## 6.4.12 EXHIBIT L – Reclamation Costs

(1) All information necessary to calculate the costs of reclamation must be submitted and broken down into the various major phases of reclamation. The information provided by the Operator/Applicant must be sufficient to calculate the cost of reclamation that would be incurred by the state.

(2) The Office may request the Operator/Applicant to provide additional, reasonable data to substantiate said Operator/Applicant's estimate of the cost of reclamation for all Affected Lands.

**SUMMARY OVERVIEW:**

Summary Status of Affected and Unaffected land as of this Amendment (Exhibit C-1: Existing Conditions and Exhibit C-2: Extraction Plan Map). The excavation has, prior to this technical revision, been separated into two distinct pits. While maintaining the reference to separate Tracts A (West Basin) and B (East Basin), it is anticipated that this will become one large open extraction area that will be converted to a single lined reservoir upon completion of mining. For the purpose of reclamation costs, the excavation and subsequent regraded and lined reservoir is summarized as one pit:

Table 1 - Primary Data on Area of Affected Lands and Reclaimed Features:

| Entity | Tracts A and B Combined |
|---|---|
| Extraction Area | 111.05± Acres |
| Finished Basin Area | 98.61± Acres |
| Static Water Area (Elevation 4790 feet) | 90.10± Acres |
| Area Above Static Water Level (Extraction Area - Static Water Area) | 20.95± Acres |
| Basin Area Volume (cu.ft.) | 106,695,270± |
| Static Water Level Volume (cu.ft.) | 69,367,019± |
| Static Water Level Volume (Gallons) | 518,901,334± |

NOTE Well: All lands within the 155.86± acre permit area are to be considered as affected lands under C.R.S. 34-32.5-103(1) respective of this permit application and any subsequent permit revisions or amendments to the permit as originally approved.

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The following assumptions are based upon the pre-disturbed state of the application for purposes of determining estimated costs of reclamation and correlated financial warranty. Where appropriate, information is generalized and approximated from similar estimates determined by the Colorado Office of Mined Land Reclamation (OMLR), as indicated:

## 6.4.12 EXHIBIT L – Reclamation Costs

**Summary of Reclamation Costs:**

$81,852.09± Total Site Discharge
$ 206,419.12± Total Grading
$ 79,042.53± Total Liner Installation
$ 54,904.36± Total Re-soiling
$ 121,985.95± Total Re-vegetation Expense
$ 54,780.34± Total Conveyor Decommissioning
$ 598,363.69± Sub-Total
$ 3,585.00+ Possible Mobilization/Demobilization Costs *(est.* from OMLR Two Rivers)
$ 601,948.69± **Sub-Total Direct Costs**
$ 146,484.21± Possible Indirect Costs Pending RMS Indirect Costs @ 24.335 % of Total Reclamation Costs

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**$748,432.91± Grand Total - Financial Warranty Amount - Pending OMLR Review and estimates including estimated expenses for State of Colorado Mobilization and Demobilization and other 'Indirect' cost determinations by the Office.**

**RECLAMATION EXPOSURE:**

Based upon the Mining and Reclamation Plans of this application, the status and trend of activities and affected land; and related calculations to estimate reclamation liability, are determined as follows.

Please Note: Due to the difficulty of calculating heavy equipment costs similar to the Division's software program, unit costs from previous and reasonably current Division estimates of like or similar kind have been utilized to create a reasonably close estimate. The per unit basis from Division records are shown along with other sources used or referenced to determine unit costs, at the back of this exhibit.

## DEWATERING:

Extraction started in Tract A in 2018 and is ongoing; extraction of Tract B began in 2021. The formerly designated Mineral Reserve Area 1 between Tracts A and B will be extracted as well, resulting in one large open extraction area within the permit boundary (see Exhibit D). This estimate is for reclamation of the entirety of the planned extraction areas (formerly Tract A, Tracts B, and Mineral Reserve Area 1) from a static water surface elevation with maximum lateral inflow. The analysis computes the cost to dewater the full pit, and then to dewater for one additional month while reclamation is completed.

## 6.4.12 EXHIBIT L – Reclamation Costs

**Dewatering Estimate** (refer to Two Rivers estimate utilizing similar pump and rates):

Initial pit dewatering:
518,901,425 gal x $ 0.000131/gal. discharge cost = $67,976.09

Construction dewatering (one month):
131,760,000 gal x $ 0.0001/gal. discharge cost = $13,176.00

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NOTE: Sufficient water resources exist to supplement basin losses in its unlined state during operations. However, concurrent reclamation, which includes the progressive lining of basin walls once extraction is complete, is ongoing, and the final planned use of the pit is a developed water resource in the form of a lined reservoir.

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**GRADING:**

As stated in Exhibit D - Extraction Plan:

> Extraction, which occurs within the basin at a 1.25H:1V slope, is expected to be complete within 5 to 7 years. Following extraction, slopes will be regraded at a 3H:1V slope. Currently, the entirety of the western wall, or 1760± linear feet, has been extracted and regraded. An estimate of the remaining volume to be regraded is provided by subtracting the volume of the finished, regraded basin (3,951,674± CY) from the current basin configuration (4,098,487± CY) for a total volume to be regraded of 146,813± CY.

Average push distance is 50± feet using equipment and assumptions leading to per unit cost previously determined by OMLR (refer to Two Rivers estimates at back of this exhibit) = $1.406 per LCY.

146,813± LCY
x $ 1.406 per LCY.

