

# EXHIBIT C — PRE-MINING AND MINING PLAN MAP(S) OF AFFECTED LANDS

One or more maps may be necessary to legibly portray the following information:

## SECTION (A)

All adjoining surface owners of record;

All surface land owners within 200 feet of the proposed permit boundary have been listed in a table on map Exhibit C-1.

## SECTION (B)

The name and location of all creeks, roads, buildings, oil and gas wells and lines, and power and communication lines on the area of affected land and within two hundred (200) feet of all boundaries of such area;

All reasonably identifiable manmade structures, including roads, buildings, oil and gas infrastructures, utilities, ditches, lined ponds, fences, conveyors, wells, and culverts, as well as important natural features, such as creeks, have on the affected land and within 200 feet of the proposed permit boundary have been included on map Exhibit C-1.

## SECTION (C)

The existing topography of the area with contour lines of sufficient detail to portray the direction and rate of slope of the affected land;

One-foot contours generated from drone-collected photogrammetry from March 2023 are displayed on the Existing Conditions Map Exhibit C-1 and the Extraction Plan Map Exhibit C-2.

## SECTION (D)

The total area to be involved in the operation, including the area to be mined and the area of affected lands (see definition of "Affected Land");

The affected land is equal to the proposed permit boundary and is indicated on map Exhibits C-1 and C-2. The proposed area to be mined is indicated as the "Initial Extraction Area" on map Exhibit C-2.

## SECTION (E)

The type of present vegetation covering the affected lands; and

The five predominant types of vegetation covering the affected lands are listed by area in Exhibit J Table 1 and presented spatially in map Exhibits C-1, Existing Conditions Map, and Exhibit C-0, Aerial Image and Vegetation Map, to provide an overlay against what may be observed from the imagery

## SECTION (F)



In conjunction with Exhibit G – Water Information, Rule 6.4.7, if required by the Office, further water resources information will be presented on a map in this section.

Water wells within the proposed permit boundary and within 200 feet of the boundary have been included in a table and their locations indicated on map Exhibit C-1

## SECTION (G)

Show owner's name, type of structures, and location of all significant, valuable, and permanent man-made structures contained on the area of affected land and within two hundred (200) feet of the affected land.

All significant, valuable, and permanent<sup>1</sup> man-made structures on the affected land and within 200 feet of the affected land boundary are located and provided in a table on Exhibit C-1.

## SECTION (H)

In conjunction with Exhibit I – Soils Information, Rule 6.4.9, soils information may be presented on a map in this section.

Soils information was not determined to be necessary for this section, but is presented on map Exhibit I/J.

## SECTION (I)

Aerial photos, if available, may be included in this section.

Due to the large amount of information on the map Exhibits C-1 and C-2, aerial imagery was removed for legibility. Aerial imagery can be seen clearly on map Exhibit I/J, with associated soils and vegetation information.

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<sup>1</sup> Adequacy 2, Item 6



## EXHIBIT D — EXTRACTION PLAN

The mining plan shall supply the following information, correlated with the affected lands, map(s) and timetables:

### SECTION (A)

(a) description of the method(s) of mining to be employed in each stage of the operation as related to any surface disturbance on affected lands;

Resource recovery will commence by first removing the upper [A profile/plow layer] six to twelve inches of soil [six (6.0±) inches typical], combined with existing grass or crop stubble. Removal will utilize scrapers or excavators, aided by dozers where necessary, and hauled to the northern corner of P125A. All extraction and surface related activities detailed in this application will occur under an approved Fugitive Dust Permit issued by the Colorado Department of Public Health and Environment (CDPHE).

Until re-soiling activity occurs, where harvested soils have been stockpiled and remain undisturbed for reclamation or sale, they will be seeded with the mixture specified under Exhibit L - Table L: **Primary/Preferred Seed Mixture.** A stabilizing cover of native vegetation may take up to three years to fully establish the desired cover. In the event the native seed mixture fails, an optional mixture of predominantly introduced species will be used as a fall back to better assure a stabilizing cover of vegetation. The optional seed mix will be used only after submittal to and approval of a Technical Revision by the DRMS<sup>1</sup>. Still, using the preferred native seed mixture offers opportunity to gauge the potential performance of the selected species prior to utilizing it over larger areas requiring reclamation later in the life of the resource recovery operation<sup>2</sup>.

Once vegetation is established over the initial reclamation soil stockpiles, they will likely remain untouched until all other resources have been extracted within Pit P125A; at that time, stockpiled topsoil will be placed on designated reclaimed areas or moved to one of the other designated stockpile locations shown in Exhibit C-2, Site Plan Map, as determined by the advancement of the extraction and reclamation operations. Where concurrent reclamation is possible, operations will utilize soil in an over the shoulder method when practical. In this manner, reclamation is expedited without increasing soil stockpile volumes while reducing expenditures related to labor, handling, and time<sup>3</sup>.

Soil salvaged as stated above is expected to exist in-situ at six to twelve inches in thickness. Resulting volumes of salvaged soil will range from 8,200 - 16,500 cubic yards for Pit P125\_S1, from 19,100 - 38,400 cubic yards for pit P125A, and from 24,800 – 49,700 cubic yards for pit P125B. Salvaged soil will be stockpiled in designated stockpile locations shown in Exhibit C-2, Site Plan Map. Smaller short-term stockpiles may be created along pit edges where regrading is imminent or in progress and re-soiling will follow. Designated stockpile locations may store either topsoil or overburden subject to operational requirements, but topsoil and overburden will not be mixed in a single stockpile. Stockpiles will be clearly signed to identify whether the stored material is topsoil or overburden.

Re-soiling volumes required above the waterline of the lined water storage will require much less soil. The re-soiling areas are estimated at 5.7 acres for Pit P125A and 6.9 acres for Pit P125B with volumes calculated based on a nominal six inches of soil cover at 4,567 and 5,586 cubic yards, respectively. Outside of reclaimed excavation areas, approximately 1.5 acres of access roads and materials storage and parking

<sup>1</sup> Adequacy 2, Item 8

<sup>2</sup> Adequacy 1, Items 28, 62

<sup>3</sup> Adequacy 1, Item 29



areas will require an estimated 1,210 cubic yards of topsoil. Topsoil salvaged from Pit P125\_S1 will be sufficient to re-soil the area once the pit is backfilled to approximately existing grade. Excess soil not needed on site may be sold subject to maintaining on site no less than 1.3 times the amount of topsoil required for reclamation of disturbed areas that will have topsoil replaced<sup>4</sup>.

Following soil salvage, the balance of the extractable deposit will be removed to the depth of the unconsolidated or weathered bedrock using excavators and trucks, with the excavated sand and gravel material transported offsite by conveyor to the plant site pit run located on the northeast adjacent P115 Kurtz site (M1999-006), and subsequently processed by screening, crushing, washing, and other methods to size and properly dimension the extracted material into saleable product. Overburden not suitable for processing and sale as sand and gravel will be stockpiled in designated stockpile locations shown in Exhibit C-2, Site Plan Map for use in regrading and reclamation activities. Resource recovery will commence from the southeast corner of pit P125\_S1, establishing a keyway moving north and west, and then moving northwestward via an advancing face. Discharge will occur near the northeast corner of P125\_S1 and southeast corner of P125A to an existing ditch on the west side of WCR17. Additionally, discharge from the P125B area will occur near the southwest corner of P125B to the unnamed tributary to St. Vrain Creek<sup>5</sup>.

Pit P125\_S1 has a tank battery located at its southeastern border; extraction will not occur within 25 feet of these tanks while this infrastructure is still in place. An underground oil and gas pipeline is located between Pits P125\_S1 and P125A; extraction will not occur within 10 feet of the pipeline easement while the pipeline is in place. Finally, one abandoned oil and gas well each (two total) is located within the extraction extents of Pits P125A and P125B, both of which are pending removal (refer to map Exhibit C-1 for ownership details); extraction will not occur within 25 feet of the wells before they are removed.

Perimeter Keyway Extraction will maintain a perimeter slope no steeper than 1.25H:1V. Where pit depths exceed 23 feet below ground surface (bgs), extracted final walls will be no steeper than 3H:1V for depths 23 feet bgs and greater (refer to the Exhibit S addendum: Slope Stability Analysis and supplemental letter dated July 1, 2025 for additional information). At the toe of the cut perimeter slope is the keyway that runs below the extracted deposit of the basin, into the bedrock, which allows the subsurface waters to flow to the settling basin and discharge pumps necessary to keep the cut basin dry during a time of extraction and reclamation of the affected perimeter slopes.

The keyway dimensions may vary more or less from 4± to 8± feet in depth and 4± to 16± feet in width. Extraction must be broad enough to allow equipment to safely approach the toe and excise the bed dimensions where the resulting channel is sufficient to convey the groundwaters to the settling basin for discharge.

Please Note: The graphic representation of the Initial Extraction Area and the topsoil/overburden stockpile locations in Map Exhibit C-2 are idealized, and may vary slightly in shape, size, and location presented based on conditions encountered in the field. Annual Reports will report on the nature and extent of affected lands and more properly reflect actual conditions on the ground in a given year of operations. Any change in location of stockpiles will be addressed in an appropriate revision<sup>6</sup> as determined necessary by DRMS based on the change<sup>7</sup>.

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<sup>4</sup> Adequacy 1, Item 30

<sup>5</sup> Adequacy 1, Item 35

<sup>6</sup> Adequacy 1, Items 36, 60

<sup>7</sup> Adequacy 2, Item 9



During extraction, a predominantly vertical advancing pit wall (the extraction front) is not anticipated due to the use of excavators in the removal of the material deposits. The extraction front refers to areas of the pit wall being mined in areas of active extraction operations<sup>8</sup>. Excavators provide a great deal of control over the extraction process. The maximum length of the extraction front will likely never exceed the maximum cross-sectional length of Pit P125B, or 2,000± feet, or less; in any given direction. The advancing front will result in a moving face with a slope typically equal to or flatter than 1.25H:1V.

Acreage to be affected during the first year of extraction activities includes the establishment of the Initial Areas of Extraction (P125\_S1) and attending settling pond and means of transportation by ground haulage by truck to topsoil/overburden stockpiles or to the conveyor for transportation to the processing facility as described in this Exhibit. The Initial Area of Extraction will expand until concurrent reclamation follows as each Pit is exhausted of resource.

Although initial extraction may otherwise result in temporary slopes up to 1.25H:1V, all cut slopes will be backfilled with unconsolidated bedrock, overburden (on-site unmerchantable excess materials, or imported inert materials) and soil to advance the reclamation and completion of the desired basins. Pit P125\_S1 is planned to be completely backfilled with fill and topsoil placement expected to be completed 1-2 years after extraction in this pit is complete. The estimated volume of overburden material from all three mining areas is inadequate to reclaim P125\_S1. Additional backfill will either be excavated as borrow material from the bottom of Pits P125A and P125B, or from available backfill material on the M-1999-006, Kurtz Resource Recovery & Land Development Project permit owned by Raptor and adjacent to this permit<sup>9</sup>.

Concurrent backfilling and grading of cut perimeter slopes, while desirable, may be obstructed in time and extent by the need to maintain keyways and basin discharge during extraction. Backfilling of slopes can only occur once enough of the floor is exposed to facilitate backfilling and finished grade of extracted basin slopes without interfering with basin discharge operations. This makes concurrent backfill difficult to accurately forecast. Regardless, any completed slope remediation will be indicated in any subsequent Division of Reclamation, Mining and Safety (DRMS) Annual Report. Any change in the key variable parameters that impact the financial warranty estimate beyond the maximum financial warranty stated in Exhibit L, Reclamation Costs, will be addressed in a Technical Revision and the financial warranty updated<sup>10</sup>.

No plant or processing operations will be installed or occur on this site. Pit-run (unprocessed materials) will be loaded onto a conveyor on the east side of Pit 125A that will deliver material to the existing north-south conveyor along the east side of Weld County Road 17 on Raptor's adjacent P115 Kurtz (M1999-006) permit, which will convey material to be processed at the existing P115 Kurtz plant. Extracted materials from Pits P125\_S1 and P125B will be loaded onto a conveyor that will tie into the Pit P125A conveyor for offsite transport. Truck transportation of excavated material to the transfer conveyor may also be used as an alternative to the conveyor from P125\_S1 and possibly P125B as needed for operational flexibility. Processed material will then be transported directly from the plant to area markets as needed and where appropriate<sup>11</sup>. Estimated volumes of fill for backfilling P125\_S1, or regrading the slopes for the lined reservoirs in P125A and P125 B are as follows<sup>12</sup>:

P125\_S1 Backfill = approximately 550,000 cubic yards

<sup>8</sup> Adequacy 2, Item 10.

<sup>9</sup> Adequacy 1, Items 33, 37

<sup>10</sup> Adequacy 1, Item 40

<sup>11</sup> Adequacy 1, Item 34

<sup>12</sup> Adequacy 1, Items 38, 39



P125A Regrade = approximately 206,000 cubic yards

P125 B Regrade = approximately 151,000 cubic yards

The transfer conveyor will be a short belt, approximately 150 feet long to convey extracted sand and gravel over WCR 17. The conveyor will be set on an elevated structure at appropriate heights to enable access to pipeline in easements and required clearance (18-feet) over the county road and metal (or other appropriate material) pans will be installed under the conveyor structure to prevent spillage onto the county road. The design will be similar to other Raptor locations where an extended span has been required to cross a county road. The proposed conveyor from P125\_S1 is expected to be approximately 1,280 LF in length. The conveyor will be supported by legs at intervals of approximately 40 feet with typically 6- x 2- x 2-foot concrete blocks sitting on ground surface used as necessary to anchor the legs. The proposed conveyor from P125\_S1 will be relocated after P125\_S1 is fully extracted to transport material from P125B. The proposed conveyor between Pits P125B and P125A is expected to be approximately 870 LF in length and will span the Last Chance Ditch and metal (or other appropriate material) pans will be installed under the conveyor structure to prevent spillage into the ditch. Final conveyor specifications are to be determined however belt width is anticipated in the range 30-54"<sup>13</sup>.

Extracted material will be loaded immediately onto the conveyor for offsite transport; therefore, only a limited amount of temporary material stockpiles is expected onsite as part of logistics for offsite transport.

Any structures constructed within an offsite permitted area to support on-site operations will be incorporated into the respective permit through an appropriate revision<sup>14</sup>.

