

November 22, 2023

Colorado Division of Reclamation, Mining, and Safety
1313 Sherman St, Rm 215
Denver, CO 80203

Delivered Via Email

**RE: Anderson Pit, File No. M-2005-021,
Technical Revision No. 2 (TR-02) Application, Third Adequacy Review**

Robert Zuber,

Please accept this response on behalf of United Companies for the third adequacy review letter dated November 22, 2023.

Third Adequacy Items

1. *On page E-3 of the most recent submittal, the text states that flat bench areas will be utilized as residential sites. However, the reclamation map in Exhibit F does not indicate this land use, nor is residential use consistent with the approved post-mining land use of recreational. Please explain this discrepancy or revise the text on page E-3.*

The approved post-mine land use from Amendment 02 is a man-made lake, wildlife habitat, and dry rangeland. Exhibits E and F have been revised to only refer to these uses. The Division should be aware that Amendment 02 says *“As indicated in previous paragraphs, the post-mine land use will remain the same. The post mining land use will consist of a man-made lake for wildlife habitat, and dry rangeland.”* This is also what is listed in the public notice for Amendment 02. In Amendment 01, the post-mine land use is described in the permit narrative and the public notice as Wildlife Habitat and Dry Rangeland. However, the 112 application form for Amendment 01 has the box for Recreation checked. This appears to be the source of confusion.

TR-02 does not propose any change to the approved post-mine land use. Given that Wildlife Habitat and Dry Rangeland have been listed as the post-mine land use in two approved amendments, and that neither of these uses inherently conflict with Recreation, Wildlife Habitat and Dry Rangeland will be what is shown in Exhibits E and F.

2. *Table L-1 in the recent submittal indicates that 25.4 acres will be seeded at this site. However, in the previous submittal, it was stated that 114.2 acres will be seeded. The Division believes that the 114.2 acres appears more accurate, based on Exhibit F. Please revise Exhibit L or explain this major change in the reclamation plan. (Note that for a major change in the reclamation plan, an amendment is required.)*

Exhibit L is calculated around the worst-case reclamation scenario. This scenario exists at the end of mine life when the largest quantity of water must be pumped out of the Anderson Pit to reclaim the last stretch of highwall. At that point in time, the last remaining area of topsoiling and revegetation also exists.

Lewicki has corrected an error in the previous bond calculation, and determined that a roughly 50 acre area will exist that requires topsoiling and revegetation in the worst case scenario. Language has been added to Exhibits L and E to clearly identify the 50-acre non-lake un-reclaimed area limit.

3. *In the recent version of Table L-1, there is no indication of mulch being used. Please clarify if mulch is included in the unit costs for revegetation.*

Mulching costs are contained in the revegetation step of the bond calculation in Table L-1. The text in the table has been revised to show this.

4. *On page D-3, a truck shop is included in the facilities list. Please indicate in this exhibit if that facility is to be removed or not. If it will be removed, please include the truck shop in the discussion and costs in Exhibit L.*

The truck shop has been removed from Exhibit D, Section 2.1. Exhibit L has been revised to include a breakdown of the fixed building demolition for clarity.

Please feel free to contact me with any questions.

Regards,



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Attachments

- Exhibit D
- Exhibit E
- Exhibit L
- Map F-1

Mining Plan

Exhibit D

1. General Mining Plan

The property boundary has been surveyed on site and the permit area will be surveyed prior to any site disturbance. Map C-2 shows the mining plan.

The gravel zone is approximately 40 feet thick in an alluvial deposit. It is overlain by 12 inches of topsoil and overburden ranging from 4 to 15 feet thick. In general, the area will be mined by first excavating soil/overburden with front end loaders, dozers, or other appropriate earth moving equipment. This material will be stored for use in reclamation, to backfill slopes, and to build the peninsulas and potential island. The topsoil and overburden will be stockpiled separately on the site. Any stockpiles to be in place longer than 90 days will be seeded and vegetated to prevent erosion. The reclamation plan depicting how these materials will be used is shown on Map F-1. Due to the abundance of overburden at the Anderson property, it is feasible to build the peninsulas and island with this excess material. It should be noted that the peninsula configuration depicted on Map F-1 is approximate and may vary when executed. Exhibit E addresses more on reclamation and the construction of these peninsulas.