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**$ 206,419.12± to grade remaining ungraded slopes**

**Liner Installation**:

Raptor has made allowance for liner installation on the regraded slope. Assumptions are that a 4-

foot-thick liner will be keyed into bedrock at the base of the regraded slope and up the slope to approximately 5 feet below the original surface elevation. The western wall of the excavation has already been regraded and lined and is therefore not included in the perimeter used in calculations below. The remaining slopes have an average depth of 30 feet. The keyway dimensions in bedrock are assumed to be 4x4-foot.

Perimeter liner at 9,357 lin.ft. x 40 sq.ft./ft x 4 ft. / 27 = 55,476 CY of liner placed at an estimated cost of $1.302/CY = $ 72,229.70.

Keyway at the base of the 3:1 slope is estimated at 8,830 lin.ft. x 16 sq.ft./ft / 27 = 5,233 CY of liner placed an estimated cost of $2=1.302/CY = $6,812.84.

**$ 79,042.53** Total Liner Installation Cost

**Soil Demand AND Re-soiling of Affected Lands (refer to Exhibit D):**

NOTE: The soil demand (and related costs) will decrease proportionately as extraction activities progress over each Tract of planned extraction as a result of concurrent reclamation. For now, a conservative area estimate to reclaim the lands above the static water level of the entire extraction area will be determined for resoiling expenses.

111.05± acres -– Total Extraction Area
24.49± acres Plant Processing/Mineral Reserve Area 2
-90.10+ acres -– Static Water Area
45.44± acres -– Requiring Revegetation from initial operations

At a depth of 0.5± feet, the total volume = 45.44± acres x 0.5± feet of soil replacement x 43,560.0± sq.ft/acre ÷ 27 cu.ft/cu.yd. = 36,655± cu.yds. total soil requirement. At $1.314/LCY, the total cost of soil replacement is $48,164.58.

We assume that 25% of the soil replaced, or 11.36 acres, will require disking or scarifying. At $589.35/acre, the total cost of disking/scarifying is $6,695.06.

The majority of soil placement can occur using an average placement distance of 600 ft., or less along embankments, (utilizing the same assumptions utilized at the Two Rivers Project as included with this exhibit).

$ 48,164.58± for soil replacement
$ 6,695.06± for disking/scarifying

$ **54.859.64+ to replace 0.5± feet of soil over the existing affected lands remaining above the anticipated final water level.**

## 6.4.12 EXHIBIT L – Reclamation Costs

**Establishment of Vegetation over Affected Lands:**

The demand for establishment of vegetation over the affected lands will also diminish proportionately with the planned extraction of the Tracts. For now, the total exposure is estimated as indicated above to be 45.44± acres at complete extraction (refer to resoil area, above):

NOTE: The vegetation demand (and related costs) will decrease proportionately as extraction activities increase over each Tract of planned extraction. The seed mixture includes a substitute for mulch in the inclusion of a wheatgrass hybrid and is identical to the seed mix approved for the Two Rivers project (see back of this exhibit).

$ 1,789.70± Preferred Seed Mix
x 45.44± acres
$ 81,323.97± Sub-Total Seed

Assume a 50± percent failure and add half the expense back into the total for reseeding, or:
$ 40,661.98± Sub-Total Re-seeding costs

**$ 121,985.95± Total Re-vegetation Expense**

**Processing Area and Decommissioning:**

Raptor has estimated decommissioning costs for the Conveyor that will deliver mined material to that area. Decommissioning will involve the removal of the conveyor infrastructure and belting.

The decommissioning cost estimate for the conveyor structure is based on previous estimates provided by Divide Construction for other Raptor (previously Varra) operations and presented in Financial Warranty estimates. The costs have been updated to current using US Army Corps of Engineers Civil Works Construction Cost Index System (CWCCIS) indices.

The portion of the conveyor anticipated to be removed with the decommissioning of the P122 Pit includes the portion present within the P122 Pit's property boundary, as well as the alignment along the western property boundary (located within the P116 Pit's property), the elevated truss across County Road 28, and the section that parallels County Road 17 northward until the limit of the P115 property. The total length of the regular conveyor structure in 40-foot sections supported on concrete blocks is estimated to be 3,521± lin.ft. with an additional extended span elevated truss section 125-foot in length that crosses County Road 28. The conveyor has a width of 3 feet and a hight of 6 feet. Decommissioning costs for the regular conveyor structure are estimated at $ 0.8/cu.ft. and for the elevated truss section at $9.57/SF. Concrete block removal is estimated at &6.89/ea.

Concrete block removal: 3,521 lin.ft ÷ (1 block/40 ft) x $6.89/ea = $613.21

Conveyor decommissioning: 3,521± lin.ft. x 18 sq.ft x $ 0.80/cu.ft. = $ 50,702.40

## 6.4.12 EXHIBIT L – Reclamation Costs

Conveyor extended span: 125ft long x 3 ft wide x $9.75/sq.ft = $ 3,588.75

**$ 54,904.36** Total Conveyor Decommissioning Cost

**OTHER MISCELLANEOUS COSTS:**

Mobilization and demobilization costs are based upon the Division's estimates, which are pending – but estimated in the summary at the beginning of this Exhibit L at $3,585.

Demolition of Structures: **None.** Building Permits for structures will be obtained where required from the Weld County Building Department.

**Please Note: The per unit cost values derived from previous OMLR determinations for heavy equipment, as applied to this exhibit, are included at the back of this exhibit. Since there is no possibility of the applicant in fully reproducing the Division's methods, utilizing similarities from past OMLR calculations is the most viable and accurate means available for the applicant to derive reasonable estimates of per unit costs and should result in estimates very reliable with that of the Division.**

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