MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
HARD ROCK MINING SECTION, MINING BUREAU
OPERATING PERMIT – FIELD INSPECTION REPORT

Permittee: Montana Resources, LLC							Inspection Date: September 4, 2024				
Operating Permit #: 00030			Project: Montana Resources-Continental Mine Complex				County: Butte-Silver Bow				
Nearest City or Town(s): Butte											
Inspector(s): Garrett Smith							Permittee Rep(s): Jeremy Fleege, Mark Thompson				
Agencies w/overlapping permit jurisdiction:		USFS		BLM	✕	Other (EPA)		None			
Minerals: Copper, molybdenum, minor silver											
Status:	✕	Active		Inactive		Suspended		Other			
Weather: Mostly sunny and smoky, high temp 81°F											

Type of Operation:		Purpose of Inspection:	
✕	Open Pit		Initial (Pre-permitting)
	Underground	✕	Regular Compliance
	Placer		Amendment # MR#
✕	Leach- *Leach pads near HSB not receiving solution*		Complaint Received
✕	Tailings Storage Facility: [✕] Active or [ ] Inactive		Bond Release
	Mill	✕	Other (tour, data collection, baseline, TSF, etc.)- *TSF records review is attached*
	Other: (surface rock picking, trenching or excavation)		NON issued

INSPECTION CHECKLIST

(N/O = Not Observed, N/A = Not Applicable) *Additional notes are italicized*

GENERAL:							
	Yes		No		N/O		N/A	
	✕							All mining-related disturbances within permitted and bonded areas
							✕	Incremental bonding requirements have been submitted
	✕							Following approved mining plan and permit conditions
	✕							Following approved monitoring plans
	✕							Reclamation concurrent with mining: *Ongoing reclamation on TSF West Embankment*

MATERIAL HANDLING:							
	Yes		No		N/O		N/A	
	✕							Soil salvage according to plan
	✕							Soil stockpiles properly maintained: *Soil salvaged from N/NW of TSF West Embankment, some direct-hauled and placed on embankment*
	✕							Special handling/stockpiling of materials consistent with plan

FACILITIES:							
	Yes		No		N/O		N/A	
	✕							Construction reports properly filed
	✕							Acceptable liner integrity
	✕							Tailing impoundment/heap leach/dump design as approved
	✕							Road construction as approved

WATER CONTROLS:							
	Yes		No		N/O		N/A	
	×							Erosion-control measures concurrent with mining, BMPs in place: *Maintenance and repairs to follow Erosion Control Plan as needed.*
	×							Erosion/sedimentation mitigations acceptable
	×							Culverts installed and maintained as approved
	×							Diversions maintained and functioning as approved
	×							Process/storage/settling pond(s) constructed, operating, and maintained
	×							Acid rock drainage controlled
	×							Adequate freeboard in all solution storage and process facilities
AIR QUALITY:							
	Yes		No		N/O		N/A	
	×							Acceptable air quality: *No significant fugitive dust observed. Water is sprayed on the roads and multiple strategies are used on the tailings*
OTHER:							
	Yes		No		N/O		N/A	
	×							Noxious weeds controlled
	×							Wildlife mitigations in place and functioning
							×	Cultural resource mitigations properly implemented
			×					Water sample(s) taken
			×					Materials sample(s) taken
	×							Photos taken
	×							Are revisions or amendments anticipated in the next year? *Potential disposal of offsite waste (BPSOU), developments for critical mineral recovery, future amendment for TSF expansion*
			×					Is a comprehensive 5-year bond review due in the next year? Date of next 5-year bond review: *Final due in January 2026*
								Other:

DISCUSSION: DEQ staff arrived at Montana Resources (MR) offices at 1:00 PM. A preliminary meeting was held to review the goals for the inspection, which included a review of mining activities in the Continental Pit, Horseshoe Bend (HSB) area, and the Yankee Doodle Tailings Storage Facility (TSF). This inspection report also includes DEQ's review of TSF records and engineering oversight, in accordance with Section 82-4-381(4), MCA. **Compliance assistance and recommendations are provided in bold.**

Continental Pit and E East Layback

As documented in 2022 and 2023 inspections, MR observed areas of instability on the D East highwall in the Continental Pit during fall 2022. Revision MR22-002 allowed for additional disturbance and overburden removal to the east of the highwall (termed "E East"), to create a shallower slope on the rock face and limit future instability. DEQ took photos of this area from the Interstate 15 corridor before arriving at the mine office, detailing the condition of reclamation and revegetation on the East Dump Complex and the boundary of disturbance associated with the E East layback (Photos 1 through 8). The slopes appear stable and vegetation coverage is good across the dump complex, even with a relatively dry and hot summer. Periodic monitoring is being performed to evaluate revegetation success. **Rilling or erosion was observed in isolated, small areas on dump slopes and the access road to the Clear Water Ditch. As conditions warrant, these areas should be monitored and maintained according to the Erosion Control Plan.**

Disturbance and overburden removal has continued in the E East area (Photos 9 through 14). The blasting plan was modified through revision 23-003 to state that no blasting would occur within 500 feet of the Interstate 15 right-of-way

without prior approval from DEQ in consultation with the Montana Department of Transportation (MDT). However, blasting has not yet occurred within a distance that requires additional coordination and approval from DEQ and MDT. **MR anticipates that blasting within this buffer distance may occur over the next year, so DEQ recommends proactive communication and preparation for any modified blasting methods or traffic control that may be needed.**

The progress of mining across the Continental Pit and the exposure of a pronounced area of supergene enrichment in the D East area were observed on the way to the TSF barge access road (Photos 15 through 20).

TSF- Tailings Management and Reclamation

After passing by the ongoing construction of the "mega ramp" along the southeast side of the TSF (Photo 21), the TSF beach and pond were accessed along the barge access road (Photos 22, 27, and 28). Grading and alluvium placement have occurred on the upstream faces of the embankments, in accordance with Engineer of Record (EOR) recommendations (Photos 23, 29, and 30). The EOR will be conducting the annual facility inspection during the week of September 23rd. Construction of the embankment crests to an elevation of 6,450 feet has occurred across the facility, with the exception of a small area in the northwest corner (construction pending). Other aspects of construction, monitoring, and maintenance are being conducted in accordance with the Design Document, Tailings Operation Maintenance and Surveillance (TOMS) Manual, and annual recommendations from the EOR. See TSF Addendum for additional details.

A wide beach area is important to separate the tailings pond from the embankments, thus contributing to the safety and stability of the facility. There are 28 tailings discharge points around the TSF perimeter, which allow greater flexibility for selectively applying slurry in areas that might become dry and prone to blowing dust, and to control the sequential development of the beach and pond areas (Photos 24 through 26, 29 through 33). The tailings beach is saturated in many places and tracks are visible from vehicles spraying magnesium chloride for dust control, there was no blowing dust observed on this site inspection.

In late 2023, grading and soil placement occurred over approximately 21.7 acres on the downstream face of the West Embankment. These areas were seeded in early June 2024 and the initial vegetation has started to grow (Photos 34 through 36). The coverage looks good at this point, with very few weeds observed. The level of germination is a bit surprising, given the hot and dry conditions in the past few months. A small portion of the area (2.7 acres) was covered with variable depths of topsoil and organic amendments, as test plots for investigating alternative reclamation strategies (Photos 38 through 42). The test plot areas show comparable growth at this point and all areas will be monitored over the upcoming growing seasons. **If new methods are ultimately identified and proposed for completing the final reclamation, the Reclamation Plan must be revised accordingly. If test plot areas fail to meet the requirements for comparable stability and utility to adjacent lands (82-4-336(9), MCA), then additional reclamation work would be required (i.e. alluvium or soil placement) in order to comply with the approved Reclamation Plan and to be eligible for bond release.**

A small area was also reclaimed between the West Embankment Drain Extraction Pond and the North/Northwest Dumps (Photos 43 through 45). The lined pond has ample capacity to manage seepage and the pumping system is functioning well, with no major changes observed in flow rates or water quality in the past year of monitoring.

Horseshoe Bend (HSB), Seep 10, and Water Treatment

The next stop on the inspection was the HSB area overlook (Photos 46 and 47). DEQ approved Minor Amendment 011 in July 2022 for the construction of the HSB Rock Disposal Site (RDS) at the southern toe of the TSF. The RDS design includes a foundation drainage layer and engineered rock drains to capture and convey seepage flows from underneath the RDS, through a conveyance channel, and then to the management and treatment systems required under the Butte Mine Flooding Operable Unit (BMFOU) remedy. The placement of non-ore rock into the RDS will not occur until drain construction is complete (likely by 2025). As a component of Minor Amendment 011, the "Seep 10" that emanates on a bench above HSB has also been diverted into a channel, pond, and pipeline, to be routed around the future HSB RDS.

The construction of layered rock drains and seepage conveyance features continues, and the old precipitation plant has been completely demolished and removed (Photos 48 through 52). In some areas, a cross section of the multi-layer drain was visible, in addition to seepage emanating from the contact of the rock drain and underlying ground surface.

The HSB water treatment plant was then observed prior to leaving the area. MR continues to coordinate with a research group from West Virginia to evaluate the potential to recover rare earth elements (REE) or other critical minerals (CM) from the precipitated sludge produced by water treatment. See the DEQ inspection report from 9/28/2023 for additional details. **Potential funding for additional investigations and facilities is still pending, but DEQ recommends discussion in advance about the potential permit implications for REE and CM recovery and/or reprocessing systems. The operation, reclamation, and financial assurance for such systems should be considered with regard to overlapping BMFOU water treatment requirements.**

Other Permit Topics

- Plans continue to evolve for the disposal of material to be removed under Butte Priority Soils Operable Unit (BPSOU) activities. Potential repository locations are being evaluated by a siting committee, which include sub-aqueous disposal in the Berkeley Pit, a dry repository near Shields Avenue that would be removed from the mine permit boundary and transferred to Atlantic Richfield, and an additional location (on Atlantic Richfield property). **DEQ recommends further discussion with MR as these plans develop, to facilitate timely processing for any associated permit actions that may be required.**
- The next amendment application to raise the TSF embankments would require an updated Design Document and TOMS Manual, in addition to certification from the EOR and a review/conclusion report from the Independent Review Panel. These documents are in development and will be provided to the other parties as they're available. MR anticipates submitting the application to DEQ in late 2024 or early 2025. **DEQ recommends scheduling a meeting and/or site tour in this timeframe to provide an overview of the project and orient some of the department's newer staff.**

The inspection concluded around 3:30 PM, with a wrap-up of the concepts that were discussed during the inspection. There were no issues identified that need immediate attention, although DEQ anticipates additional discussion about the topics in bold.

Signature of Inspector(s):		Date:	9/18/2024
Signature of Reviewer:		Date:	9/18/2024
Copy reports to:	Permittee (c/o Mark Thompson, Montana Resources); File 00030.3		

Attachments:

- Photo Log
- Tailings Storage Facility (TSF) Addendum

Hard Rock OP Mining Section
Inspection Photo Log
Permit: 00030 Montana Resources

Inspector(s): Garrett Smith

Date: 09/04/2024

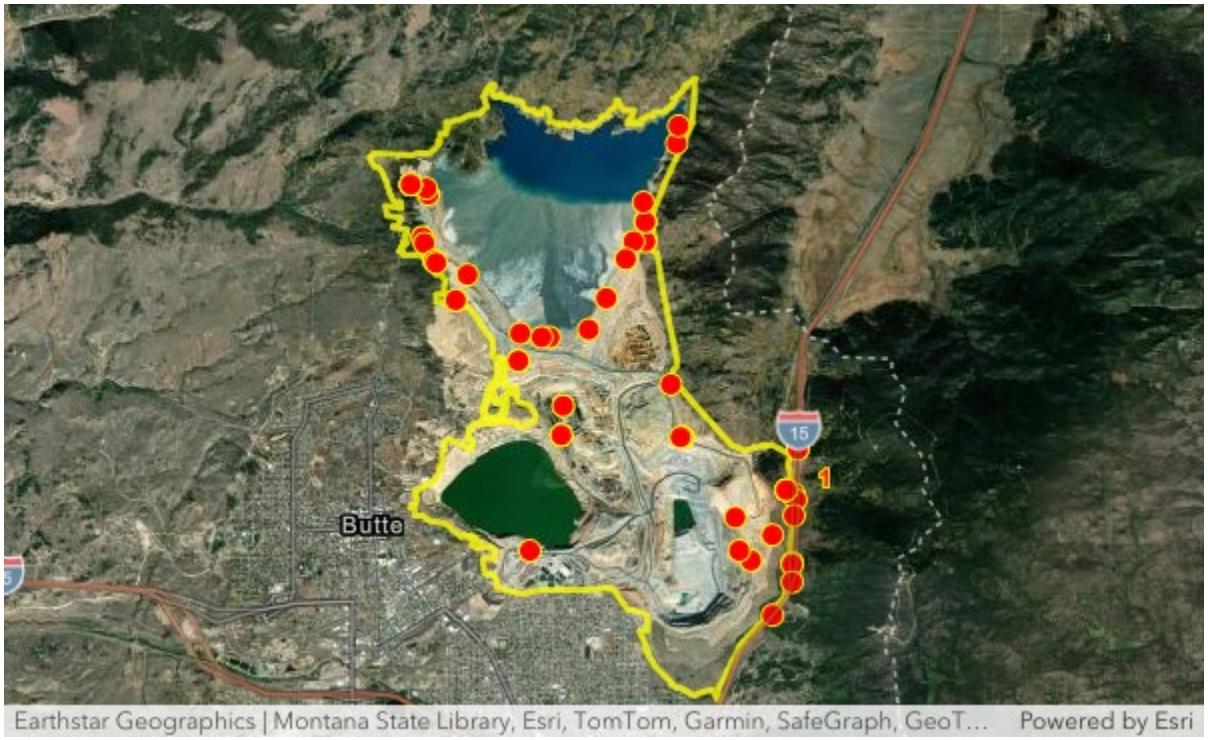

Photo #: 1
File: image-20240904-183704.jpg
Location: -112.46098, 46.02253
Date, Time: 2024/09/04, 12:37:04
Description: Disturbance associated with the E East layback area, reclamation on grassy slopes below.

