

February 8, 2022

Robert Zuber Colorado Division of Reclamation, Mining, and Safety 1313 Sherman St, Rm 215 Denver, CO 80203 (303) 866-3567

Delivered Via Email RE: Bennett's Gravel Pit, Permit M-1979-166 TR-05 Third Adequacy Review - Response

Mr. Zuber:

Please accept this letter on behalf of Elam Construction, Inc. as the response to third adequacy review of the Technical Revision No. 5 of Bennett's Gravel Pit, dated February 4, 2022.

To allow the division sufficient time to complete its adequacy review, the applicant requests an extension of the decision date to February 28, 2022.

The responses to each of the items needing to be addressed in the adequacy review are provided. Adequacy items that the Division listed as "no additional response is required" have been omitted from this response for clarity.

- 1) Regarding the Exhibit C maps, please explain why the floodplain does not encompass the river on the east end of the maps, or revise the maps if appropriate.
 - No additional response required regarding the original adequacy item. Thank you for providing the FIRMette map.
 - Please submit new maps with certifications by a Professional Engineer.

The revised maps provided with this response contain the certification of a Professional Engineer.

• Regarding the inflow/outflow structure that was added to the maps, it is unclear when this structure will be built. The Lewicki letter states that it will be constructed after all mining is completed, but Map F-1 indicates otherwise. Please address this apparent discrepancy.

The inflow/outflow structure will be constructed following the completion of mining activities. The nature of this amendment is to allow Elam Construction flexibility in their mining plan. Phase 1 of mining will be to the maximum extents that are currently permitted for. Phase 1 of reclamation, shown in Map F-1, is the reclamation scenario in the case mining ceases after Phase 1 of mining. If Phase 2 mining is not pursued, the inflow/outflow structures will be installed at the conclusion of Phase 1 mining. If Elam Construction decides to pursue Phase 2 of mining, then the site will be



reclaimed as shown in Map F-2. In this case, the inflow/outflow structure will not be constructed until the completion of Phase 2.

• On Map F-1 the use of the word "thalweg" in the details is confusing. A thalweg is the line connecting the lowest points along the channel bottom. Perhaps this word should be replaced with the word "level." For example, "TYPICAL HIGHWATER THALWEG OF RIVER" could be "TYPICAL HIGHWATER LEVEL OF RIVER."

Please refer to Maps F-1 and F-2 with the requested changes.

- 4) On Map C-3 there is no road down the slope to the product stockpiles and the plant. Please explain if this was accidently omitted or if the plan is for trucks and other equipment to traverse the slope without a designated road.
 - On Map C-3 there is a label "IN PIT RAMP (TYP.)," but it is unclear what this is pointing at. The topography does not show a road. Please explain this further.

There was an error in the version of Map C-3 previously submitted. Please refer to the attached Map C-3 which has been updated to include the typical pit ramp location.

- 8) The reclamation plan, Exhibit E, and Map F-2 need to be revised so that the maximum area of the lake (or lakes) at any given time (during mining, during reclamation, and after reclamation) is 9.5 acres per the Well Permit (Number 049487). Alternatively, the operator can obtain written permission from the Division of Water Resources stating that the on-site lake (or lakes) can encompass more than 9.5 acres, and as large an area as 15.3 acres.
 - Please revise Maps C-3 and F-2 to indicate very clearly that Phase 2 of the mine plan cannot begin without an additional well permit or other appropriate documentation from the Division of Water Resources.
 - The Division wants to emphasize that in this context we do not distinguish between the area of ponds and the areal extent of "exposed groundwater."

Please refer to the revised Maps C-3 and F-2 which indicates that Phase 2 of mining is not to commence until the additional gravel well permits have been obtained.

- 12) Please revise the Reclamation Plan (Exhibit E) and associated maps (Exhibit F) to very clearly explain all of the items in the list below. Provide significant detail for a reader to understand the plan completely and be able to compare the plan to the key elements of the RCE.
 - The areas that have already been reclaimed at the site, including the banks of the existing pond.
 - This should be in agreement with the 2021 Annual Report for this permit, which states that three acres have been reclaimed. It should also be in agreement with the 2021 Annual Report Map, which shows that current reclamation has been performed near the southwest corner of the existing pond but no other areas of



the pond. To avoid confusion for future readers, the text and map should indicate "As of February 2022" or similar language.

 If the 2021 Annual Report is inaccurate, please explain that in your response to this letter. In future reports, Elam Construction needs to insure that the reports are accurate and in agreement with the permit exhibits (namely, Exhibit D and Exhibit E).