Raptor will minimize of impacts to mule deer population in the riparian corridor along the St. Vrain Creek during construction of the project and during winter. While no current extraction is proposed in the riparian corridor, Raptor commits to construction activities will only be conducted during daylight hours and to not leaving open trenches or pits during construction that could result in harm to animals.

<sup>15</sup>Backup sirens and heavy equipment averaged 60.0± to 75± decibels. The level drops an additional 5.0± decibels for every 100.0± feet from the source of plant noise, achieving residential background levels at a total setback of 400± feet. Noise levels at areas of extraction are buffered with increasing depth of extraction.

## SECTION (B)

### (b) earthmoving;

General earthmoving including topsoil, overburden and sand and gravel is described in Section (a) above.

Material transport of raw materials from extraction locations to the plant site (located on adjacent Raptor Materials Kurtz property, DRMS permit number M1999-006) will occur via conveyor (see route on Exhibit C-2: Extraction Plan Map). This will in turn serve to minimize impacts to area transportation corridors. Any significant change to the location, extent, and nature of the conveyor systems to that designated in this submittal will be reflected in an appropriate revision submitted and approved by the DRMS<sup>16</sup>.

<sup>13</sup> Adequacy 1, Item 41

<sup>14</sup> Adequacy 2, Item 6

<sup>15</sup> Adequacy 1, Item 42 (previous paragraph in original application removed)

<sup>16</sup> Adequacy 1, Item 43



## SECTION (C)

### (c) all water diversions and impoundments; and

To determine the influence of past activities on groundwater, six (6) piezometer wells were advanced and developed along and within the entire Cogburn site boundary. Groundwater level information is based on three quarters of continuous monthly measurements at these piezometers, whose locations are identified on map Exhibit G: Water Information Map. Recorded groundwater depths vary in elevation below the surface, ranging from an average of approximately 23.5± feet bgs in the southeastern portion of the property to 8.5± feet bgs in the northwestern portion.

Groundwater elevations are influenced by crop irrigation practices that run generally from April through September and may occasionally lag into the middle of October. During this time groundwater depths may be skewed higher in elevation in Pits P125\_S1, P125A, and the eastern portion of P125B; however, throughout the 2024 monitoring period, groundwater elevations over the entire site have remained deeper than 7.0± feet from the surface.

Using the approximate surface elevations at the eastern boundaries of Pits P125A (4,800') and P125B (4,790'), and noting that groundwater monitoring results have reported depths between 14-16 feet bgs in the northern corner of P125A and vary between 7-9 feet bgs along the eastern boundary of P125B, we have estimated static water levels of 4,785' in Pit P125A and 4,782' in Pit P125B. The cyan colored contours shown in the map Exhibit G: Water Information represent the static groundwater elevation in each reclaimed pit. Since completed reservoirs will be lined to meet State of Colorado Water Resources specifications and requirements, and since lined basins will ultimately equalize with the surrounding groundwater elevations, the static water levels shown should reasonably reflect those of both the lined or unlined state, and represent a proper reflection of the optimal surface area of the water over the finished basins. Raptor Materials, LLC has sufficient water to meet the circumstances and obligations of both the lined and unlined states and, as reflected in Exhibit G: Water Resources Information, until and unless the reservoirs have an approved liner, the Operator will dedicate sufficient waters to secure the reclamation of the resulting basins in the unlined state.

As extraction activity progresses into the aggregate profile, groundwater must generally be removed in advance through the use of pumps and subsequent discharge into area tributaries. A complete dewatering evaluation was performed by AWES in their report dated October 2024, and is included as an addendum to this permit application. The report concludes that 'the results of analytical and numerical solutions indicate that the proposed mine dewatering activities will not adversely affect the regional groundwater hydrology'. All discharge of waters will be conducted under an approved CDPHE discharge permit.

Dewatering of the property in preparation for extraction and resource recovery will occur by establishment of a dewatering pump and/or well in the northeastern corner (low point) of Pit P125\_S1 and southeastern corner of Pit P125A and discharged to an adjacent settling pond prior to eventual release into a ditch on the west side of Weld County Road 17 which returns water to the Last Chance Ditch. The point of discharge and settling pond location are on Exhibit C2: Extraction Plan Map. Additionally, discharge from the P125B area will occur near the southwest corner of P125B to the unnamed tributary to St. Vrain Creek. All discharge will conform to the applicable CDPHE discharge permit requirements, and any changes to discharge points would require approval from CDPHE and be reflected in an appropriate permit revision with DRMS<sup>17</sup>.

Cut slopes will cause direct precipitation to drain internally into the resulting basins and are not anticipated to result in any off-site impacts due to erosion or stormwater runoff. The gentle to near flat topography of the area landscape tends to aid in overall stability above the planned areas of extraction. While some

<sup>17</sup> Adequacy 1, Item 45





erosion of resulting basin perimeter slopes will be evident subsequent to extraction, the advance of reclamation activity over affected lands will provide cover for both near and long-term stability of those lands remaining above water level of the finished basins. All completed slopes above the anticipated static groundwater elevation will be soiled, seeded and stabilized as provided for under Exhibit E - Reclamation Plan.

Of the total 64.8 acres of potential extraction (e.g., the full eventual extents of P125\_S1, P125A, and P125B), the resulting basins will function as multiple-use reservoirs with a slightly fluctuating combined water surface area covering 42.6 acres. Of the remaining balance of 22.2± acres of land above the anticipated high-water mark of the reservoirs, 10.2 acres of disturbed at-grade backfill, not otherwise committed to existing or planned structures or infrastructure over Pit P125\_S1, will be stabilized with vegetation; the remaining 12.6 acres of basin slopes in Pits P125A and P125B will be stabilized with vegetation<sup>18</sup>.

## SECTION (D)

(d) the size of area(s) to be worked at any one time.

The 196.4-acre parcel boundary forms the permit boundary, as reflected on exhibit maps. All lands under its direct control within the 196.4-acre permit area, are affected lands under C.R.S. 34-32.5-103(1), respective of this permit application. Any changes required in the nature of planned extraction or reclamation will be addressed in an appropriate revision as determined necessary by DRMS based on the change<sup>19</sup>. If lands are needed beyond the designated permit boundary, those lands will be secured for the active DRMS permit by Amendment<sup>20</sup>.

Within the permit boundary, there are three (3) identifiable areas designated for primary extraction, the description of which will help to explain the nature of planned extraction and reclamation. The Primary Areas of Extraction are as follows<sup>21</sup>:

10.2 Acres = Primary Extraction **Pit P125\_S1 – South Pit**  
23.8 Acres = Primary Extraction **Pit P125A – Eastern Pit**  
30.8 Acres = Primary Extraction **Pit P125B – Central Pit**  
64.8 Acres = Total Primary Extraction  
131.6 Acres = Affected Lands beyond planned extraction limits  
196.4 Acres TOTAL

Of the outlying 131.6 Acres, additional areas of initial disturbance include:

0.9 Acres = Employee Parking / Materials Storage  
0.3 Acres = Sediment Basins  
0.1 Acres = Outfall Pipe Corridors  
0.2 Acres = Conveyor Corridors External to Extraction Areas  
1.5 Acres = Disturbed Area beyond Primary Extraction Limits  
64.8 Acres = Total Primary Extraction  
66.3 Acres = Maximum Proposed Disturbed Acreage<sup>22</sup>

<sup>18</sup> Adequacy 1, Item 46 (following paragraph in original application removed)

<sup>19</sup> Adequacy 2, Item 9

<sup>20</sup> Adequacy 1, Item 47

<sup>21</sup> Adequacy 1, Item 48

<sup>22</sup> Adequacy 2, Item 12





Of the outlying 130.1 acres, existing developed lands that will not require reclamation include:

5.9 Acres = Unpaved Perimeter Access Roads \*  
0.2 Acres = Vehicle Crossings \*  
0.6 Acres = Existing Oil and Gas Facilities  
1.0 Acres = Existing Farming/Oil and Gas Roads  
7.7 Acres = Existing Developed Lands

\*Existing roads may be improved via widening or addition of gravel, and will be retained as such according to the desires of the landowner.

Of the outlying 122.4 acres, 41.3 acres are designated as a Mineral Reserve Area, which may be permitted and mined at some time in the future.

81.1 = Remaining Outlying Areas

The extraction limits assure through the use of setbacks that other interests are not affected by planned extraction. Extraction is set back uniformly at a minimum 20.0± feet from the edge of property lines; easements and rights-of-way; underground gas lines or other underground facilities, irrigation ditches and seep ditch, wells and other structures. Minor variations may occur in the field over time from those represented on Exhibit Maps. The plans detailed in this application are based upon future events for which minor or temporary departures at any point in time may be evident. To the extent any significant departure in the field occurs in a time and manner not otherwise anticipated in these exhibits, the operator may cure by self-inspection, by observation from DRMS inspection in a timely manner, or by operator-initiated Revision to the Permit or otherwise via clarification in attending required DRMS Annual Reports<sup>23</sup>.

Extraction will not occur closer than 125± feet from the face of a residential structure; unless there is a written accommodation with the owner of the residential structure that allows extraction to occur within a closer stated limit. Extraction will occur no closer than 25± feet from well heads and related above ground facilities. Extraction around well heads will be concurrently backfilled to maintain a 100± foot buffer from the balance of extracted lands. At all times, safety will take precedent and override all other conditions in time with a matter of safety or emergency respective to any and all aspects of the approved permit.

In addition to the three above-mentioned pits, a Mineral Reserve Area is located between pit P125B and the St. Vrain Creek, identified as P125C on Map Exhibit C-2. The western portion of Pit P125B, up to a 400-ft setback from the unnamed tributary that traverses the site, is also identified as a Mineral Reserve Area pending later considerations of floodplain and potentially jurisdictional determination on some areas of possible wetlands. These areas are indicated in this permit application as potential areas of future extraction, which will not occur until and unless identified, detailed, and approved, under separate appropriate revision to the permit<sup>24</sup>.

- 31.2 Acres – West Pit
- 10.1 Acres – Western Portion of Central Pit

The remaining 81.1 acres of lands within the permitted limits may comprise levees, previously affected areas, and areas of minor to no disturbance (including public transportation corridors, rights-of-way,

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<sup>23</sup> Adequacy 1, Item 49

<sup>24</sup> Adequacy 1, Item 51



easements, permanent structures, river and stream terrace and cottonwood corridor buffer areas), or other farm features or structures; or as otherwise determined from included maps and aerials<sup>25</sup>.

A complete schedule of exposed and reclaimed areas is provided in Table E-1 in Exhibit E: Reclamation Plan.

With the relatively small pits, Raptor would prefer a steady sequential advance through the initial pits P125\_S1 and P125A but for operational flexibility requires the ability to have up to three active mining areas (area of active extraction operations) of up to 16 acres to be in production simultaneously for an anticipated maximum active mining area of 48 acres. The flexibility to operate in up to three active mining areas allows for management of the resource in response to market demands, coordinating operations around existing infrastructure, water management, to ensure safe operations, or due to seasonal restrictions if required to minimize impacts to wildlife. The maximum disturbed area will continue to grow over the life of the operation as the post mining land use is lined water storage and as noted by the DRMS, until the basin is fully extracted and lined, and a leak test is performed and approved by the State Engineer. Progressive regrading and lining however will be performed and is discussed in Exhibit L.

## SECTION (E)

(e) An approximate timetable to describe the mining operation. The timetable is for the purpose of establishing the relationship between mining and reclamation during the different phases of a mining operation. An Operator/Applicant shall not be required to meet specific dates for initiation, or completion of mining in a phase as may be identified in the timetable. This does not exempt an Operator/Applicant from complying with the performance standards of Rule 3.1. If the operation is intended to be an intermittent operation as defined in Section 34-32.5-103(11)(b), C.R.S., the Applicant should include in this exhibit a statement that conforms to the provisions of Section 34-32.5-103(11)(b), C.R.S. Such timetable should include:

### SUBSECTIONS (I) THROUGH (III)

- i. an estimate of the periods of time which will be required for the various stages or phases of the operation;
- ii. a description of the size and location of each area to be worked during each phase; and
- iii. outlining the sequence in which each stage or phase of the operation will be carried out. (Timetables need not be separate and distinct from the mining plan, but may be incorporated therein.)

There are no fixed sequences or phases scheduled as part of the extraction plan. Instead, Pits are used instead of Phases to describe the activities, since each Pit can be accessed concurrently with another, instead of a strict sequential requirement. An Initial Extraction Area that is scheduled to be completed within 5 years is presented in Map Exhibit C-2.

At anticipated production levels of 800,000 tons per year, extraction is expected to roughly follow the durations presented below. Please Note: The time periods will depend on the actual rate of production required to meet market demand, and the average annual advance may also vary with thickness and quality of the sand and gravel, management of water and ground conditions, and other unforeseeable circumstances. Some flexibility may also be exercised to optimize operations around or through existing infrastructure if scheduled for removal. As noted in Section (d) above, while sequential development of the pits is preferred, simultaneous operation in more than one and possibly all pits may be necessary.

A more detailed discussion of mining and reclamation timing is presented in Exhibit E – Reclamation Plan.

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<sup>25</sup> Adequacy 1, Item 52



Exhibit C-2 – Extraction Plan Map shows the location and planned extraction limits, general direction of extraction, and related features described above; along with features made obvious in the included aerial image of the permit location (Exhibit C-0 – Aerial Image and Vegetation Map) and surrounding lands.

Exhibits C-2 – Extraction Plan Map and L – Financial Warranty Map, shows Initial Extraction proposed to begin in the yellow hatch area shown on the Exhibit L Map. Pit P125\_S1 is small, occupying only 10.2 acres. The direction of extraction will follow the perimeter of the extraction limits in order to establish the perimeter keyway (dewatering trench) for the 10.2-acre Pit P125\_S1, 23.8-acre Pit P125A, and 30.8-acre Pit P125B. Approximately 66.3 acres across the three pits are expected to be extracted in the first five years.

Table E-1 in Exhibit E – Reclamation Plan provides a projection of mine development and regrading/reclamation. The plan as described is a forecast and may vary according to market conditions with mining and subsequent regrading occurring faster or slower, sometimes significantly so. The geology uncovered as extraction progresses may also dictate changes in the rate of extraction. If efficiency demands a higher production scenario, up to three separate areas could be developed in the manner described simultaneously<sup>26</sup>.