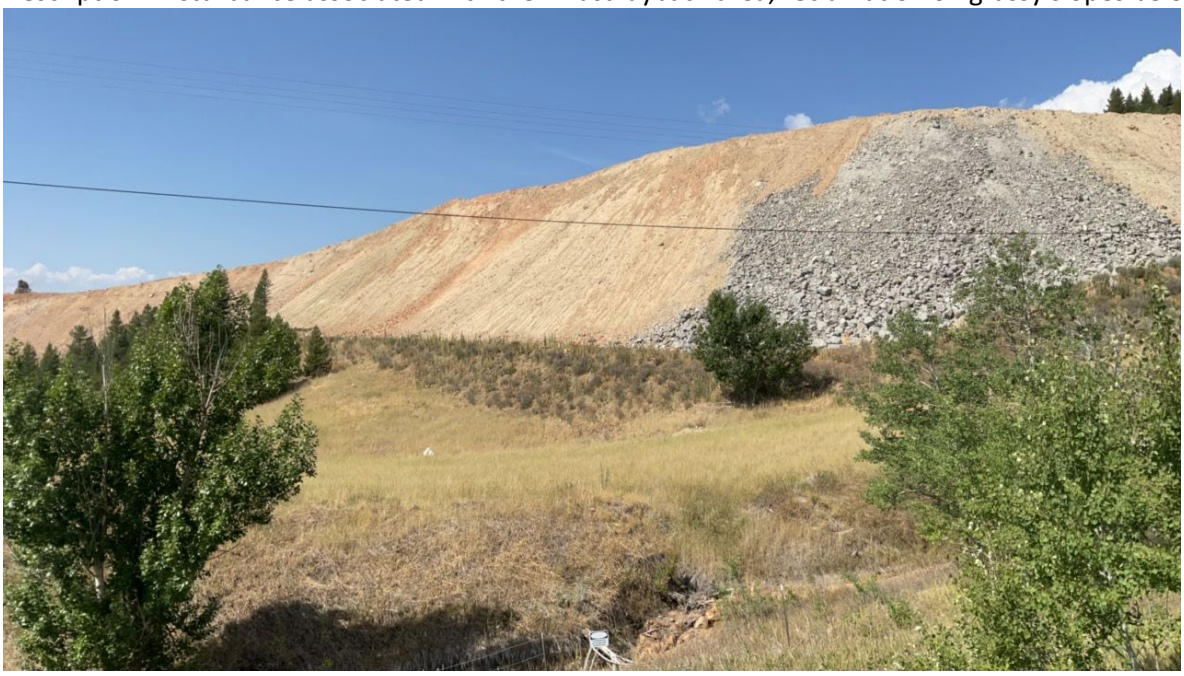

Photo #: 2
File: image-20240904-183833.jpg
Location: -112.46144, 46.01688
Date, Time: 2024/09/04, 12:38:33
Description: Disturbance associated with the E East layback area, reclamation on grassy slopes below.

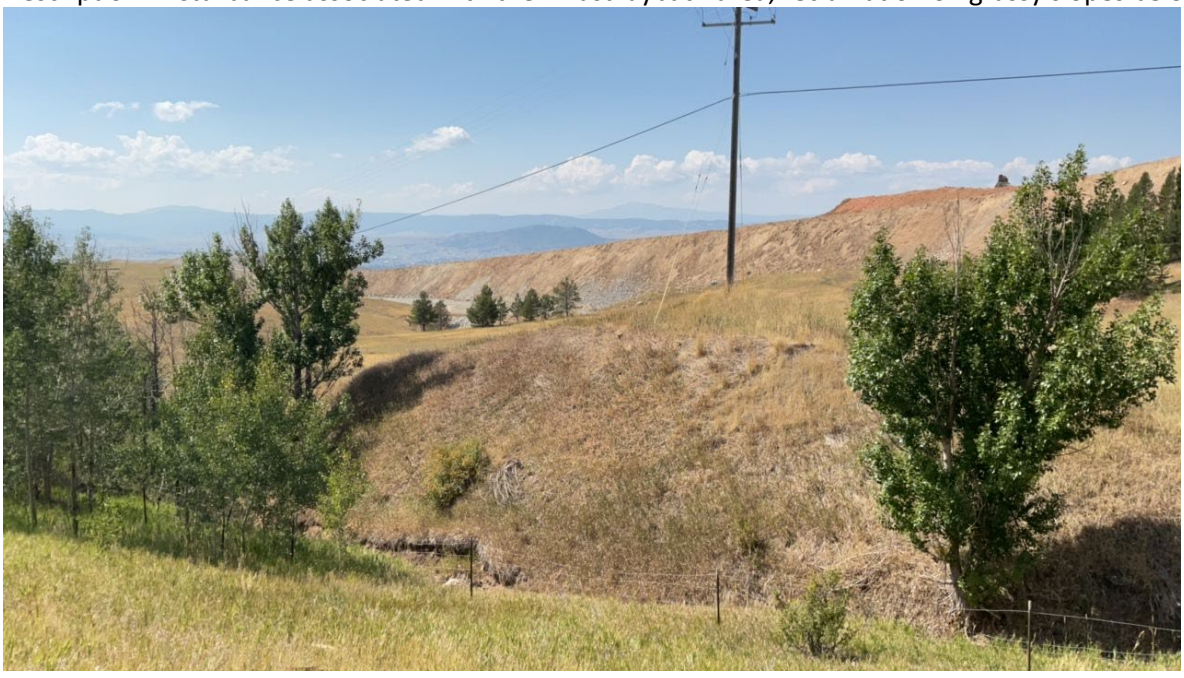

Photo #: 3
File: image-20240904-183946.jpg
Location: -112.46131, 46.01631
Date, Time: 2024/09/04, 12:39:46
Description: Disturbance associated with the E East layback area, larger areas of reclamation to the south.

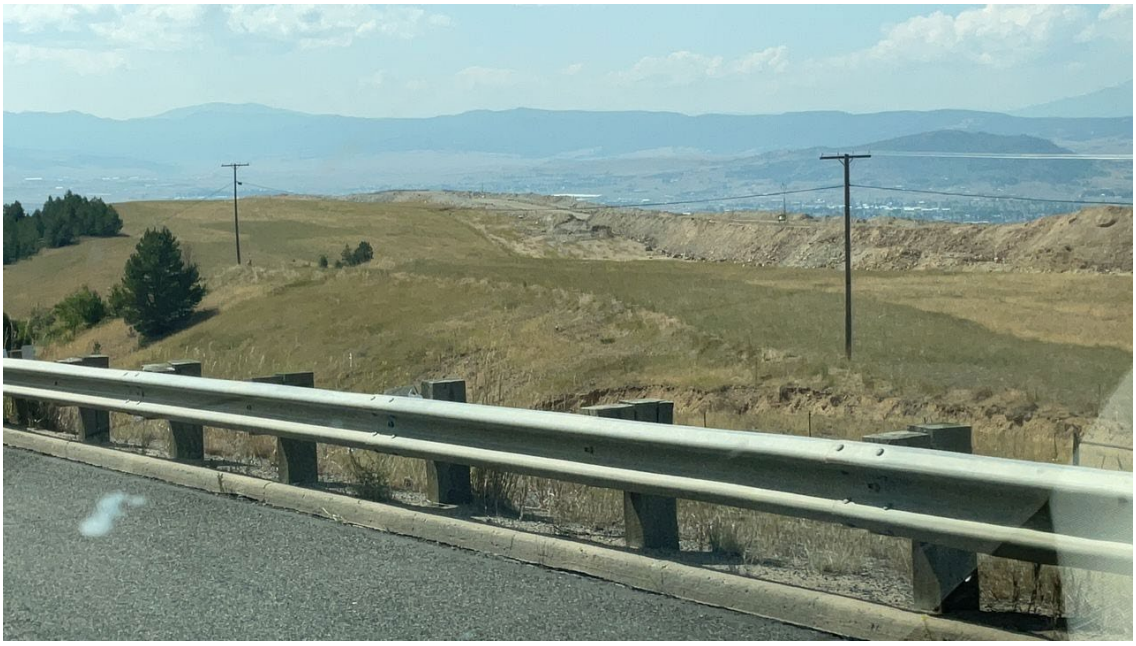

Photo #: 4
File: image-20240904-184014.jpg
Location: -112.46141, 46.01433
Date, Time: 2024/09/04, 12:40:14
Description: Reclamation on the East Dump Complex appears stable, with only minor areas of erosion.

Photo #: 5
File: image-20240904-184129.jpg
Location: -112.46206, 46.00861
Date, Time: 2024/09/04, 12:41:29
Description: Reclamation on the East Dump Complex appears stable, with only minor areas of erosion.

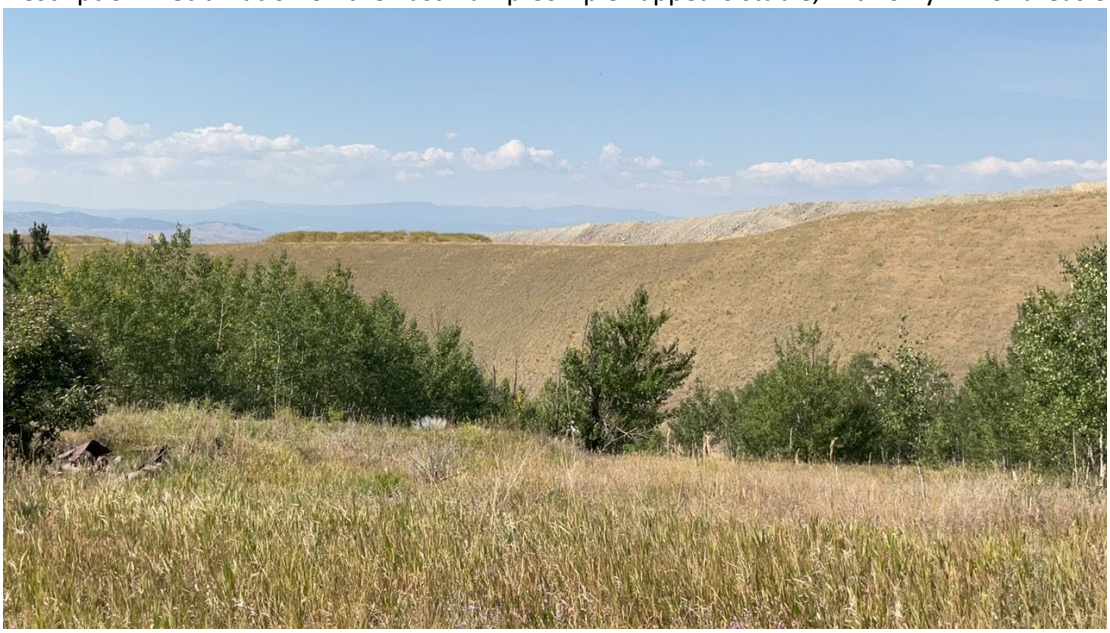

Photo #: 6
File: image-20240904-184154.jpg
Location: -112.46204, 46.00846
Date, Time: 2024/09/04, 12:41:54
Description: Reclamation on the East Dump Complex appears stable (distant), with only minor areas of erosion.

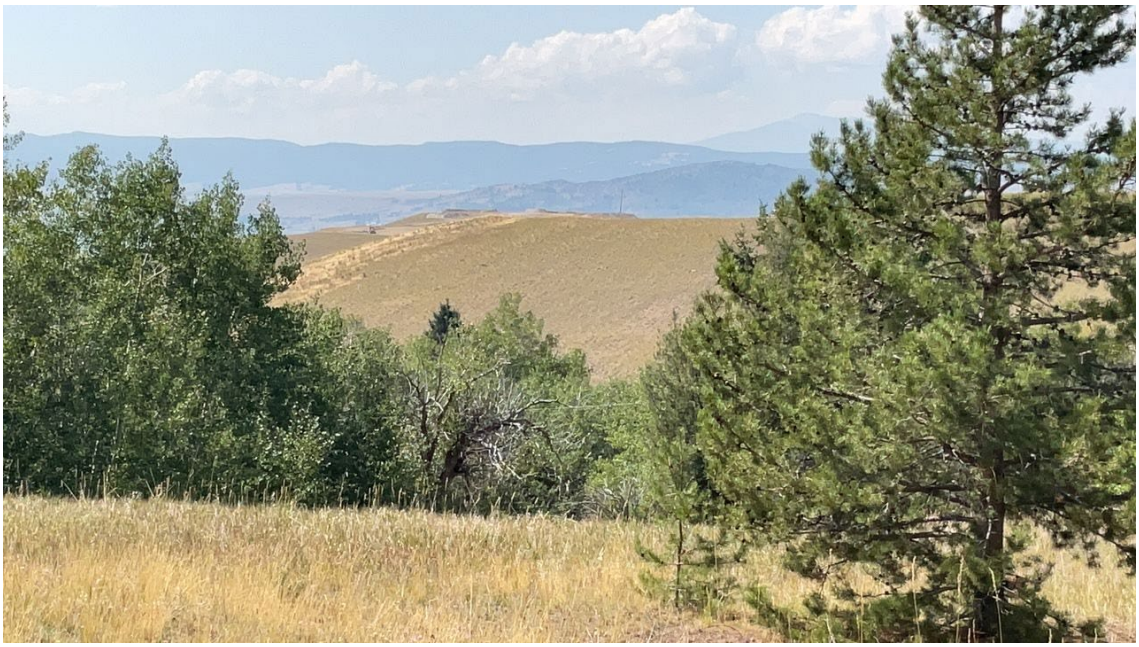

Photo #: 7
File: image-20240904-184252.jpg
Location: -112.46193, 46.00632
Date, Time: 2024/09/04, 12:42:53
Description: The access road leading to Clear Water Ditch and East Dump reclamation has minor erosion.

