COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Colony Shale Oil Project	**MINE/PROSPECTING ID#:** M-1980-047	**MINERAL:** Oil shale	**COUNTY:** Garfield
INSPECTION TYPE: Surety-Related Inspection	**WEATHER:** Clear	**INSP. DATE:** October 23, 2023	**INSP. TIME:** 08:30
OPERATOR: Caerus Cross Timbers LLC	**OPERATOR REPRESENTATIVE:** Jason Eckman	**TYPE OF OPERATION:** 112 - Hard Rock Regular Operation	
REASON FOR INSPECTION: Surety Related	**BOND CALCULATION TYPE:** Partial Bond	**BOND AMOUNT:** $9,500,000.00	
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** DRMS	**JOINT INSP. AGENCY:** None	
INSPECTOR(S): Amy Yeldell	**INSPECTOR'S SIGNATURE:** Amy Yeldell	**SIGNATURE DATE:** November 6, 2023	

GENERAL INSPECTION TOPICS

The following inspection topic(s) were identified as having a Problem (PB), which includes correction actions and a deadline whereby the Operator must demonstrate compliance with the conditions of the Permit and the requirements of the Act and Rules. Failure to address the corrective actions by the deadline may cause the Division to escalate the Problem to a Possible Violation (PV) and schedule the issue for formal hearing before the Mined Land Reclamation Board (Board).

(AR) RECORDS---------- Y	**(FN) FINANCIAL WARRANTY-------- Y**	**(RD) ROADS---------- Y**
(HB) HYDROLOGIC BALANCE---------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- NA**
(PW) PROCESSING WASTE/TAILING---- N	**(SF) PROCESSING FACILITIES------- N**	**(TS) TOPSOIL---------- Y**
(MP) GENL MINE PLAN COMPLIANCE- Y	**(FW) FISH & WILDLIFE---------- N**	**(RV) REVEGETATION---- Y**
(SM) SIGNS AND MARKERS---------- N	**(SP) STORM WATER MGT PLAN---- Y**	**(RS) RECL PLAN/COMP-- PB**
(ES) OVERBURDEN/DEV. WASTE--------- N	**(SC) EROSION/SEDIMENTATION--- Y**	**(ST) STIPULATIONS------- Y**
(AT) ACID OR TOXIC MATERIALS------- Y	**(OD) OFF-SITE DAMAGE----------NA**	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

CORRECTIVE ACTIONS

INSPECTION TOPIC: Reclamation Plan

PROBLEM: The current reclamation plan needs to be updated and clarified pursuant to C.R.S. 34-32-116 (1). The operator must follow the approved reclamation plan or provide sufficient information to describe or identify how the operator intends to conduct reclamation.

CORRECTIVE ACTIONS: The operator shall submit a Technical Revision, with the required $216 revision fee, to update and clarify the current approved reclamation plan to reflect existing and proposed activities by the corrective action date.

CORRECTIVE ACTION DUE DATE: 02/05/2024

OBSERVATIONS

This inspection was conducted as part of the Colorado Division of Reclamation, Mining and Safety's (Division) normal monitoring program. The Colony Oil Shale Project is a Hard Rock 112 permitted site located northwest of Parachute Colorado in Garfield County. The entire mine was inspected, excluding the underground areas. Colony consists of 5,712.05 acres with a maximum disturbance of 527 acres. The Division currently holds a financial warranty in the form of a corporate surety in the amount of $9,500,000.00. Amy Yeldell of the Division conducted the inspection. Jason Eckman and Ed Seymour represented Caerus and accompanied the Division on the inspection.

Site Specific Observations:
* Indicates areas minimal reclamation tasks remain and/ or where final reclamation has been achieved and areas are eligible for release. Please clearly indicate the acreages associated with any released areas, especially if only a section of an areas is eligible. Accuracy of tracking areas will be crucial as the site looks towards final reclamation.

*Area 4 Alternate access road. The road area is self-reclaimed and only identifiable by white PVC posts delineating affected lands. Vegetation consists of mature sage and perennial grasses (Photo One). There is a gate and jersey barrier that needs to be removed. Once removed a portion of Area 4 is eligible for release.

*Area 4 Ponds #3, 4 and 5. Sediment catchment ponds are inundated with water (Photos Two and Three). The banks of the ponds have diverse and well-established vegetation. Vegetation consists of trees, shrubs forbs and grasses with no noxious species observed. The ponds are within a ravine along a creek, slopes are steeper than a 3H: 1V however blend naturally with surrounding topography. No visible signs of erosion were observed. The spillway of the pond appears to be armored with concrete. Pond 3 has a short access road that is a two track (Photo Four). This area should be ripped and reseeded. The Division also recommends placing boulders or some other sort of obstruction along the road to detour vehicle access.

Area 4 Lower Building Area. Within the area to the west side of the road are three large buildings and three smaller shed type structures (Photo Five). Additionally, there is a 1,000-gallon propane tank (empty). A diesel tank (empty) and a generator located within a shed are in secondary containment (Photo Six). The containment under the fuel had water inside. There is a weather station. Above the laboratory area accessed by a separate road is a fueling area. There is a concrete secondary containment structure with two fuel tanks inside. The diesel

tank has fuel and appears to be in use while the gasoline is empty. The containment has water and needs to be pumped out (Photo Seven). There is also an empty plastic secondary containment structure to temporarily place items within. If this structure is going to be used in the future it also needs to be pumped out. A trash roll-off was also located in this area and was in use. Division staff entered most of the buildings. The laboratory still has lots of historical equipment inside. Caerus has some equipment for going underground stored inside as well. The Records Storage building is mostly empty aside from an ATV, fertilizer, and old air monitoring equipment (Photo Eight). This building is being utilized by their ranch manager. Division staff did not enter the core shed. There are also several single electrical poles and wire connecting Area 4 and 5. This power is not tied into the power grid (Xcel Energy). During the inspection staff discussed leaving some of the buildings for continued use. This will require updating the Reclamation Plan and providing documentation from the County that they are permitted to remain postmining. Regardless, the Division will require information regarding their construction. For each building, please provide the dimensions and building material type, foundation thickness (reinforced?). And for reclamation if a building is to be removed indicate where the demolished structure will go and if the foundation will be removed or backfilled.