Maps C-1 and F-1 have been revised to show the 3 acres of previously reclaimed ground in the southwest of the existing pond. Exhibit E has also been revised to clarify that this portion of the site has already been reclaimed.

- The plan to reclaim all existing disturbance as well as the disturbance proposed in Phases 1 and 2 with TR-05.
 - State any limits to mining and reclamation. For example, will the reclamation of existing disturbance be performed prior to beginning the proposed mining operations? **During my inspection in August 2021 it was clear that much of the shoreline of the existing pond has not been reclaimed, most notably on the north side.**

The current disturbances at the site are the processing area, current mining area, and a road surrounding the existing pond. It is not planned that any of these disturbances will be reclaimed prior to mining as the reclamation of these areas would be redundant. In regard to the inspection, the unreclaimed shoreline will not be reclaimed prior to mining as it will be disturbed in Phase 2.

- The process for dewatering, including dewatering of the existing pond to reclaim the slopes, as necessary.
 - Where will water be pumped? Will the sediment pond be large enough for this operation?

During Phase 1 mining and reclamation, the existing dewatering system will be used to drain either pond. The existing pond, along the south side of the site, would be directly pumped down to allow any reclamation work needed.

During Phase 2, all dewatering will take place via the sediment pond and discharge system already outlined on Map C-3.

All dewatering activities will be via an approved CDPHE discharge point that is sampled according to its permit. The dewatering system will be adjusted as needed to meet the standards of the CDPHE discharge permit.

• The plan for hauling gravel to the northern area with a post-mining land use of industrial and grading this area. (This is in the current plan.)



All gravel stockpiles will be maintained within the area identified for industrial land use. Currently, all stockpiles are located within this area, therefore no gravel hauling to the industrial area is needed as part of final reclamation.

• Volumes and approximate haul distances for fill material and topsoil.

The volumes of topsoil and overburden required for each phase of reclamation are provided in Exhibit E Table E-1. This amount includes the material needed to backfill the pit slopes and the material outside of the pits. Exhibit I has been revised to include information on the approximate haul distances.

Attachment List

Please refer to the accompanying attachments with this response:

- Bennett Pit TR-05 (revised Exhibits)
- Bennett Pit Map C-2 Phase 1 Mining
- Bennett Pit Map C-3 Phase 2 Mining
- Bennett Pit Map C-4 Cross Sections
- Bennett Pit Map F-1 Phase 2 Reclamation
- Bennett Pit Map F-2 Phase 2 Reclamation

Regards,

- All

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Mining Plan Map

Map C-2 Phase 1 Mining Plan Map C-3 Phase 2 Mining Plan Map C-4 Cross Sections

Exhibit C









Mining Plan

1. General Mining Plan

Map C-2, located in Appendix 1, shows the mining plan. The property boundary has been surveyed on site and the permit area will be surveyed prior to any new site disturbance.

The Bennett Pit will involve the disturbance of roughly 25.1 acres of sand and gravel from their current mining location roughly 1.5 miles northwest of Delta, CO. The mine is operated by Elam Construction. Inc. It is located approximately one-quarter mile south of US-50, and directly north of the Gunnison River in Delta County, Colorado. Mining is currently taking place in the eastern portion of the site while roughly 4.6 acres of the southern portion of the site are reclaimed from previous mining as a groundwater lake. The current permit area is 32.6 acres and will remain unchanged with this revision. The mining and reclamation plan is being revised to expand the maximum mining extents to extract the full resource at the site. This includes the expansion of mining to the entire site including the current processing area, the area to the northeast of current mining, and the material surrounding the existing reclamation pond. Mining will occur in two phases to give the mine flexibility in their bond and reclamation options. Phase 1 involves the mining to the northeast of the current mining area to be reclaimed as a groundwater pond. This will keep the reclaimed lake exposure within the limits of the current gravel well permit; of which accounts for 9.5 acres of groundwater exposure. Phase 2 will expand mining to the entire site which will require an increase in the reclamation bond and a new gravel well permit. Mining in Phase 2 that exposes more groundwater than is already permitted will not occur until the gravel well permit is approved by the Colorado Division of Water Resources (CDWR) and in place. For both phases of reclamation, an area will remain in the north near the site entrance for continued industrial use after reclamation.