Resource extraction activities are expected to occur for 3 to 5 months per typical year. However, processing of materials will occur year-round. Processing activities include crushing, screening, washing, and producing concrete and asphalt. Mining will proceed roughly from north to south, as the order shown on Map C-2. The order of mining and size of new mining areas may vary from what is depicted.

Mining will occur to the limits shown on Map C-2 with appropriate setbacks from structures and easements. Disturbance boundaries will be staked prior to mining in new areas. The total disturbance will be 224.5 acres. Mining will proceed to 2 feet above the bedrock, and will have an approximate active slope of 0.5H:1V to near vertical to maximize gravel recovery. Highwall mining at this slope will progress to the mid-slope point of the final mining slopes shown on Map C-2. This will allow for the highwall to be knocked down via dozer to a 2H:1V slope. The highwall will then be backfilled with excess overburden to the reclaimed 3H:1V slopes, and peninsulas will be constructed. Slope details are shown on Map C-3.

The maximum permitted tonnage to be sold from the Anderson Pit is 378,750 tons. However, typical annual production is estimated to be around 252,500 tons. The raw aggregates will be sold for use as construction materials such as concrete, asphalt, road base, etc. The anticipated production breakdown is shown below:

<u>Product</u>	<u>Tons Sold</u>	<u>% Reject Rate</u>	<u>Tons Mined</u>
Road Base	200,000	0%	200,000
Concrete	37,500	10%	41,667

Asphalt	15,000	40%	25,000
Total	252,500	5%	266,667

A temporary sediment pond will be present in the northwest corner of the permit area to use for dewatering. This is shown in Map C-2, and has already been constructed as of September 2023. The sediment pond will be used for pit dewatering purposes as mining will take place below the water table. Water from the pit bottom will be pumped to the sediment pond for sediment settling. The water will either infiltrate or evaporate prior to release after 72 hours to the permitted discharge point. This pond will be removed during reclamation. The discharge point diverts water through a 20" culvert under the county road to a small ditch. The pit dewatering system is shown on Map C-2 and has already been constructed as of September 2023. More information on hydrology is located in the existing permit's Exhibit G, and should be unchanged from this revision. The active pit will serve as the sediment pond in the case of a large storm event.

The site is accessed by an easement from 1800 Road. This road will be retained after reclamation for the easement owner, Teddy Graff. Therefore, this road does not need to be included in the permit area. Documentation of this agreement has already been submitted to the Division in the existing permit. The access is shown on Map C-2.

No toxic or acid-producing materials will be encountered by mining. If any are encountered, it will be covered with overburden and/or topsoil, and the mining plan will be adjusted to avoid these materials.

2. Mining Timetable

Mining operations at the Anderson Pit are anticipated to take 36 years since the start of mining in May 2005. As of 2023, there is an estimated 18 year mine life remaining. This may vary based on the rate of mining which is dependent on demand for the aggregate products. The permitted production level is 378,750, however, actual production levels will tend to be around 252,500 tons per year.

Table D-1 - Mining Timetable shows the mining sequence and the amount of time for each step.

Table D-1 - Mining Timetable

Description	Time Required
Initial stripping of new mining areas.	1 month (repeated throughout the mine life as new mining areas are opened)
Mine and reclaim pit according to approved plans. Reclamation occurs as mining has reached its maximum extents in an area.	18 years
Total	18 years

2.1. Equipment Mine Facilities and Operation

The Anderson Pit will contain the following facilities and equipment. Approximate quantities of equipment are provided but are subject to change as needed to complete mining and reclamation.

