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Engineering ♦ Hydrology ♦ Hydrologic Modeling ♦ Water Rights  
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May 28, 2010

Ms. Tanya King  
Wyoming Department of Environmental Quality  
Land Quality Division  
510 Meadowview Drive  
Lander, WY 82520

Re: TFN 5 3/143  
Eastfork Ranch Pit  
Responses to Round 1 Completeness/Technical Review



Dear Ms. King,

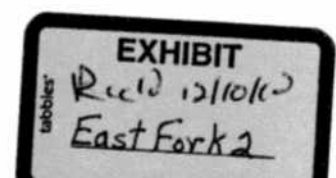
Pursuant to your completeness review correspondence dated February 22, 2010, enclosed on behalf of McMurry Ready Mix Company are responses and two sets of revised materials. These responses are also based on our March 3, 2010, meeting and subsequent e-mail correspondences. The format for this response retains your original comments followed by our responses in *italics*, and references the revised materials related to the comment. Materials that are revised are noted in **bold underline** font. Steve Stresky of Aqua Terra Consultants, Inc. has provided all responses.

The Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD) received the Application for a Mining Permit for the McMurry Ready Mix Eastfork Ranch Pit on December 23, 2009. Per Wyoming Statutes we have reviewed the application and are providing comments. At this time, WDEQ-LQD has identified deficiencies in the application and finds it to be incomplete.

WDEQ-LQD staff will be available to meet with you and your representative, Aqua Terra Consultants, Inc., to answer questions and assist in the remedy of outstanding issues.

#### GENERAL COMMENTS

1. There are numerous references to the possibility of mining to the limit of the gravel (which would be well below the water table), but no definite commitment that this will occur. WDEQ-LQD requires a definitive mine plan and reclamation plan. The Mine Plan and Reclamation Plan should focus on a shorter term period; perhaps 10 to 20 years. WDEQ-LQD would suggest using an above-water scenario for that time period. The



reclamation plan for deep mining over an 80 year life would be better presented as a long term conceptual plan.

*The full-permit mine plan has been re-cast as a "long-term conceptual plan" that represents the maximum recoverable reserves and leaves a postmining impoundment. This plan will remain in the permit application to represent the most aggressive extraction that could occur in market conditions that place the gravel resource in high demand. Revisions to the long-term plan are also included as recommended in these comments. A 20-year mine plan has been added that is based on the more likely scenario of mining a specified depth below the water table and reclaiming surface grade without an impoundment. Permit materials that have been revised or added are addressed with the applicable comments below.*

2. There are multiple references throughout the permit application indicating that the 10 acre limited mining operation (LMO) 1423ET is in existence and that the ground has been disturbed. There are also multiple references to this LMO indicating that the ground has not yet been disturbed or is partially disturbed. The LMO has disturbed 11.3 acres. The topsoil pile which was located at the north end of the pit was moved into the pit along the east highwall and the area where the topsoil pile had been located was scarified and seeded. All sections of the application should correctly reflect the current situation on the ground. Also note, McMurry Ready Mix agreed to seed the topsoil pile in its new location to protect the topsoil from wind and water erosion; this has yet to be done.

*Where applicable, references to the LMO have been revised to reflect its current status. Based on our e-mail correspondence, we agreed to use 10.0 acres to represent the LMO. The LMO shown on various maps remains unchanged, while references to existing conditions in Figure MP-1 have been changed to reflect the last known status. References to existing conditions have also been revised in Appendices D7, D8 and D9 as noted below.*

3. There is a haul road along the north edge of the property which was significantly improved (width, borrow ditches and gravel surfacing) during the summer of 2009. There are multiple references to this road as belonging to WYDOT, having been built by WYDOT and having been used by WYDOT. WDEQ-LQD staff has had conversations with WYDOT personnel and with Mr. Ron McMurry regarding the construction and use of this road. The haul road was not built by WYDOT nor has it been used by the STATE of Wyoming. WDEQ-LQD will not accept any verbiage in the application document, maps or ancillary information suggesting the haul road was built by, used by, or maintained by WYDOT or the State of Wyoming. Please correct all such references in the various sections of the application.

Section B-5 in the bond section, Figure E-1, Section D7-3.4, Section D8-2, Section D8-4.0, and Section D9-3.1 were revised to correct references to WYDOT access.

4. Please clarify whether the disturbed acreage associated with the haulroad (8.9 acres) was measured before or after the road had been upgraded. Please insure that the correct acreage is referenced in all sections of the application.



*The 8.9 acres was determined after the road had been upgraded. This acreage was modified to clarify the status of the permit in **Section D8-4.1**, which now incorporates the LMO acreage.*

5. There are two different references to the distance of the Eastfork pit from Boulder, WY; 10 miles and 13 miles. These should be consistent throughout the application.

***Section D7-1.1** was changed to reference the correct distance of 13 miles.*

6. It would be helpful if all of the adjudication materials (Form 1, Form 3, Bonding Calculations, Surface Owner Consent (Form 8), Other Consent, Other Permits, Appendix A, Appendix B, Appendix C, Appendix E and the reclamation cost estimate) were organized with tabbed dividers, following the outline in the Table of Contents.