The sand and gravel deposit at the Bennett Pit is approximately 30 feet thick overlain with four to five feet of overburden and six to eight inches of topsoil. The deposit is situated on top of a relatively flat layer of bedrock shale. Mining will commence in 10 to 20 foot layers to roughly 2 feet above the shale bedrock. The total mining depth varies on site due to an elevated ridge in the north portion of the site, but is generally 30-40 feet deep. The operator will avoid mining into shale or any other bedrock encountered. In the case shale bedrock is encountered, the pit will be backfilled to two feet above the shale zone and the maximum mining depth will be adjusted accordingly.

Mining in the new area will start with removal of topsoil and overburden with scrapers, loaders, and haul trucks as necessary. Topsoil will be stockpiled and revegetated for use in reclamation. Overburden will be stockpiled separately for use as backfill in the reclamation of the mine. The sand and gravel will then be extracted using loaders and/or excavators, then transported to processing with trucks. Processing will include the sorting of material in a crusher/screen plant to create various sized products to be stored in separate stockpiles within the mine. Asphalt and concrete will also be produced on site as dictated by the market. Dozers and scrapers may also be used to move topsoil, overburden, or gravel as needed.

Mining activities are expected to occur intermittently throughout the year depending on demand and weather conditions. Operations during the winter months will be limited. Processing operations



including screening/crushing and washing can occur any time of the year. Asphalt production will occur intermittently between the months of March and November.

Mining will occur in two phases. Phase 1 of mining is an expansion of the current mining area to the northeast of the site. Phase 2 of mining will include the remaining portions of the site; the processing area and material surrounding the existing groundwater pond. Mining in phase 1 will generally occur from the southwest to the northeast, while phase 2 mining will be from the southeast to northwest. Refer to maps C-2 and C-3 for each phased mining plan.

Groundwater will be encountered during all phases of mining due to the proximity of the mine to the Gunnison River. Groundwater levels fluctuate throughout the year depending on the elevation of the Gunnison River. Since groundwater will be exposed during mining, the pits will be dewatered using pumps. Phase 1 groundwater will be pumped to the existing groundwater lake which is acting as a settling pond. After settling is complete, this water will be discharged at the current NPDES permit's discharge point to be returned to the Gunnison River. Phase 2 groundwater will be pumped to a settling pond to be constructed near the same discharge point. Water will then be discharged in the same manner as in Phase 1. The discharge point can be seen in Maps C-2 and C-3.

The maximum mining extents per each phase are shown on Map C-2 and C-3. Final mining slopes will be no steeper than 2H:1V. Cross sections show the slopes for mining and reclamation in Phase 1 on Map C-4.

Mining within the pit will use a 1H:1V to near vertical slope on active mining faces until reaching the final mining extents. This will occur in 10 to 20 foot layers until bedrock is within 2 feet of the mining floor. The active highwall will be laid back to the final mining slopes after the maximum mining extents have been reached. Highwall mining will commence to the midpoint between the final mining toe and crest before the slope is knocked down to the final mining slope of 2H:1V. Slopes will further be backfilled during reclamation to 3H:1V slopes. No more than 1000 feet of active highwall will remain at any point without being reclaimed.

Reclamation will be completed concurrently with the progression of mining. Areas where mining has been completed will be reclaimed to minimize the ongoing disturbance area. Highwalls will be backfilled to a 3H:1V slope which can be seen in Map F-1 and F-2. It is anticipated that there will be enough overburden to supply the required backfill amount to regrade each slope, as demonstrated in Exhibit E.

The total disturbed area with this expansion is 25.1 acres. Phase 1 disturbance includes 24.6 acres, while phase 2 will only add an additional 0.5 acres of disturbance as most of the phase 2 mining is within the previously disturbed processing area. Reclamation of the site will include backfilling, grading, and topsoiling all disturbed areas. The mining pit will be converted to a groundwater lake while the area surrounding the lake will be vegetated to become wildlife habitat. Vegetating of areas includes seeding and mulching. More information on reclamation and bonding is provided in Exhibit E and L.



2. Mining Timetable

Mining operations at the Bennett Pit will take at least 20 years to complete, based on an annual production of 100,000 tons per year. This is an estimate as the life of the mine will vary based on market conditions.