Area 19A Power Pole Corridor. Additional single electrical poles and wire are located within area 19A. This area is largely self-reclaimed and is mostly evident based on the overall height/size of vegetation relative to adjacent vegetation. These poles and wire need to be removed. In updating the Reclamation Plan, please provide the Division with the pole count for this area. Some spot seeding may also be required after their removal. A pull off is located within Area 19 and is currently being used for miscellaneous storage and parking (Photo Nine). This area will need to be ripped and seeded. The Division also recommends blocking it off to detour future use.

Area 5 Upper Building Area. There are three larger buildings/ shops located in this area. The electrical poles continue into this area from Area 4 and will need removed. Additionally, there is a smaller yellow generator building and a 1,000-gallon propane tank. All three of the buildings are currently in use to store road maintenance equipment (Photo Ten). As previously mentioned, this will require updating the Reclamation Plan and providing documentation from the County that the buildings are permitted to remain postmining. The Division will require information regarding their construction and details regarding removal if it will not remain postmining.

Area 5 Pullout. The northern portion of area 5 is a pull out just before the mine bench. There is a large white empty tank presumed to be for water storage (Photo Eleven). Caerus indicated they do not use it. This item should be removed. There is a flat area located at the base of the scree path above the creek. It is unclear if this was affected for mining purposes or just to keep rocks from entering the creek. There are random holes and berms along this graded area that need contoured. The Operator should attempt to blend and smooth while putting an emphasis on directing water to avoid erosion into the creek. Once graded the area should be seeded. Shrubs and other deeply rooted species will likely favor this area over grasses due to the rocky nature of the soils.

Lower 6B pad area. There is a plugged and abandoned gas well located within this bench. Additionally, there is what appears to be an open monitoring well with submersible pump. This well should be abandoned if not required for monitoring. Miscellaneous wire and culverts are being stored in the northeast corner of the pad (Photo Twelve). This material is slowly being removed over time. Mr. Seymour indicated that this pad has been seeded several times. Hydromulch material was observed. Some portions of the pad have well established shrubs but overall, the site is lacking perennial grasses and other early seral species. The windsock and electrical for the helicopter pad remain in place along the face of the highwall. The west or entrance of the pad appears to be frequently used for parking/ pull-off of the main road (Photo Thirteen). If Caerus would like to leave this area, they will need to update the Reclamation Plan to reflect the areas where vegetation will not be

established. The parking vs vegetation areas should also be delineated on the ground.

*19B / 6A bench road. There is a bench above the main road that goes from the first switch back to above the portal entrance. This area is used to access the bench for rock fall mitigation. There is no vegetation or soils in this area.

6B Upper - Mine Bench. The current Reclamation Plan calls for removing the buried 6 ft culvert that carries the creek from the dam under the benches and returns it to the original channel further downstream. It was discussed that this may not be feasible or the best solution. Please provide sufficient documentation to support the proposed post-mining land configuration of the mine bench and creek. The electrical for the mine lights are located within the bench and buried. The portals currently have a partial cinder block wall with a chain link fence door (Photo Fourteen). The northern portal is draining, the water is then infiltrating into the bench. The portals will require final sealing/closures. The Division recommends referencing the IMP Bid book for reference. On the north side of the bench is a ventilation shaft that connects to the decline (Photo Fifteen). This also served as the secondary escape way. This feature will also need to be sealed upon completion of final reclamation. There also appears to be several abandoned wells located on the bench. Please provide the Division with documentation of the well construction and abandonment.

8B Summit Laydown Yard. This is a graveled pad located on top the ridge. The building has been removed but there are two foundations that remain on site. Given that nails stick up it is impractical to leave it in place. Within the revised Reclamation Plan address this feature. There is also a weather station and solar panels on the southwest corner of the pad (Photo Sixteen). If this feature cannot be repurposed provide details for its reclamation. The perimeter of this pad will need to be pulled back to help blend. Anything that is not significantly graded will require decompaction. The Operator also discussed not topsoiling this area given the cost to haul topsoil in. Justification beyond cost and a sound alternative must be provided to ensure reclamation success.

Area 10B. This area is largely self- reclaimed and mostly comprised of perennial grasses. A large culvert goes under the road to direct drainage into the Davis Gulch Dam. There is also a sediment pond with water and a spillway. The slope, though steeper than a 3H:1V is stable and well established with vegetation. Some minor grading will be required where area 15B/16B intersects 10B (Photo Seventeen). There is also an abandoned well in the rip-rap spillway area.

*Area 10D Topsoil Stockpile. These stockpiles were placed on the side of a hill and appear to be natural and blend with surrounding topography (Photo Eighteen). Given the well-established vegetation and the steep slope the Division would advise against using these stockpiles if sufficient quantities of topsoil are available from the other locations. This area will likely be extremely difficult to reclaim if redisturbed.

Area 10C Loop Road. There are several wells located on the north side of the loop road (Photo Nineteen). The Division and Caerus were unclear what the purpose of these wells were and if it was related to mining activities. If they are mining related, they will need to be abandoned. Please provide the Division with an inventory of the wells, locations, and details (construction and abandonment). There were two additional monitoring wells on the south side of the loop road. Please provide information of the construction and abandonment of these wells as well. Overall vegetation in this area blends naturally. Only touch up seeding from the abandonment of the wells will be required.

Area 12 and 14 Topsoil Stockpiles. The two main topsoil stockpiles are located northwest of the disturbed lands. These stockpiles contain an extraordinary amount of salvaged material. Unfortunately, they were piled up high leading to compaction and a degradation of quality for the bottom portions of the stockpile. The exterior of

these stockpiles contains well established and diverse perennial grasses. When utilizing stockpiles, the Division would recommend disturbances be consolidated or minimized to limit the exposed soil that will require additional reclamation.