The estimated timetable for extraction, commencing approximately winter 2025 to spring 2026, is estimated to take 5-6 years combined, or longer, followed by up to an additional five years to complete reclamation; or a total estimated life of the mine of 10-11± years, and ending approximately winter 2035 to 2037. This is a life of mine operation, and all timetables are estimates and may prove shorter or longer than stated. The final determination will occur five years after the deposit is exhausted and all marketable product has been removed and necessary infill completed at the location to the point of final reclamation as approved or modified under the terms of the permit.

This submittal is unable to fully forecast the maximum extent of disturbance within the affected lands expected at any given point in time, beyond an annual basis. As operational extraction and reclamation efforts will vary annually, the timing of extraction, reclamation, and life of operation as forecasted must be based on an initial estimate [refer to Exhibit L: Reclamation Costs], then subsequently verified and summarized in the required DRMS Annual Report. As stated in Section (a) of this exhibit, any change in the key variable parameters that impact the financial warranty estimate beyond the maximum financial warranty stated in Exhibit L, Reclamation Costs, will be addressed in a Technical Revision and the financial warranty updated<sup>27</sup>.

## SECTION (F)

A map (in Exhibit C - Pre-Mining and Mining Plan Maps(s) of Affected Lands, Rule 6.4.3) may be used along with a narrative to present the following information:

### SUBSECTIONS (I) AND (II)

- (i) nature, depth and thickness of the deposit to be mined and the thickness and type of overburden to be removed (may be marked "CONFIDENTIAL," pursuant to Rule 1.3(3)); and
- (ii) nature of the stratum immediately beneath the material to be mined in sedimentary deposits.

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<sup>26</sup> Adequacy 1, Item 54

<sup>27</sup> Adequacy 1, Items 53, 55



Generally, total soil and overburden depth (including all soil horizons) over the property may vary from approximately zero to six feet with the potential for a mixture of silt, clay, or gravel outcrops over random areas. Gravel depth may occur from the surface to the underlying shale varying at approximately 23± to 50± feet over the entire property. The underlying shale is generally described as a dark grey and very stiff unit which is expected to be an excellent base for lined reservoirs, and if needed, liner material for the side slopes of the excavations<sup>28</sup>.

Additional geologic considerations are also included in the addendum: Slope Stability Analysis.

## SECTIONS (G) AND (H)

Identify the primary and secondary commodities to be mined/extracted and describe the intended use; and name and describe the intended use of all expected incidental products to be mined/extracted by the proposed operation.

The primary commodities to be extracted are sand and gravel in a range of marketable sizes. For a diverse list of products to be extracted and/or processed, and sold, they may include but are not limited to the more common products identified in Table D1 – Varra Companies Product List (included as an addendum), or other inert or commonly useful products used for diverse construction purposes, including, but not limited to: structural fill, concrete products, road construction products; and other products to aid the residential, commercial, industrial customer; and for any other infrastructure use<sup>29</sup>.

Incidental products depending on availability from and suitability of the material extracted, and market available, could include but are not limited to topsoil, overburden and clay. These product uses are diverse but could reasonably be expected to include landscaping, reclamation or use as bulk fill. As stated in Section (a), Raptor commits to maintaining on site no less than 1.3 times the amount of topsoil required for reclamation of disturbed areas that will have topsoil replaced<sup>30</sup>. It is anticipated that there will not be excess overburden and Raptor commits to not selling overburden unless there is more than 1.3 times the amount of overburden required for reclamation of disturbed areas<sup>31</sup>.

## SECTION (I)

Specify if explosives will be used in conjunction with the mining (or reclamation). In consultation with the Office, the Applicant must demonstrate pursuant to Rule 6.5(4), Geotechnical Stability Exhibit, that off-site areas will not be adversely affected by blasting.

Explosives will not be used.

## SECTION (J)

Specify the dimensions of any existing or proposed roads that will be used for the mining operation. Describe any improvements necessary on existing roads and the specifications to be used in the construction of new roads. New or improved roads must be included as part of the affected lands and permitted acreage. Affected land shall not include off-site roads which existed prior to the date on which notice was given or permit application was made to the office and which were constructed for purposes

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<sup>28</sup> Adequacy 1, Item 56

<sup>29</sup> Adequacy 1, Item 62

<sup>30</sup> Adequacy 1, Item 63

<sup>31</sup> Adequacy 2, Item 4



unrelated to the proposed mining operation and which will not be substantially upgraded to support the mining operation. Describe any associated drainage and runoff conveyance structures to include sufficient information to evaluate structure sizing.

Entry into the permitted areas is dependent upon the needs and necessary management of continued agricultural activities during operations, as well as essential management and mobility within the active areas of extraction and correlated need for transportation of human resources, equipment, and product. Human resources for operations, heavy equipment, and haul traffic will occur based upon the desired and dynamic activities necessitated by time and circumstance within the designated Pits. Access points for continued agricultural, extraction, and plant site operations are shown on Exhibit C-2: Extraction Plan Map, and described below. NOTE: Access purpose and usage may change in time from that indicated here-in. Any changes to access points will be addressed in an appropriate revision. Also, general existing dimensions and length of existing access roads are represented in the aerial images or graphic representation on the Exhibit Maps relative to the access locations detailed, below. Existing roads are generally 8-12 feet wide, with localized exceptions in some cases up to 15 feet. Modifications to existing roads including minor widening up to 15 feet (with additional width for safety berms if required), or application of additional gravel to improve the running surface may occur as needed and will be reported in DRMS Annual Reports. Such improvements will be retained according to the desires of the landowner<sup>32</sup>.

Northeast Entrance: Primary entrance and access to Pit P125A

East Entrance (Access Point #2): Alternate access to Pit P125A

Southwest Entrance (Access Point #3): Access to Pit P125\_S1<sup>33</sup>

Existing roads outside of the permit boundary are shown on Exhibit C-1: Existing Conditions Map. Additional roads may be developed around the perimeter of the extraction areas primarily for light vehicle access. The location of these roads has been added to Exhibit C-2. These roads will be lightly graveled as necessary and up to 20 feet wide including safety berm where necessary. As sand and gravel mining is not precision engineered excavation and extraction will field-fit according to the conditions and geology encountered, combined with the very flat nature of the existing irrigated fields, detailed design of possible drainage structures is impractical. While largely confined by small existing earthen berms around the perimeter of the extraction areas, where apparent or evident that water will accumulate on sides of roads away from the excavations, small ditches will be constructed as needed, with culverts to drain to the pits. The proposed design of any drainage or runoff conveyance structures will be submitted as a Technical Revision for approval prior to construction<sup>34</sup>. As with any existing roads, used in their existing state or improved, the perimeter roads will be retained according to the desires of the landowner. No other defined roads within the Extraction Limits will occur except for the temporary paths created by extraction equipment or otherwise determined by subsequent Revision to the permit<sup>35</sup>.

All existing agricultural roads outside of the designated extraction limits will be retained according to the desires of the landowner. The same shall form part of the final end use of the reclaimed lands, unless otherwise indicated in this submittal or by subsequent permit revision.

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<sup>32</sup> Adequacy 1, Items 57, 64

<sup>33</sup> Adequacy 1, Item 32

<sup>34</sup> Adequacy 2, Item 13

<sup>35</sup> Adequacy 1, Item 65



Known structures and landowners, including above and below ground utility owners, located on and within 200± ft. of the permit boundary, are shown on Exhibit C-1: Existing Conditions Map including creeks, roads, buildings, oil and gas facilities [such as tanks, batteries, wells and lines], and power and communication lines and support structures, easements and rights-of-way. The Geotechnical Stability Exhibit (attached as an addendum) provides certification from a registered professional geologist that these structures will not be harmed by planned extraction profiles and extents.

For lands within the Extraction Limits, only those structures, easements, and rights-of-way shown in Exhibit C-2: Extraction Plan Map, are anticipated to remain from those shown in Exhibit C-1: Existing Conditions Map. If changes to existing or possible revised structures, easements, or right-of-way are in any manner retained, or where they might occur subsequent to DRMS approval of this application, if such changes result in changes to the mining and reclamation plan will be addressed in an appropriate revision as determined necessary by DRMS based on the change<sup>36</sup>. All established setback distances from planned activities to any remaining features will be maintained regardless. Future agreements may be reached allowing mining in areas currently identified as being restricted to mining containing certain structures, easements or rights-of-way. Any changes mining beyond the proposed extraction areas will be addressed in an appropriate revision<sup>37</sup>.

Exhibit C-1 shows and identifies all these features understood by us, and the respective Surveyed information, and correlated observation and title work upon which they are based and represented on the attending maps. The permit maps are not surveys. They are maps and as such, they comprise a reasonable representation of all site features but must not be relied upon by themselves exclusively for location purposes. Maps and features are not a substitute for field identification of underground structures and will rely upon location services of the 811 service. Setbacks where required will be based on the actual field locations of site features.

Exhibit C-2 shows the remaining oil wells and lines within planned operations at the time of the submittal. Any revisions, additions, or modifications of residual oil wells or lines will be avoided as represented on updated maps and revisions to the permit, and consistent with setback distances identified in this submittal. Removal of any existing structures such as the oil and gas structures and or lines, will be updated on required Annual Reports, or by Technical Revision, as warranted, or as otherwise directed consistent with Colorado Statute.

NOTE: Shoreline irregularities and fill to establish and enhance the aesthetic and end-use functions of the resulting basins shown on Exhibit F: Reclamation Plan Map, are illustrative only, as this effect as to location and extent will be field-fit where practical, and may substantively different from that portrayed under the application. The actual location and extent will be identified in subsequent DRMS Annual Reports, and absent there, at the time of any applicable release of a location in part or whole from the permit. Since representations cannot be accurately portrayed in advance, Exhibit F simply identifies the near maximum extent [typical] of the resulting basins or ponds and the potential for shallows during lining and finished grading.

Additional information on the reclamation and restoration of affected lands is identified under Exhibit E: Reclamation Plan. All reclamation will follow guidelines established under Exhibit E - Reclamation Plan and Exhibit J – Vegetation Information, until and unless otherwise revised<sup>38</sup>.

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<sup>36</sup> Adequacy 2, Item 9

<sup>37</sup> Adequacy 1, Item 58

<sup>38</sup> Adequacy 1, Item 59





# EXHIBIT E – RECLAMATION PLAN

## SECTIONS 1 AND 2

In preparing the Reclamation Plan, the Operator/Applicant should be specific in terms of addressing such items as final grading (including drainage), seeding, fertilizing, revegetation (trees, shrubs, etc.), and topsoiling. Operators/Applicants are encouraged to allow flexibility in their plans by committing themselves to ranges of numbers (e.g., 6"-12" of topsoil) rather than specific figures.

The Reclamation Plan shall include provisions for, or satisfactory explanation of, all general requirements for the type of reclamation proposed to be implemented by the Operator/Applicant. Reclamation shall be required on all the affected land. The Reclamation Plans shall include:

### SECTION 2.A

A description of the type(s) of reclamation the Operator/Applicant proposes to achieve in the reclamation of the affected land, why each was chosen, the amount of acreage accorded to each, and a general discussion of methods of reclamation as related to the mechanics of earthmoving;

Reclamation at this location is geared to lay a foundation that will capture both short and long-term multiple-end use benefits that will complement the dynamic mix of surrounding land uses over time. The primary end use will be the creation of much needed developed water resources with other areas returned to rangeland. Pits P125A (23.8 acres) and P125B (30.8 acres) will be reclaimed as lined reservoirs, while Pit P125\_S1 (10.2 acres) will be backfilled as soon after extraction as practically possible, topsoil replaced and seeded to return to rangeland. Backfill will be sourced from overburden on site as well as from the adjacent, active P115 Kurtz (M1999-006) and P122 Bearson (M2015-033<sup>1</sup>) sites and/or the bases of Pits P125A and P125B as needed to complete timely regrading or backfill. Raptor estimates a total volume of overburden from the extraction on site of approximately 490,000 cubic yards. Additional material deemed unsuitable for saleable sand and gravel but suitable for fill may exist within the sand and gravel bed but estimating this volume is not possible. Additional fill may be "borrowed" from the floor of the extraction areas. Raptor anticipates a reasonable range of additional backfill excavated from pit bottoms to complete the reclamation plan outlined will be approximately 225,000 cubic yards, which would require an estimated additional 4.3 feet of excavation from the bases of Pits P125A and P125B. Topsoil will be stripped and stockpiled onsite for use in reclamation as extraction progresses<sup>2</sup>.

### SECTION 2.B

A comparison of the proposed post-mining land use to other land uses in the vicinity and to adopted state and local land use plans and programs. In those instances where the post-mining land use is for industrial, residential, or commercial purposes and such use is not reasonably assured, a plan for revegetation shall be submitted. Appropriate evidence supporting such reasonable assurance shall be submitted;

The proposed post-mining land uses of developed water resources and rangeland is consistent with land use in the vicinity and in particular along the St. Vrain Creek, and is in keeping with the spirit and intent of the policies and goals of the State of Colorado, Weld County, and the Towns of Firestone, Platteville and Mead.

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<sup>1</sup> Adequacy 2, Item 17

<sup>2</sup> Adequacy 1, Items 67, 68





Approval of the application will allow the resource to be accessed and utilized in a responsible and orderly manner as required under both Colorado law, and consistent with local County and Municipal Regulations<sup>3</sup>.

## SECTION 2.C

A description of how the Reclamation Plan will be implemented to meet each applicable requirement of Rule 3.1;

### Rule 3.1.1 Establishing Post-Mining Use

Pits P125A and P125B will be reclaimed as developed water resources through the construction of lined reservoirs. Pit P125\_S1 will be backfilled and reclaimed as rangeland<sup>4</sup>.

### Rule 3.1.2 Reclaiming Substituted Land

All affected land shall be reclaimed; no previously mined land shall be substituted for purposes of reclamation.

### Rule 3.1.3 Time Limit and Phased Reclamation

There are no fixed sequences or phases scheduled as part of the extraction plan. Instead, Pits are used instead of Phases to describe the activities, since each Pit can be accessed concurrently with another, instead of a strict sequential requirement. An Initial Extraction Area that is scheduled to be completed within 5 years is presented in Map Exhibit C-2. More detailed information about sequencing and the Initial Extraction Area is presented in Exhibit D and Exhibit L. As discussed in Section (e ) of Exhibit D, the estimated timetable for extraction, commencing approximately winter 2025 to spring 2026, is estimated to take 5-6± years combined, or longer, followed by up to an additional five years to complete reclamation; or a total estimated life of the mine of 10-11± years, and ending approximately winter 2035 to 2037.

### Rule 3.1.4 Public Use

No land within the permit area is intended to be open for public use during the operations.