***Tabs** for Permit to Mine, License to Mine, Bond, Public Liability, Appendix A/B, Appendix C, Appendix E, Compliance, and County Approval were added.*

#### **Bond Calculations**

- a.) It should be noted that "area bond" and "incremental bond" are coal related terms that don't really apply to non-coal operations. Future revisions to the calculations should not include this terminology.

***Section A** of the bond was changed to "Backfill Reclamation" and **Section B** was changed to "Post-Backfill Reclamation." **Table ADJ-4-1** was revised accordingly.*

- b.) Page ADJ-4-4 item B-10, the total disturbed area is listed as 16.8 acres, however, the bond calculation on page ADJ-4-6, covers a total of 20.1 acres. Please correct this discrepancy.

*With the revised mining sequence, the correct disturbed area for reclamation is 20.8 acres (10.0 acres for the LMO and 10.8 acres for the first year of mining). The 8.9-acre road on the northern portion of the permit is not included in the disturbed area because it will remain. The **introduction paragraph** and **Section B-10** were revised with the corrected acreage. **Table ADJ-4-1** was also revised accordingly.*

- c.) Figure ADJ-4-1, The topsoil pile shown on this map has been moved. The new location for the topsoil stockpile should be shown, as well as any additional stockpiles that will be created through the Year 1 topsoil stripping shown on the map.

*Topsoil stockpiles for the LMO and the Year 1 area have been added to **Figure ADJ-4-1**.*

- d.) The costs for disking and drill seeding operations should each be estimated at \$50 per acre. Cover crops should not be used (see comment under reclamation plan) and this cost should not be included in the bond estimate. The cost of the permanent seed mix seems low and should be verified. Please revise the bond calculation to adjust these costs.

*The costs for disking and drill seeding were changed to \$50 per acre in **Table ADJ-4-1**. The cost for the seed mix is taken from an actual 2009 seed-mix purchase for reclamation at another regular mine operation.*



- e.) Section B-9, page ADJ-4-4, discusses the use of mulch, whereas the cost estimate does not include mulch. LQD has no preference concerning the use of mulch, however the discrepancy should be corrected.

**Section B-9** was revised to clarify the use of stubble mulch and permanent seed.

**Certificate of Public Liability**

- a.) This item is only required for coal mines.
- b.) Page ADJ5-1, The first paragraph indicates that the certificate of public liability is maintained at the Casper and Cheyenne offices of the LQD. This should be the Lander and Cheyenne offices of the LQD.

*The location was corrected in Section ADJ-5, as well as in Section ADJ-3 and Section ADJ-4.*

**Surface Owner Consent**

- a.) A signed WDEQ-LQD Form 8 is required for any surface owners within the permit area.

*A signed Form 8 was added as ADJ Addendum 6B. Note that this section was moved from the end of the adjudication section.*

**Other Consent**

- a.) Provide consent from ditch company(s) and SEO to move the Banes No. 1 Ditch and remove the Hittle Enlargement of Jorgensen Ditch.

*In discussions with the SEO, the agency does not require consent or notification for moving a portion of a ditch. The land owner has provided consent to move the Banes No. 1 Ditch and remove the Hittle Enlargement through the Form 8 addition per Comment a under Surface Owner Consent above. According to the land owner and SEO records, the Hittle Enlargement of the Jorgensen Ditch has been abandoned for more than 30 years. The points of use remain with the water right, but the point of diversion has been changed. As such the ditch no longer retains a formal status for conveying water to its original points of use.*

*Verbiage was added to Section ADJ-6 to clarify water-rights status and consent to alter these ditches.*

**Other Permits**

- a.) Provide a copy of the Sublette County Planning and Zoning/Commission conditional use permit for expanding the mine.



*As discussed in our meeting, the Conditional Use Permit applies only to the LMO. A letter issued by the county was added as Section ADJ-15.*

- b.) Before the final reclamation plan can be approved WDEQ-LQD will need copies of SEO water appropriation and a copy of the SEO permit for the reservoir.

*As discussed in our meeting, the appropriation for an impoundment scheduled for long-term construction (potentially 80 years) is not practical, especially for a reclamation plan that is not likely. However, the SEO recommends that this conceptual plan be used in the application to conservatively appropriate surface water. Verbiage was added to Section RP-6.2 to reference the appropriation application. The reference to the application was also added to Section ADJ-12.2.*

#### **Appendix A – Surface and Mineral Ownership Within the Permit Area**

- a.) Since there are multiple surface owners and mineral owners within the permit boundary, Figure AB1 – Surface and Mineral Ownership needs to be split into two maps; Surface Ownership and Mineral Ownership, in order to clearly show ownership information.

*Mineral ownership was removed from Figure AB-1 and put in Figure A-2. Figure A-1 now shows only surface ownership.*

- b.) Each map should be located in the tabbed section immediately following the tabular listing of names and addresses.