Area 16A LaSal Laydown. This flat pad area has a highwall that can be cut/fill along the west side. The Highwall is approximately 200 yards by 40 ft tall at a 1H: 1V slope. The perimeter of the pad will need to be pulled back since the entire pad appears to be built up on the ridge. Located on the pad are several foundations that will require removal (Photo Twenty). The buried water pipeline will need to be plugged. There was also a monitoring well adjacent to the jersey barriers. If no longer needed form monitoring it will also need to be abandoned.

Area 18D, E and F North Valley Fill. There is an upper and lower haul road associated with this area that will need to be reclaimed. The majority of the northwest side of this area is cut/fill general dozing (Photo Twenty-One). The northeast edge of disturbance will likely need to be pulled back. Areas 18E and F have lots of random highwalls and pits that will need general shaping. There is one large overburden pile located within this pad. A foundation is also located on the west side below the back haul road. The entire pad area will need to be decompacted and topsoiled prior to revegetation.

Area 18C Gondola. This area is located along the access road to the ESR. It generally has steep slopes that have volunteer vegetation. Where possible or vegetation is lacking additional civil work should be conducted.

*ESR Test Plots. This area has been used for long term restoration research related to oil shale. Several research/test plots are located on the site. There is a weather station and lysimeter as well. There is a 1000-gallon propane tank on site that is used to power equipment as needed. This area is of great value and the Division is not opposed to its continued use independent of the mine (Photo Twenty-Two). There is no mention of this area in the Reclamation Plan, please clarify the post-mining land configuration.

Area 18E. The floor has great vegetation establishment of shrubs. Unfortunately, the walls are approximately a 1H: 1V and will need to be reduced.

Area 18A Switch yard. This is where the transmission lines terminate. Electrical equipment needs to be removed (Photo Twenty-Three). The South side of the pad area needs to be pulled back. Additional sloping and general contouring is necessary on the northwest side.

Area 9 Davis Gulch Dam. The full dam across the gulch was never constructed. A smaller cofferdam that appears to function as a sediment pond was constructed to the north in preparation for the final dam. The gulch was largely stripped of loose soil down to rock. More than thirty years later soils and rock have sloughed in areas and vegetation has volunteered. A switch back road extends to the south then cuts back north to the base of the current dam (Photo Twenty-Four). A gravity fed water horse, supplies water for dust suppression. It is located at the end of the road drawing its water from the pond above. Clarify in the revised Reclamation Plan if this road will remain and if any additional reclamation will take place.

Acid And Toxic Materials:
All fuels observed on site were stored within secondary containment. It is noted that several of the secondary containment structures had water in them and should be pumped out.

Explosives:
Explosives are not used in conjunction with this mining operation

Financial Warranty:
The Division currently requires a financial warranty amount of $9,500,000 for this site. The Division is in the process of reviewing the adequacy of the current financial warranty. Given the inadequacy of the current Reclamation Plan the Division is unable to complete its review without additional information. See the corrective actions regarding updating the Reclamation Plan. Upon completion of the updated Reclamation Plan the Operator shall also provide an updated Exhibit L which provides reclamation costs for the remaining items.

Hydrologic Balance:
Water was observed discharging from the northern portal on the mine bench (Photo Fourteen). Please specifically address how this discharge will be addressed within the revised Reclamation Plan. Upon completion of final reclamation, the Operator will be required to provide documentation assuring that all wells have been abandoned or use transferred.

Reclamation Success:
Given that the mine was not fully developed the current reclamation plan did not take into account reclaiming a partially constructed site. Additionally, several aspects of the reclamation plan were promised to be submitted at a later date and have yet to be clarified. Overall, the current reclamation plan is inadequate to clearly describe how final reclamation will be carried out at this site. This is cited as a problem pursuant to C.R.S. 34-32-116 (1). The operator shall revise the Reclamation Plan in the form of a Technical Revision, with the required $216 revision fee by the corrective action due date. This revised plan shall include a narrative describing how each area specifically will be reclaimed to achieve the post-mine land use and include updated Reclamation Plan Maps to visually depict the final land configurations.

Revegetation:
Several areas have volunteer vegetation resulting from this site being inactive for a number of years. Areas that were previously reclaimed appear to have a good establishment of desirable vegetation. The Operator is encouraged to preserve previously reclaimed areas where possible and only grade/contour the areas where necessary. Very few noxious weeds were observed. Post reclamation noxious weed management treatments will likely need to be initially increased.

Topsoil:
Several of the topsoil piles were salvaged a number of years ago and the quality of soil has likely degraded. The Division would encourage soil sampling prior to use for final reclamation purposes.

Responses to this inspection report should be directed to: Amy Yeldell at the Division of Reclamation, Mining and Safety, Rm 215, 1001 E 62nd Ave, Denver Co 80216. Direct contact can be made by phone at 303-866-3567 Ext 8183 or via email at amy.yeldell@state.co.us

Inspection Contact Address
Jason Eckman
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Parachute, CO 81635