Facilities:

- Portable asphalt plant – 14,000 gallon diesel tank
- Concrete batch plant with foundation
- Truck scale
- Mine office (portable)
- Portable crusher – 8,000 gallon diesel tank
- Portable wash plant – 3,000 gallon diesel tank
- Fuel farm – 10,000 gallon diesel tank
 - o Secondary containment of at least 110% tank capacity
 - o Portable

Equipment:

- 2-3 Front end loaders
- 1 Bulldozer
- 1 Motor grader
- 1 4000 gallon water truck
- 2-3 Off road haul trucks (depends on production needs)
- 2-3 On road haul trucks, 15 and 24 ton (depends on production needs)

Only a loader and scale will be located on site full time, as most of the year the pit will not need to be running at full production. Equipment needed to produce material during the construction season will all be portable, and only present for the time needed to satisfy demands at the time. United will provide portable toilets and bottled water to employees on site during operations.

2.2. Lighting

No night mining will take place at the Anderson Pit. However, portable lighting may be used for emergency equipment repairs. All lights will be downcast.

2.3. Blasting

No blasting will take place at the Anderson Pit.

3. Topsoil and Overburden Handling

Topsoil and overburden at the site are estimated to be 12 inches and 4-15 feet thick respectively. All topsoil and overburden will be stripped prior to mining and stored in various stockpiles, berms, or used for reclamation. These materials will be stored separately. The berms and typical stockpiles are shown on Map C-2. All stockpiles will be at a slope no greater than 2H:1V. Any long-term

stockpiles will be vegetated to prevent erosion. There is more than enough overburden and topsoil to meet reclamation needs. In areas where mining is complete, reclamation work on creating the peninsulas will be undertaken using the stored overburden.

4. Water Handling

An existing ditch that used to run through the property has been rerouted in accordance with previous permits. Water will be used in processing and dust control. Water for these consumptive uses is procured through very senior water rights from the Bona Fide Ditch. These rights allow for 263 acre-feet of water per month at 65 cfs. This amount of water is more than adequate for the consumptive uses in processing and dust control, as well as for augmentation water for evaporative losses from the pit. Water handling in general is unchanged from this revision.

5. Delta County Impacts and Environmental Impacts

The Delta County land use permit has been approved by the Delta County Board of County Commissioners. This permit addresses the impacts the operation will have on the local citizenry.

1. General Reclamation Plan

The total disturbed area to be reclaimed under this permit is 224.5 acres. The post-mining land use for the entire permit area will be wildlife habitat and dry rangeland. The wildlife habitat and rangeland will consist of a groundwater lake with dry rangeland on the flat areas around the perimeter of said lake. Map F-1 shows the post-mining topography and identifies the various areas of reclamation.

Reclamation will occur concurrently with mining. Topsoil and overburden from the current mining phase will be used to reclaim any areas where mining has been completed. It will also be used to create the peninsulas as shown on Map F-1. Topsoil will be replaced on all graded areas except those that are greater than 10 feet below the anticipated groundwater pond water level. Concurrent reclamation will reduce the overall disturbance and reduce the transportation and rehandling of topsoil and overburden for storage or reclamation.

Reclamation will consist of backfilling and grading the mining slopes from a 2H:1V to 3H:1V slope using overburden as backfill material. The slopes will be compacted to prevent erosion and for stabilization purposes. No more than 1,000 feet of active mining highwall will exist at any time without being regraded to reclamation slopes. Additionally, no more than 50 acres of non-lake area will be disturbed at a time without being reclaimed. Peninsulas will also be constructed in a manner similar to shown on Map F-1 using excess overburden. All disturbed areas will be retopsoiled with 12 inches of topsoil, ripped, mulched, and seeded for revegetation. All berms and stockpiles will be flattened and their materials dispersed throughout the site. All structures will be removed from the site, all being portable and not requiring demolition. The sediment pond will be filled, graded, and revegetated.