*Figure A-1 and Figure A-2 were moved to the end of Appendix A/B.*

- c.) Each map should clearly indicate ownership. Specify if multiple owners, own minerals or surface at any location.

*Splitting the two maps into Figure A-1 and Figure A-2 now clarifies surface and mineral ownership.*

- d.) Please also show the east and west access roads on the ownership maps.

*The access roads were added to Figure A-1 and Figure A-2.*

#### **Appendix C – Legal Description**

- a.) Figure C-1 should clearly show the area described in aliquot parts and that area called "Parcel 1" described by metes and bounds. It is requested that a copy of the property survey map be included in the application to clearly show the corners and distances as described in the metes and bounds survey.

*Aliquot delineation was added to Figure C-1. The metes and bounds description is based on the abutting Sublette County property, and was also added to Figure C-1. The Sublette County legal description was added as ADJ Addendum 11C in Appendix E, which is now referenced at the end of Section ADJ-11.*



- b.) Figure C-1 should show the east and west access roads, as well as State highways and County roads, clearly labeled with their route numbers.

*The roads and labels were added to **Figure C-1**.*

- c.) Please show township and range on Figure C-1 as well as all other maps in the application.

*Township and range were added to **Figure C-1**. Township and range are shown in all other maps.*

#### **Appendix E – Easements, Right of Ways and Structures**

- a.) Page ADJ9-AB-2, the Memorandum of Landowner Agreement and Easement between Eastfork Livestock and McMurry Ready Mix should be moved here.

*This addendum was moved to Appendix E and renamed **Addendum 11A**.*

- b.) Pages ADJ9-AC-1 and ADJ9-AC-2 Eastfork Livestock, Inc. Road Clarification should be moved here.

*This addendum was moved to Appendix E and renamed **Addendum 11B**.*

- c.) Provide documentation for an easement or right of way as legal access through the Sublette County and Jensen properties on the east side of the permit area and Eastfork Livestock on the west side of the permit area.

*The recorded Easement Agreements were added as **Addendum 11C** and **Addendum 11D** in Appendix E.*

- d.) Figure E-1 should be expanded to the west to show the connection of the west haul road to the county road. Please label the county road with the appropriate number.

***Figure E-1** was revised to show access to the county road. The scale and map size were changed to accommodate the expanded map.*

#### **Unsolicited revision for Appendix D3**

*A SHPO concurrence letter was received, and is now attached as **Page D3-3**. **Section D3-2** was modified accordingly.*

#### **Appendix D5 – Topography, Geology, and Overburden Assessment**

- a.) The reported Grade Elevation and Casing Elevation for all of the drilling logs are in the 4,600 msl range, while actual ground surface elevation per topography map Figure D5-2 are in the 7,100 msl range. The drilling logs should be corrected so they can be correlated to the map.

***Figures D5-3a – 3e** were revised with the correct elevations.*



- b.) Is there inner-burden between the upper and lower gravel benches? This layer should be characterized either for the final pit floor, or as material to be used in backfill grading. Where will this material be stockpiled if the lower gravel seam is mined?

*The Mine Plan assumes that the upper clay is not extensive and is eroded out at some point in the eastern portion of the permit, as shown in Figure D5-2. If this upper clay is thick and extensive, it would not be mined to obtain access to the lower gravel. Some of the clay may be mined to provide fines for aggregate gradation, but there would be no benefit to extracting and stockpiling the clay. The test pits and monitoring wells suggest a sand-and-gravel deposit that is extensive enough to provide ample materials for mining and project needs. A sentence was added to Paragraph 1 of Section MP-1.4 to clarify the use of fine-grained material in the mining operation.*

- c.) It is requested that additional borings be conducted at several locations inside the proposed pit area to accurately determine the thickness and character of the gravel seams and the inner-burden material.

*As agreed in our meeting, the sand and gravel has been adequately characterized, and additional borings are not necessary.*

**Unsolicited Revisions for Appendix D5:**

*Figure D5-2 was revised to show the high water table and extent of mining based on the 20-year mine plan. The high water table is shown because this surface is used to plan postmining grade in the reclaimed pit.*

**Appendix D6-Surface and Groundwater**

- a.) Provide a tabular summary of Surface and Groundwater Rights, location, owners, depth to water, date completed (if possible).

*Surface water and groundwater rights are tabulated in Tables D6-3 and D6-4.*

**Unsolicited Revisions for Appendix D6:**

*Table D6-2 was revised to incorporate groundwater sampling data to date. The laboratory reports were added to Addendum D6-A and Addendum D6-B and page numbering was corrected in Addendum D6-B. The fifth paragraph of Section D6-1.1 was revised to reference the seasonal high water table.*

*Table D6-4 was updated with recent SEO updates related to the water-rights permits within the mining permit area.*

*Duplicate section numbers were removed from Figure D6-3.*

**APPENDIX D7 - Soil Assessment**

- a.) Page D7-4, paragraph 5 states that "All ten soil profile descriptions and sample site locations are plotted on the map," in reference to Figure D7-1. This same paragraph states, "The map's legend includes a list of all map units and their recommended



salvage depths." The map, Figure D7-1, included in this section does not show the above listed details. Please add this information to the map.