Enclosure

EC:
Travis Marshall, Senior EPS, Grand Junction DRMS
Ed Seymour, Caerus

PHOTOGRAPHS

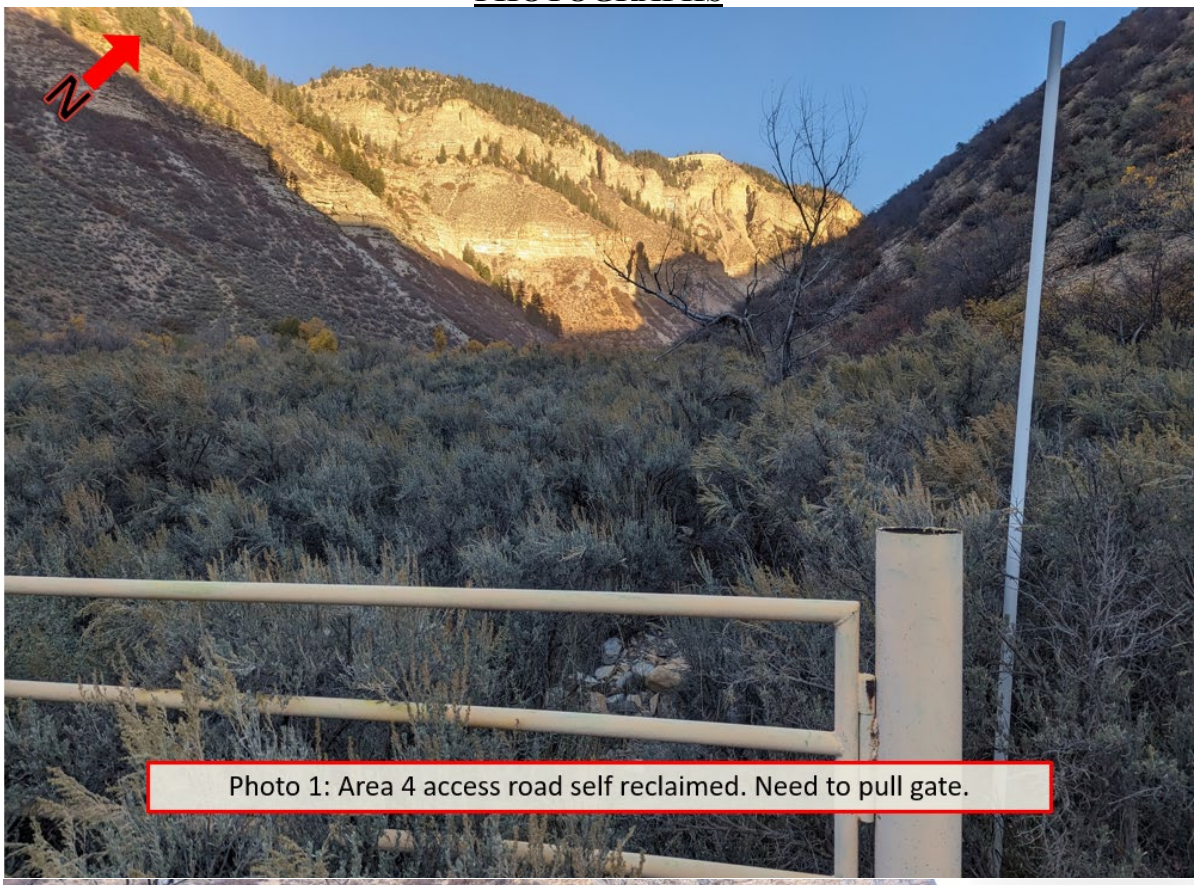

Photo 1: Area 4 access road self reclaimed. Need to pull gate.