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

Description	Time Required
Initial stripping of new mining area for Phase 1 (northeast portion of site)	1 month
Mine and reclaim Phase 1 according to approved plans. Reclamation occurs as mining has reached its maximum extents in an area.	5 years
Initial stripping of new mining area for Phase 2 (processing area and area surrounding the southern groundwater pond)	1 month
Mine and reclaim Phase 2 according to approved plans. Reclamation occurs as mining has reached its maximum extents in an area.	15 years
	20 years

Table D-1 - Mining Timetable



2.1. Equipment Mine Facilities and Operation

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

Facilities:

- Portable Fuel Storage
- Portable Water Storage
- Portable Wash Plant
- Portable Crushing Unit
- Gradation Screen/Conveyor (portable)
- Portable Toilet
- Mine Office (portable)
- Stackers
- Dumpster
- Scale
- Portable Concrete/Asphalt Plant

Equipment:

- 1-3 Scrapers
- 3 Dozers
- 2 Loaders
- 1 Grader
- 1 Water Truck
- 2 Excavators
- 2 Haul Trucks

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. Elam Construction will provide portable toilets and bottled water to employees on site during operations.

2.2. Blasting

No blasting will take place at the Bennett Pit.

3. Topsoil and Overburden Handling

The topsoil on site is estimated to be six to eight inches thick, with approximately four to five feet of overburden underlying it. All overburden and topsoil will be stripped prior to mining for use in reclamation. Topsoil and overburden will be stockpiled separately and will be seeded if they are to



be in place greater than 90 days. These stockpiles will be located in the processing and operating area during phase 1, and within the pit during phase 2, see maps C-2 and C-3. Overburden will be used during reclamation to backfill the slopes from a 2H:1V slope to a 3H:1V slope. Topsoil will be spread across the property in an even layer during reclamation.

4. Water Handling

No water diversions will be needed at any part of the mining operation. Water will be used in processing and dust control. Water for these purposes is sourced from the irrigation ditch near the north boundary of the site. Water is stored in the existing groundwater lake and will be stored in a settling pond constructed during phase 2. Area surface water will be allowed to drain within the site, since the excavation will be substantially bigger than the volume of runoff the local area will generate.

The Gunnison River is adjacent to the south of the site. The southernmost portion of the site is within the floodway while the southern half of the site is within the floodplain. Future mining will not take place in the floodway and a minimum 100-ft are maintained from the river to protect the river from degradation in the event of flooding. Due to the mine's location within the 100-year floodplain, an inflow/outflow structure will be constructed during reclamation. The intention of this structure is to facilitate safer flood flows in and out of the reclaimed pond. See Map F-2 for this structure design.

Groundwater is expected to be encountered during mining. Pit dewatering will remove the groundwater from the mining areas to a settling pond before discharging at the NPDES permitted discharge point. During phase 1, water is pumped into the existing groundwater lake, acting as a settling pond, before discharging in the northwest to a drainage canal, see map C-2, and eventually to the Gunnison River. During phase 2, pit dewatering will be routed to a newly constructed settling pond, see map C-3, and will be discharged to the Gunnison River at the same discharge point. The use of settling ponds ensures that groundwater encountered during mining is returned with little to no impact from the mine.

5. Schedule of Operations

Mining operations will occur as dictated by the market. Mining, screening, and processing will be conducted with portable equipment at various times of the year. Asphalt production will occur intermittently throughout the months of March and November. Product will be sold throughout the year, although little is expected to be sold during the winter. The operator will not have night gravel mining operations, although minor truck activity and repairs may occur after hours. Mining, trucking, and processing will occur during regular operating hours.

6. 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.



Reclamation Plan

1. General Reclamation Plan

The total area to be reclaimed under this permit is roughly 25.1 acres of disturbed area out of the 32.6-acre permit area. The remaining 7.5 acres are either undisturbed, or within the southwest 3 acres of the that have been reclaimed as of February 2022. Phase 1 reclamation plans can be seen on Map F-1. Reclamation at the end of Phase 1 will involve the backfilling of 2000 feet of highwall, topsoiling of areas to be seeded, gravelling of the industrial area, and seeding of all non-water, non-industrial areas. Reclamation at the end of Phase 2 will be the same, but with a larger lake and smaller industrial area. Phase 2 reclamation can be seen on Map F-2.

The goal of reclamation is to repurpose the land to be used as groundwater lakes with surrounding wildlife habitat with an area in the north remaining for industrial use. Reclamation will consist of backfilling and grading all mining slopes to a maximum 3H:1V slope from the mining crest to 10 feet below the normal water surface of the lakes. All permanent and portable facilities will be removed from the site. All berms will be flattened. Non-industrial disturbed area will be topsoiled and revegetated as the final steps of reclamation. An inflow/outflow structure will be constructed at the southeast of the site between the reclaimed pond and Gunnison River, as can be seen on Maps F-1 and F-2.