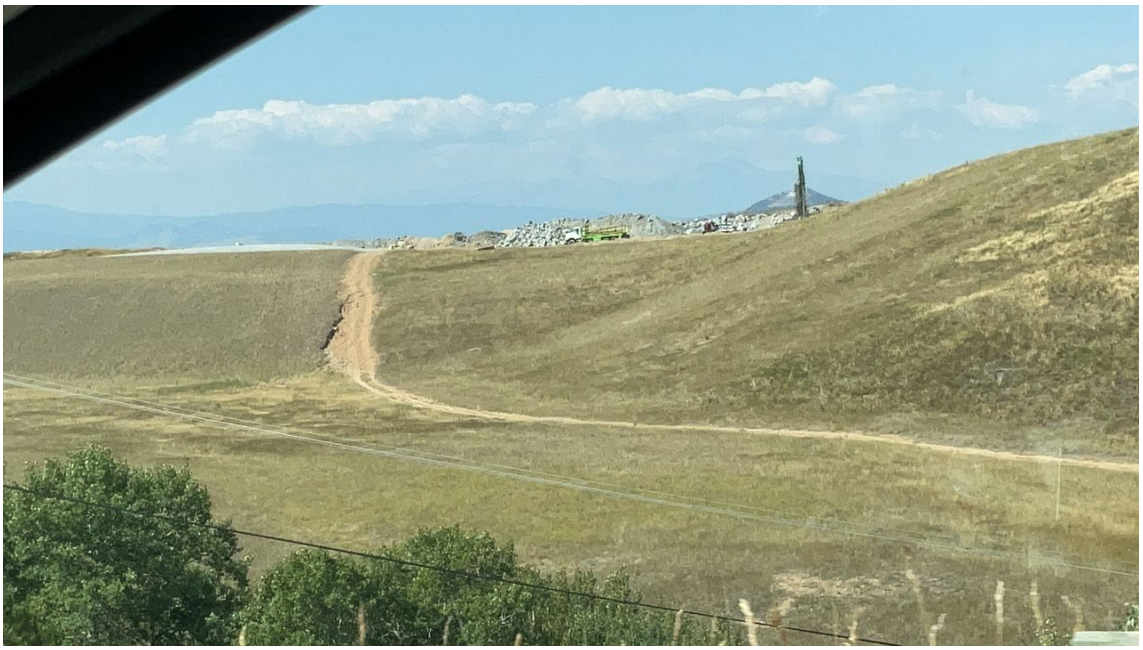

Photo #: 8
File: image-20240904-184311.jpg
Location: -112.46534, 46.00228
Date, Time: 2024/09/04, 12:43:11
Description: Reclamation on the East Dump Complex appears stable, with only minor areas of erosion.

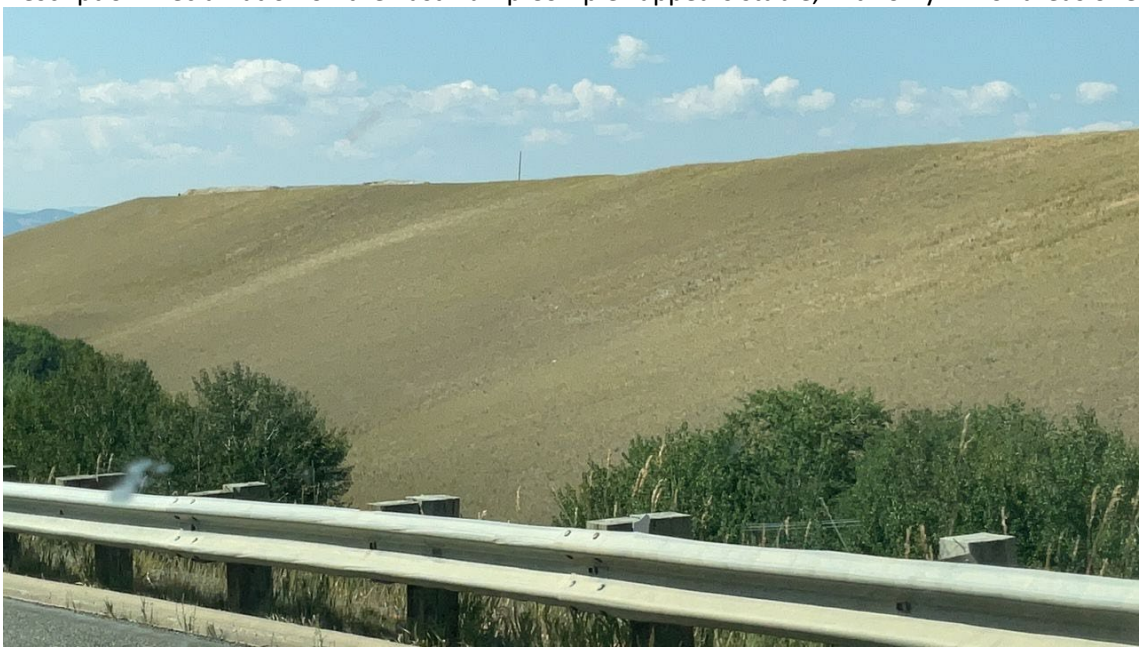

Photo #: 9
File: image-20240904-191736.jpg
Location: -112.50785, 46.01001
Date, Time: 2024/09/04, 13:17:36
Description: The layback around E East is ongoing, creating a shallower angle in the overall highwall configuration. Interstate is beyond the right margin of photo.

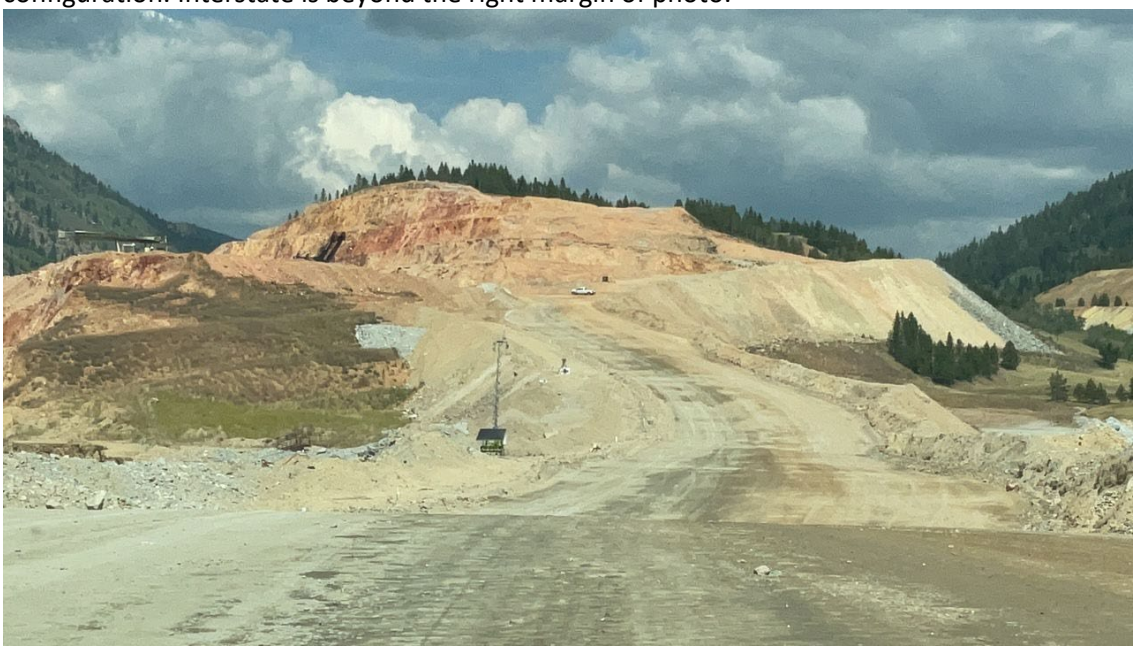

Photo #: 10
File: image-20240904-191756.jpg
Location: -112.46528, 46.01208
Date, Time: 2024/09/04, 13:17:56
Description: Drilling, blasting, and hauling material from layback area.

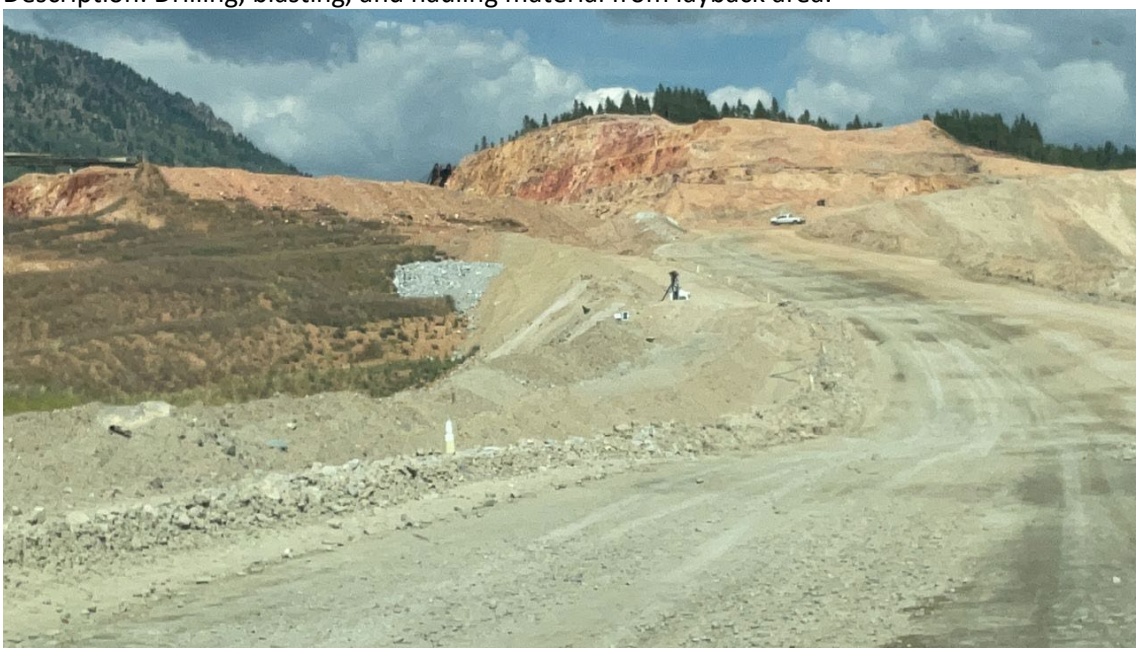

Photo #: 11
File: image-20240904-191956.jpg
Location: -112.46303, 46.01744
Date, Time: 2024/09/04, 13:19:56
Description: Drilling, blasting, and hauling material from layback area.

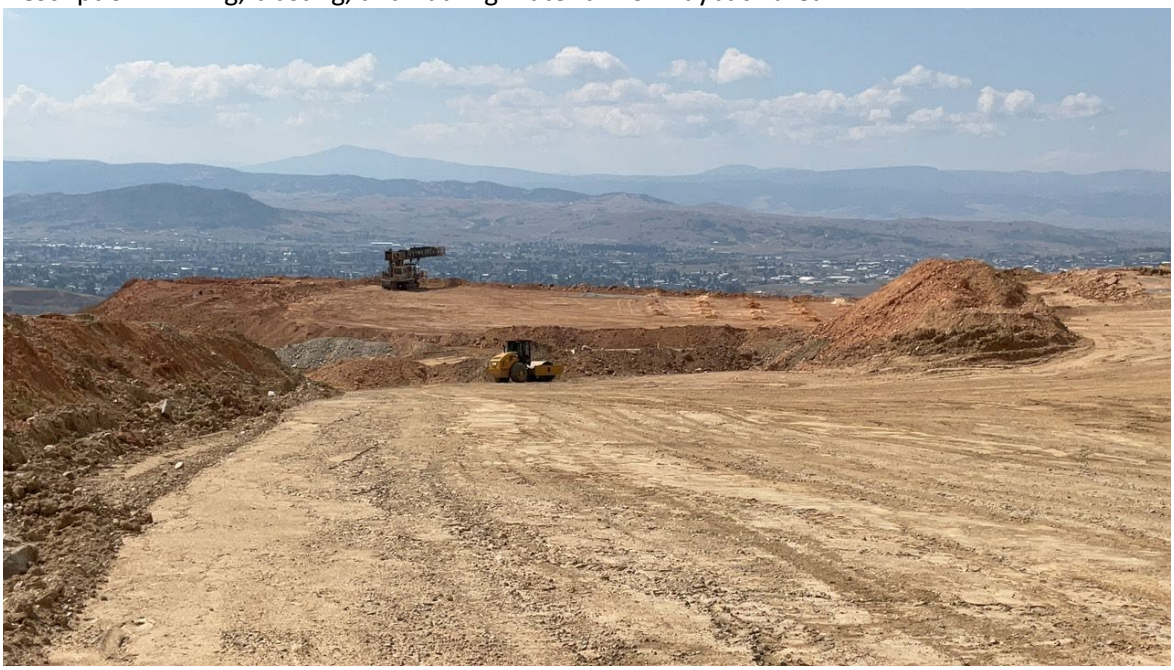

Photo #: 12
File: image-20240904-192004.jpg
Location: -112.46303, 46.01742
Date, Time: 2024/09/04, 13:20:04
Description: Drilling, blasting, and hauling material from layback area.

