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Tuesday 8 January 2019

To: Peter Hays, E.P.S.
Colorado Office of Mined Land Reclamation (OMLR, or 'the Office')
Division of Reclamation Mining and Safety
1313 Sherman St., #215
Denver, CO 80203

From: Varra Companies, Inc.
Bradford Janes, Forester
Liaison – Interdisciplinary Affairs

Subject: FINANCIAL WARRANTY CONSIDERATIONS to OMLR Permit M-2009-018 – HEINTZELMAN Project.

Legal Description: A parcel of land located in part of Section 32; all in Township 3 North; Range 67 West; 6th P.M.; Weld County, Colorado.

General Location: East of St. Vrain Creek and South of Highway 66 along Weld County Road 17.

Total Acres: 155.23 (153.65 original)

Good Morning, Peter.

We are attempting to provide some clarification for consideration in your warranty estimates and perspectives indicated in your inspection report of 1 November 2018.

Considerable flexibility is provided for operations in the use of fill – whether utilized for backfilling or unlined water resources. This flexibility extends to methods and timetables, as Exhibit D contemplated: "…any method that accelerates the [39 year] timetable… including concurrent reclamation ongoing within each Tract, will be utilized, based upon market conditions and the capacities of the operator.'

The original permit – as submitted in 2009, considered accelerated extraction and an end use of developed water resources. Extracted slopes at the location are 1.25H:1V or flatter are consistent with the approved permit.

From Exhibit D:

> Because the permit area may be fully affected, phasing does not adequately describe the extraction and reclamation potential of the permit area. Tracts are used, since each Tract can be accessed concurrently with the other; and per Exhibit L - Reclamation Costs, accelerated extraction only serves to decrease the overall reclamation liability and accelerate final reclamation and site stabilization of the property as a whole. Therefore, any method that accelerates the above timetable, including concurrent reclamation ongoing within each Tract, will be utilized, based upon market conditions and the capacities of the operator.

Extracted slopes are designated at 1.25H:1V as evidenced at the location:

> While extracted slopes may be temporarily 1.25H:1V, all final basin (reservoir) slopes will be established concurrently with extraction and will conform to Rule 3.1.5(7), or flatter.

While finished slopes are allowed at 2H:1V at 10± feet below the anticipated final water level, the designation is primarily intended to keep warranty amounts lower during operations, since the practicality of backfilling will keep finished slopes at 3H:1V, or flatter.

From Exhibit E:

> BACKFILL NOTICE

Inert structural fill may be imported or utilized from existing sources, along with processing fines and reject material to fill portions of Tracts A, B, and C - the extent and location of which will be field determined during final reclamation in order to advance alternative end-use potentials for post extraction development.

Alternative use potentials include:

Mixed use(s), other than general agriculture will occur and may include, but are not limited to: the retention of existing structures as desired (e.g., concrete batch plant, asphalt batch plants, recycling facilities and related structures, shop, scale-house/office; and supporting facilities such as fuel depots, parking areas, oil and gas facilities access, etc.) for continued industrial - commercial uses; the creation of unforeseen future structures, **and for the use and development of on-site water resources**. Since the area of surrounding lands is a mix of these uses, the site end use will retain these potentials.

Originally, as indicated in the opening of Exhibit D:

Of the 157.06± Acres of lands comprising the parcel boundary, 3.41± acres surrounding an existing residence and outbuildings are not included in the permit boundary, resulting in total permit area of 153.65± acres described as follows:

65.57 Acres of Planned Extraction - Tract A - 05-15± years.
40.69 Acres of Planned Extraction - Tract B - 10-20± years.
26.26 Acres of Planned Extraction -Tract C - 01-25± years.
132.52 Acres of Planned Extraction-TOTAL

Of the 132.52± acres of planned extraction, the remaining 21.13± acres of the permit boundary comprise planned or existing permanent access roads, operational support use, or areas of minor to no disturbance. Lands not otherwise occupied will be later developed to the highest possible end-use, and will likely comprise a mixed use which may include other agricultural uses, as well as light residential, commercial, or industrial uses. As indicated in Exhibit E - Reclamation Plan; of the 132.52± acres of potential extraction, the resulting basin will function as a reservoir with a surface covering 105.44± acres of water, leaving a balance of 31.01± of affected land above the anticipated high water mark to be revegetated.

Presently, the operation is in compliance with the Colorado Division of Water Resources (OSE), providing for up to 105.5+/- acres of exposed surface waters. While liberating these waters would necessitate lining the basin, there is no mandate either backfilling

exposed groundwaters on extracted locations, or lining of those basins. Your inspection report of 1 November acknowledges we have sufficient shares to cover the exposed groundwater for the unlined ponds.

Because the Operations are in full compliance with the OSE, as provided for under an approved Substitute Water Supply Plan (SWSP), there is considerable latitude to shape the nature, extent, and circumstances of exposed groundwater. This involves an understanding that the extraction limits are just that, limits. The operator has provided for options to both cut and fill within the extraction limits to shape the nature of final reclamation.

Regardless, it is the intent of Operations to line the finished basins, and a Technical Revision or Amendment to do so will be submitted as soon as practicable in 2019; as requested in your inspection report.