The peninsulas shown on Map F-1 depict what the typical peninsula configuration would be for reclamation. The actual configuration of these peninsulas may vary slightly.

Map F-1 shows the final contours and reclamation planned for the site. The access road will be left intact for the landowners' use, and will not require reclamation.

Table E-1 shows the volumes needed to reclaim as well as the estimated volumes of topsoil and overburden that will be removed prior to mining.

Table E-1 – Reclamation Volumes

<u>Phase</u>	<u>Topsoil Stripped (CY)</u>	<u>Overburden Stripped (CY)</u>	<u>Topsoil Required (CY)</u>	<u>Overburden Backfill Required (CY)</u>
Total Disturbance – 224.5	60,370	3,440,800	30,720	374,210

* Backfill requirements calculated as minimum amount to fill slopes from 2H:1V to 3H:1V. Excess will be used to create peninsulas.

2. Topsoil Replacement

Topsoil will be replaced in a single 12-inch lift across all disturbed areas at the Anderson Pit. It will be directly placed via loaders and haul trucks. This will follow the regrading and backfilling of slopes and will be part of the concurrent reclamation. All areas will be disced following the topsoil replacement to aid in root penetration.

3. Site Access

The site access will remain in place after reclamation for use by the landowner. No reclamation work is required for the access road.

4. Reclamation Timetable

The sequence and timing of reclamation activity can be seen in **Error! Reference source not found.** below. This schedule is dependent on the rate of mining, which will fluctuate with market demands. The operator will reclaim areas of the site as mining moves on to ensure limited disturbance. Some areas of the site have already been partially reclaimed.

Table E-1 – Reclamation Timetable

Description	Time Required
Develop and mine remaining mining areas, reclaiming concurrently.	18 years
Backfill, topsoil, and revegetate remainder of the site that is unreclaimed	1 year
Vegetation monitoring	2 years
Total	21 years

5. Revegetation Plan

For both the dryland and wetland areas, the soil will be disced to loosen the soil. Due to the mild grade, seed can be drilled into both regions. The drylands areas will be seeded with the NRCS recommended seed mix. Certified weed free mulch will be crimped into the surface at 2000 lbs per acre. The wetlands will be seeded with a specially designed mix. Fertilizer may be added as determined by a soil test at the time of seeding. Dryland seed mix will be used on all disturbances outside of the pit, while the wetland seed mix will be used on the pit walls.

The seed mixes are as follows.

5.1. Dryland Seed Mix

<u>Species</u>	<u>Pounds of pure live seed per acre (drilled)</u>
Four Wind Saltbush	0.25
Rabbitbrush	0.25
Skunkbush Sumac	0.25
Yellow Sweetclover	1.5
Fairway Wheatgrass	1.5
Thickspike Wheatgrass	3.0
Streambank Wheatgrass	3.0
Total	9.75

5.2. Wetland Seed Mix

<u>Species</u>	<u>Pounds of pure live seed per acre (drilled)</u>
Slender Wheatgrass	3.0
Basin Wildrye	1.5
Inland Saltgrass	1.0
Alkali Sacaton	1.0
Timothy	1.0
Redtop Grass	1.0
Carex Sedge	1.0
Common Reedgrass	0.5
Canadian Reedgrass	0.5
Total	10.5

Broadcast seeding will be done at double the drill rate.

6. Post-Reclamation Site Drainage

Map C-2 and F-1 show drainage arrows which indicate the direction of surface water drainage throughout the site during and after mining. In general, the site will drain internally to the groundwater pond.

7. Revegetation Success Criteria

Revegetation will be deemed adequate when erosion is controlled, the vegetation cover matches neighboring rangeland areas, and when it is considered satisfactory according to Division standards. This will be monitored in the two years following the completion of reclamation.

8. Weed Control

This weed control plan is unchanged from the existing DRMS permit:

United Companies will take measures to ensure that the land affected by the mining operation is free of weed infestations. Currently there are several problematic weeds which are present within the general area where the permit will apply identified by Delta County Weed Control. The two species are Russian knapweed and whitetop. Any infestations of these weeds will be removed prior to mining and will be monitored after reclamation has occurred.