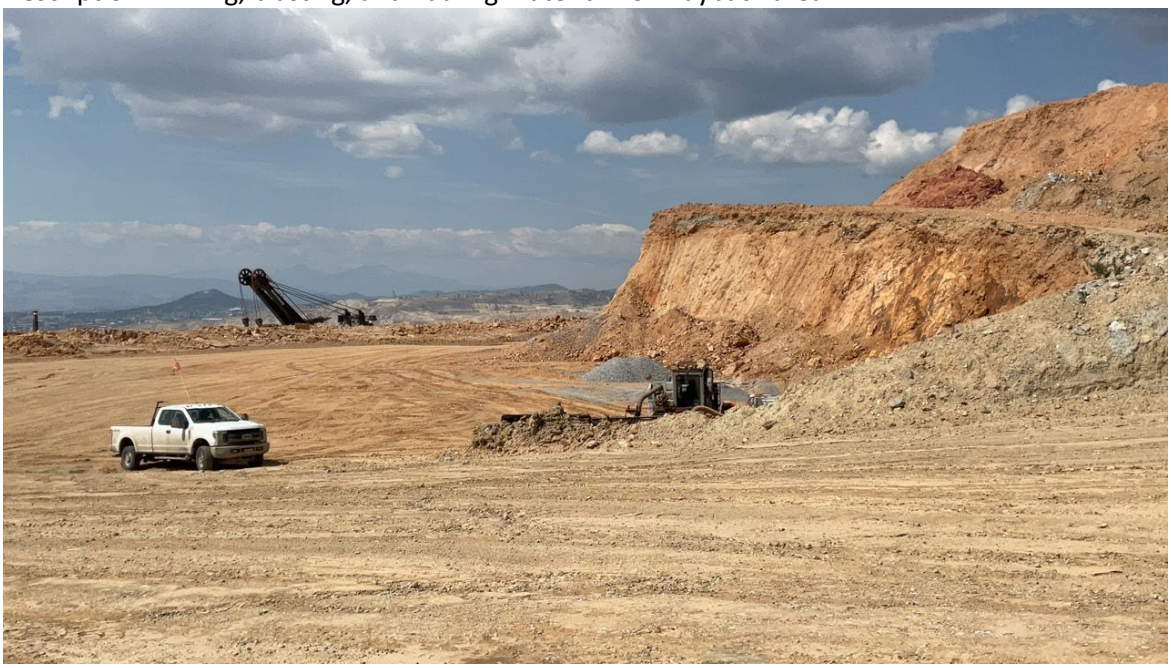

Photo #: 13
File: image-20240904-192036.jpg
Location: -112.46289, 46.01747
Date, Time: 2024/09/04, 13:20:36
Description: View of East Dump Complex reclamation, as seen from highwall layback area (interstate on left).

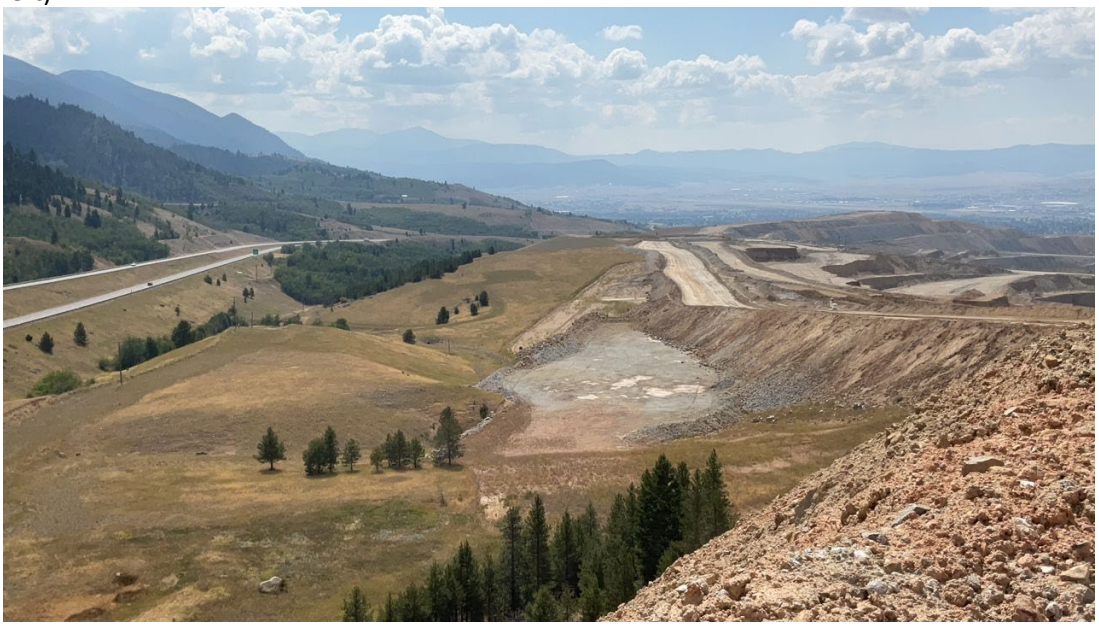

Photo #: 14
File: image-20240904-192046.jpg
Location: -112.46288, 46.01747
Date, Time: 2024/09/04, 13:20:46
Description: View of East Dump Complex reclamation, as seen from highwall layback area.

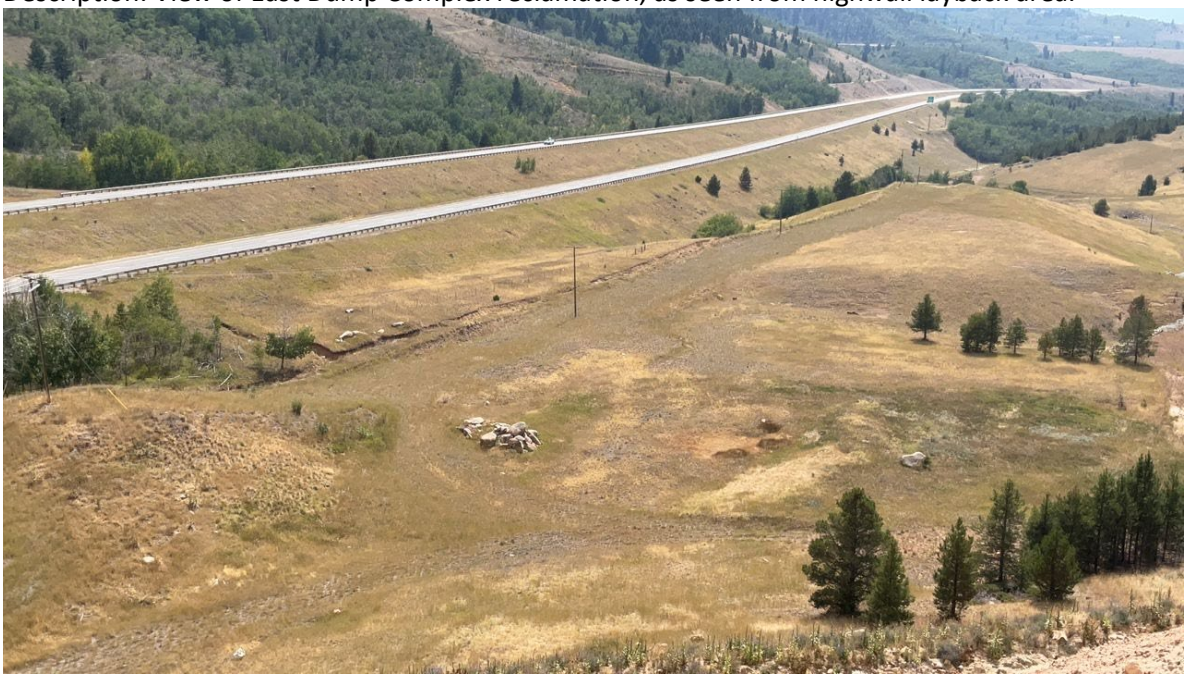

Photo #: 15
File: image-20240904-192519.jpg
Location: -112.47118, 46.01004
Date, Time: 2024/09/04, 13:25:20
Description: A drastic contact at the enrichment zone within the D East/E East area.

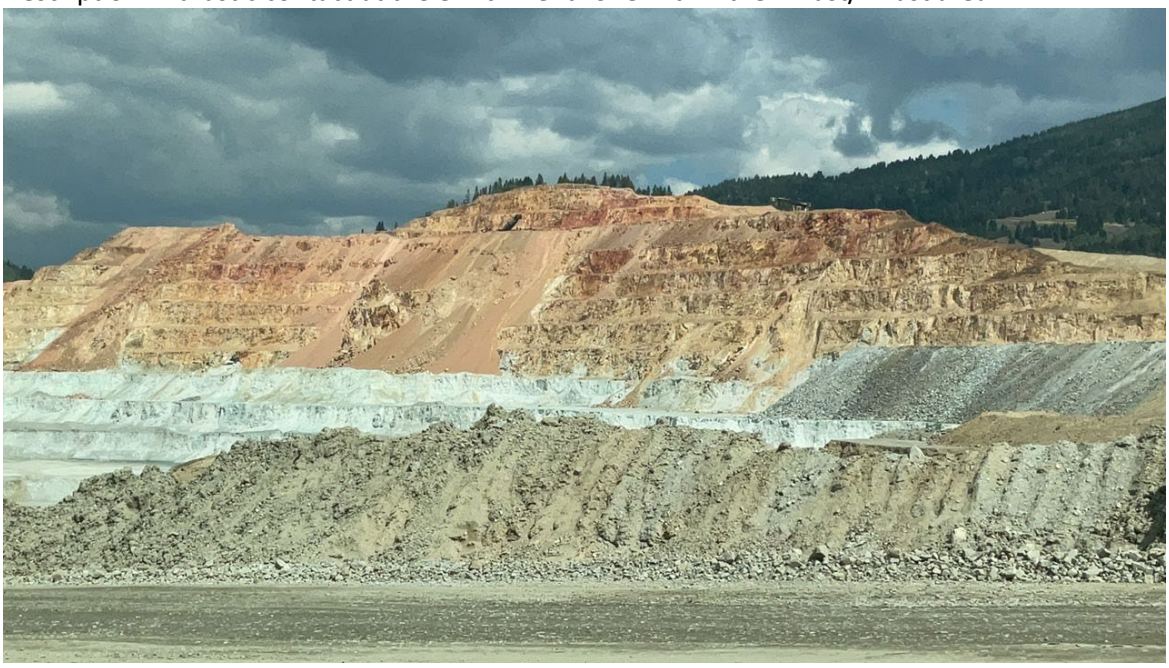

Photo #: 16
File: image-20240904-193353.jpg
Location: -112.48118, 46.02385
Date, Time: 2024/09/04, 13:33:53
Description: Overview of Continental Pit operations.

Photo #: 17
File: image-20240904-193400.jpg
Location: -112.48117, 46.02386
Date, Time: 2024/09/04, 13:34:00
Description: Overview of Continental Pit operations.

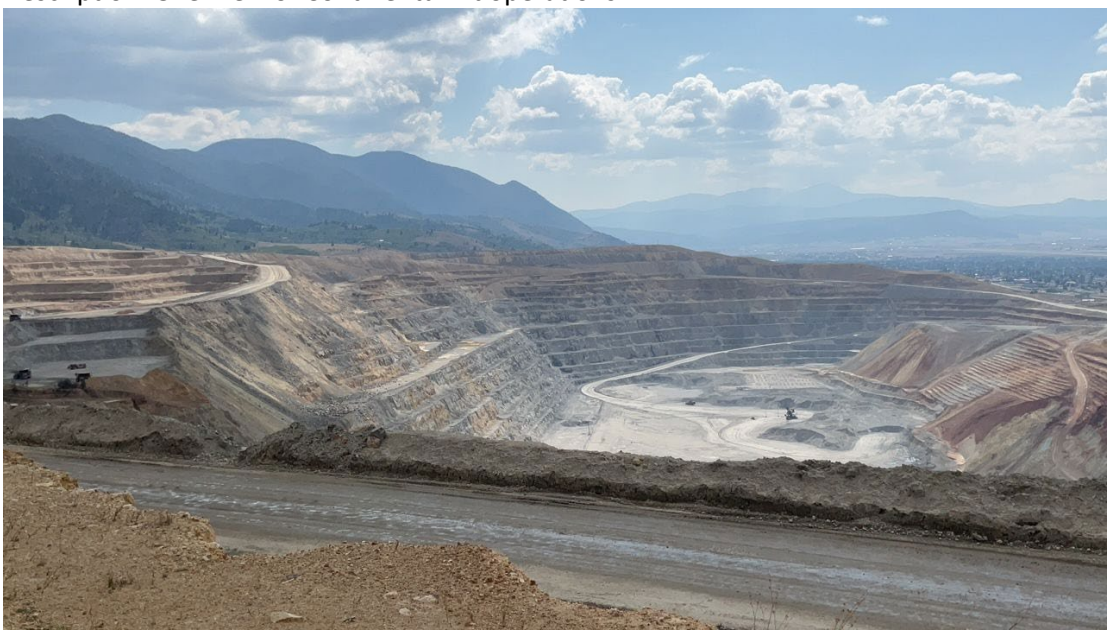

Photo #: 18
File: image-20240904-193411.jpg
Location: -112.48118, 46.02387
Date, Time: 2024/09/04, 13:34:11
Description: Overview of Continental Pit operations, with Central Zone on the right/middle.