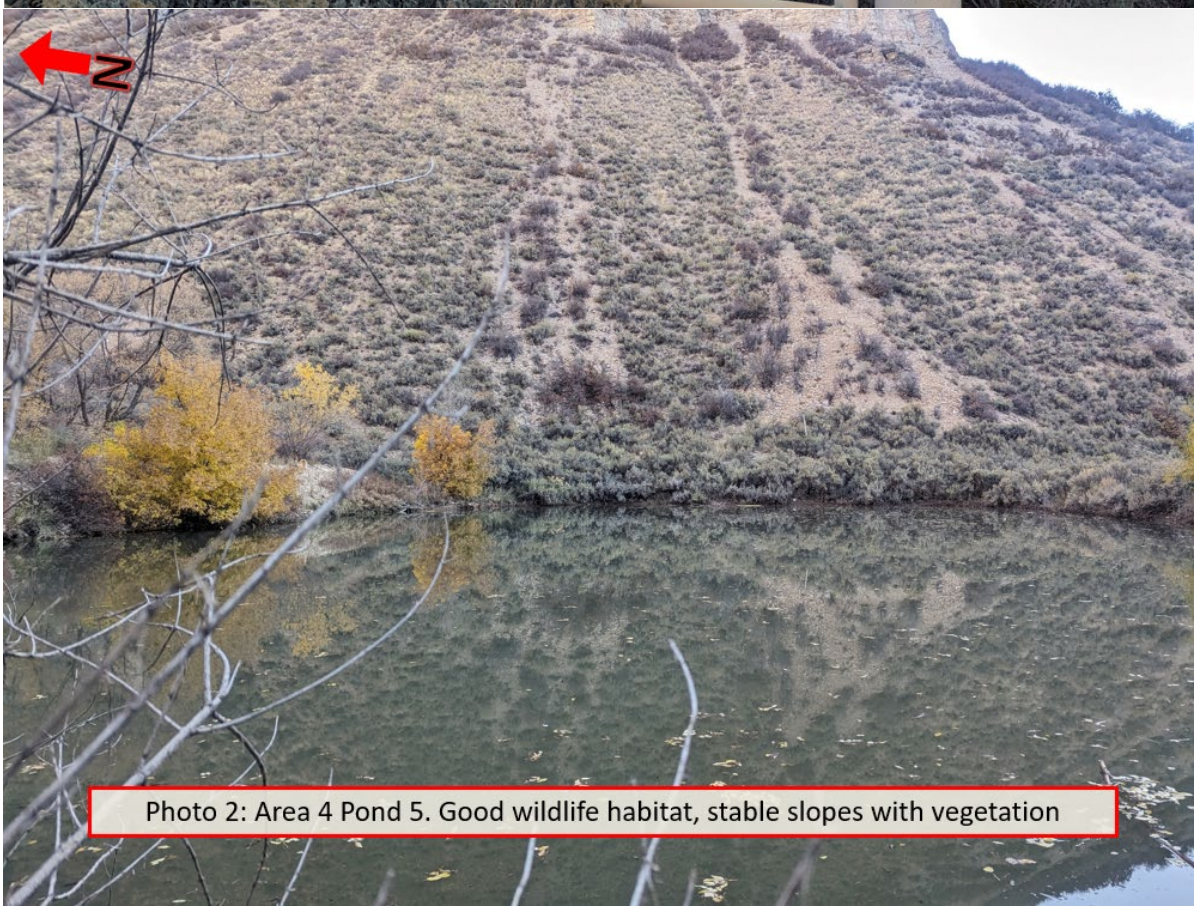

Photo 2: Area 4 Pond 5. Good wildlife habitat, stable slopes with vegetation

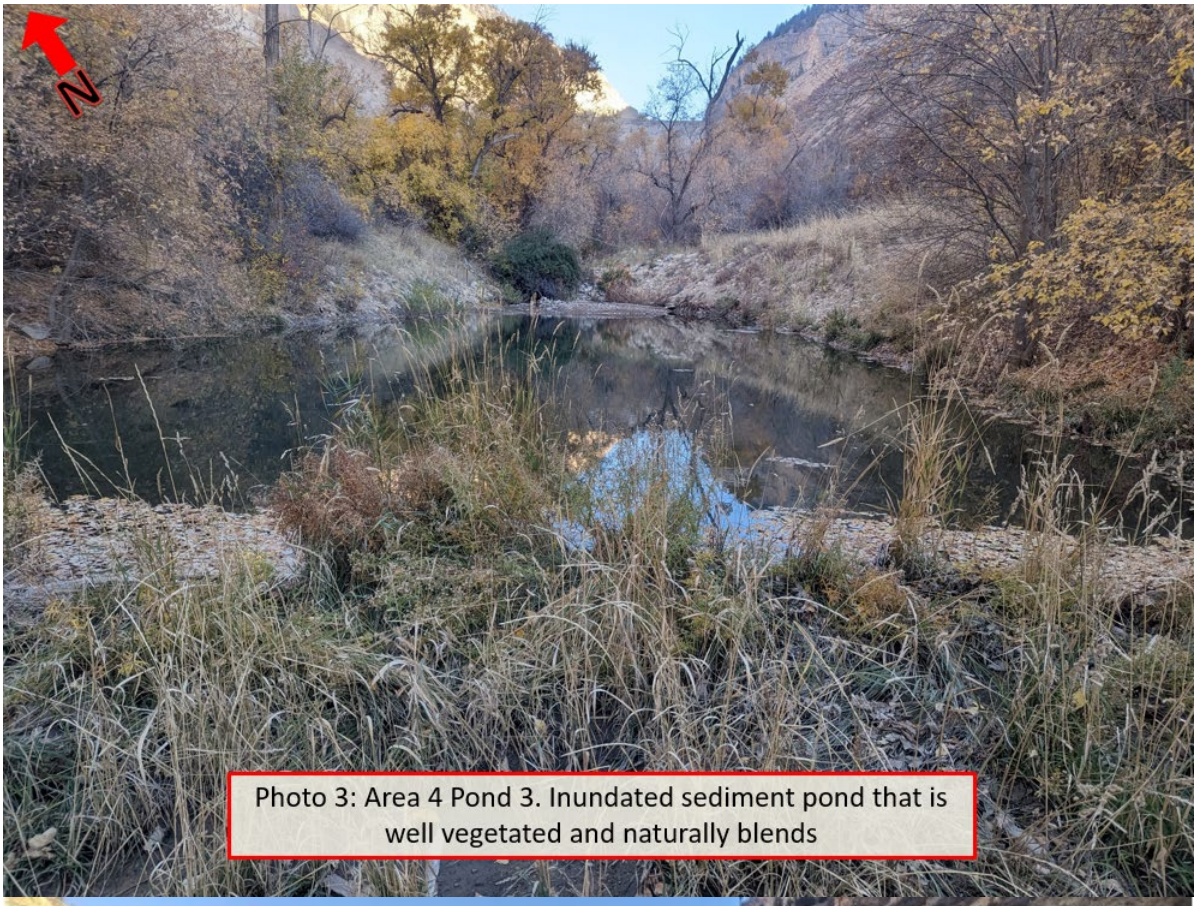

Photo 3: Area 4 Pond 3. Inundated sediment pond that is well vegetated and naturally blends