*Soil sample sites and salvage thicknesses were added to **Figure D7-1**.*

- b.) Page D7-1, Item D7-1.1, this reference distance of 10 miles east of Boulder, WY is different than all other references of 13 miles.

***Section D7-1.1** was changed to reference the correct distance of 13 miles.*

**Unsolicited Revisions for Appendix D7:**

***Figure D7-1** was revised to show the correct, digitized soil boundaries for which acreages were calculated. The boundaries currently shown in the figure were hand-drawn used for rough acreage calculations. Although the differences between the hand-drawn and digitized versions are minimal, the digitized version corresponds more accurately with the boundaries drawn in the field by Mr. Nyenhuis. The acreages and corresponding volumes are corrected in **Table D7-1**. While making this revision, it was noticed that the topsoil acreage for the haul road was not included as acreage within the affected area, and was corrected in the **Table D7-1** for Disturbed Land. The acreages for the bottomland soil type were removed (it is not affected), and the symbol designation for the bottomland soil type was also corrected. Salvage depths are unaffected by these revisions. Also included in **Table D7-1** is the salvage volume for the 20-year mining plan.*

**APPENDIX D8 – Vegetation Inventory**

- a.) Page D8-2, section D8-4.1 Mapping states that "Two vegetation community types were delineated on the Eastfork Ranch Pit permit area." Further review of this Appendix details four vegetation community types, including Mixed Shrub, Disturbed Land, Riparian/Willow Bottom, and Meadow community types. The map, Figure D8-1, also shows all four community types in the permit area. Please correct this discrepancy.

*The number of vegetation types was corrected in **Section D8-4.1**.*

- b.) Page D8-3, The Disturbed Land section does not appear to take into account the existing Limited Mining Operation into the total acreage of 8.9 acres of disturbed lands. Please clarify.

*The LMO was added to the description and acreage discussed in **Section D8-4.1** under **Disturbed Land**. Other changes to proportional acreages were revised per Comments c and d below.*

- c.) Figure D8-1, Vegetation Inventory Map. The map shows the boundary for the existing Limited Mining Operation; however the vegetation type shown in this area is illustrated as Mixed Shrub. This entire area has been disturbed and should therefore be illustrated as Disturbed Lands.

*Disturbed land was added to **Figure D8-1** for the LMO.*





- d.) Page D8-3, Table D8-1 should account for the additional disturbed lands acreage listed in the above comments (LMO and widened road). This change will affect percentages also listed in this table.

*The acreage for the LMO was added to **Table D8-1**, and the corresponding proportions were revised. The acreages and proportions cited in the text under **Mixed Shrub, Disturbed Land**, and **Meadow** of **Section D8-4.1** were also revised. The description relative to the LMO was also added to **Disturbed Land**.*

- e.) Page D8-3, Remove reference to WYDOT association to haulroad.

*The WYDOT reference was removed from **Section D8-4.1** under **Disturbed Land**.*

**Unsolicited Revisions for Appendix D8:**

*An orphaned sentence in **Section D8-4.7** was moved back to its paragraph prior to Table D8-3.*

**APPENDIX D9 – Wildlife Inventory**

- a.) Page D9-1, 2nd paragraph in the Wildlife Habitats section states that the disturbed lands within the permit area consist only of the road constructed by WYDOT and it occupies 8.9 acres. This statement does not take into account the ≈10 acres of disturbed lands from the Limited Mining Operation and the additional acreage disturbed from widening the haulroad this year. Please clarify and remove reference to WYDOT.

*Paragraph 2 of **Section D9-3.1** was revised to incorporate the LMO disturbance, and the WYDOT reference was removed.*

- b.) Page D9-2, Table D9-1 should account for the additional disturbed lands acreage listed in the above comment. This change will affect percentages also listed in this table.

***Table D9-1** and corresponding acreages cited in **Section D9-3.1** were revised to incorporate the LMO disturbance.*

- c.) The applicant is required to consult with both WG&F and USFWS regarding wildlife issues. Please include all correspondence both to and from these agencies. Recommendations from these agencies will have to be incorporated into the mine and reclamation plan.

*Correspondence from USFWS was added as **Addendum D9-B**, and from WGFD as **Addendum D9-C**, and a reference to these correspondences was added as Paragraph 2 of **Section D9-2**, which also now contains a reference to addressing wildlife protection measures in the Mine and Reclamation Plans. Agency recommendations are also now noted in **Section D9-4**. Changes to the Mine and Reclamation Plans relative to wildlife are noted below.*

*The Mine and Reclamation Plans as revised for this Comment Response have also been forwarded to the USFWS and WGFD for their review. Submittals at this time will*



*hopefully allow a timely review if concurrence is requested by DEQ, as responses from these agencies can be difficult to obtain in a reasonable time frame.*