TRACT A:

1. Tract A – Extraction is continuing in Tract A, however, a portion of the North and West boundary have been lined and graded. Shadowing and Mounding potentials for this location were detailed in a similar report for the adjacent P-122 Project, and is attached for reference. The operator will provide an Amendment in 2019 prior to completion of lining at Tract A.
2. The applied and compact shale has been capped with a protective layer of sup-soil, and a small area surrounding the residence on the NorthWest boundary had the soil berm applied along the slopes at that location, but no other soil has been placed to date.
3. Grading is pending on apx. 1225.00± linear feet of the of the ungraded basin perimeter with a slope of apx. 1.25H:1V along a segment of the East and South basin boundary of Tract A extraction limits. When volume is calculated using an area of 918.75 sq.ft. to obtain a 3H:1V slope from a 1.25H:1V base: (1,225.00 lin. Ft. x 918.75 sq.ft.) ÷ 27 = 41,684.00± cu.yds. fill pending.

4. Costs attributed to Lining the unfinished slopes appear inappropriate since they are not a requirement but an option for this operation given the status of legal water covering the operations.

TRACT B:

1. Tract B is being backfilled to a minimum of 2.5± above the anticipated groundwater table. This activity is consistent with the existing permit, however, maps will be updated at the time of the Amendment for Lining activity, or by Technical Revision, to reflect area fill.
2. Grading of basin perimeter slopes is being accomplished by fill activity. Presently, slopes have a mean depth of 23.75 feet, and varying in near equal parts from 10, 20, 30, and 35 feet in depth generally respective of fill activity from West to East within the basin area. It is likely that fill activity will be completed in 2019.
3. For now, grading is pending on apx. 3,900.00± linear feet of the ungraded basin perimeter with a slope of apx. 1.25H:1V along a segment of the SouthEast basin boundary of Tract B extraction limits. When volume is calculated using an area of 493.56 sq.ft. to obtain a 3H:1V slope from a 1.25H:1V base: (3,900.00 lin.ft. x 493.56 sq.ft.) ÷ 27 = 71,292.00 cu.yds. fill pending.

TRACT C:

1. While the Aeolian formation of Tract C is being utilized for now to accomplish backfill operations at Tract B, the potential for continued extraction of the resource remains open. Tract C may be utilized for continued extraction, as updated in subsequent OMLR Annual Reports.
2. Soil resources at Tract C are limited but suitable, even in the native state, and upon surface to regolith horizons. As noted in the attached Soil Test from CSU, the 'Aeolian Deposit:
    - The pH's and salts are at levels that are suitable for plant growth.
    - The SAR's are low, sodium is not a problem.

- The only amendments recommended for the soil is to aid revegetation is for the application of 40#'s per acre of Nitrogen fertilizer.

FINANCIAL WARRANTY CONSIDERATIONS (NOTE: land measurements utilized a combination of ground and digital tools – including Google Earth):

1. Grading –
   a. Warranty – should be considered respective of transitional grading of the remainder of ungraded basin walls at Tracts A and B. Tract C is being reduced with finished slopes in tact. Presently there is a combined volume of 112,976.0± cu.yds needed to reduce the existing basin perimeter slopes to 3H:1V. When the needed volume is multiplied by your determined value to the tenth of a mill, or 0.613 cents per LCY = $69,254.29 (added the fractional penny and made it an entire penny). This combined grading costs should lower your projected combined costs of $1,044,959.00 for grading at Tracts A and B, by $975,704.71 to the stated $69,254.29.
2. Clarification. Once grading is completed on Tract A, we trust correlated dewatering costs estimated at $4,356.00, necessary for grading (should a default occur prior to grading completion in Tract A) should be satisfied.
3. Replacing Topsoil Tract B and C -
   a. Tract A - Warranty Considerations – As indicated in the included CSU Soil Test, the Aeolian deposit is of a quality 'suitable for plant growth.'
   b. Costs for resoiling for Tracts A and B should be removed, however, a cost for the application of Nitrogen fertilizer should be considered.
4. Seeding on disturbed areas – Warranty Considerations
   a. The seed mixtures selected for use on disturbed lands are developed with considerable thought as to their suitability and adaptability to altered soil medium in the pioneer state. Because seed is a commodity, its prices may fluctuate dramatically depending upon market conditions of supply and demand. If a seed falls dramatically in availability, it may result in a significant

increase in the total cost of a mixture. For this reason, applying temporal inflated costs for seed may act as a discouragement to the development of the better mixtures via simplification of the mix to accommodate cost, not purpose. We can by measure attempt to gain current real world costs for these mixtures, as attached. It might prove a better solution to average the prior and current costs in a revision to encourage proper scientific seed mixture development over that of expediency. Just a thought.

b. All of our permitted operations utilize the option of broadcast seeding, which would negate the need for Tilling and Drilling costs. We believe if the cost of Tilling and Drilling discourages drilling seed, then the costs for direct application of broadcast seed at double the drill rate should be considered in the OMLR warranty estimate.

c. When it comes time to Revise the permit for purposes of establishing an approved liner, we may update the mixture to gain more favorable costs for warranty.

5. The Conveyor System – Warranty Considerations

a. Attached, is the current Salvage Value for the Conveyor System. At the least, there is Zero ($00.00) liability for such a demand transport system. More, the Salvage Value of the Conveyor System should be used as an Asset against the site liability. Please consider this information respective of the final Warranty determination by the Division.