barrel.*
 - c. The location of the primary spillway outfall is unclear on Map 2.05.3(4)-6. *Please revise Map 2.05.3(4)-6 to indicate the outfall of the primary spillway.*
 - d. WFC, in its response to item 4, indicates that the primary spillway location was moved to correspond to the county road culvert. Is the primary spillway connected to the county road culvert? *If the primary spillway barrel is connected to the county road culvert, please revise the designs accordingly.*
 - e. The SEDAD designs indicate that the riser height is 8'. Photographs of the riser taken by the Division on December 12, 2012 (below) would indicate that the riser is less than 8' high. *Please revise the design based on the actual height of the riser.*

WFC (April 9, 2013):

- a. Map 2.05.3(4)-6 and the SEDCAD runs have been revised to reflect the actual barrel length.
- b. The intake in the primary spillway riser has an 18" restrictor plate so was modeled as an 18" riser in SEDCAD. The barrel is a 24" CMP and the modeling reflects this.
- c. Map 2.05.3(4)-6 has been revised to show the outfall of the primary spillway.
- d. The primary spillway is connected to the county road culvert. However, connection is below ground and the culvert is not fed by any surface runoff water other than that flowing through the primary spillway.
- e. The SEDCAD designs have been revised to indicate the correct riser height.

DRMS: *April 9, 2013 Response accepted.*

9. **DRMS (New Item):** Revised Map 2.05.3(4)-6 indicates that the inlets to Pond 001 are now or will be CMP structures. The approved design for the inlets is a trapezoidal ditch with a 15' bottom width on the east end, and a 12' bottom width on the west end (detailed in Appendix 2.05.3(4)-2 in the SEDCAD runs for Ditch NHN001 East and NHN001 West). There is currently no approved design for a culvert in either inlet location. ***Please submit design information, as required by Rule 2.05.3(3)(b), for the two inlet CMPs.***

Engineering / Geotechnical

1. DRMS: *January 28, 2013 response accepted.*
2. DRMS: *January 28, 2013 response accepted.*
3. DRMS: *January 28, 2013 response accepted.*
4. DRMS: *January 28, 2013 response accepted.*
5. DRMS: *January 28, 2013 response accepted.*
6. DRMS: *January 28, 2013 response accepted.*
7. DRMS: *January 28, 2013 response accepted.*

All adequacy comments, with the exception of new Surface Water Hydrology item 9, have been successfully addressed. Please submit information addressing the remaining comment, so that the revision application may be approved. You are welcome to contact me with any questions you may have.

Sincerely,



Marcia L. Talvitie, P.E.
Environmental Protection Specialist

cc: Greg Lewicki and Associates, PLLC
Sandra Brown, DRMS