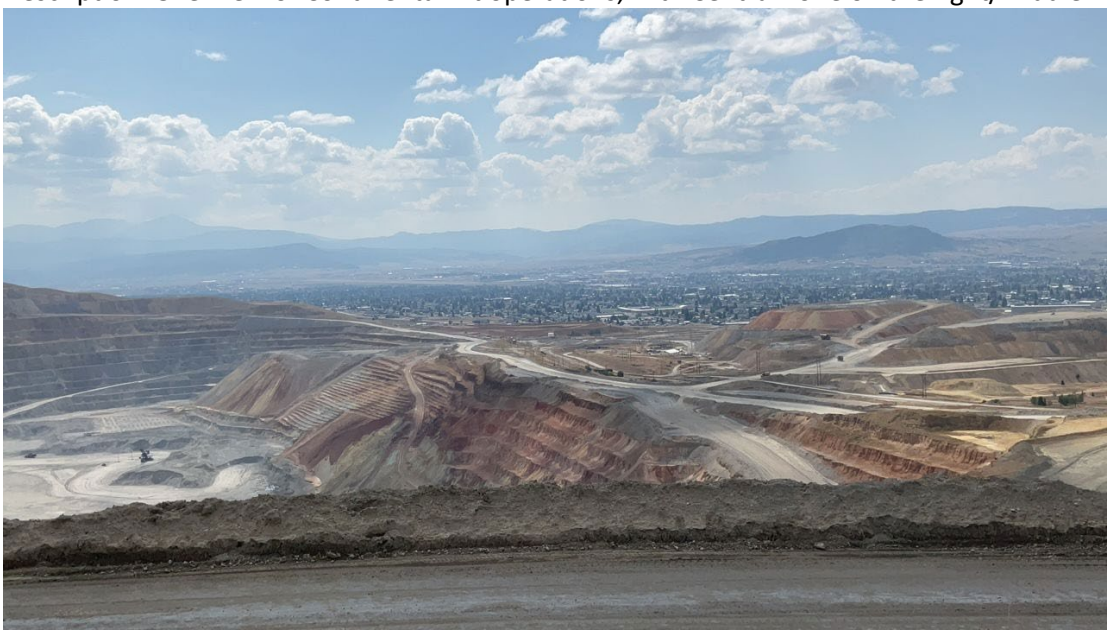

Photo #: 19
File: image-20240904-193417.jpg
Location: -112.48117, 46.02386
Date, Time: 2024/09/04, 13:34:17
Description: Central Zone and Pittsmont Dump on the left, with Berkeley Pit in the distance.

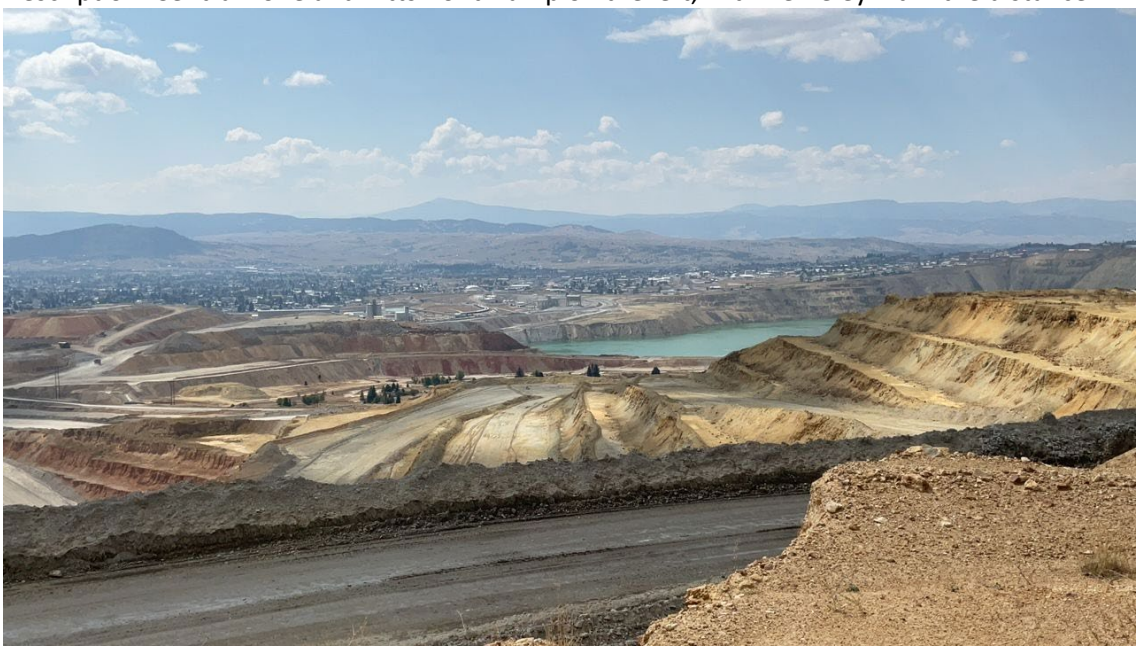

Photo #: 20
File: image-20240904-193450.jpg
Location: -112.48161, 46.02395
Date, Time: 2024/09/04, 13:34:50
Description: Looking across former leach pads, tailings pipeline and embankment ramp construction are visible in the distance.

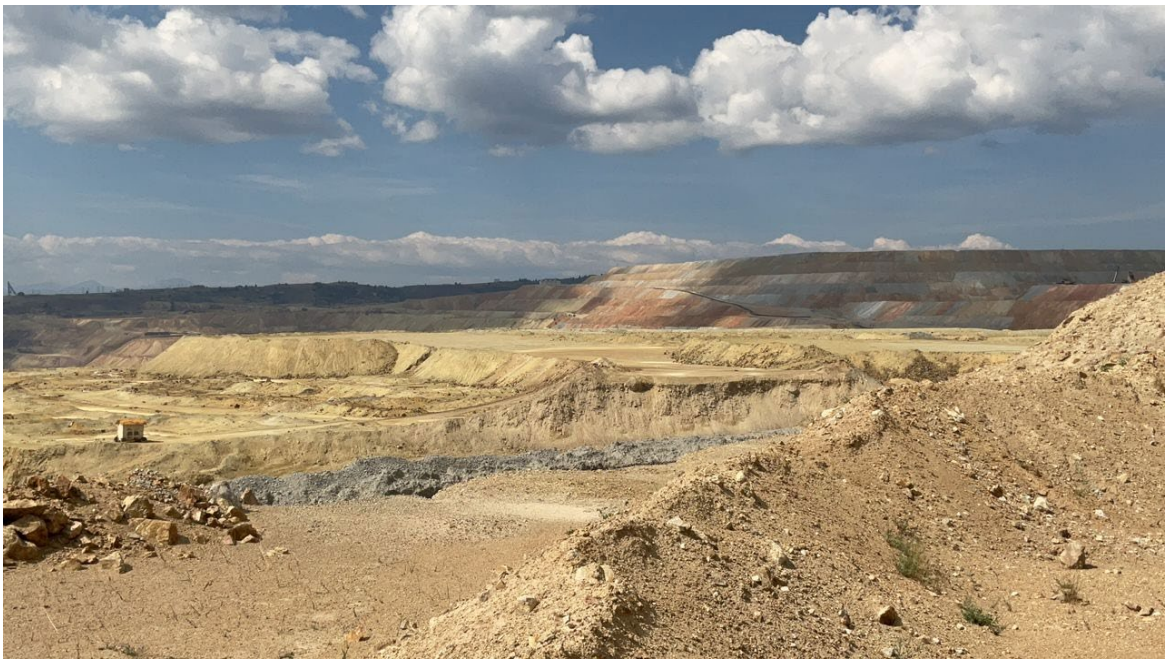

Photo #: 21
File: image-20240904-193930.jpg
Location: -112.48325, 46.03037
Date, Time: 2024/09/04, 13:39:30
Description: Embankment ramp construction

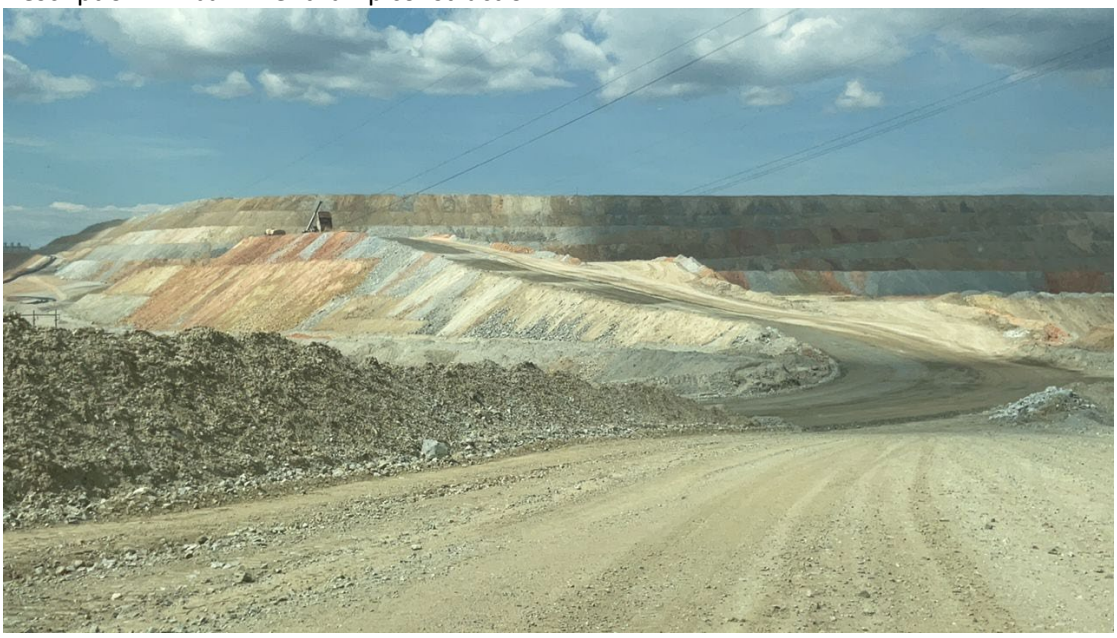

Photo #: 22
File: image-20240904-194320.jpg
Location: -112.48781, 46.04785
Date, Time: 2024/09/04, 13:43:20
Description: Access road to TSF pond and pumping barge system.

Photo #: 23
File: image-20240904-194423.jpg
Location: -112.48759, 46.05008
Date, Time: 2024/09/04, 13:44:23
Description: Grading and alluvium placement have occurred on the upstream face of the North-South embankment, in accordance with EOR recommendations.

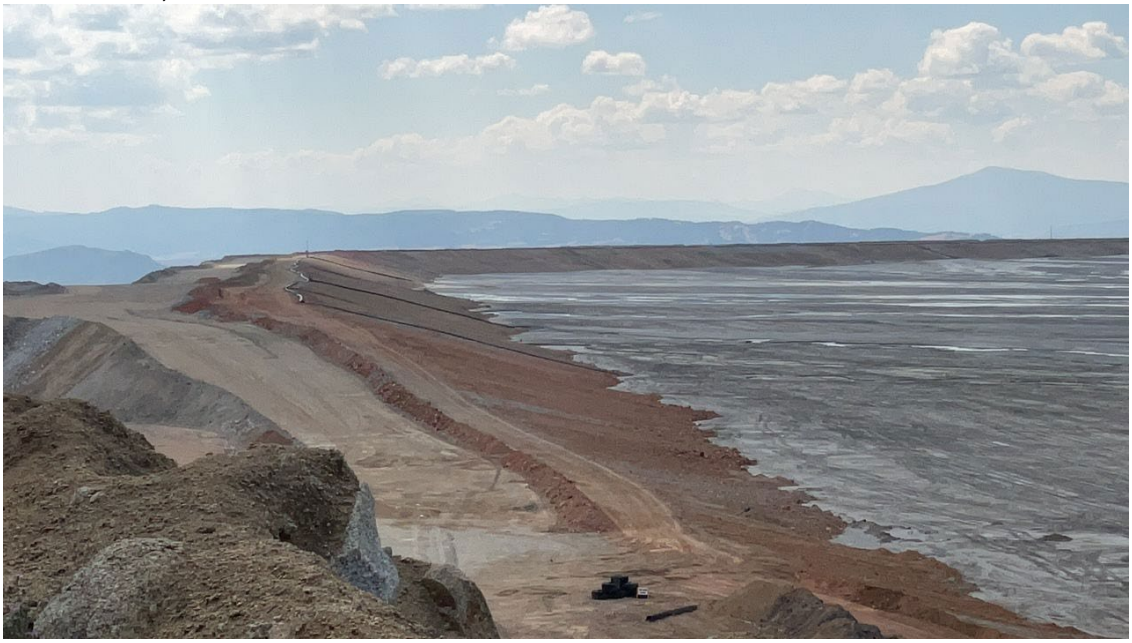

Photo #: 24
File: image-20240904-194432.jpg
Location: -112.48758, 46.05007
Date, Time: 2024/09/04, 13:44:32
Description: The tailings beach is saturated in many places and tracks are visible from vehicles spraying magnesium chloride for dust control.