### Rule 3.1.5 Reclamation Measures – Materials Handling

No lining or final grading will occur in Pit P125\_S1 as it will be backfilled to approximately original grade as soon after extraction as practically possible. Backfill and topsoil placement expected to be completed 1-2 years after extraction in this pit is complete. It is currently anticipated the fill material will come from overburden material stripped in the permit area and supplemented as necessary with borrow material from pit floors.

Lining of basins involves the placement of low permeability compactable fill, from on-site or other suitably sourced geologic materials, into the keyway (dewatering trench); the same keyway used to facilitate discharge to keep the basins dry and free of groundwaters at the time of extraction. The balance of the basin floors (where needed) and slopes are also covered and compacted with the same materials until they meet the standards established under the August 1999 State Engineer Guidelines for Lining Criteria. Typical to

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<sup>3</sup> Adequacy 1, Items 69, 70

<sup>4</sup> Adequacy 1, Item 71



obtaining approval for the constructed liner, the lined basin must pass a 90-day leak test. Correspondence from the OSE approving the construction of the lined basin will be submitted to the DRMS on receipt; or as part of any request for release of the permit, in part or whole<sup>5</sup>.

Raptor has extensive experience successfully constructing lined storage reservoirs with several prior projects completed, tested and approved by the OSE. The deposit contains extensive materials suitable for use in constructing the liner including shale, claystone, clay, sandstone-claystone-siltstone and sandstone-siltstone bedrock, clay lenses in the sand and gravel deposit, and overburden often comprised of low plasticity sandy silty clay to silty sand. Excess topsoil has also been successfully used as a liner construction material and could be used if excess material is available. Other materials encountered within the sand and gravel deposit during excavation would be stored in temporary piles on the excavation floor. Parameters such as plasticity, percentage of fines etc. have not been determined for the deposit materials at this time but extensive experience in constructing several approved lined storage reservoirs with similar materials along the St. Vrain Creek and other rivers and streams provides high confidence in the availability of suitable materials within the extraction area.

The liner will be progressively constructed once the pit is developed sufficiently to allow regrading and any problems with the efficacy of the liner can usually be detected prior to leak testing through evidence of seeps in the constructed liner which can have remedial action taken. Similarly, although not common, seeps are sometimes observed in the bedrock floor. While these have generally in Raptor's extensive experience proved to be self-healing, where needed remedial action and spot lining and compaction would be undertaken.

Liner construction involves building a compacted low permeability core by placing and compacting suitable material in 6"± lifts. A Caterpillar 815 or 825 (or equivalent) compactor generally makes 2-4 passes to achieve suitable compaction of the core and which experience has shown provides integrity of the core both laterally and vertically. This process starts in the keyway and continues until the core reaches ground level. As the core is built the internal slopes are also brought up to achieve a 3:1 or shallower slope. The exact mix of material used to construct the core is determined at the time of construction based on the materials available. Moisture adjustments required have generally been minimal in prior experience and judgements on additional water are made during construction to achieve a moisture content typically in an optimum range of 2-4 percent. The internal slopes do not necessarily have to be clay materials, but can consist of pit run, overburden, shale or a mixture of these materials. The general approach to construction of the core and regrade of a typical wall at the extraction limit is shown in Figure 1 below<sup>6</sup>.

Backfill material placed over liners to regrade the lined reservoirs to 3:1 will be placed in relatively shallow lifts typically 5 to 6-feet high as the liner is built up. No specific compaction is proposed or has been found necessary in previous construction as with the relatively shallow lifts, adequate compaction is achieved through the repeated traversing over the material by haul trucks and dozers. In final reclamation and decommissioning of the site, if concrete conveyor footings are not needed by the owner for other purposes either on or off site, they will be disposed of as fill on-site<sup>7</sup>.

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<sup>5</sup> Adequacy 1, Item 76

<sup>6</sup> Adequacy 1, Item 72

<sup>7</sup> Adequacy 2, Items 20 and 28



Backfill in P125\_S1 is proposed to be end dumped at surface level extending fill faces from the edges of the pit. Some initial settling would be expected and if more than modest swales or other features generally acceptable and desirable on range land, additional fill would be placed to establish a more level surface<sup>8</sup>.

## Typical Liner and Regrade for Extraction Limit Wall – Final Reclamation

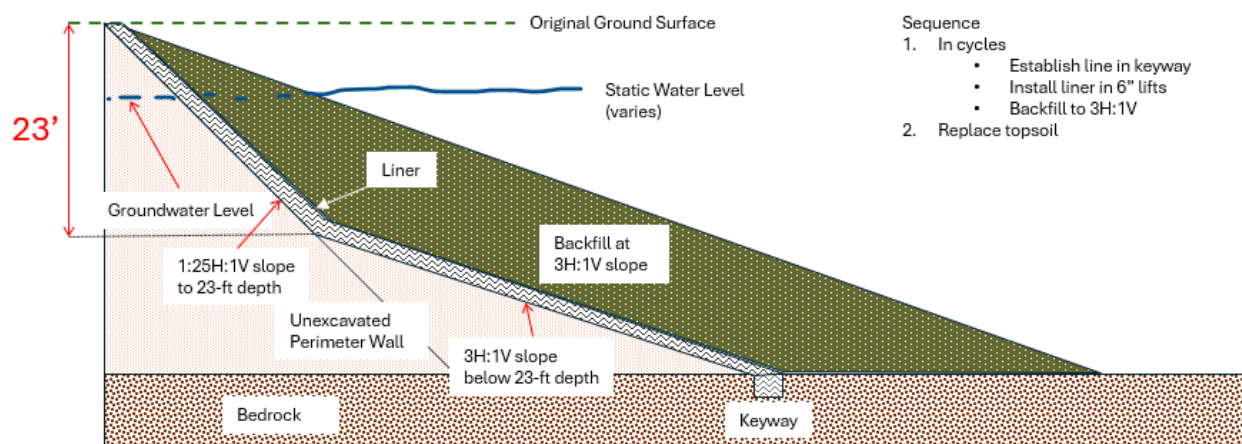


Figure 1. Typical Completed Reclamation Liner and Regraded Slope for Extraction Limit Wall<sup>9</sup>

Estimated volumes of material used in liner construction, overburden available from the extraction areas, and backfill on lined slopes is summarized in Table 1<sup>10</sup>.

Table 1 Key Reclamation Quantities

	Liner Volume (CY)	Overburden Volume (CY)	Lined Slope Fill (CY)	Depth Min (ft)	Depth Max (ft)
P125_S1	NA	70,785	NA	40	50
P125A	67,485	154,213	205,596	35	45
P125B	50,503	200,902	150,875	25	35
Total	117,988	425,900	356,471	--	--

The excavation of sand and gravel does not entail or engage any processes, products, or methods that are expected to result in the release of pollutants or otherwise contaminate surface or groundwater. A groundwater monitoring plan has been submitted with the permit application and a drainage plan for the site

<sup>8</sup> Adequacy 1, Item 85

<sup>9</sup> Adequacy 1, Item 73

<sup>10</sup> Adequacy 1, Items 74, 75, 84

once submitted, accepted and approved by Weld County will be forwarded to the DRMS<sup>11</sup>.

A Backfill Notice is included with this application as an Addendum at the back of Exhibit E – Reclamation Plan, to cover an expected deficit of fill material to back fill P125\_S1 and establish regraded slopes in the lined pits P125A and P125B<sup>12</sup>.

### 3.1.6 Water – General Requirements

Since the primary end use is developed water resources, the basins are intended to hold waters based upon the rights assigned by decree, or as stipulated in regulatory compliance with the Colorado Division of Water Resources, Office of the State Engineer (OSE). This may include the need to augment water sufficient to cover the anticipated exposed groundwaters of the basins in the unlined state. The entire unlined basin is or will be sufficiently covered under an approved Substitute Water Supply Plan. In order to again liberate waters set aside for augmentation, the basins will as soon as is practical be backfilled or lined to segregate the basin from Colorado groundwaters.

The impacts of the proposed project on the prevailing hydrologic balance are discussed in Exhibit G – Water Information.

### 3.1.7 Groundwater – Specific Requirements

A Groundwater Monitoring Plan is attached as an addendum to Exhibit G – Water Information.

Following the required post-reclamation monitoring period, monitoring wells will be abandoned by Raptor Materials (the well owner) in accordance with DWR's BOE Construction Rule 16.4.1<sup>1314</sup>:

- Any casing above the ground surface will be cut to be level with the ground surface.
- The casing underground will be left in place, and the monitoring well will be filled with sand or clean gravel to the static water level.
- Between the static water level and 5 feet below ground surface, the monitoring well will be filled with clean native clays.
- The uppermost 5 feet below ground surface will be filled with grout.

### 3.1.8 Wildlife

Wildlife safety and protection is discussed in Exhibit H – Wildlife Information.

### 3.1.9 Topsoiling

Stripped topsoil that is not immediately used for reclamation will be stockpiled and stabilized with a cover of native vegetation as an erosion control measure. The topsoil stockpile location at the southeastern corner of Pit P125A is intended to allow for the complete extraction of Pit P125\_S1 and the near-complete extraction

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<sup>11</sup> Adequacy 1, Item 86

<sup>12</sup> Adequacy 1, Item 77

<sup>13</sup> Adequacy 1, Item 88

<sup>14</sup> Adequacy 2, Item 19



of Pit P125A before application to reclaimed exposed surfaces or if necessary for operational requirements, relocated to another designated stockpile location. The quality of the on-site topsoil is detailed in Exhibits I and J – Soils and Vegetation<sup>15</sup>.

## SECTION 2.D

Where applicable, plans for topsoil segregation, preservation, and replacement; for stabilization, compaction, and grading of spoil; and for revegetation. The revegetation plan shall contain a list of the preferred species of grass, legumes, forbs, shrubs or trees to be planted, the method and rates of seeding and planting, the estimated availability of viable seeds in sufficient quantities of the species proposed to be used, and the proposed time of seeding and planting;

Topsoil stockpiling, stabilization, and application is addressed in this Exhibit E – Reclamation Plan Sections 2.A, 2.C, and 2.F. Spoil stabilization, compaction, and grading is addressed in this Exhibit E – Reclamation Plan Sections 2.C and 2.F. A list of preferred seed mixes, application rates, and methods for revegetation is included as an addendum to Exhibit L – Reclamation Costs. The proposed time of seeding and planting is addressed in Section 2.F.

## SECTION 2.E

A plan or schedule indicating how and when reclamation will be implemented. Such plan or schedule shall not be tied to any specific date but shall be tied to implementation or completion of different stages of the mining operation as described in Rule 6.4.4(1)(e). The plan or schedule shall include:  
(The schedule need not be separate and distinct from the Reclamation Plan, but may be incorporated therein.)

- i. An estimate of the periods of time which will be required for the various stages or phases of reclamation;

The estimated timetable for extraction, commencing approximately winter 2025 to spring 2026, is estimated to take 5-6± years combined, or longer, followed by an additional five years to complete reclamation; or a total estimated life of the mine of 10-11± years; ending approximately winter 2035 to 2037. This is a life of mine operation and all timetables are estimates and may prove shorter or longer than stated. The final determination will occur five years after the deposit is exhausted and all marketable product has been removed and necessary infill completed at the location to the point of final reclamation as approved or modified under the terms of the permit is completed.

- ii. A description of the size and location of each area to be reclaimed during each phase; and

The final land configuration will ultimately result in one 10.2-acre pit backfilled to approximate original contour and two (2) reservoir basins totaling **54.6** surface acres, with a static water elevation surface area of **42.6** acres as illustrated on the following Exhibit F - Reclamation Plan Map. The map details the post resource recovery landform establishment. The size of the resulting basins is a function of area geology and available resource relative to man-made obstructions that serve to prohibit a greater linkage.

Roads are proposed to be developed in the setbacks to the excavations providing perimeter access to the pits during operations, and around the lined reservoirs or rangeland post mining. The landowner considers these features desirable, and they are not included in the reclamation plan or cost estimate. Other features such as settlement basins and parking areas are included in the reclamation plan and cost estimate, however

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<sup>15</sup> Adequacy 1, Item 78



if the landowner decides they may be of benefit, an appropriate revision will address such changes. Infrastructure including conveyors, and materials storage conex structures will not be disposed of on site and will be removed from the site unless the owner advises rather than off-site disposal or reuse, the owner desires to reuse the conveyor belt or other infrastructure for some post mining purpose(s)<sup>16</sup>.

iii. An outline of the sequence in which each stage or phase of reclamation will be carried out.

Table E-1 provides a projection of mine development and regrading/reclamation. The plan as described in Exhibit D and above in this Exhibit E, is a forecast and may vary according to market conditions with mining and subsequent regrading occurring faster or slower, sometimes significantly so. The geology may also dictate changes in the rate of extraction. If efficiency demands in a higher production demand scenario, separate areas could be developed in the manner described in Exhibit D simultaneously. Such changes may happen quickly and would be addressed in the Annual Report.

## SECTION 2.F

A description of each of the following:

i. Final grading - specify maximum anticipated slope gradient or expected ranges thereof;

As part of reclamation, lands situated above the anticipated final water level of the completed basins, and within 10± feet below the anticipated final water level of the basins, will be graded to 3H:1V, or flatter. Lands below 10± feet from the anticipated final water level of the basins will also be graded to 3H:1V, or flatter, unless 2H:1V slopes are otherwise approved by subsequent permit revision. All basin walls below 30 ft bgs will be graded to 3H:1V or flatter. Naturally occurring or previously established slopes may exceed 2H:1V where not otherwise affected by extraction activities and may not be altered as part of reclamation unless necessary to facilitate the reclamation of affected lands.

All affected lands between the extraction limits and remaining above the anticipated high-water mark of the basins will be capped with a minimum of six (6.0±) inches of soil, as supported by Exhibit I – Soils Information. Timing and use of soil are detailed further under Exhibit I – Soils Information and Exhibit L – Reclamation Costs. The areas above the static water level for each reservoir are<sup>17</sup>:

P125A = 5.7 acres

P125B = 6.9 acres

All areas to be revegetated, including extraction areas, employee parking and material storage areas, sediment basins, and conveyor and pipe corridors, will be ripped prior to re-soil application. Although Raptor's experience is that not all areas will be compacted and require ripping for successful vegetation, Raptor commits to ripping all areas to be revegetated<sup>18 19 20</sup>.