During all phases of the mining operation the permit area will be monitored closely every year which the permit is active to determine if there are any additional weeds invading the area. Weed control will again be initiated if the problem becomes serious. The Division will be consulted regarding any additional weed infestation area and any control measures prior to their initiation. If infestations of similar weeds as are present now is experienced the current weed control plan will continue to be used. If any new species of weeds are found Delta County Weed Control Authority and the Division will be consulted in order to formulate the best plan for the new infestation. The plan does not contemplate total weed removal on the property. Past experience shows that some initial weed cover in the first year following topsoiling is beneficial to the reclamation effort. Weeds tend to provide shade for new grasses as a means of holding snow on the seedbed longer and protect it from wind and water erosion until the planted species have taken hold.

9. Monitoring Reclamation Success

Monitoring reclamation on an ongoing basis will allow minor revisions to assure efficient and successful reclamation. The operator plans to use the local NRCS office to assist in determining the ability of the reclaimed land to control erosion. If minor changes or modifications are needed to the seeding and reclamation plan, revision plans will be submitted to the Division as required. It is hoped that the Division will provide assistance in evaluating the success of ongoing reclamation process. All areas disturbed and reclaimed and any other important items regarding reclamation will be submitted in the annual reports to the Division. Delta County and the Division of Parks and Wildlife will also be consulted on the progress of the reclamation.

Reclamation Costs

Exhibit L

Reclamation will be completed concurrently with the progression of mining. No more than 1000 feet of active highwall at a near vertical slope will exist at a time. These active faces will be knocked down to a 2H:1V slope as soon as feasible after mining has reached its final extents. The peninsulas and potential island will be created with excess overburden throughout the life of the mine. Once the pit nears completion, there will be no more than 1000 feet of 2H:1V mining slopes. The remaining areas where mining is complete will have been reclaimed: backfill to 3H:1V, topsoil, grade, rip and seed. Therefore, the worst-case reclamation scenario will be once the full pit is mined: 1000 feet of 2H:1V mining slopes for backfilling and grading remain, facilities and must be removed or demolished, and the processing area requires topsoiling and seeding. The total area needing topsoiling and seeding at this point will be no more than 50 acres.

Reclamation work will include pit dewatering to reclaim the remaining slopes, flattening berms and stockpiles, filling in the sump, and topsoiling and seeding all disturbances outside of the lake area. All the equipment will be removed from the site (all are portable except for the concrete plant). Fixed structures will be demolished and removed. Vegetation monitoring will then occur for 2 years after all reclamation work is complete.

Topsoil and overburden will be directly placed via trucks and loaders. Berms will be flattened and ponds will be filled using dozers. Components, areas, and volumes that make up the worst-case reclamation scenario in each phase are described below:

1. Backfill and grade 1000 feet of highwall (approx. 38 ft tall) to the final contours
 - a. 26,740 CY of backfill directly placed via loader and haul truck from stockpiled overburden
 - b. Dewater pit w/ 12' groundwater
2. Place topsoil across all areas that are not already reclaimed (processing area and surrounding slopes)
 - a. Place topsoil on 50.0 acres at 12 inches deep = 80,670 CY
3. Remove scale, office, plants, and other facilities/equipment
 - a. All structures are portable except for concrete plant foundation
 - b. Demolish concrete plant foundation 60' x 90' x 6" (item breakdown in Table L-2)
4. Seed and mulch entire topsoiled area as rangeland or wetland fringe
 - a. 50.0 acres total to be seeded and mulched, assume 25% seed failure (applied to area in calculating estimated costs)