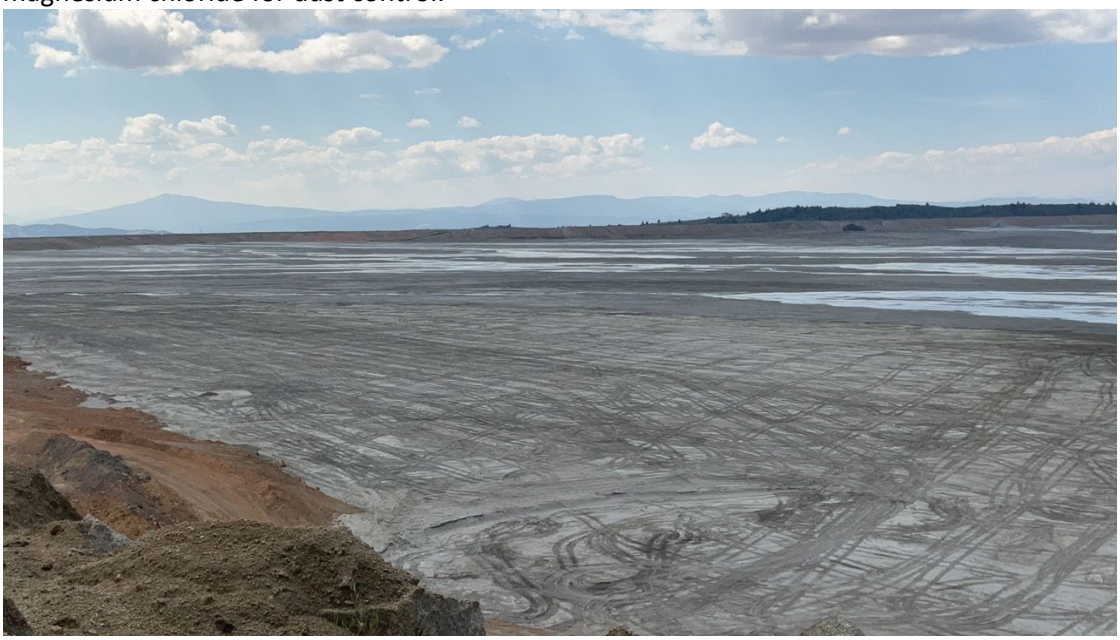

Photo #: 25
File: image-20240904-194448.jpg
Location: -112.48758, 46.05006
Date, Time: 2024/09/04, 13:44:48
Description: The interface of the tailings beach and pond.

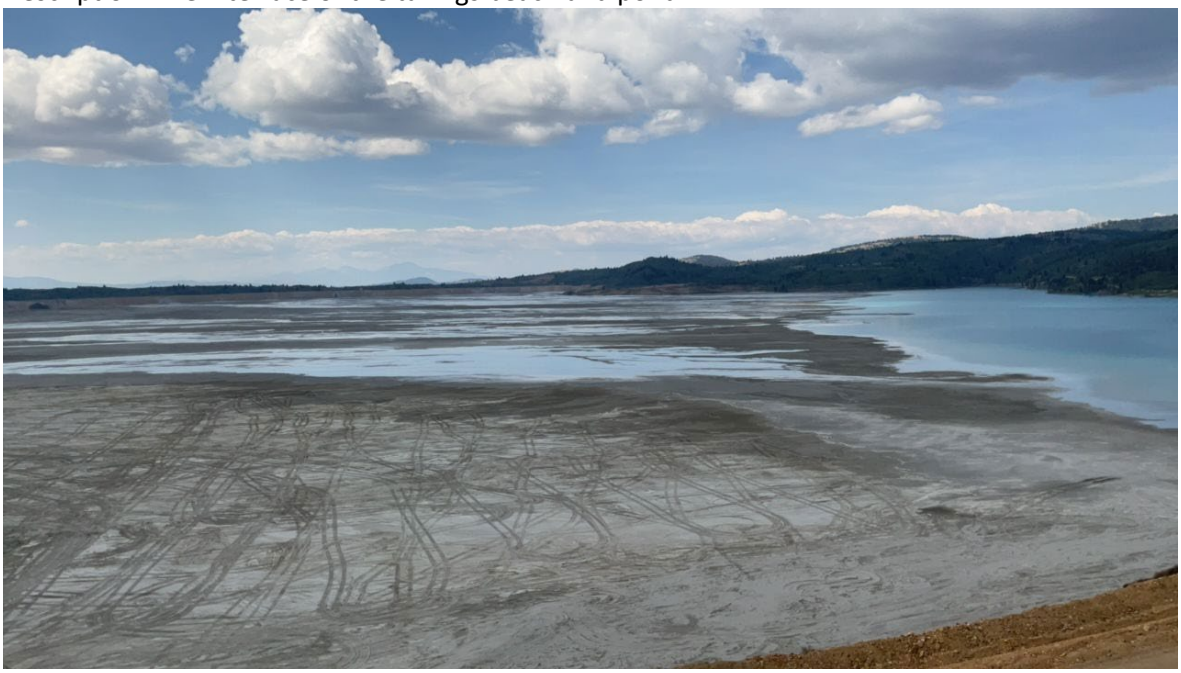

Photo #: 26
File: image-20240904-194505.jpg
Location: -112.48759, 46.0501
Date, Time: 2024/09/04, 13:45:05
Description: The interface of the tailings beach and pond.

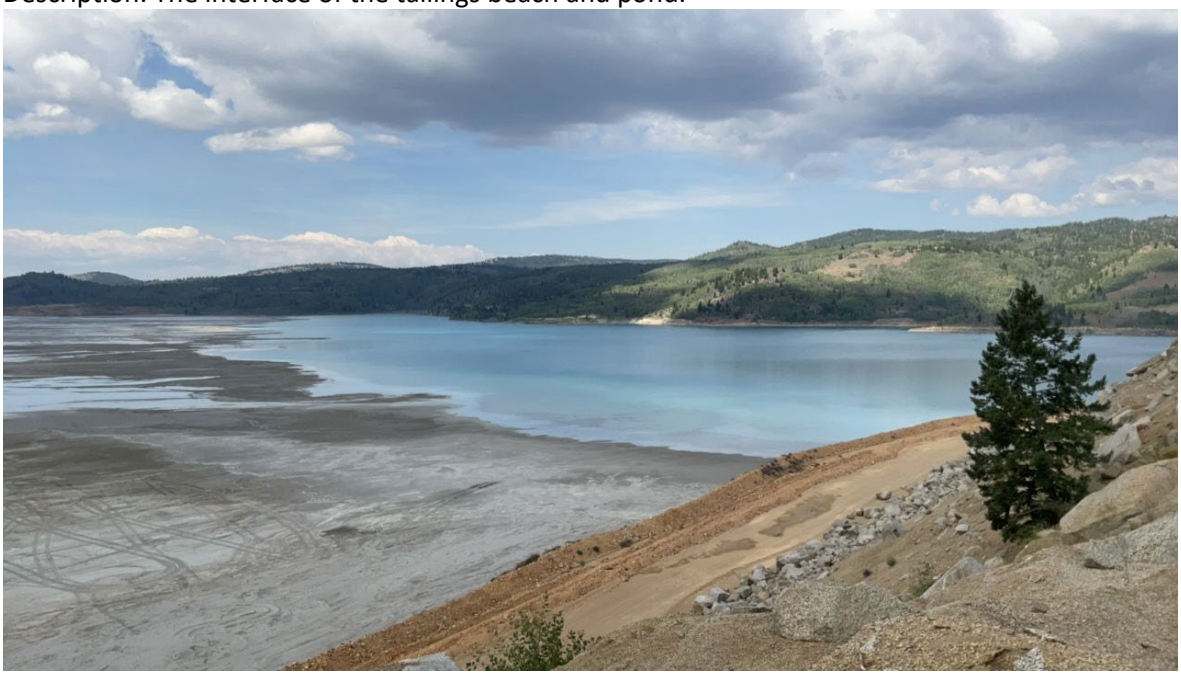

Photo #: 27
File: image-20240904-195006.jpg
Location: -112.48206, 46.05964
Date, Time: 2024/09/04, 13:50:06
Description: TSF pond pumping barge and water conveyance pipelines.

Photo #: 28
File: image-20240904-195101.jpg
Location: -112.48172, 46.06176
Date, Time: 2024/09/04, 13:51:01
Description: TSF pond and northeast shore, across from the pumping barge,

Photo #: 29
File: image-20240904-195609.jpg
Location: -112.49437, 46.04092
Date, Time: 2024/09/04, 13:56:10
Description: Tailings distribution pipelines are in good condition. Grading and alluvium placement on the upstream face of the East-West Embankment is visible in the distance.

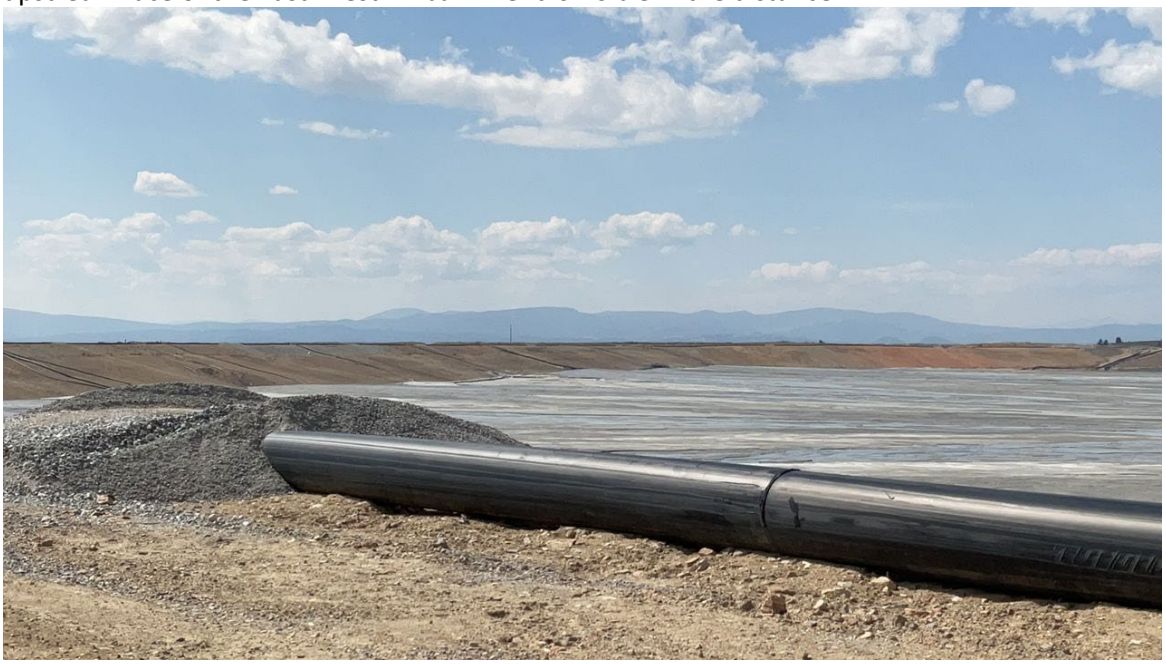

Photo #: 30
File: image-20240904-195653.jpg
Location: -112.49757, 46.03705
Date, Time: 2024/09/04, 13:56:53
Description: Grading and alluvium placement on the upstream face of the East-West Embankment.

Photo #: 31
File: image-20240904-195817.jpg
Location: -112.50578, 46.03603
Date, Time: 2024/09/04, 13:58:17
Description: Active tailings discharge near the central portion of the East-West Embankment.

Photo #: 32
File: image-20240904-200148.jpg
Location: -112.51901, 46.04365
Date, Time: 2024/09/04, 14:01:48
Description: The remaining upper portion of “Rocky Knob” near the transition to the West Embankment.

Photo #: 33
File: image-20240904-200435.jpg
Location: -112.52606, 46.05419
Date, Time: 2024/09/04, 14:04:35
Description: Tailings discharge along the West Embankment, soil was salvaged from the distant shore.