#### **Unsolicited Revisions for Appendix D9**

*The reference to Highway 353 was corrected in Section D9-1 and Section D9-3.1. The sage grouse Core Area boundary was added to Figure D9-1 and is now referenced in Section D9-3.2 under Migratory Birds of High Federal Interest, which also has been revised to incorporate information related to the federal determination on sage grouse. Corresponding references have been added to Section D9-5.*

#### **MINE PLAN and RECLAMATION PLAN - GENERAL**

WDEQ-LQD recognizes that neither the mine plan nor reclamation plan can account for all contingencies over a 80 mining period. WDEQ-LQD expects there will be revisions to both plans over the life of the mine. This 80 year plan should probably be designated as a long-term conceptual plan. WDEQ-LQD requests a definitive mine plan and reclamation plan that focuses on a shorter period of time; for instance 10 to 20 years. In the short term plan WDEQ-LQD expects a definitive statement from McMurtry Ready Mix as to the depth of mining. Either mining will be limited to above the groundwater table, or there will be a plan to mine to the full depth of the gravel with a corresponding mine plan and reclamation plan. The current reclamation plan is based on mining full depth. If the mine plan is not committed to full depth mining, then the current reclamation plan cannot be achieved.

*As discussed in our meeting, two mine plans will be proposed in the permit application, one as a "long-term conceptual plan" that represents the maximum recoverable reserves, and one as a more likely plan that will be projected for 20 years. The long-term plan will remain as proposed, with some changes as recommend by DEQ in these comments, and is now contained in addenda for the Mine and Reclamation Plans. The 20-year plan will assume a specified depth of mining that will leave postmining grade above the seasonal high water table. Specific changes to the Mine and Reclamation Plans are detailed below.*

Since the permit area is within core sage grouse habitat, contemporaneous and successful reclamation will be essential in order to minimize impacts to sage grouse habitat. WDEQ-LQD requests a definitive commitment that no more than 25 acres will be disturbed at any one time. This will necessitate prompt reclamation grading and seeding.

*The applicant will commit to the annual, 25-acre disturbance and successive reclamation of prior disturbance. As discussed in our meeting, demonstration of reclamation adequate to continue subsequent disturbance will be based on the initial establishment of vegetation indicated by early growth on newly-reclaimed land. This demonstration will allow the annual continuation of the mining sequence, as opposed to the demonstration of mature regrowth of key species such as sage brush, which would render mining unfeasible. Changes to the Mine and Reclamation Plans to incorporate the requested acreage limit and reclamation standards are detailed below.*

WDEQ-LQD is not favorable to two reservoirs in the final reclamation. Since the haul road is bladed and graveled only, the cost to move it, curving around the northwest corner would



allow mining of the mineral under the existing haulroad and provide for simpler, more unified reclamation at the end of the project.

*The haul road and diverted ditch were moved to the northwest corner, and the smaller reservoir was removed. Revisions were made accordingly to Figure MP-B-1, Figure MP-B-2, Figure MP-B-3, Figure RP-A-1, Figure RP-A-2, Figure RP-A-3, and Figure RP-A-4 that are now in Mine and Reclamation Plan addenda.*

The triangular area, adjacent to the northwest corner of the existing LMO, as shown is not to be mined. WDEQ-LQD favors mining through it to recover the mineral and ease the grading in the reclamation of the LMO. If the triangular area is intended to protect the well EF-1, which appears to be north of the haulroad, please explain why this large area is needed for protection.

*The grading shown in Figure RP-1 and Figure RP-2 was changed in the vicinity of the northern portion of the LMO to create a more uniform postmining surface. As discussed in our meeting, the value of protecting groundwater monitoring capabilities outweighs the small amount of resource in that area relative to the extensive volume of sand and gravel available within the permit.*

On page MP-4 and RP-1 the application states that the landowner desires to return the area to pasture land for grazing to include agriculture and wildlife habitat. The Large Reservoir (proposed to be 3,258+ acre feet) far exceeds the impoundment size necessary for a stock pond (20 acre feet). As a major impoundment (not preexisting) this is considered to be a land use change, which will require justification. Converting a combined total of over 180 acres of the 291 acres to be affected to reservoir constitutes a change in use and does not appear to be consistent with the landowners desire to returning the area to grazing land. No justification for this change in land use appears to be included in this application.

*Based on our meeting, the permit will now be cast with reclamation to a surface grade that is commensurate with agriculture, with a long-term option of considering greater reserves recovery and leaving a postmining impoundment. Although the extraction of maximum reserves is unlikely, the landowner would readily accept a land-use change that would preclude agriculture, because the long-term financial benefit of the sand-and-gravel resource outweighs any comparable benefit from agriculture. Land use is clarified in Section MP-B-1 and Section RP-A-2, both of which now are part of the Long-Term Conceptual Plan in the Mining and Reclamation Plan addenda.*

*Also, the desire of reclaiming land for agriculture will be balanced with restoring suitable habitat for sage grouse. The last paragraph in Section MP-1.5.3 was revised to reflect this reclamation commitment.*

#### **MINE PLAN - SPECIFICS**

1. Page MP-1, Section MP-1.2 describes the mine progression for the 80 year life of the mine. As discussed above, this section should be revised to describe the 80 year plan as a conceptual long range plan and a short term (10-20 year) plan should be developed. This short term plan could be revised and updated as dictated by future developments.