Table L-1 – Reclamation Cost Estimate Phase 1

Activity Description	Quantity		Unit Cost (\$)	Cost (\$)
Backfill and grade 1000' of highwall (38 ft. tall)	26,740	CY	\$0.55	\$14,710
Pit dewatering of approx. 133.9 acre lake @ 12 feet deep	1610	Acre-ft	\$94.50	\$152,145
Remove all portable structures	1		\$1,000.00	\$1,000
Removal of all fixed buildings and demolition of associated foundations (see table L-2 below)	1		\$114,140	\$114,140
Topsoil and grade all disturbed areas to be revegetated. (50.0 acres @ 12")	80,670	CY	\$0.33	\$26,620
Ripping all topsoiled areas.	50.0	acres	\$565.00	\$28,250
Revegetate disturbances as rangeland (seeding, mulching) Estimated 25% failure rate applied to acreage	49.1	acres	\$1,560	\$76,600
Revegetate disturbances as wetland fringe (seeding, mulching) Estimated 25% failure rate applied to acreage	13.4	acres	\$1,960	\$26,264
Equipment mobilization	1		\$905	\$905
Totals				\$440,634.00
DRMS Costs (28% x direct costs)				\$123,377.52
Total Bond Amount				\$564,011.52

Table L-2 – Concrete Plant Demolition Cost Estimate

Item	Dimensions	Quantity	Unit	Unit Cost	Cost
Concrete plant slab	60' x 90' x 6"	5,400	SF	\$1.97	\$10,640
Concrete plant building stemwall	1' x 1' x 304'	304	LF	\$7.88	\$2,400
Concrete plant foundation pads	5 @ 10' x 1.5' x 4'	200	SF	\$3.94	\$790
Truck scale foundation	700 SF	700	SF	\$2.62	\$1,830
Fuel storage slab	24' x 36'	864	SF	\$1.97	\$1,700
Concrete plant building, machinery in half of bldg	(60' x 90' x 25').5	67,500	CF	\$1.22	\$82,350
Concrete plant feeder conveyor	50'	50	LF	\$50.08	\$2,500
Section of sediment pond discharge pipe	20" dia x 85'	85	LF	\$10.93	\$930
Disposal fees for steel	1000 CY	1,000	CY	\$11.00	\$11,000
TOTAL					\$114,140

LEGEND

BUILDINGS AND RELATED STRUCTURES

Building

Tanks

Fence

LAND SURVEYS

Public Land Survey System

Range or Township line

Range or Township labels

Section line

Section numbers

Mining claim or property boundary

ROADS AND RELATED FEATURES

Highway

Light duty road, paved

Light duty road, gravel

Gate on road

Railroad

RIVERS, LAKES, SHORELINES, AND CANALS

Perennial stream/ditch

Perennial river

Perennial lake/pond

Flood Plain

Underground Water Line

VEGETATION & SOILS

Agriculture

Existing Trees

NWI Wetlands

TRANSMISSION LINES AND PIPELINES

Utility line, pole, tower

Utility line, buried

MINING FEATURES

DRMS Permit Boundary

BASELINE CONTOURS

Index

Approximate of indefinite

Intermediate

Approximate of indefinite

Supplementary

POST-RECLAMATION CONTOURS

Index

Approximate of indefinite

Intermediate

Approximate of indefinite

Dump

F-1 Reclamation Plan

Anderson Pit

DRMS Permit Number: M-2005-021

United Companies

Mine Entry Location:

Latitude: 38.7550

Longitude: -108.0329

State: CO

County: Delta

Nearest Town: Delta

Section: 11

Township: 15 S

Range: 95 W

PM: 6th

Major Watershed:

Gunnison River

MSHA ID: N/A

Map Scale: 1" = 200'

0

200

400

Map Georeferencing Information:

Datum: NAD83

Projection: CO STATE PLANES

Survey Source: N/A

Imagery Source: N/A

Survey Date: ---

Imagery Date: ---

Drawn by: SAC

Checked by: BEL

Approved by: BEL

Date: 9/20/23

Date: 9/20/23

Date: 11/22/23

File Name: Anderson Pit 230905

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