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<sup>16</sup> Adequacy 2, Item 21

<sup>17</sup> Adequacy 1, Item 79

<sup>18</sup> Adequacy 1, Item 79

<sup>19</sup> Adequacy 1, Item 80 (following paragraph in the original application removed)

<sup>20</sup> Adequacy 2, Item 18



ii. Seeding - specify types, mixtures, quantities, and expected time(s) of seeding and planting;

The balance of unoccupied affected lands above the anticipated static water level will be stabilized where necessary utilizing the seed mixture as shown as an addendum to Exhibit L – Reclamation Costs: Table L – Preferred/Primary Seed Mixture.

The Primary Seed Mixture combines a thoughtful mingling of predominantly native grasses of diverse height, form, color and function, to assure that the reclaimed site can provide for a multiple-use benefit. This is compatible with, and an improvement over the diminished lands located in the floodplain of the two rivers, and area monocultures of residential bluegrass lawns and surrounding cropped land<sup>21</sup>.

Generally, warm and cool seed mixtures can be treated in a myriad of ways. In Table L this distinction is indicated in the column labelled "C/W". Cool season mixtures are often planted in the fall and warm in the spring, however, exceptions may apply. Some argue warm season grasses are better broadcast, while others like them drilled with the cool season grasses.

Resoiled areas will be allowed sufficient time to settle prior to seeding, which will commonly follow in the fall or spring. Resoiling will occur when soil moisture is adequate to prevent blowing, yet dry enough to prevent compaction. Part of the soil rebuilding process on the reconstituted soils will be in establishing structure to the soils to facilitate plant-soil-water relationships. Overly compacted soils will tend to limit soil structure development and create a poor seedbed for later establishment, so revegetation may be deferred if soils to be reclaimed are manipulated while wet, instead of moist.

iii. Fertilization - if applicable, specify types, mixtures, quantities and time of application;

Fertilizer may be used as part of revegetation efforts. The need for fertilization and any subsequent fertilizer rates will be determined based upon soil tests taken at the time of reapplication of salvaged soil to affected lands remaining above water level. Status of fertilization and soil test results can be included in DRMS Annual Reports, as warranted.

Sampling will utilize a hand auger and approved NRCS soil sample bags, and utilizing recommended procedures. Any soil testing will be conducted by the CSU Soil Laboratory in Ft. Collins, Colorado. The tests will be used to monitor soil quality and suitability of any amendments. Fertilizer may be withheld until after emergence to deter the encouragement of weed species. The use, composition and rates of fertilization will be determined prior to the time of seeding where appropriate, and may be reported in the DRMS Annual Reports, as appropriate.

While this approach represents the best known professional advice and practice on determining the approach to fertilization borne out by Raptor's successful revegetation efforts on several sites, Raptor acknowledges the need for a basis to establish the financial warranty for reclamation in the event it was to be done by others. Raptor has included as a guide the following fertilization option to support an estimation of cost. This does not represent a commitment to this approach as that is not good practice. Raptor will take the approach described above to ensure the greatest likelihood of successful revegetation<sup>22</sup>.

Targeting an application rate of:

- Nitrogen – 30-50 pounds/acre

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<sup>21</sup> Adequacy 1, Item 81

<sup>22</sup> Adequacy 1, Item 82





- Phosphorus – at least 20 pounds/acre

A general fertilizer with L-P-K of 20-10-10 would be satisfactory at a rate of 200 lbs/acre.

iv. Revegetation - specify types of trees, shrubs, etc., quantities, size and location; and

<sup>23</sup> <sup>24</sup> A list of preferred seed mixes, application rates, and methods for revegetation is included as an addendum to Exhibit L – Reclamation Costs.

The use of a sterile hybrid live cover crop will aid in the stabilization of the soil by allowing a quick vegetative cover to become established in advance of the native grasses. The hybrid will also serve as an aid to reduce competition resulting from the establishment and growth of unwanted pioneer species (weeds) on disturbed ground<sup>25</sup>.

The attending reclamation seed mixture, and as approved, has a provision for the use of a sterile hybrid grass in lieu of mulch. Mulch, even when crimped with specialized equipment, is subject to being blown off the property, or reduced to an ineffective stubble. Often, it has been observed to intercept rainfall where it quickly evaporates from the stubble surface, limiting the benefits of light precipitation by preventing infiltration and percolation of moisture to the root zone. The hybrid on the other hand will establish quickly, but since it is sterile, will not continue to compete with the emerging native grasses. After two to three years, the hybrid grass will begin to die out just as the native grasses emerge and improve their dominance over the revegetated areas.

Field identification and location of targeted weed species is fundamental to determining the extent and character of weed infestation; and in the subsequent development of a treatment plan. Due to the complex nature of identification, assistance with identification and mapping will be sought from among Weld County Weed and Pest Division; Colorado State University Cooperative Extension Service; U.S. Natural Resources and Conservation Service; as well as online and internal resources.

Mapping will attempt to identify general areas of infestation within the permit boundary, and vectors of infestation from inside or outside the permit boundary. Vectors are a consideration in prevention of future infestation, which may affect on-site behaviors, including method and means of access within permitted lands. An expectation that vectors from adjacent lands must be treated by adjacent landowners if treatment on permitted lands is to be fruitful is part of continuing treatment considerations.

Since the list of noxious weed continues to grow, and considering the development of new treatments, this management plan is intended to retain the flexibility needed to meet future conditions and capabilities in the arena of weed management and control. Weed management will be under the supervision of a certified weed management specialist. All applicable requirements currently in force at the time will be adhered to. The primary species to be identified, mapped (if found), and treated will include those species on the State of Colorado noxious weed list, as updated. List A species will be eradicated and List B Species will be controlled. Weed management efforts will also attend to current guidance from the Weld County Department of Public Works.

<sup>23</sup> Adequacy 1, Item 87 (preceding paragraph in the original application removed)

<sup>24</sup> Adequacy 1, Item 87

<sup>25</sup> Adequacy 1, Item 83



It should be noted that many weeds are sourced and vectored from adjacent lands and waterways. Weed management will see diminishing effects that may be beyond the capacities of the Operator to ameliorate if responsible weed management fails on those lands. Consideration of due diligence should apply respective of on-site efforts and limitations due to sources and vectors beyond the reach of the Operator.

Once the nature and extent of weeds have been mapped, and vectors identified, a course of treatment options will be considered in order of priority of economy and effectiveness. The overall object of weed management will be to control weeds by establishing a healthy competitive stand of vegetation that wins the competition for plant-available water. This effort is linked to on-site soil management, including monitoring of soil fertility and percent organic matter on problem lands relative to distribution and amount of field available moisture in affected areas.

Physical weed control at the site will use non-chemical means, unless, due to weed morphology, or other factors, circumstance require application of other methods or an approved herbicide. If chemical weed control is utilized, it will be conducted in compliance with manufacturer's recommendations and in conformance with applicable federal, state, or local laws. Chemical treatment of weeds will be the last option considered except where all other methods of competitive control fails; including mechanical cutting, tilling, or removal of noxious weeds. Where possible, pre-emergent weed control chemicals will be used. An exception to chemical weed control would be operator-applied concentrated vinegar based organic weed control that does not harm soil or water. This is especially advantageous in application near water bodies.

In general, weeds will be mowed or mechanically removed before a seed head can develop. This will take priority over recently seeded areas expressing emergent grasses. Where mechanical means fail; chemical applications may follow according to recommendations from previously stated sources, and applied accordingly (see above) to prevent damage to grasses, aquatic species and wildlife. An example of Chemical treatment and primary noxious weeds can be found at the Colorado State University Extension Service website: <https://www.extension.colostate.edu/>.

Still, predominant weed control efforts will focus upon prevention, principally through the establishment of a diverse stabilizing cover of grasses, as described earlier. Regardless of control methodology, the intent of mechanical and chemical methods will be to prevent weed species from reproducing vegetatively, or by seeding in percentages that threaten the preferred species. In general, the idea is to aid the grasses in out competing weed species for plant available water and nutrients in the new soils, until such a time that the grasses are fully established over the applied areas, are dominant over the weeds, and capable of self-regeneration. It should be understood that some weeds will remain. Total eradication of weeds is unlikely under the best circumstances and is not a reasonable expectation or likely outcome. Treatment and control of noxious or nuisance weeds will be reported in DRMS Annual Reports as warranted.

- v. Topsoiling - specify anticipated minimum depth or range of depths for those areas where topsoil will be replaced.

Placement of approximately 6 inches of soil and initial stabilization of affected lands with a stabilizing cover of grasses will better assure a foundation for later vertical development and establishment of cover; whether resulting from natural invasion or direct planning of trees, shrubs, and forbs. By themselves, the grasses will provide a stable foundation for later enhancements, while visibly improving wildlife habitat by interrupting area monocultures.



A Backfill Notice follows this page. The flexible use of inert fill will facilitate the timely reclamation of affected lands.



Raptor Materials, LLC

Cogburn Sand, Gravel, and Reservoir Project

December 2025

A REGULAR IMPACT (112) CONSTRUCTION PERMIT APPLICATION – COLORADO DIVISION OF RECLAMATION MINING AND SAFETY, OFFICE OF MINED LAND RECLAMATION



# EXHIBIT H – WILDLIFE INFORMATION

## SECTION 1

In developing the wildlife information, the Operator/Applicant may wish to contact the local wildlife conservation officer. The Operator/Applicant shall include in this Exhibit, a description of the game and non-game resources on and in the vicinity of the application area, including:

### SECTION 1 SUBSECTION A THROUGH C

a description of the significant wildlife resources on the affected land;

seasonal use of the area;

the presence and estimated population of threatened or endangered species from either federal or state lists; and

Wildlife residents and visitors observed on area lands include two Bald Eagle nests, one located approximately 0.11 miles northeast of the northern project area boundary, and one located 0.16 miles southwest of the western project area boundary. Other migratory birds have been seen in the area, but no nests were observed within the project area. Game species such as Mule Deer will traverse the river bottom, open spaces and fields nearby; as will fur bearers such as prairie dogs, rabbits, coyotes, raccoons, fox, skunks and other non-game species. The project area contains a habitat that could be considered suitable for the eastern black rail. However, the South Platte River drainage is not considered in the black rail's breeding range; concurrence was obtained from the US Fish and Wildlife Service (USFWS) on August 1, 2025 that there are no concerns related to the eastern black rail within the project area and that no further consultation under the Endangered Species Act is required. No suitable habitats were found within the project area for the Preble's meadow jumping mouse. If additional wildlife surveys are conducted prior to the onset of operations that impact the proposed operations, the mining plan and associated maps will be updated accordingly<sup>1</sup>.

### SECTION 1 SUBSECTION D

a description of the general effect during and after the proposed operation on the existing wildlife of the area, including but not limited to temporary and permanent loss of food and habitat, interference with migratory routes, and the general effect on the wildlife from increased human activity, including noise.

No significant impacts to wildlife or habitat loss are anticipated by planned operations due to the abundant natural conditions of the surrounding lands and general expanse of the project area. Proposed extraction areas occupy less than 50% of the affected area. As with the current use as agricultural fields, temporary displacement of wildlife may occur over the immediate area of affected lands during active operations, while on-site speed limits will be posted at 15 mph to better assure the safety of wildlife in proximity to the activity.

### THREATENED AND ENDANGERED SPECIES

Raptor Materials engaged ERO, a natural resource and environmental consulting firm to conduct a natural resources assessment. ERO assessed the project area for habitat for Threatened and Endangered (T&E) species under the Endangered Species Act (ESA). The ERO report is provided as an addendum to Exhibit H.

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<sup>1</sup> Adequacy 2, Item 26



ERO reports that the proposed project would not directly affect Preble's meadow jumping mouse or monarch butterfly due to the lack of suitable habitat in the project area. No habitat was identified for the piping plover, whooping crane, and pallid sturgeon, nor would they be affected downstream due to depletions to the river.

The project area contains habitat that would be considered suitable for the eastern black rail. However, the U.S. Fish and Wildlife Service (USFWS) currently only considers the Arkansas River drainage part of the breeding range for eastern black rails and does not consider the South Platte River drainage within the black rail's breeding range. Concurrence from the USFWS indicates that there would be no effects on the species, and no further action is necessary.

Best Management Practices (BMPs), Voluntary Conservation Measures and recommendations discussed with ERO will be implemented to further minimize the risk of harm to T&E and other wildlife. These measures include:

- Work areas will be stabilized in a manner to prevent or minimize soil erosion.
- The operator will protect the surrounding area and, from siltation. The Contractor will utilize well-established NRCS storm water and erosion management measures to control erosion, as necessary.
- All temporarily disturbed areas will be reseeded with native seed mix as specified in the mine plan. The mine plan states that the "Primary Revegetation Seed Mixture combines a thoughtful mingling of predominantly native grasses of diverse height, form, color and function, to add cover, food source for wildlife and pollinators."
- The project will implement mine-site reclamation consisting of reseeding with native grasses and pollen producing species.
- Trees along the lower terrace of the watercourses will be preserved where possible.
- All riverine areas will otherwise remain untouched.
- All mining areas, access routes, staging areas, and work areas will all be outside riparian areas.
- The project will avoid fragmenting linear riparian corridors.
- The project will avoid disturbing (e.g., crushing or trampling) or removing (e.g., cutting or clearing) all vegetation, such as willows, trees, shrubs, and grasses in riparian areas.
- Impacts to all riparian habitat consisting of shrubs, grasses, and forbs will be avoided or minimized to maintain current vegetation communities and allow for habitat connectivity to habitat upstream and downstream.
- Mining areas will predominantly occur with existing areas of human disturbance such as agricultural cropland, grazed pastures and roads.
- Minimum 100-foot buffers will be established between planned disturbance and the bankfull river/riparian corridor.
- Traffic will be limited to existing roads and bridges to the degree possible.
- Noise and dust levels for the project are regulated under the Colorado Department of Public Health and Environment. These measures are sufficient to reduce and minimize noise and dust impacts to wildlife.

## BIG GAME

ERO reviewed data from CPW map databases and determined Mule Deer Migration Corridors and Severe Winter Range high priority habitat (HPH) areas overlap the project area. Per recommendation of the CPW District Wildlife Manager and in concurrence with ERO's recommendations, construction within the Mule Deer Severe Winter Range will be avoided to the maximum extent possible from December 1 to April 30; if construction during that period is unavoidable, the start of said construction will be outside of the December



1 to April 30 window. Additionally, in conformance with CPW's recommendation to maintain an open riparian corridor, and in line with the BMPs listed above, the Saint Vrain Creek drainage will remain undisturbed and open to maintain suitable habitat and movement corridor northwest of the mine area.