*A sentence was added to the end of Paragraph 2 of **Section MP-1.2** to define the Long-Term Conceptual Plan, and Paragraph 3 was added to define the 20-year plan. The reserves estimate in Paragraph 2 of **Section MP-1.4** was also revised accordingly. As discussed above, the Long-Term Conceptual Plan is now separated from the 20-year plan and housed in **Addendum MP-B** and **Addendum RP-A**.*

2. Page MP-2, Table MP-1 needs to show the equipment used to excavate below the water table.

*Potential equipment for deep excavation was added to **Table MP-1**.*

3. Page MP-3, Item MP-1.5.1 should reference the elevation of the groundwater.

*Paragraph 1 of **Section MP-1.5.1** was modified to reference the expected groundwater occurrence from grade.*

4. Page MP-6, Item MP-1.6.7 topsoil stockpiles must be designed with 3:1 sloping sides so that they can be seeded.

***Section MP-1.6.7** and Paragraph 4 of **Section MP-2.1.1** were revised to specify 3H:1V side slopes.*

5. Page MP-7 1st paragraph says "a buffer of up to 25 feet will be stripped..." this should also say "not less than 10 feet".

*Paragraph 1 of **Section MP-2.1.1** was revised to include a minimum buffer of 10 feet.*

6. Page MP-7 4th paragraph says topsoil signage will be within 150 feet of the topsoil stockpiles. Signage must be placed on each stockpile.

*Paragraph 4 of **Section MP-2.1.1** was revised to indicate signage upon the stockpile.*

7. Page MP-7, the 2nd paragraph in Section MP-2.1.2 describes the location of the topsoil pile produced from the existing Limited Mining Operation. This topsoil pile should be illustrated on Figure MP-1.

*The stockpile was added to **Figure MP-1**.*

8. Figure MP-1 needs to show the locations of all existing topsoil piles and mineral stockpiles.

*The topsoil stockpile is now included in **Figure MP-1**, and the locations of the aggregate stockpiles as of May 2010 was added to the figure.*

9. LQD suggests that McMurtry evaluate the feasibility of a plan that would commence deep mining from the west side of the permit area and move eastwardly. This would allow for construction of the impoundment and then mining would proceed up-dip to allow containment of the water without pumping?

*As discussed in our meeting, the preference for mining is to continue westward from the LMO. Additionally, the 20-year plan will result in mining a specified depth below the high water table, reclaiming surface grade without an impoundment, and allowing the mining sequence to move efficiently westward. If deep mining is considered in the future, the mine sequence may be redesigned to incorporate a west-to-east sequence after the initial, shallow mining has been completed.*



10. Since the permit area is within core sage grouse habitat, contemporaneous and successful reclamation will be essential in order to minimize impacts to sage grouse habitat. WDEQ-LQD requests a definitive commitment that no more than 25 acres will be disturbed at any one time. Please incorporate this into both the mine plan and the reclamation plan.

*Paragraph 5 of **Section MP-1.5.3** was added to commit to DEQ stipulations regarding sage grouse protection measures, and the last paragraph was revised to clarify postmining restoration intentions.*

SPCC Plan

- a.) Page MP-AA-4 is not signed by a professional engineer licensed in the State of Wyoming.

*As discussed in our meeting, after the permit is approved and the site facilities have been arranged for the expansion, the site will be inspected by a professional engineer, and the permit will be updated with the signed page.*

- b.) Page MP-AA-6 item C. This section specifies that the plastic lined earthen berm around each storage tank will be constructed to hold the volume of the tank. 40 CFR 112.7 requires 100% of the volume plus freeboard for precipitation. Elsewhere in the application the containment berm is specified at 150%. The current berm around the existing tank in the LMO is grossly insufficient and has not been corrected.

***Part C** and the second paragraph under **General Facility Summary** were revised to cite that the containment berms will hold 150 percent of the tank volume.*

- c.) The alluvial deposits have been described in this permit application as highly conductive. Page D6-21st paragraph estimates transmissivities of 7,000 to 66,000 gallons per day per foot. Based on the high hydraulic conductivity and proposed mining below the water table, there is need for more specific information in the Spill Protection Control and Containment plan. For instance, if equipment such as a dragline, were mining below the groundwater table and a hydraulic hose ruptured spilling oil onto the water surface, what specific items are to be located on site to contain the oil film. Where will these materials be stored. Who and how many persons will be required to perform the required functions to contain the oil film. How will the oil film be removed. Who will remove it. Where will it go. Who will determine the cleanup is satisfactory. How and where will the containment materials be disposed.

***Part B(4)** was added for the potential of releasing petroleum from machinery while operating in the pit. A reference to hydraulic oil was also added to the first sentence. **Part C** was added to specify countermeasures for controlling a release. The remainder of the plan was renumbered accordingly.*



## RECLAMATION PLAN

The Reclamation Plan as submitted assumes deep mining for the entire permit area for the life of the mine. The mine plan assumes shallow mining with an option to go deep. If deep mining is not performed, the Reclamation Plan cannot be achieved.