Photo 4: Area 4 Pond 3. Access road needs reclaimed

Photo 5: Area 4 Lower Building Area

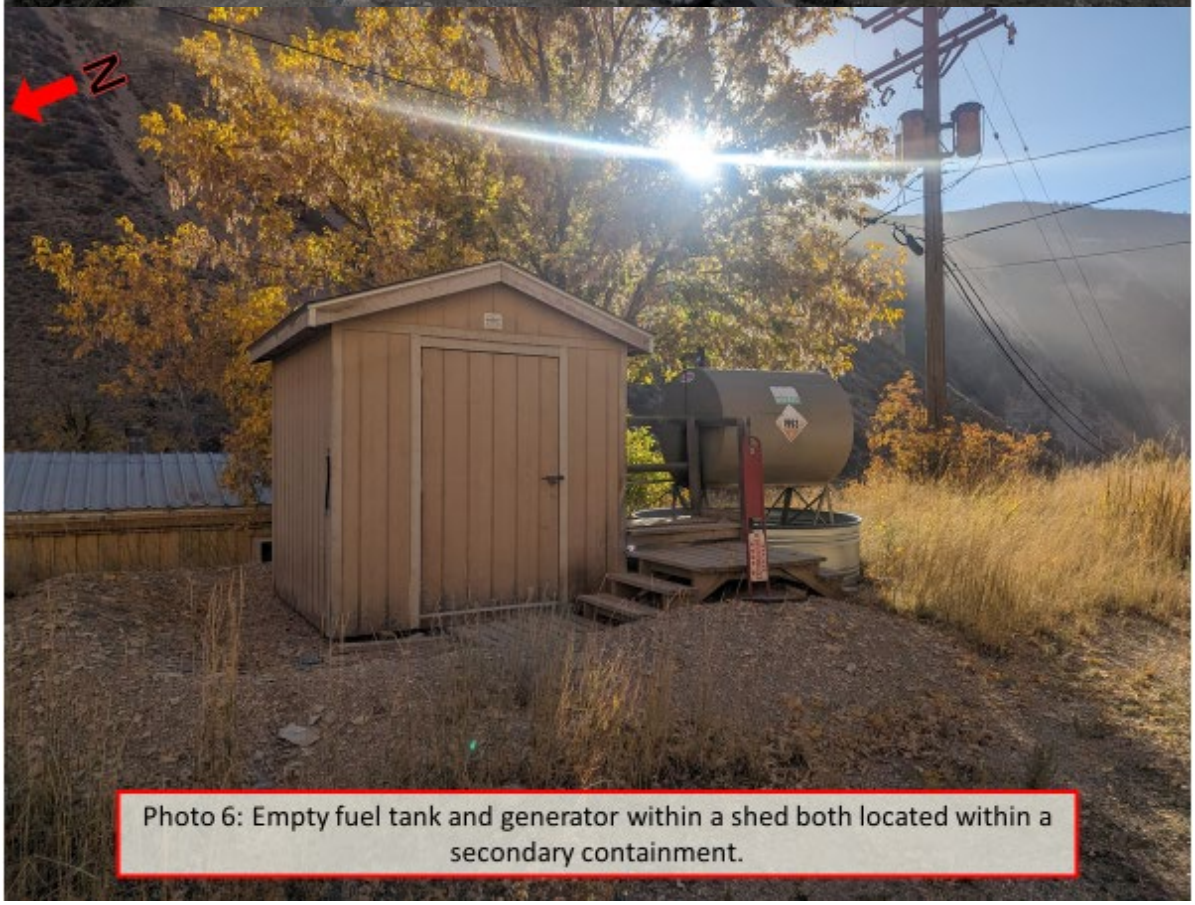

Photo 6: Empty fuel tank and generator within a shed both located within a secondary containment.

Photo 7: Secondary containment structure that needs water removed, diesel tank is in use.

Photo 8: Inside of the Records Storage building, currently being used my ranch manager for storage.

Photo 9: Misc. parking and storage within Area 19A.

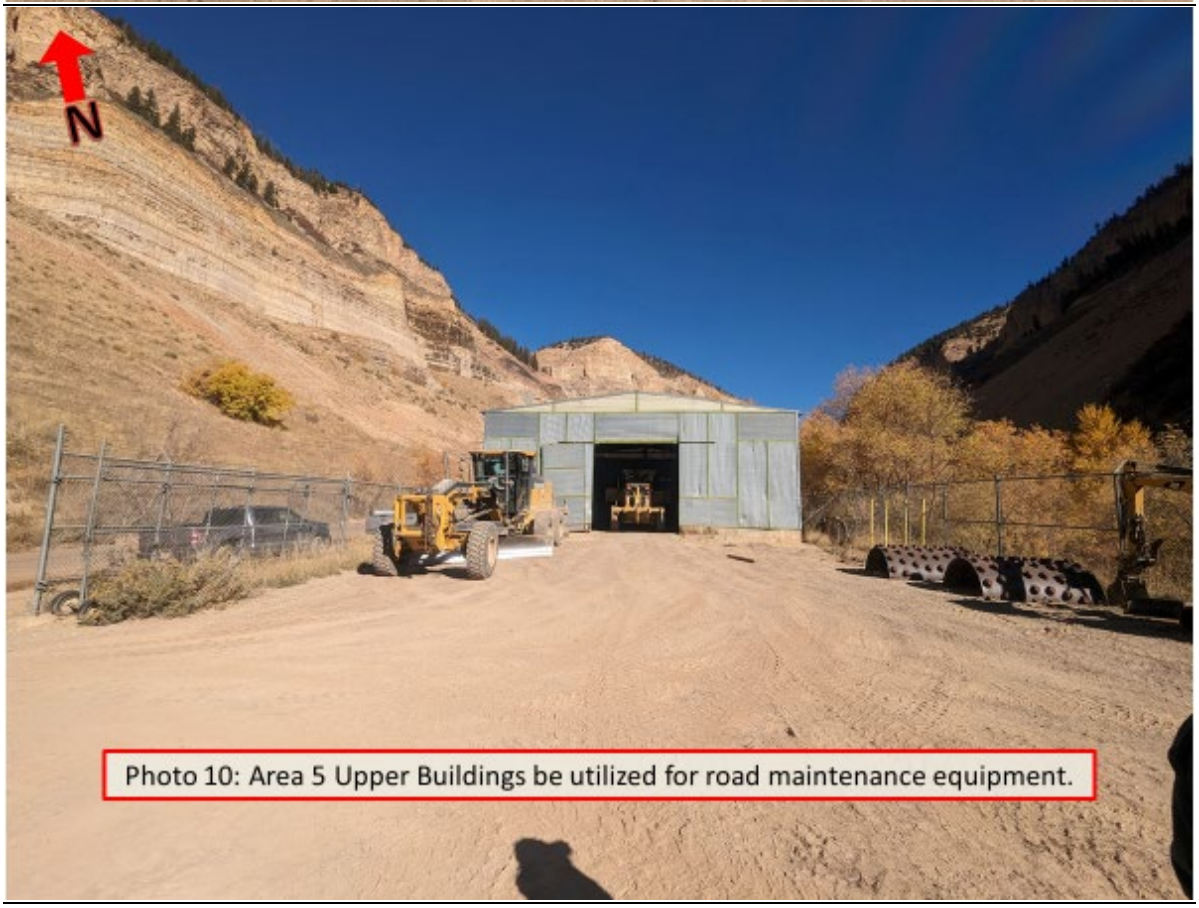

Photo 10: Area 5 Upper Buildings be utilized for road maintenance equipment.