Aggregate mining in general is a slow, steady progression of mining within active cells. While the cells vary in size, the area actively being extracted will be generally 8 to 16 acres in size. The active extraction area will advance through the cells with concurrent reclamation taking place in the previous cell and where possible in the active cell. This incremental approach will retain open areas and opportunities for wildlife movement and foraging within unmined areas during the life of the mine noting that proposed extraction areas occupy less than 50% of the affected area. Even when mining is completed and the cells transitioned to water storage, there will be ample room remaining within the existing riparian and riverine areas along the St. Vrain Creek. Deer and other wildlife will be able to freely migrate, forage, breed and complete all life requirements along this broad migration path. The creek drainage will be undisturbed and remain open to maintain suitable habitat year-round, including severe winter weather, and provide movement corridors to the northwest of the mine area.

Mining will normally be conducted during daylight hours when wildlife is the least active. As described above, aggregate mining in general is a slow, steady progression of mining within active cells affording wildlife the ability to avoid conflicts over the majority of the project area. There will be no vertical walls created by mining and each cell will also have multiple ingress and egress roads at moderate slopes for equipment. These roads will allow ample opportunity for wildlife to escape, particularly during wildlife active periods when no mining will occur. The operator has no record or evidence of trapped deer in a basin or cell at any of its aggregate operations in Colorado.

There will be no fragmentation of wildlife habitat with unnecessary fencing. Existing fencing at the project site consists of wildlife-friendly, 3-strand barbed wire. Raptor Materials will remove all unnecessary fencing that currently exists at the site working with ERO to identify existing unnecessary fencing, as well as keeping fences that benefit wildlife where possible (e.g., fencing along Weld County Roads 17 and 28 that may provide a physical/psychological obstacle to wildlife traversing dangerous roadways).

Deer populations commonly traverse active resource conservations projects like these. Deer and other wildlife are commonly seen at other Colorado mining operations by truck and haul operators as they browse the vegetation at the bottom of more fully extracted basins.

#### AQUATIC NATIVE SPECIES

In the project area, St. Vrain Creek coincides with the Aquatic Native Species Conservation Waters HPH. The presence of water moving through St. Vrain Creek provides suitable habitat for native species. As currently designed, the extraction area is located outside of the limits of St. Vrain Creek. Best Management Practices should be used during construction to discourage any sedimentation or construction runoff from entering St. Vrain Creek. Any impacts on the project area wetlands would likely require a Section 404 Permit, which may require a combination of restoration and mitigation of permanent impacts. Restoration or mitigation could provide resiliency to the Aquatic Native Species Conservation Waters HPH area.

Commensurate with the CPW recommendations, the project will implement appropriate stormwater BMPs although it will not be able to implement no surface occupancy and no ground disturbance within 500 feet of the ordinary high water mark of St. Vrain Creek. The project area including within 500 feet of the ordinary high water mark of St. Vrain Creek is actively used as rangeland for cattle. The project will result in the removal of cattle and their access to the St. Vrain Creek. This action will reduce the introduction of bovine



fecal matter into St. Vrain Creek, which is a known contributor to nutrient loading and water quality degradation to which native aquatic species are extremely sensitive. By eliminating this source of contamination and in partnership with the implementation of appropriate BMPs, the project, will enhance the localized ecological health of St. Vrain Creek and likely result in the localized improvement of habitat conditions for native aquatic species.

The mine will comply will all regulations, standards, and policies of the Colorado Mined Land Reclamation Board for the protection of aquatic resources, including establishing a minimum 100-foot buffer between planned disturbance and the bankfull river/riparian corridor. Furthermore, Raptor Materials has provided stormwater BMPs and reclamation plans in the mine site application that are designed to protect aquatic resources.

### BALD EAGLE AND MIGRATORY BIRDS

A bald eagle nest is located approximately 0.11 miles northeast of the northern project area boundary. A second bald eagle nest was identified approximately 0.16 miles southwest of the western project area boundary by CPW on March 1, 2025. These nests could be impacted by the project if a physical object or structure (i.e., surface occupancy) is proposed within the CPW-recommended 0.25-mile radius of active nests permanently or for a significant amount of time or if there would be human encroachment activities within a 0.5-mile radius of an active nest from December 1 through July 31.

ERO is developing a bald eagle mitigation plan to comply with the Bald and Golden Eagle Protection Act (BGEPA), Migratory Bird Treaty Act (MBTA), and 2016 USFWS Eagle Permit Rules as applicable for any activity within the 0.25-mile nest radius. All areas of initial extraction are located outside the 0.25-mile radius, and thus can be conducted without a bald eagle mitigation plan. Monitoring of the nests is ongoing. An approved mitigation plan will be instated if deemed necessary by the USFWS prior to extraction within the 0.25-mile nest radius, or within the 0.5-mile radius between December 1 and July 31. In all cases, a migratory bird nest survey will be completed one week prior to ground- or vegetation-disturbing activities.

If the Eagle Protection Plan and review of the Eagle Permitting website determine that unavoidable disturbance will occur as a result of the project, Raptor Materials will apply for the appropriate Eagle Nest Disturbance permit. If an Eagle Nest Disturbance permit is issued by U.S. Fish and Wildlife Service, no modification will be made to the mining plan as the project would be in compliance with U.S. Fish and Wildlife Service rules and regulations regarding disturbance to eagle nests.

### OTHER SPECIES OF CONCERN

#### BLACK-TAILED PRAIRIE DOG

ERO observed active black-tailed prairie dog burrows in the northern portion of the project area during the 2024 site visit. Although prairie dogs are not protected under the ESA, CPW recommends attempting to remove or exterminate prairie dogs prior to bulldozing an active prairie dog town for humane reasons. Weld County does not have any regulations or policies pertaining to prairie dogs and CPW protocol should be followed.

Raptor Materials will implement a voluntary prairie dog management approach that may include avoidance, passive dispersal, and/or humane lethal control. The selection of any single or combination of these techniques will be prioritized based on site-specific conditions and regulations, and the likelihood of success. ERO supports this approach as a humane and practical solution to address human-prairie dog conflicts. Because mining would be incremental in scale over the life of the project, avoidance will be the first





option for most of the project area. Prairie dogs will be allowed to remain in areas not being actively mined. If impacts on prairie dogs cannot reasonably be avoided, one (or a combination) of the alternatives described above will be implemented. Any management option selected to address prairie dogs will be conducted in a manner that is compliant with local, state, and federal regulations.

#### WESTERN BURROWING OWL

The western burrowing owl is a threatened species federally protected under the MBTA. The prairie dog burrows within and around the project area are a suitable habitat for burrowing owls. More than 70 percent of sightings reported in Colorado Breeding Bird Atlases were in prairie dog colonies (Colorado Bird Atlas Partnership 2016). CPW recommends a buffer of 660 feet surrounding active burrowing owl nests during the nesting season. No prairie dog burrows are located within the extents of the proposed initial area of extraction; however, burrows are present within the 660-foot buffer.

Burrowing owl surveys were conducted by ERO in compliance with CPW's Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls (CPW, 2011) on April 17, April 26, and May 2, 2025. No burrowing owls were observed within the project area during any of these three surveys. Additional surveys will be conducted if construction begins within the 2026 burrowing owl nesting period (March 15 – October 31). If burrowing owls are found to occupy the site, earthmoving work that could impact or cause the collapse of burrowing owl dens will be delayed until late fall after they have migrated. Extraction occurring from November 1 through March 14 would not require clearance surveys because it would not fall within the burrowing owl nesting season. Burrowing owl management will follow required local, state, and federal regulations.

## SECTION 2

The application may be reviewed and commented upon by Colorado Parks & Wildlife (CPW). If CPW has comments, they must be provided prior to the end of the public comment period specified in Subsection 1.7.1(2)(a) to be considered by the Board and Office.

Comments were received from CPW in a letter dated April 17, 2025, which is included as an attachment to this Exhibit. Items pertaining to mule deer, bald eagles and migratory birds, aquatic species, and burrowing owls have been integrated into Section 1. Additional items raised by CPW are addressed below:

#### FENCING

Any fencing erected during or after the project will comply with the CPW-recommended three- or four-strand smooth-wire fencing with the bottom strand height a minimum of 17 inches above ground level and a maximum top strand height of 42 inches above ground level. Existing fencing at the site may be removed where practicable, but is not planned to be removed unnecessarily.

#### NOXIOUS WEEDS AND NATIVE RE-SEEDING

A Noxious Weed Management Plan will be implemented prior to the start of site activities. Native vegetation will be left undisturbed as much as possible outside areas of active extraction, vehicle access, and materials storage. Revegetation will be completed using an appropriate native seed mix recommended by the Weld County Department of Public Works (see exact mix in Exhibit L).

#### LIGHTING

Typical mine operations will be only during daylight hours. Any nighttime lighting will be for periodic maintenance, and will be installed such that the lighting is in conformance with CPW recommendations of



longer wavelengths (>560 nm) and lower correlated color temperatures (CCT<3000 Kelvin degrees).  
Nighttime lights will be motion-detected to ensure it is switched off following completion of maintenance activities.



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# EXHIBIT L – RECLAMATION COSTS

## SECTIONS 1 AND 2

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.

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 OF RECLAMATION COSTS, PARAMETERS, AND APPROACH

This reclamation cost estimate has been performed for the initial projected 5 years of Operations at the P125 Cogburn site, with the intent of adjusting the Financial Warranty as needed in future Technical Revisions or adjustments to the projected Life of the Operation, if any. The current projected Life of Mine, detailed later in this Exhibit, including reclamation, is 10-11 years.

The reclamation cost estimate has been revised to reflect reasonably expected maximum disturbance during the initial extraction of the property in the areas described in Exhibits D and E. Major cost items in the reclamation cost estimate will be the backfilling of P125\_S1, and the backfilling/regrading and lining of highwalls in P125A and P125B. Maximum disturbance in P125\_S1 is expected in year 2 of operation when that area is fully extracted. While some backfill may have been completed when extraction is complete, the initial financial warranty estimate will conservatively assume the full backfill volume is necessary. Maximum disturbance in the extraction areas to be reclaimed to developed water resources is expected in year 4 with a forecast of 5,000 feet of wall open and pending backfilling/regrading and lining. If changes in planning or operational requirements require these key parameters to be exceeded an appropriate revision would be submitted as determined necessary by DRMS based on the change<sup>1</sup> to ensure the financial warranty is adequate. Roads are proposed to be developed in the setbacks to the excavations providing perimeter access to the pits during operations, and around the lined reservoirs or rangeland post mining. The landowner considers these features desirable, and they are not included in the reclamation plan or cost estimate. Other features such as settlement basins and parking areas are included in the reclamation plan and cost estimate, however if the landowner decides they may be of benefit, an appropriate revision will address such changes.

A summary of project costs is presented below. Costs are separated into operational tasks (direct costs – Table 1) and insurance, bonding, project management, engineering, legal, and administration (indirect costs – Table 2). Indirect costs are calculated as a percentage of either the direct costs or the number of hours to complete tasks.

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<sup>1</sup> Adequacy 2, Item 9



Table 1. Reclamation Direct Cost Summary

Task	Pit	Cost
DIRECT COSTS		
Dewater pit - initial pumping	P125A and P125B	\$81,165
Dewater pit - continual pumping	P125A and P125B	\$5,427
Excavate pit bottoms for liner material	P125A and P125B	\$14,575
Haul and push liner material to pit area	P125A and P125B	\$34,200
Mix material for liner	P125A and P125B	\$7,209
Compact liner	P125A and P125B	\$7,706
Excavate pit bottoms for P125_S1 backfill deficit	P125A and P125B	\$14,567
Haul backfill material from overburden stockpiles and pit bases to P125_S1	P125S1	\$767,633
Excavate pit bottoms for liner backfill	P125A and P125B	\$29,133
Haul and push subsoil from pit bottoms to grade over liner	P125A and P125B	\$63,658
Grade subsoil over liner	P125A and P125B	\$57,227
Rip pond banks and P125_S1	P125A, P125B, and P125_S1	\$13,533
Haul topsoil to pit areas	P125A, P125B, and P125_S1	\$23,673
Spread topsoil on reservoir banks and backfilled areas	P125A, P125B, and P125_S1	\$5,337
Seed banks of ponds and P125_S1	P125A, P125B, and P125_S1	\$36,242
Demo and remove concrete and conveyor	N/A	\$83,262
Plug and abandon monitoring wells	N/A	\$7,809
Mobilization and Demobilization	N/A	\$10,061
SUBTOTAL DIRECT COSTS:		\$1,262,417



Table 2. Reclamation Indirect Cost Summary

Item	Percentage of [Cost/Hours]	Cost
INDIRECT COSTS – OVERHEAD AND PROFIT		
Liability Insurance	2.02% [DC]	\$25,501
Performance Bond	1.05% [DC]	\$13,255
Job Superintendent	50% [Total Job Hours]*	\$72,259
Profit	10% [DC]	\$126,242
INDIRECT COSTS – LEGAL, ENGINEERING, PROJECT MANAGEMENT		
Financial Warranty Processing (legal)	N/A	\$500
Engineering/contract/bid	6% [DC + O&P]	\$89,980
Reclamation Mgmt/Admin	4.5% [DC + O&P]	\$67,485
SUBTOTAL INDIRECT COSTS:		\$395,222

\*Job hours for this project are estimated at 1,924 hrs, with a superintendent hourly rate of \$75.13, based on the September 2024 DRMS Cost Estimate for the P124 Two Rivers (M2022-013) project

**The Grand Total Financial Warranty Amount – \$1,657,639 – is pending DRMS review and their cost estimate, including expenses for the State of Colorado Mobilization and Demobilization and other Indirect Cost determinations by the Division.**

For future reference, the ultimate project dimensions that will be used at the end of the current projected Life of Mine are summarized in Table 3.

Table 3. Total Proposed Affected Lands and Reclaimed Features Measurements

Entity	Pit P125_S1	Pit P125A	Pit P125B	Combined
Extraction – finished basin (Acres)	10.2	23.8	30.3	64.8
Static Water Area – surface (Acres)	N/A	18.4	24.2	42.6
Static Water Area – elevation (ft.)	N/A	4,785	4,782	-
Basin Lands Above Static Water Level (Acres)	N/A	5.7	6.9	12.6
Static Water Level Volume (cu.yds.)	N/A	730,918	484,098	1,215,016
Static Water Level Volume (Gallons)	N/A	147,626,451	97,775,222	245,401,673
Static Water Level Volume (Acre-Feet)	N/A	453.0	300.1	753.1

**NOTE:** All lands within the 196.4± acre permit area are 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. Previously affected ground prior to the onset of Operations under this permit will not be reclaimed under the terms of this permit unless otherwise re-affected beyond their original state. Public Lands and other easements and rights-of-way are offset from operations and while they may fall



within the 196.4± acre parcel – are excepted from the permit conditions to the extent of their approved setbacks.