*The separation of the 20-year plan and the Long-Term Conceptual Plan now cast the permit with a likely mining scenario. Changes to the permit documentation are detailed below.*

Reservoirs, impoundments, stock dams, etc. need to be designed in accordance with WDEQ-LQD Guideline 17. This guideline suggests that the design should provide for the impoundment to spill at least every 10 years. It also requires a change in land use for large impoundments that are not pre-existing.

The designs for the impoundments don't appear to consider any out-flow; ever. Since, the reclaimed land will be used by livestock, there will likely be impact on the water quality. If the impoundment never flushes out or spills, there will be continued degradation in quality due to evaporation and concentration of naturally occurring minerals in the water. A spillway is necessary to control the water elevation at a level that will allow periodic flushing/outflow.

*The postmining reservoir is discussed in Comment 7 below.*

## RECLAMATION PLAN - SPECIFICS

1. WDEQ-LQD prefers to see a short term mine and reclamation plan based on 10 to 20 years. The 80 year plan is beyond reasonable projection and should be discussed as a long-term conceptual plan. Figure RP-1 Postmining Topography (or its revision) should be labeled as a long term conceptual plan. A post mining topography based on 10-20 years of mining should be developed for inclusion in the permit application. This plan could be revised in the future as conditions dictate.

*Reclamation representing the Long-Term Conceptual Plan was moved to Addendum RP-A, which is referenced in Section RP-1. The focus of the main body of the Reclamation Plan is now the reclamation of the 20-year Mine Plan that reclaims a postmining surface near the seasonal high water table. References to deep mining and postmining reservoirs were removed from the main body of the Reclamation Plan, and are now the focus of the discussion in Addendum RP-A.*

2. WDEQ-LQD suggests that the short term plan be based on mining above the water table unless McMurtry Ready Mix is willing to commit to deep mining for that period of time.

*The applicant agrees that mining to a specified depth will be more likely than extracting the maximum potential reserves. Reclamation will result in a postmining surface near the seasonal high water table, which will be beneficial for subirrigation during the latter portion of the irrigation season, when the water table is highest. Section RP-1, Section RP-2, Section RP-4, Section RP-6, Figure RP-1, Figure RP-2, Figure RP-3, and Figure RP-4 have been revised to incorporate the 20-year plan.*



3. A triangular area near Well EF-1 is proposed not to be mined. Left intact, the triangular area causes steep slopes in the reclamation of the LMO that would otherwise not be required. Please address how this piece could be mined out to provide gentler slopes in the LMO area. This would require relocation of the Banes No. 1 Ditch closer to the east permit boundary, but as shown the Banes No.1 Ditch is already relocated.

*The postmining topography was smoothed out in this area and revised in Figure RP-1 and Figure RP-2. Figure RP-1, Figure RP-2, Figure RP-3, and Figure RP-4 were revised accordingly.*

4. WDEQ-LQD does not favor two reservoirs, especially with the sizes of each and their proximity to each other. Consider moving the haulroad from where it crosses the northwest corner to a location closer to the north and west boundaries (possibly creating a curve) to alleviate the need for the small reservoir. The Banes No.1 Ditch would also move further to the northwest corner in this location. However, as shown the Banes No. 1 Ditch is already relocated in this area.

*The smaller reservoir was removed, and the ditch and haul road were moved. Figure RP-1, Figure RP-2, Figure RP-3, and Figure RP-4 were revised accordingly.*

5. The size of the large reservoir, even at normal water line it extremely large relative to the size the affected area. Explain what other uses are proposed for this reservoir.

6. Explain and justify the change in land use from livestock and wildlife to a reservoir.

*With the revision to commit to the likely reclamation scenario that leaves postmining grade above the water table, postmining land use is now more reasonably cast as agricultural. However, as discussed above, the landowner would also accept a land-use change that precludes agriculture. Potential land use is now clarified in Section RP-A-2.*

7. Since the reservoirs will have no outlets, they will have fluctuating water levels based on fluctuations in climate and precipitation. This zone of inundation between the normal water line and the reservoir crest of the large reservoir is excessive. It is requested that a spill feature (spillway or outlet pipe) near elevation 7114 msl be designed to eliminate or greatly reduce this area and allow the reservoir to spill at least once every ten years.

As discussed in our meeting, it is not practical to construct an outfall structure because of the extensive excavation required, most of which would be outside of the affected area. The reservoir is intended to be an expression of the fluctuating water table, water within which would readily flush through the reservoir and adjacent alluvium because of the high hydraulic conductivity of the alluvial materials. Discussion to clarify this concept was added to Section RP-A-6.4 in Addendum RP-A.

8. Provide information how the spill feature will affect the wetlands area.

*Because the outfall would not be constructed, its effect to nearby wetlands is not applicable.*

9. Page RP-s, item RP-2.3, please clarify whether topsoil will be placed between the low pool water line and reservoir crest in the large reservoir area?