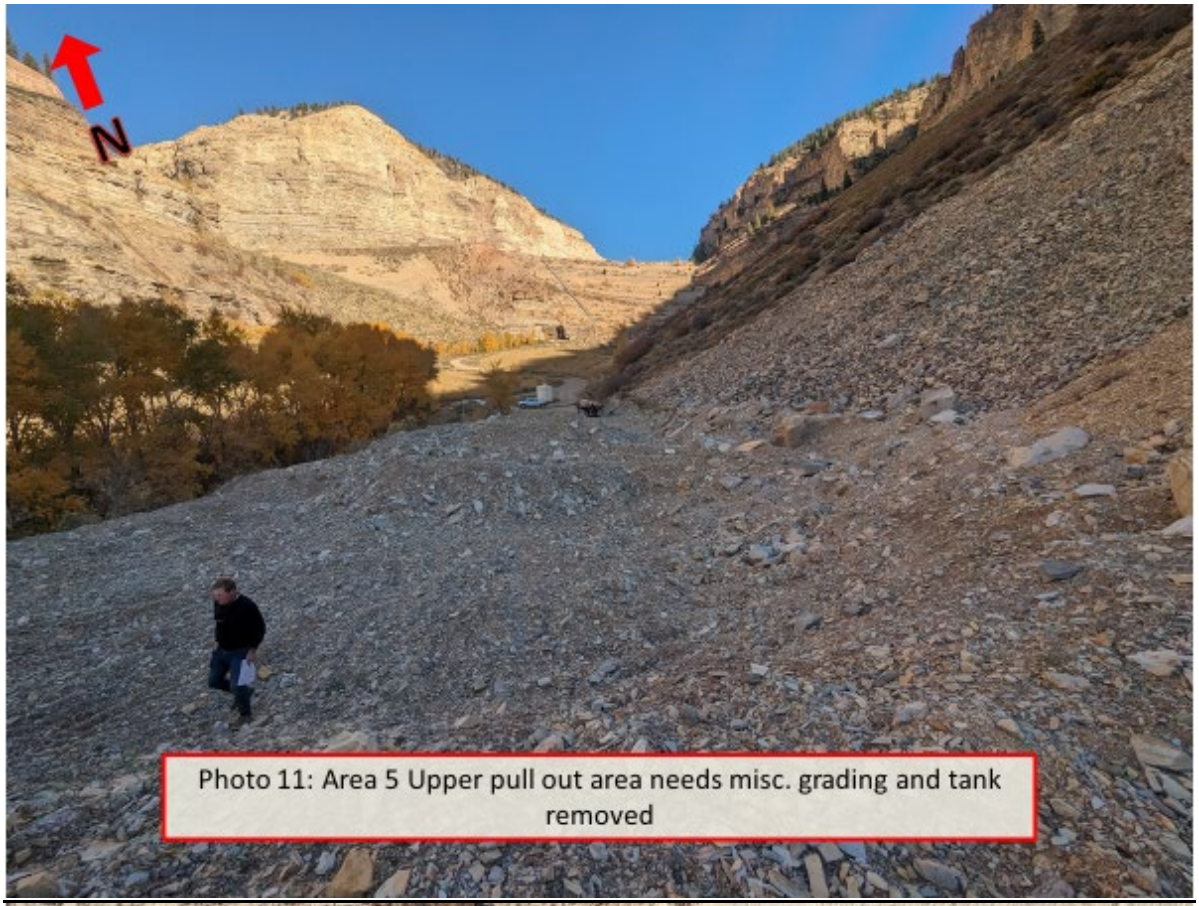

Photo 11: Area 5 Upper pull out area needs misc. grading and tank removed

Photo 12: Area 6B lower pad misc. metal storage

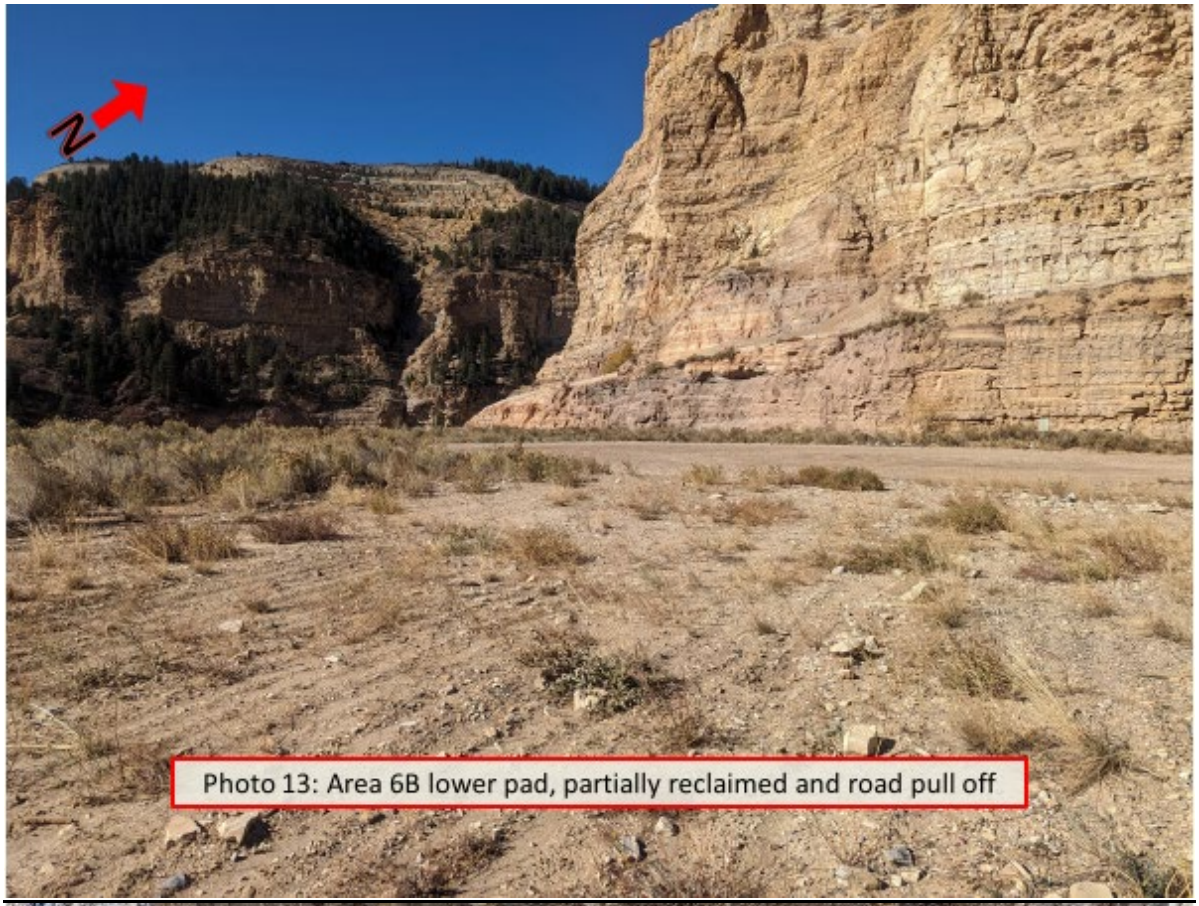

Photo 13: Area 6B lower pad, partially reclaimed and road pull off

Photo 14: Area 6B northern mine portal with discharge.

Photo 15: Area 6B vent shaft/secondary escape off of the decline

Photo 15: Area 8B weather station remains in place

Photo 17: Area 10B intersects with 16B, pond needs additional grading