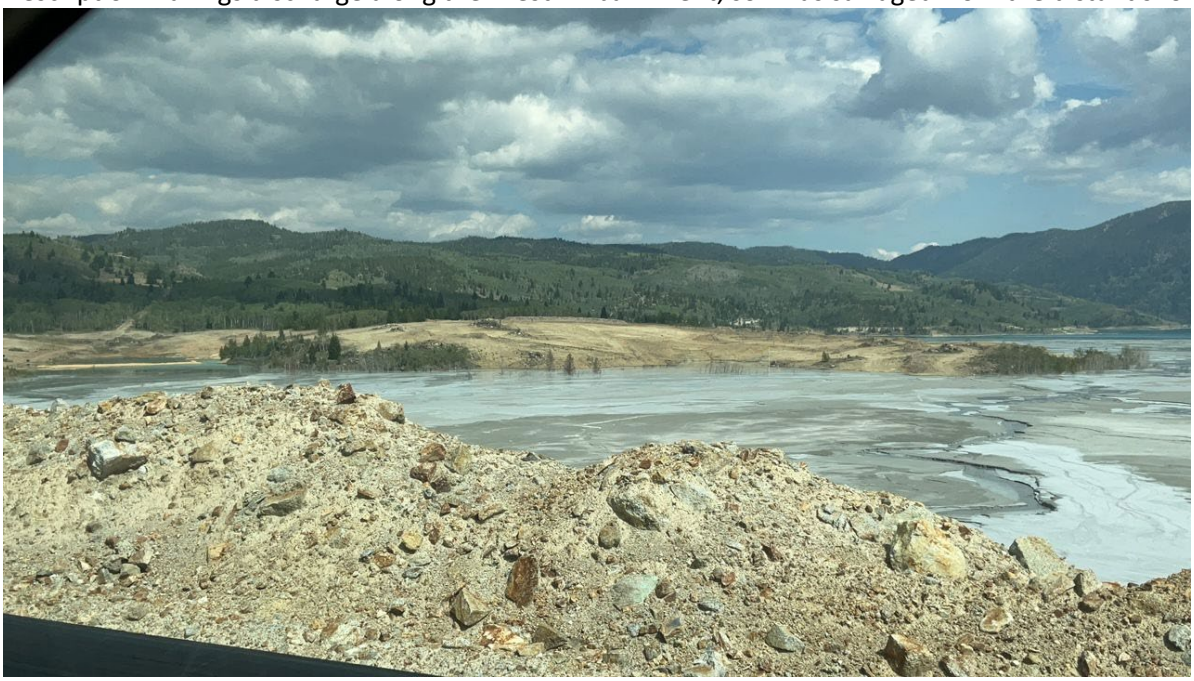

Photo #: 34
File: image-20240904-200741.jpg
Location: -112.52882, 46.05468
Date, Time: 2024/09/04, 14:07:41
Description: Early growth on West Embankment slopes, seeded in early June 2024.

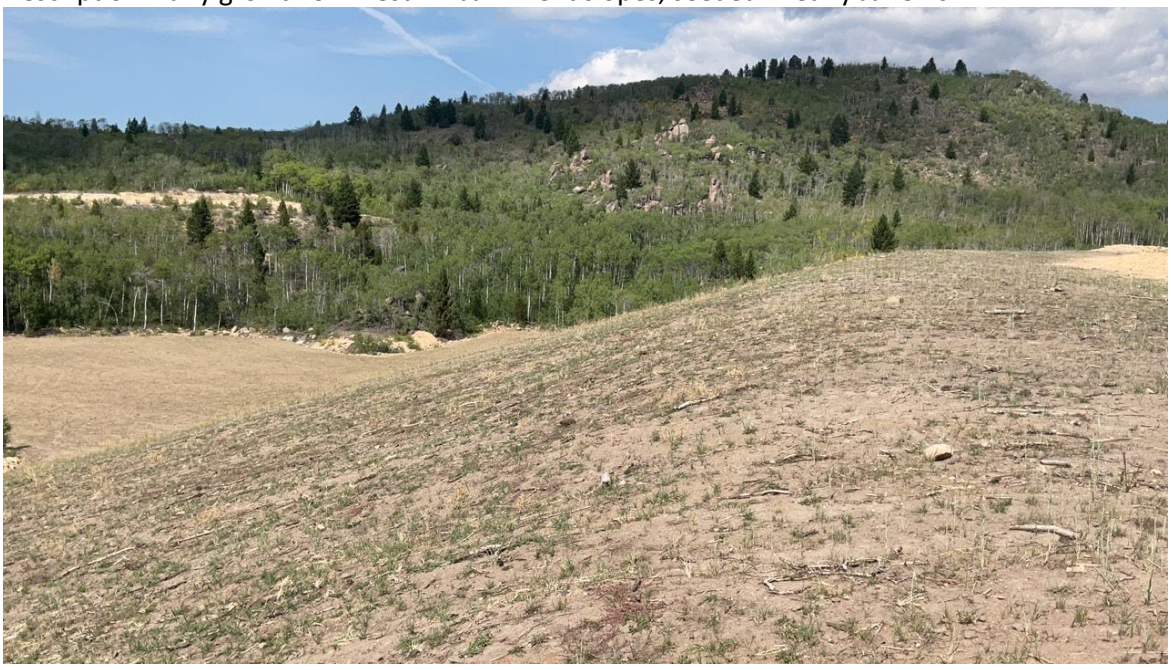

Photo #: 35
File: image-20240904-200754.jpg
Location: -112.52882, 46.05468
Date, Time: 2024/09/04, 14:07:54
Description: Early growth on West Embankment slopes, seeded in early June 2024.

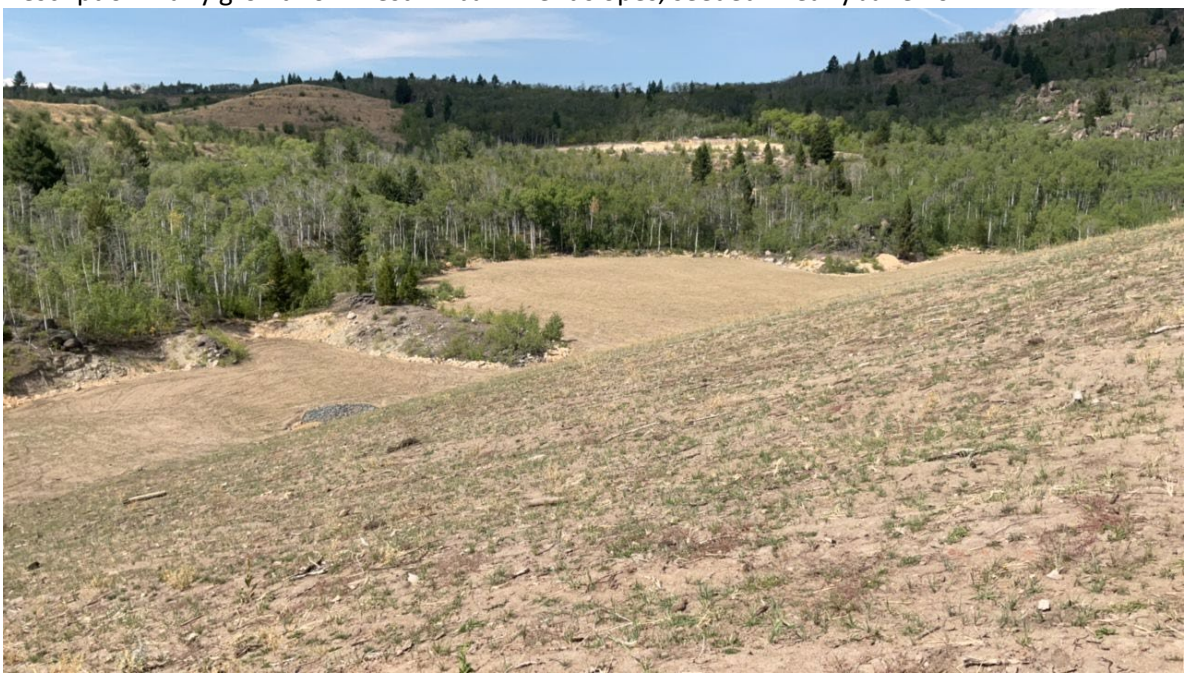

Photo #: 36
File: image-20240904-200836.jpg
Location: -112.52885, 46.05472
Date, Time: 2024/09/04, 14:08:36
Description: Vegetated soil stockpile in the distance

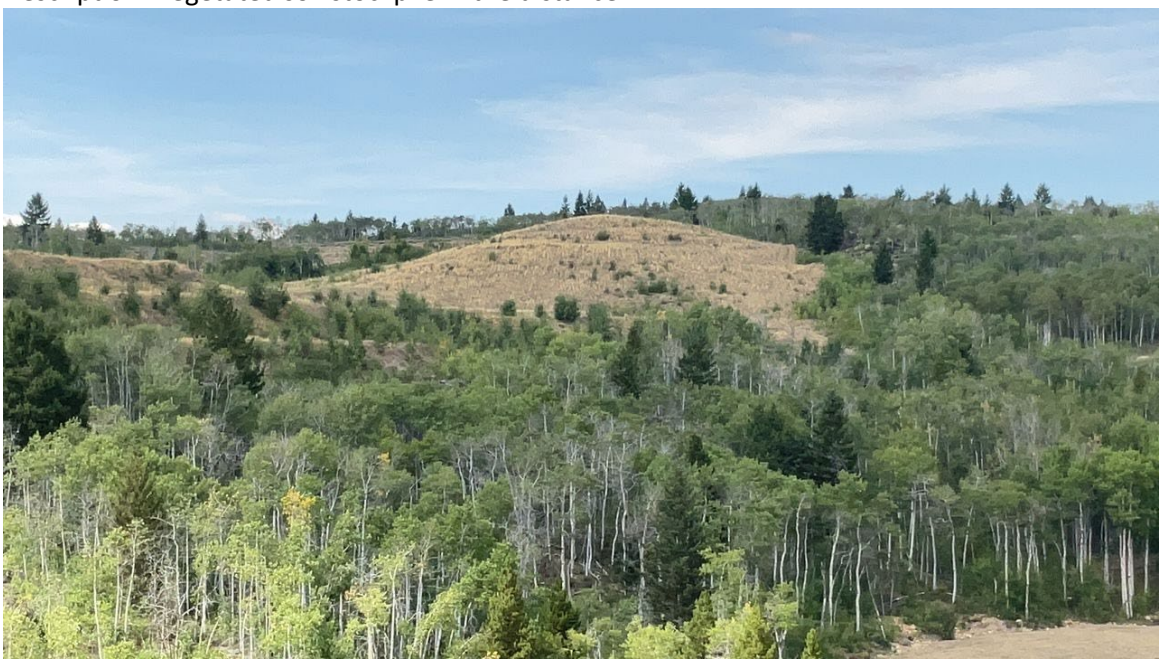

Photo #: 37
File: image-20240904-200851.jpg
Location: -112.52885, 46.05472
Date, Time: 2024/09/04, 14:08:51
Description: Early growth on West Embankment slopes, seeded in early June 2024.

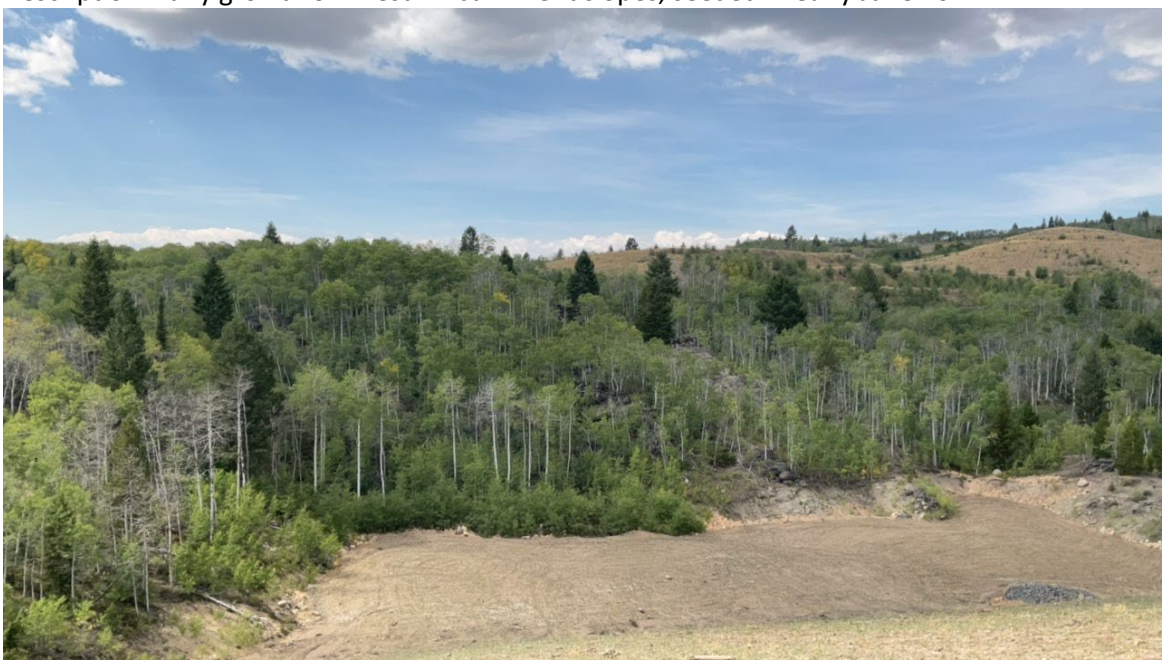

Photo #: 38
File: image-20240904-201241.jpg
Location: -112.52675, 46.0483
Date, Time: 2024/09/04, 14:12:41
Description: Early growth on West Embankment slopes, small test plot areas will be monitored.