During all phases of mining, approximately 6 inches of topsoil and 4.5 feet of overburden will be removed. These materials will be stockpiled on site or direct placed for reclamation. Stockpiles remaining in place more than 90 days will be vegetated to prevent erosion. The stockpiled materials will aid in reclamation of the site. 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.

Phase	Topsoil Stripped (CY)	Overburden Stripped (CY)	Topsoil Required (CY)	Overburden Backfill Required (CY)
1	4,991	44,917	2,832	16,274
2	11,170	100,526	8,139	30,044
Totals	16,160	145,443	10,970	46,319

Table E-1 – Reclamation Volumes

After each phase is completed, the mining slopes will be flattened and a grader will be used to create a 3H:1V slope using stockpiled overburden. The slopes will be compacted to prevent erosion and for stabilization purposes. No more than 1000 feet of active mining highwall will exist at any time without being regraded to reclamation slopes. All berms will be flattened during reclamation. The stockpiled topsoil will be used to replace a single six-inch lift across the entire disturbed area. Approximate haul distances for topsoil and overburden are shown in Table E-2. All disturbed areas will then be revegetated with a native seed mix recommended by the Natural Resource Conservation Service. Revegetation will convert the land to groundwater lakes surrounded by wildlife habitat which matches neighboring land uses along the river.



While the pit slopes are being backfilled, graded, and topsoiled, the pit will be dewatered in the same manner as during mining. A discharge permit is in placed with CDPHE for this activity.

Phase 1 of reclamation involves the backfilling, topsoiling, and revegetating of the pit to create a groundwater lake. The areas surrounding the lakes in the south of the site will be vegetated to be converted to wildlife habitat. The area in the north of the site being used as a processing area will be reclaimed to be used for industrial purposes following the closure of the mine. Phase 2 reclamation will be similar with the only difference being the size of the lake and industrial area. Table E-3 breaks down the reclamation areas by type for both phases.

Reclamation Type	Phase 1	Phase 2
Groundwater Lake	8.9 acres	15.4 acres
Wildlife Habitat	10 .1 acres	11.7 acres
Industrial Area	9.9 acres	1.7 acres

Table E-2 – Reclamation Areas by Phase

2. Topsoil Replacement

Topsoil will be replaced in a single six-inch lift across all disturbed areas at the Bennett Pit. It will be replaced on the mining slopes to 10 feet below the lake water level. 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 phased reclamation plan. All areas will be disced following topsoil replacement to aid in root penetration.

3. Site Access

All internal haul roads outside the pit will be graded and seeded to fit the post-mine land use as wildlife habitat or industrial area. The site access haul road from US-50 will remain as is to retain access to the site.

4. Industrial Area

The industrial area will be covered with 4-6 inches of gravel from the active product stockpiles at the end of either Phase 1 or Phase 2.



5. Reclamation Timetable

The sequence and timing of reclamation can be seen in Table E-3 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 continues to ensure limited disturbance.

Table E-3	- Reclamatio	n Timetable

Description	Time Required
Develop and mine phase 1	5 years
Develop and mine phase 2	15 years
Backfill, topsoil, and revegetate remainder of the site that is unreclaimed	1 year
Vegetation monitoring	2 years
Total	23 years

6. Revegetation Plan

The final revegetation plan at the Bennett Pit is unchanged from the currently approved one. It will leave a post mine land use of wildlife habitat surrounding the lakes. The recommended seed mixes to be used are as follows:

6.1. Upper Slope Seed Mix – Outside Top of Pit Slope

<u>Species</u>	Pounds of pure live seed per acre (drilled)
Jose Tall Wheatgrass	10.2
Alkalai Sacton	0.6
Yellow Sweet Clover	2.8
Sand Dropseed	0.2
Crested Wheatgrass	4.0
Total	17.8

Broadcast seeding will be done at double the drill rate

6.2. Lower Slope Seed Mix - Top of Pit Slope to Water Level

<u>Species</u>	Pounds of pure live seed per acre (drilled)
Reed Canarygrass	5.3
Red top	0.3
Total	5.6
Broadcast seeding will be done at double t	he drill rate



7. Post-Reclamation Site Drainage

The site will drain internally following reclamation in all areas except for the area southwest of the currently reclaimed groundwater lake which will drain to the west.

8. Revegetation Success Criteria

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

9. Weed Control

The weed control plan is unchanged from the weed management plan described in Technical Revision 4 employed in August 2017.

10. 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 the 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 Plan Map

Exhibit F

Map F-1 Phase 1 Reclamation Plan

Map F-2 Phase 2 Reclamation Plan