Photo 18: Area 10D reclaimed topsoil stockpiles

Photo 19: Area 10C Misc. wells scattered throughout valley

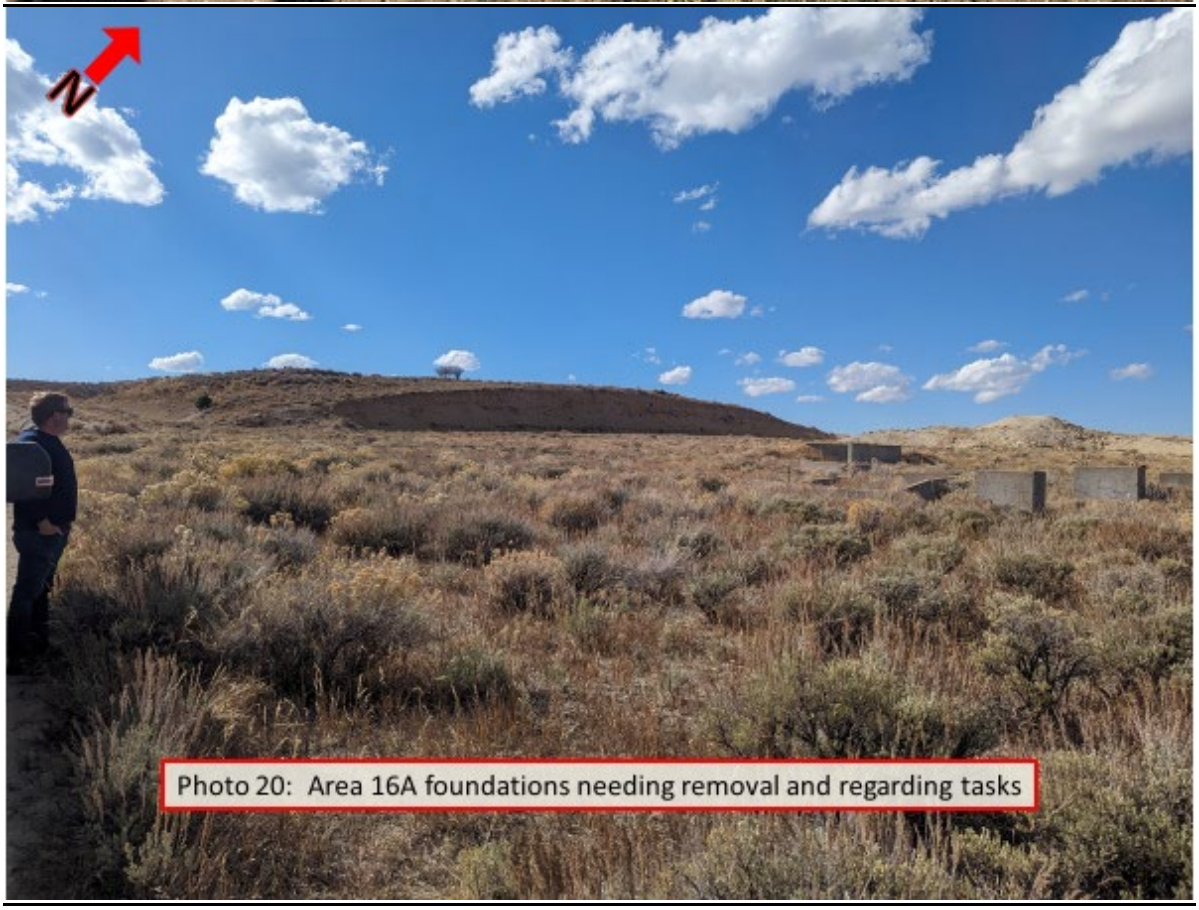

Photo 20: Area 16A foundations needing removal and regarding tasks

Photo 21: Area 18 E/F General grading and decompaction of facility areas

Photo 22: ESR Test Plots, ongoing research self reclaimed and stable

Photo 23: Area 18A utilities need to be removed.

Photo 24: Area 9 remaining coffer dam and water haul road.