The following estimates use assumptions 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 Division of Reclamation, Mining and Safety (DRMS), as indicated.

Based upon the Extraction 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: Raptor reclamation cost estimation uses a model that attempts to replicate the DRMS CIRCES Cost Estimating Software. Where equipment ownership, operating and operator costs per hour for comparable equipment are available from recent DRMS cost estimates, they have been used. Resulting unit costs are shown in calculation tables throughout this Exhibit.

Before concurrent grading, re-soiling, and revegetation for reclamation can commence, a perimeter keyway (dewatering trench) must first circumnavigate the area where the perimeter slopes form along the extraction limits. For the Cogburn site, this includes three sequential areas of extraction:

- 10.2± Acres – Pit P125\_S1 – South pit
- 23.8± Acres – Pit P125A – Eastern pit
- 30.8± Acres – Pit P125B – Central pit

Exhibit L – Financial Warranty Map shows Initial Extraction as a yellow hatch area, comprising 64.8± acres. Extraction will begin in the southeast corner of Pit P125\_S1 and establish a keyway along the pit boundary, then advance westward. Initial Extraction will then progress through Pit P125A, then P125B, generally as indicated by the arrows on the map. Discharge points from all three pits shall be adjacent to the settling basins, planned to be located outside the southeast corner of Pit P125A and the southwest corner of Pit P125B.

There is a tank battery located at the southeastern border of Pit P125\_S1; oil and gas infrastructure located at the northeastern border of P125\_S1; and approximately 1,360 feet of oil and gas pipelines located between Pits P125\_S1 and P125A which are anticipated to remain on the property. One plugged and abandoned oil and gas well each (two total) within the extraction extents of Pits P125A and P125B; and on temporarily abandoned oil and gas well within the extraction extents of Pit P125A; and an oil and gas feeder line crossing Pits P125A and P125B; all of which are pending removal by the oil and gas operator. Extraction will not occur within the setbacks detailed in Exhibit D – Extraction Plan of any oil and gas infrastructure still in place.

Perimeter keyway extraction will maintain a perimeter slope no steeper than 1.25H:1V, except for depths greater than 23 feet below ground surface (bgs), which will be extracted at no steeper than 3H:1V (refer to the Slope Stability Analysis addendum and supplemental letter dated July 1, 2025 for additional information). At the toe of the cut perimeter slope is the keyway that runs below the extracted deposit of the basin, into the bedrock, which allows the subsurface waters to flow to the settling basin and discharge pumps necessary to keep the cut basin dry during a time of extraction and reclamation of the affected perimeter slopes.



The keyway dimensions may vary from 4± to 8± feet in depth and 4± to 16± feet in width. Extraction must be broad enough to allow equipment to safely approach the toe and excise the bed dimensions where the resulting channel is sufficient to convey the groundwaters to the settling basin for discharge.

**Please Note:** The graphic representation of the Initial Extraction Area and directions are idealized and may vary slightly in shape, size, and location presented based on conditions encountered in the field. Annual Reports will report on the nature and extent of affected lands and more properly reflect actual conditions on the ground in a given year of operations. Any change in location of stockpiles will be addressed in an appropriate revision as determined necessary by DRMS based on the change<sup>2</sup>.

The life of the operation is based upon a base rate of extraction approximating 800,000 tons of material extracted in a given year. This extraction rate will shift with the market and may average 800,000± tons but could be faster or slower.

Starting out in the initial projected 5 years of Operations, and as necessary thereafter, necessary warranty can be estimated and adjusted based upon the projected Life of the Operation and the progress of concurrent reclamation. Essentially, a 5-6± year Life of Operations assumes a rate of extraction of approximately 800,000 tons per year.

Considering the Mining-Regrading Schedule included as Table E-1 in Exhibit E, and the general development concept shown on Exhibit L – Financial Warranty Map, Raptor estimates for the initial 5-year period, development of an initial 64.8-acre excavation across Pits P125\_S1, P125A, and P125B will result in creation of approximately 14,177 feet of external perimeter pit wall (estimated at ground surface level). During the same time period, Pit P125\_S1 will be backfilled; P125A will be largely reclaimed; and P125B will have completed extraction operations with lining, regrading and topsoiling of the pit walls underway.

It is important to note that the financial warranty estimates the closure cost of the operation to reflect reasonably expected maximum disturbance during the initial extraction of the property in the areas described in Exhibits D and E. The cost estimate then reflects reclaiming the projected excavation and reclamation at future points in time based on the assumed extraction rate and sequence. The actual extents and shape of the excavation may change, and actual progress will be addressed in the annual reports. Any change in location of stockpiles will be addressed in an appropriate revision as determined necessary by DRMS based on the change<sup>3</sup>.

Based on the current mining plan (sequence and extraction rate), and understanding of the various reclamation cost components, Raptor has established the following key parameters to conservatively establish a maximum disturbance that could require use of the financial warranty bond for reclamation by the DRMS. The primary cost drivers and maximum extents are:

- Complete backfill of Pit P125\_S1, estimated at approximately 550,000± cubic yards of fill
- Lining, backfill and regrading of up to 5,000 LF of final pit wall
- Topsoiling and revegetation of up to 50 acres of land above static water levels

NOTE: The timing of these conditions is not concurrent, however they establish a worst-case scenario that is unlikely to eventuate. The extraction of Pit P125\_S1 is expected in year 2 of operation with backfill starting the same year. The maximum exposure to un-reclaimed highwall in the lined reservoirs and areal disturbance

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<sup>2</sup> Adequacy 2, Item 9

<sup>3</sup> Adequacy 2, Item 9





requiring topsoiling and revegetation are forecast to occur in year 4 of the operation by which time the backfilling of Pit P125\_S1 is forecast to be 75 percent complete. While of lesser impact to the financial warranty total, dewatering of the pits to enable reclamation is estimated based on the maximum exposure (year 4) scenario, where P125A has been fully extracted and P125B has been approximately 50 percent extracted.

Raptor will update this Exhibit L, the reclamation cost estimate, and any other exhibits as required for purposes of determining financial warranty prior to disturbance exceeding the limits described above.

In the following breakdown of components for estimating reclamation cost, factoring of the projected disturbance against the final pits is used where appropriate to obtain a reasonable estimate of work required. Various approaches to obtain the necessary quantities exist, but Raptor believes the approaches and quantities are reasonable and alternate approaches would be no more certain as to the accuracy obtained. This is simply due to the variable nature of the deposit and the need to field-fit the excavation to ensure safety in the conditions encountered.

## DEWATERING

Raptor has calculated the dewatering cost estimate based on a pit configuration that aligns approximately with the worst-case liner scenario as presented in Exhibit E Table E-1 and described in the “Liner” section below. This scenario occurs at the 4-year mark, when Pit P125A has been fully excavated, and Pit P125B has been approximately 50 percent excavated. Pits P125A and P125B will be in an unlined state and would recharge to static water level requiring dewatering of the pits to allow reclamation operations to be completed. The reservoir volumes for the full extraction of P125A and P125B were calculated using a 3D computer-aided design (CAD) program using the stage-storage curves for the static water surface elevations (WSELs) listed in Table 3. The initial dewatering volumes used for the cost estimate were the entire reservoir volume of P125A and 50 percent of the entire reservoir volume of P125B. The cost was based on the use of five pumps working simultaneously. Determination of static WSELs for each pit is detailed in Exhibit D – Extraction Plan.

Table 4. Initial Dewatering Cost Estimate

Pit	Reservoir Vol [gal]	Static WSEL [ft]	Total Vol [gal]
P125A	147,626,432	4,785	196,514,062
P125B	48,887,611	4,782	
Unit Cost:			\$0.000413
Total Job Cost:			\$81,165

Following initial dewatering, a 30-day dewatering need was assumed for completion of lining and regrading. A 30-day continuous dewatering volume was calculated based on the individual pit inflow estimate provided in the AWES Dewatering Estimate memo dated October 28, 2024 (attached as an addendum). Inflow was calculated proportionally in accordance with the length of pit wall that will be exposed at year 4 (5,000 feet of exposed wall per the worst-case liner scenario) according to the mining-regrading schedule in Exhibit E Table E-1.



Table 5. 30-Day Continuous Dewatering Cost Estimate

Pit	Inflow [MGD]	Pit wall length [ft]	Pit wall length exposed [ft]	% of Tot Pit Inflow	Inflow over 30 days [gal]
P125A	0.17	5,185	2,200	42.4	2,163,934
P125B	0.56	5,912	2,800	47.4	7,956,698
Unit Cost:					\$0.000536
Total Job Cost:					\$5,427

The total dewatering cost (initial plus continuous) is estimated at \$86,592.

During dewatering, the basins will be lined or otherwise segregated from the area groundwater, to liberate the water otherwise retained to supplement loss from evaporation in the unlined state.

## LINER

Based on the forecast mining and reclamation schedule shown in Exhibit E, Table E1, the worst-case scenario of exposed pit wall requiring liner installation, backfill and regrading occurs in year 4 of operations, with an estimated 4,985 LF of wall un-reclaimed. Raptor are allowing for a maximum of 5,000 LF for financial warranty calculation. Liner installation was separated into four stages for the purposes of cost estimation: ripping liner material from the pit floors, hauling and pushing liner material to the pit walls, mixing material for the liner, and compacting the liner.

For financial warranty estimate purposes, liner material was assumed to be sourced from the base of Pits P125A and P125B and installed within the same pit it is sourced from. Pits P125A and P125B will require an average of 1.1± feet of pit bottom excavation to supply the liner material. Liners will be installed at a thickness of 4 feet on the slope with a 4-foot-by-4-foot keyway where applicable to the bottom of topsoil. Half of the liner material was estimated to require mixing; all the liner material was assumed to require compaction. As described in Exhibit E, other materials suitable for constructing the liner have been used in previous liner construction including clay lenses which if encountered would generally be stockpiled on the pit floor, and in some cases, topsoil is suitable. The approach for financial warranty estimation however assumes all material will need to be ripped.

Surface areas for liner installation were measured based on the above-described mining plan, further detailed in Exhibit D – Extraction Plan, in a 3D CAD program. The exact location of the pit walls that will require reclamation despite the detail considered in the mining plan cannot be projected with certainty as operational requirements may dictate certain sections of wall not be lined and regraded for management of drainage, access, or other reasons. An average area per foot of highwall is used to support the financial warranty calculation. Estimated exposed wall area and keyway length are proportional to the total pit crest length<sup>4</sup>. As material is expected to expand during grading and mixing, a swell factor was applied to these volumes. Likewise, a shrinkage factor was applied to the material volume for compaction. Calculation of the regrade and liner material volumes required for reclamation is presented in Table 6 below.

<sup>4</sup> Adequacy 2, Item 29



Table 6. Regrade and Liner Volume Calculations

Pit <sup>4</sup>	Activity	Wall Area [sq.ft]	Wall Depth [ft]	Keyway Length [ft]	XS Keyway Area [sq.ft]	Material Vol [cu.yd]
P125A	Regrade	194,880	N/A	N/A	N/A	92,311
P125B	Regrade	145,839	N/A	N/A	N/A	67,742
P125A	Liner	194,880	4	1,968	16	30,300
P125B	Liner	145,839	4	2,249	16	22,675

Haul distance was calculated as an average of the of the distance of liner sources to the excavation walls assuming most liner material will either be excavated floor material (shale or claystone) or clay from lenses encountered during mining set aside within the pits at an average haul distance of 450 feet. The source deposits contain extensive materials suitable for use in constructing the liner including shale, claystone, clay, sandstone-claystone-siltstone and sandstone-siltstone bedrock, clay lenses in the sand and gravel deposit, and overburden often comprised of low plasticity sandy silty clay to silty sand. Excess topsoil has also been successfully used as a liner construction material and could be used if excess material is available.

Typical liner installation as described in Exhibit E – Reclamation Plan is shown on Figure 1 below, which indicate typical dimensions used in the calculation of regrade area and liner and backfill volumes for this cost estimate.

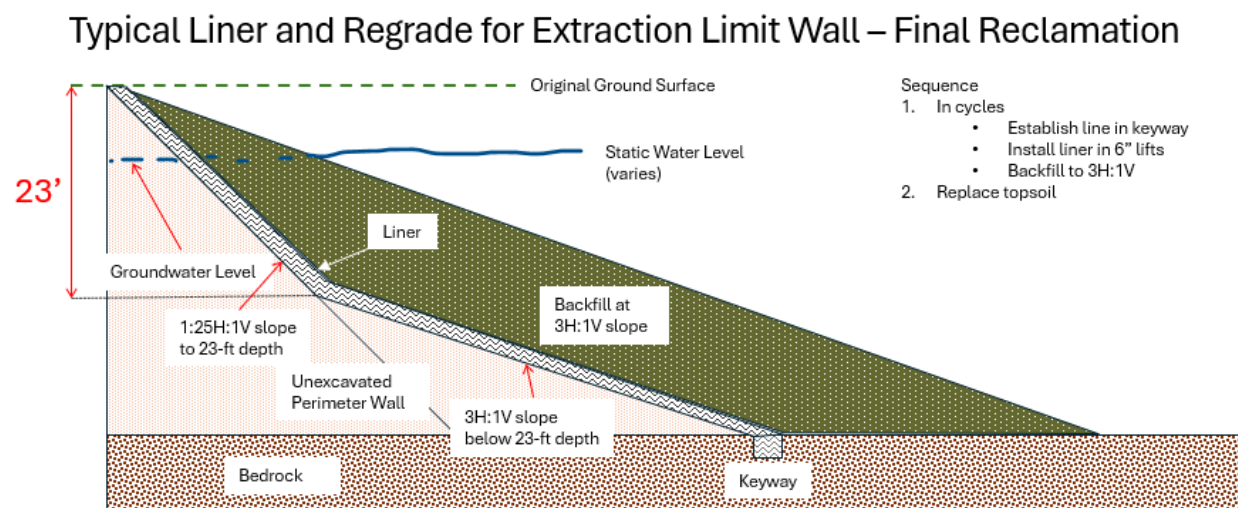


Figure 1. Typical Fully Reclaimed Liner and Backfill Construction

Haul distances from stockpiled backfill materials are expected to be very short, with material primarily sourced from pit floor or temporary stockpiles strategically placed near areas that will require regrading as excavation advances. Equipment costs were taken from the recent DRMS-provided P124 Two Rivers (M2022-013) cost estimate. Calculations for the individual lining component costs are provided in Table 7 below. The estimates assume use of Caterpillar (Cat) D8 class dozer equipped with a ripper, for ripping, pushing and mixing material, Cat 966 class wheel loader loading generic tandem or tri-axle 12-18 cy gravel trucks, and supported by a Cat 120 class grader and generic 3,500 gallon water truck to load an haul material when necessary, and a Cat 815 class compactor.