*The location of replaced topsoil is discussed in Paragraph 1 of Section RP-A-4.*



10. Page RP-2, Section RP-3 states that "the loose, gravelly nature of the materials left in the bottom of the pits precludes the need for scarification and will readily hold topsoil." The purpose of scarification is to increase the depth of root penetration to improve reclamation. The pit floor or the inner-burden material may not have a gravelly texture and may become compacted due to traffic. Please include a commitment to scarify the pit floor prior to topsoil placement.

Section RP-3 was modified to commit to scarification.

11. Page RP-3 item RP-4.2, since the permit is in a core sage grouse area, reclamation must be contemporaneous with mining. It is requested that not more than 25 acres be disturbed (unreclaimed) at any one time. The schedule for reclamation and topsoil replacement will need to be specific in terms of achieving this goal.

*The applicant will commit to having no more than 25 acres disturbed at any one time. Based on our meeting, this commitment restricts new disturbance to acreage that is successfully reclaimed. We agreed that successful reclamation for this purpose refers to the rolling reclamation for sage grouse habitat, and that initial emergence of vegetation will be sufficient to demonstrate successful reclamation. We also agreed that sage brush would not necessarily be re-established everywhere, but would be prudent to re-establish sage brush in selected areas to maintain suitable sage grouse habitat. Section RP-4.1 and Section RP-4.2 have been revised to reference these commitments and scheduling for reclamation, and the revised topsoil replacement sequence is shown in Figure RP-3.*

12. Section RP-5.1 discusses the use of cover crops. LQD does not endorse the use of cover crops that are seeded with the permanent seed mix (actually this should be termed a "nurse crop") because they compete with the perennial species in the seed mix. Please eliminate the use of cover/nurse crops that are seeded with the permanent seed mix. A true stubble mulch may be utilized. A stubble mulch is seeded by itself and allowed to grow for one growing season, then the permanent mix is drilled into the stubble the next fall. Please clarify.

Section RP-5.1 was revised to indicate that nurse crops are not preferred, but may be considered. The schedule for utilizing nurse crops was also clarified.

13. Section RP-5.2 states that most of the area will be revegetated with a pasture mix. The vegetation study shows that nearly all of the area is presently comprised of a mixed shrub vegetation community, with shrubs making up approximately 1/3 of the vegetative cover. Due to the site being located in core sage grouse area, with an active lek approximately 1½ miles from the permit area, it is requested that the upland seed mix (containing a minimum of 0.3 lbs PLS/acre sage brush) be planted on at least 50% of the affected area. Please provide this commitment in the reclamation plan.

*As discussed in our meeting, the applicant will commit to re-establishing sage brush over selected portions of the affected area. We agreed that sage brush will be re-established in selected areas (the reclaimed highwalls were discussed as a possibility), while the majority of the pit bottom would be reclaimed as hayland. This combination of vegetation restoration will satisfy the requirement to restore suitable sage-grouse habitat, as well as land-owner preference for postmining use for agriculture. Section RP-5.2 was revised to discuss the*





*areas to be reclaimed with each type of seed mix. The minimum application of 0.3 lb PLS per acre for Wyoming big sage brush is specified in Table RP-1.*

14. Page RP-5 item RP-5.4 and 5.6, It is recommended that the reclamation be protected from livestock grazing until the seeded area is released from bonding, a minimum of five years. Controlled grazing is acceptable after the vegetation is well established, and may actually enhance the reclamation, but it must be closely monitored to prevent damage to the new vegetation.

*The term "considered" was replaced with "utilized for at least five years" in **Section RP-5.4** to clarify the commitment for the protection of newly-seeded areas, and a reference to the benefit of evaluating sage-brush re-establishment was added. The commitment for five years of protection was revised in **Section RP-5.6**.*

15. Section RP-5.5 states that tree restoration is not planned. There are 26 narrow-leaf cottonwood trees, many up to 50 feet tall, that will be removed by mining. LQD would like to see an equivalent number of trees replaced in the permit area due to their importance to wildlife. Trees need not be replaced with the same species or in the same locations. Please provide a plan to replace trees.

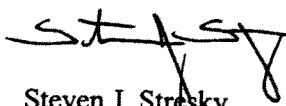
***Section RP-5.5** was revised to commit to a one-for-one replacement of trees.*

16. Section RP-5.7 discusses herbaceous production as a standard for evaluating reclamation success. Actually this standard does not apply to non-coal mines. The standard for non-coal mines is equal cover of perennial species. Please revise the text.

***Section RP-5.7** was revised to be more in line with Non Coal Rules and Regulations Chapter 3 Section 2(d)(vi).*

Thank you for your review, and for incorporating technical comments in this first round. Our meeting and the follow-up e-mail correspondences were very useful in preparing the comment responses. Please do not hesitate to contact the undersigned if you need any additional information or have any questions during your review.

Respectfully Yours,



Steven J. Stresky

Senior Hydrogeologist

sj:s: sjs  
encl: 2 revision packages  
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