Table 7. Reclamation Liner Installation Cost Estimate

Activity	Initial Vol [cu.yd]	Swell/Compaction Factor	Loose/Compacted Vol [cu.yd]	Unit Cost [\$/cu.yd]	Total Job Cost
Rip	47,913	1.215	58,214	\$0.304	\$14,575
Haul	3,328	1.215	4,043	\$1.207	\$4,880
Push	44,585	1.215	54,171	\$0.541	\$29,320
Mix	23,956	1.215	29,107	\$0.248	\$7,209
Compact	58,214	0.91	52,975	\$0.145	\$7,706
Total Liner Cost:					\$63,690

**BACKFILL**

Backfill requirements to cover the liner in reclamation of pits to create lined reservoirs is described in the Liner section. Similar to the liner material, liner backfill for purposes of financial warranty estimation will be sourced from bedrock at the bases of Pits P125A and P125B, which will require an average 3.1± feet of additional excavation. Additional allowance is included for backfilling Pit P125\_S1. The backfill volume of P125\_S1 is 550,000± CY.

Raptor's plan for backfill will be achieved using a combination of excavated overburden from the site which will be strategically staged for backfill use as reclamation progresses, supplemented by imported material from nearby sites P115 Kurtz (M1999-006) and/or P122 Bearson (M2015-003) or excavated clay and shale from the bedrock beneath the sand and gravel deposits. Similar to material excavated for lining, material excavated for backfill is expected to swell and is therefore assigned a swell factor for cost estimating purposes. Material that will be placed as backfill in Pit P125\_S1 is assigned a lower swell factor because of minor amounts of natural compaction that will occur as the material is placed into Pit P125\_S1 and tracked over as part of normal backfill operations. Excavated overburden material is estimated at 468,500± BCY. Raptor understand the DRMS for financial warranty calculation purposes will not accept that Raptor supply its own backfill from adjacent permitted sites; therefore the backfill deficit in Pit P125\_S1 (52,480 CY) is assumed to be sourced from the bases of Pits P125A and P125B, and will require an additional average 1.1± feet of excavation to supply. The cost estimate for backfilling Pit P125\_S1, summarized in Table 8 below, is based on equipment costs taken from the recent DRMS-provided P124 Two Rivers (M2022-013) cost estimate. With the exception of a compactor, the same equipment fleet as used for liner construction is assumed.

Table 8. Reclamation Backfill Cost Estimate

Activity	Initial Vol [cu.yd]	Swell/Compaction Factor	Loose/Compacted Vol [cu.yd]	Unit Cost [\$/cu.yd]	Total Job Cost
Rip (liner backfill)	131,731	1.215	160,053	\$0.221	\$29,133
Rip (P125_S1 backfill)	45,635	1.15	52,480	\$0.319	\$14,576
Haul (liner backfill)	9,046	1.215	10,991	\$0.993	\$10,919
Haul (P125_S1 backfill)	471,535	1.15	542,265	\$1.416	\$767,633



Push (liner backfill)	122,684	1.215	149,062	\$0.354	\$52,739
Grade (liner backfill)	160,053	N/A	160,053	\$0.358	\$57,227
Total Backfill Cost:					\$932,227

## TOPSOIL

Topsoil demand will be limited to the cut basin slopes remaining above the static water level for pits reclaimed as reservoirs (P125A and P125B), to the entirety of the backfilled disturbed surface for Pit P125\_S1, and for minor ancillary areas used for parking, storage and ponds. Topsoil that is removed prior to extraction will be stockpiled on-site and used as the topsoil source during reclamation. Topsoil will be placed at a depth of approximately 6 inches over both even ground and cut slopes and seeded with a cover of stabilizing vegetation, as detailed in Exhibit E – Reclamation Plan. Based on the forecast mining and reclamation schedule shown in Exhibit E, Table E1, the worst-case scenario of surface disturbance or regraded slope area requiring topsoil replacement and revegetation occurs in year 4 of operations, with an estimated 23.6 acres of surface area un-reclaimed. The cut slope surface area above the static WSEL was calculated from the reclaimed surfaces in a 3D CAD program as 5.7 acres and 6.9 acres for Pits P125A and P125B, respectively. Including the 10.2-acre backfilled surface of Pit P125\_S1, and 1.5-acres of other areas external to the pits, it was estimated that topsoil will be applied to a total of 24.3 acres. The exact location of the pit walls that will require reclamation despite the detail considered in the mining plan cannot be projected with certainty as operational requirements may dictate certain sections of wall not be lined and regraded for management of drainage, access, or other reasons. An average area per foot of highwall is used to support the financial warranty calculation.

Topsoil application was separated into two stages for the purposes of cost estimation: hauling topsoil from the temporary stockpiles to the areas required, and spreading topsoil on the banks. Similar to material excavated for backfill, topsoil is expected to swell and is therefore assigned a swell factor for cost estimating purposes. The cost estimate for topsoiling the various areas, summarized in Table 9 below, is based on equipment rates taken from the recent DRMS-provided P124 Two Rivers (M2022-013) cost estimate. A similar equipment spread is assumed as in the previous liner and backfill tasks. The topsoil removed from each pit prior to excavation is assumed to be stockpiled in designated stockpile areas and returned to the pit surface as topsoil during reclamation. The average haul route distance from the topsoil stockpiles to the areas required was estimated at approximately 640 feet.

Table 9. Topsoil Application Cost Estimate

Activity	Area [sq.ft]	Topsoil Depth [ft]	Initial Vol [cu.yd]	Swell/Compaction Factor	Loose/Compacted Vol [cu.yd]	Unit Cost [\$ /cu.yd]	Total Job Cost
Rip	1,059,099	N/A	24.3 ac	N/A	24.3 ac	\$556.58/ac	\$13,533
Haul	1,059,099	0.5	19,613	N/A	19,613	\$1.207	\$23,673
Grade	1,059,099	0.5	19,613	N/A	19,613	\$0.272	\$5,337
Total Topsoil Application Cost:							\$42,542



## REVEGETATION

Revegetation will occur following placement of topsoil on disturbed areas remaining at the time of reclamation. As described in the above subsection, Topsoil, the cost estimate was performed for the fully extracted and reclaimed reservoirs and backfilled Pit P125\_S1. Seeding will therefore occur over the same exposed area as described in more detail in Exhibit E – Reclamation Plan, and according to seed mixes and application methods presented in Table L, attached as an addendum to this Exhibit. The cost estimate was completed using the primary/preferred seed mixture in Table L.

The cost estimate for revegetation, which assumes a 25% initial failure rate that will require re-seeding, is based on unit costs taken from the recent DRMS-provided P124 Two Rivers (M2022-013) cost estimate and is presented in Table 10 below. Equipment typical for these tasks is assumed including a tractor towed spreader for application of fertilizer, boom spraying for weed control, and towed drill seeder for planting seed. This unit cost includes the cost of seed and fertilizer, their application, tilling, and mulching. Please note that seed costs are known to fluctuate seasonally and may vary noticeably from the unit cost used here. The seed mixture includes a substitute for mulch in the inclusion of a wheatgrass hybrid. The Division has historically agreed with and approved the inclusion of this hybrid as a substitute for mulch.

Table 10. Revegetation Cost Estimate

Pit	Disturbed Area [ac]	Estimated Failure Rate	Initial + Reseeding Area [sq.ft]	Seed Cost/Acre	Total Job Cost
P125_S1*	11.7	25%	14.7	\$1,192	\$17,482
P125A and P125B	12.6	25%	15.8	\$1,192	\$18,760
Total Reseeding Cost:					\$36,242

\* Includes the 1.5 acres of areas external to the extraction areas, most of which are adjacent to P125\_S1

## CONVEYOR DECOMMISSIONING

An elevated conveyor will be used on-site both to transport material from Pit P125B, across the Last Chance Ditch, into P125A, and to transport material from P125A to the existing conveyor that runs north-south along the eastern border of the Cogburn site, to an offsite plant location. The Operations team estimated the length of conveyor required based on proposed sequencing, offsite transportation delivery location, and the active pit design. The conveyor, installed in modular 40-foot sections, is portable and will be decommissioned and transported offsite for use elsewhere following removal of resources from the site. Decommissioning will involve the removal of the conveyor sections and belting, and demolition and on-site disposal of its supporting 2ft x 2ft x 6 ft concrete blocks. The conveyor itself is 3 feet wide.

The cost estimate for conveyor decommissioning, summarized in Table 11 below, is based on a June 2025 cost estimate provided by Divide Constructors for conveyor decommissioning at the adjacent P115 Kurtz site (M1999-006).



Table 11. Conveyor Decommissioning Cost Estimate

Conveyor Elements	Section Length [ft]	Unit Cost	Total Job Cost
Elevated Conveyor, Bridge Crossing, and Concrete Blocks	1,430	\$58.23/LF	\$83,262

## PLUG AND ABANDON MONITORING WELLS

Plugging and abandonment of five monitoring wells is estimated at \$7,809.

## MOBILIZATION AND DEMOBILIZATION

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 \$10,061.

## DEMOLITION OF STRUCTURES

No structures are present within the project boundary; therefore, no structure demolition will occur,

**Please Note:** Since there is no possibility of the applicant fully reproducing the Division's methods, using similarities from past DRMS 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.





# EXHIBIT M – OTHER PERMITS AND LICENSES

## SECTION 1

A statement identifying which of the following permits, licenses and approvals the Operator/Applicant holds or will be seeking in order to conduct the proposed mining and reclamation operations: effluent discharge permits, air quality emissions permits, radioactive source material licenses, the State Historic Preservation Office clearance, disposal of dredge and fill material (404) permits, permit to construct a dam, well permits, explosives permits, highway access permits, U.S. Forest Service permits, Bureau of Land Management permits, county zoning and land use permits, and city zoning and land use permits.

- Colorado Department of Health Stormwater Discharge Permit **Received 10/10/25.**
- Colorado Department of Health Emission Permit **N/A** – Concrete Batch Plant.
- Colorado Department of Health Emission Permit **N/A** – Portable Equipment – Dry Plant
- Colorado Department of Health Emission Permit **N/A** – Wet Plant
- Colorado Department of Health Emission Permit **Pending** – Fugitive Dust – Mining Operations and related activities.
- Weld County Use by Special Review Permit **Pending.**
- Colorado Division of Water Resources Well Permit **Pending.**
- Colorado Division of Water Resources Substitute Water Supply Plan **Pending.**
- State Historic Preservation Office clearance **N/A.**
- U.S. Department of the Army Corps of Engineers **No Permit Required per Correspondence of 17 December 2024.**
- U.S. Mine Safety and Health Administration **Mine ID 0504681 (part of Kurtz complex), Approved training plan in place.**
- Planned operations will not utilize or encounter materials, sources, or authorities over related lands and do not require permits for the following: radioactive source materials, construction of a dam, explosives, highway access, U.S. Forest Service, Bureau of Land Management, city zoning or land use.
- Note: Any necessary permits for other planned or potential activities, including asphalt batch plants, recycling facilities and operations, etc., will be acquired prior to on-set of such plants, facilities or operations. A well permit and an approved Substitute Water Supply Plan will be obtained from the Colorado Department of Water Resources and submitted to the DRMS prior to exposing groundwater<sup>1</sup>. All future permits will be submitted to the Division to update this list as necessary.

<sup>1</sup> Adequacy 2, Item 11



# EXHIBIT S — PERMANENT MAN-MADE STRUCTURES

Where the affected lands are within two hundred (200) feet of any significant, valuable and permanent man-made structure, the applicant shall:

## SECTION 1

provide a notarized agreement between the applicant and the person(s) having an interest in the structure, that the applicant is to provide compensation for any damage to the structure; or

The notarized agreements between the applicant and the person(s) having an interest in the structure, that the applicant is to provide compensation for any damage to the structure will be attached as an addendum to this Exhibit S. Notarized agreements will be sought with:

- Accord St Vrain Valley Ranch, LLC
- Robert Allen Collins
- Town of Firestone
- LG Everist Inc
- Platteville Dairy, LLC
- Ready Mixed Concrete Company
- Raptor Materials, LLC
- Pasquale Varra
- Last Chance Ditch Company
- Kerr-McGee Oil & Gas Onshore, LP
- Kerr-McGee Gathering, LLC
- Panhandle Eastern Pipeline Company
- Resource Gathering System, Inc.
- Kerr-McGee Rocky Mountain Corporation
- Occidental Petroleum
- Snyder Oil Corporation
- Weld County Department of Public Works
- HS Resources

This complete list of structure owners is also shown on Exhibit C-1: Existing Conditions Map. Although a notification letter was sent to HS Resources due to a reception number that encompasses the entirety of the Cogburn site, no physical oil and gas infrastructure was identified as owned by them; therefore, HS Resources is not listed as a structure owner on the Table on Exhibit C-1.

## SECTION 2

where such an agreement cannot be reached, the applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or

A slope stability analysis performed by American Water Engineering Services, LLC is included as an addendum to this Exhibit S with a supplement containing additional analysis requested by DRMS. The analysis shows with the recommended extraction wall geometry, the excavations have an acceptable factor of safety and if failure were to occur, it would be unlikely to impact structures more than 10 feet from the original extraction limit. A minimum set back of 20.0± feet from the edge of property lines; easements and rights-of-way; underground gas lines or other underground facilities, irrigation ditches and seep ditch, wells and other structures has been adopted in the design of the extraction areas.



### SECTION 3

where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility.

The notarized agreements between the applicant and the person(s) having an interest in the utility, that the applicant is to provide compensation for any damage to the utility will be attached as an addendum to this Exhibit S. Notarized agreements will be sought with:

- United Power
- CenturyLink
- City of Thornton (note the water pipeline in the City of Thornton Easement is currently under construction)