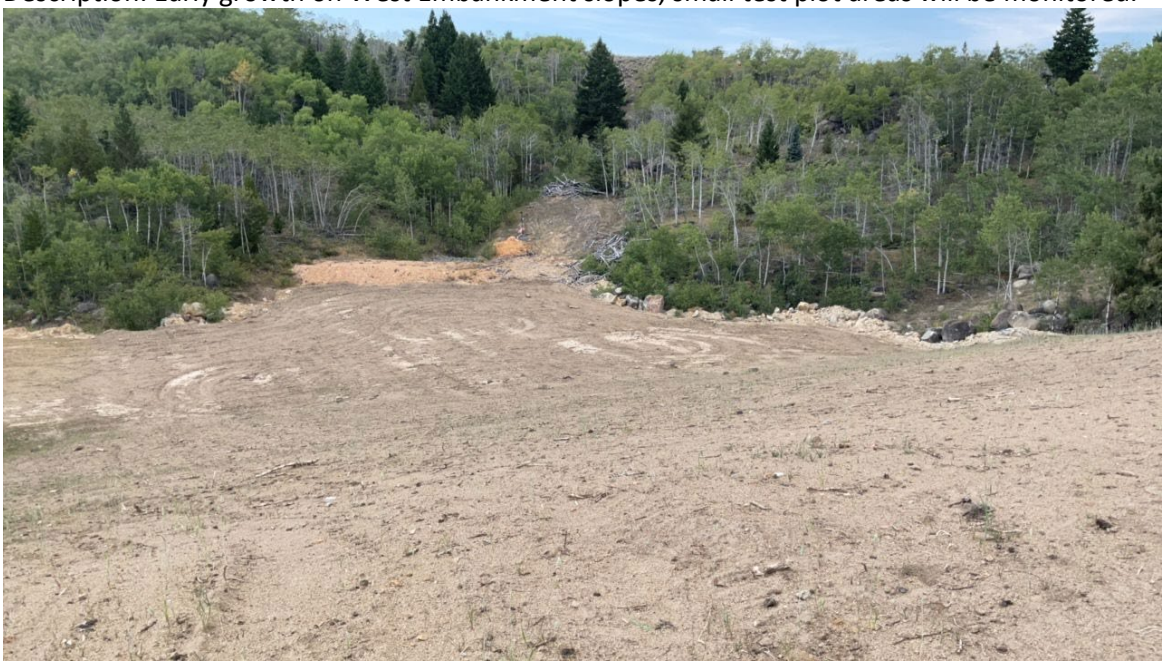

Photo #:39
File: image-20240904-201249.jpg
Location: -112.52667, 46.04822
Date, Time: 2024/09/04, 14:12:49
Description: Early growth on West Embankment slopes, small test plot areas will be monitored.

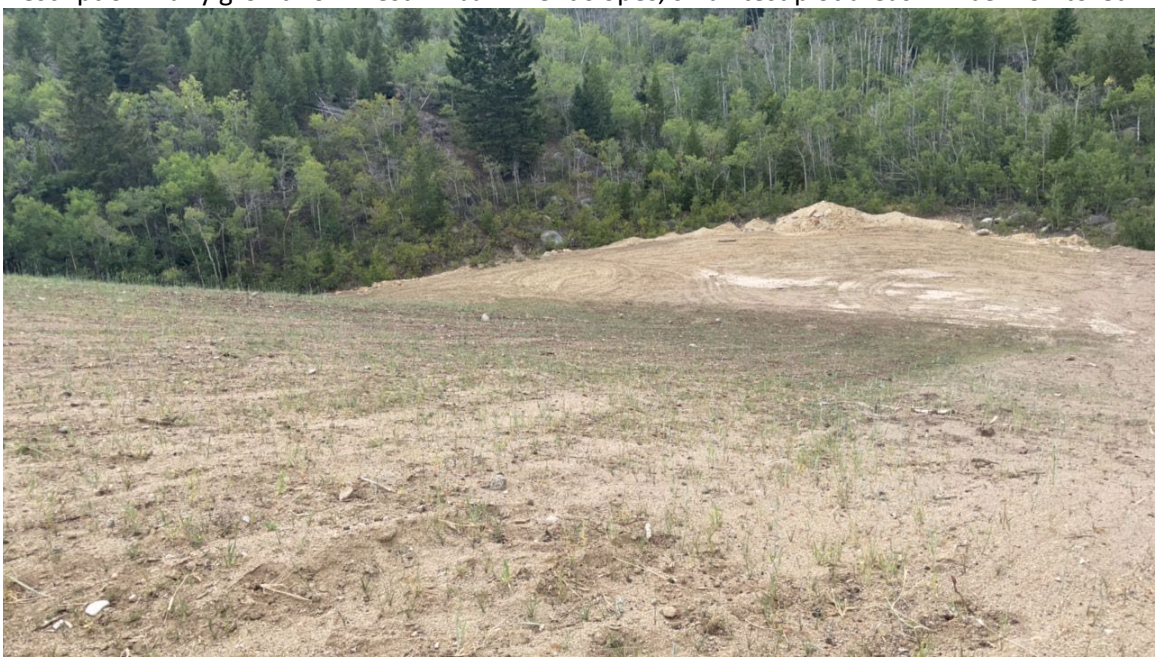

Photo #: 40
File: image-20240904-201419.jpg
Location: -112.5263, 46.04753
Date, Time: 2024/09/04, 14:14:19
Description: Early growth on West Embankment slopes, small test plot areas will be monitored.

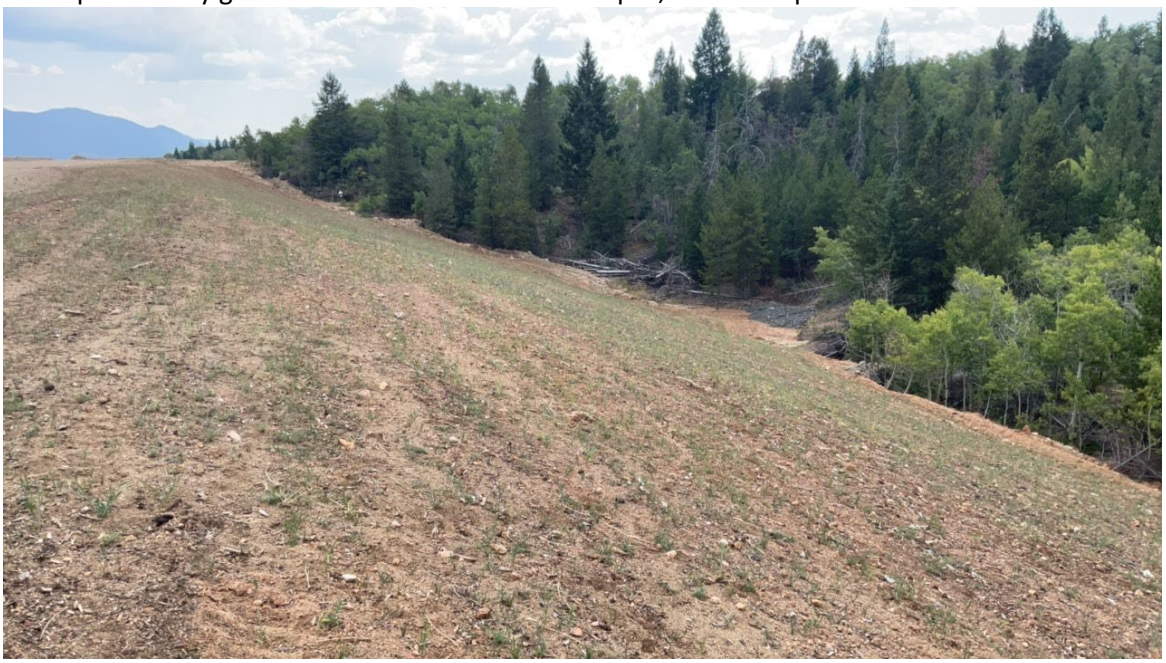

Photo #: 41
File: image-20240904-201923.jpg
Location: -112.52467, 46.0453
Date, Time: 2024/09/04, 14:19:23
Description: Early growth on West Embankment slopes, small test plot areas will be monitored.

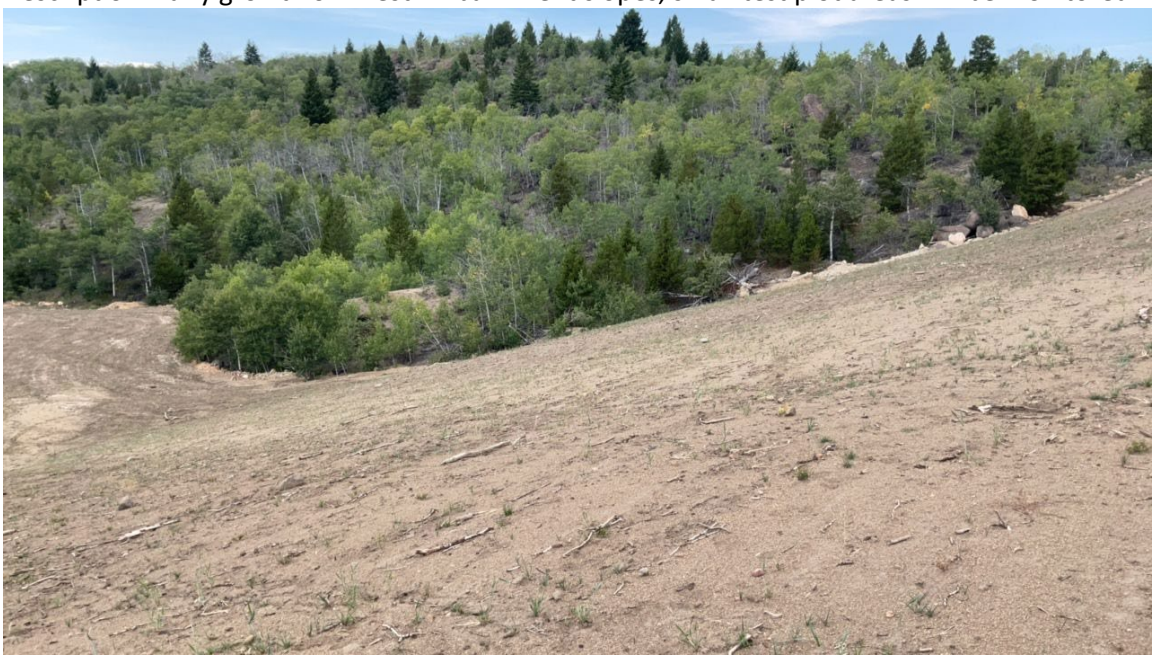

Photo #: 42
File: image-20240904-201940.jpg
Location: -112.52465, 46.04527
Date, Time: 2024/09/04, 14:19:40
Description: Early growth on West Embankment slopes, small test plot areas will be monitored.

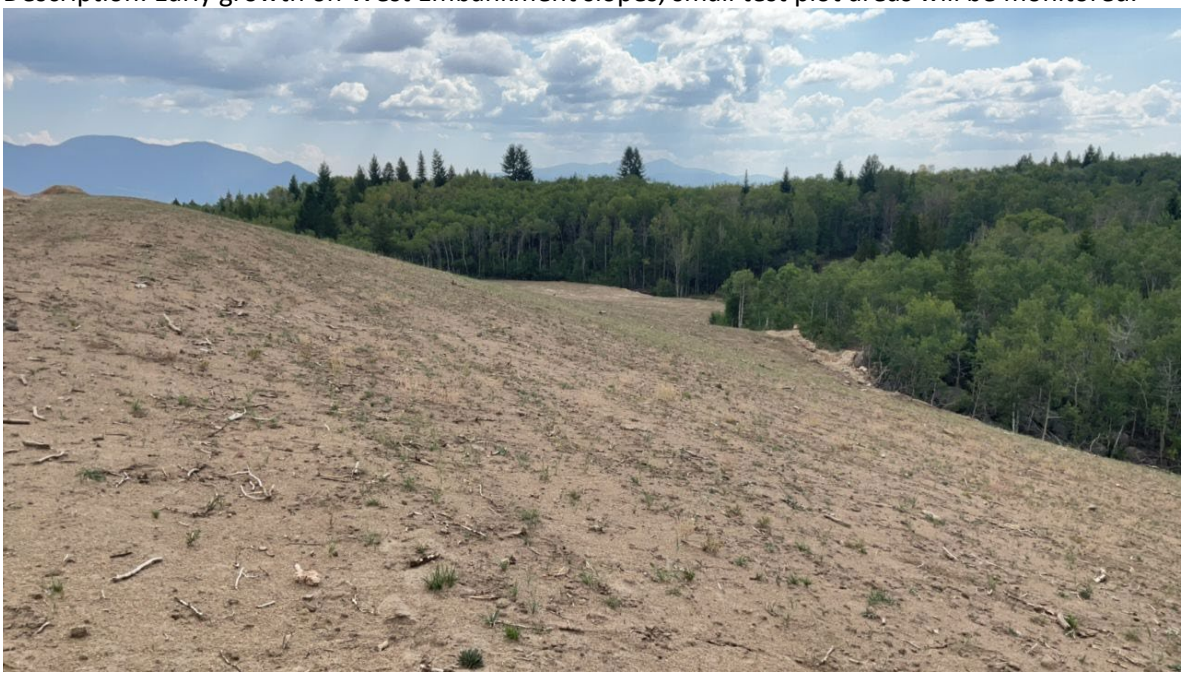

Photo #: 43
File: image-20240904-202403.jpg
Location: -112.52092, 46.04055
Date, Time: 2024/09/04, 14:24:03
Description: Early growth on slopes near the Extraction Pond.

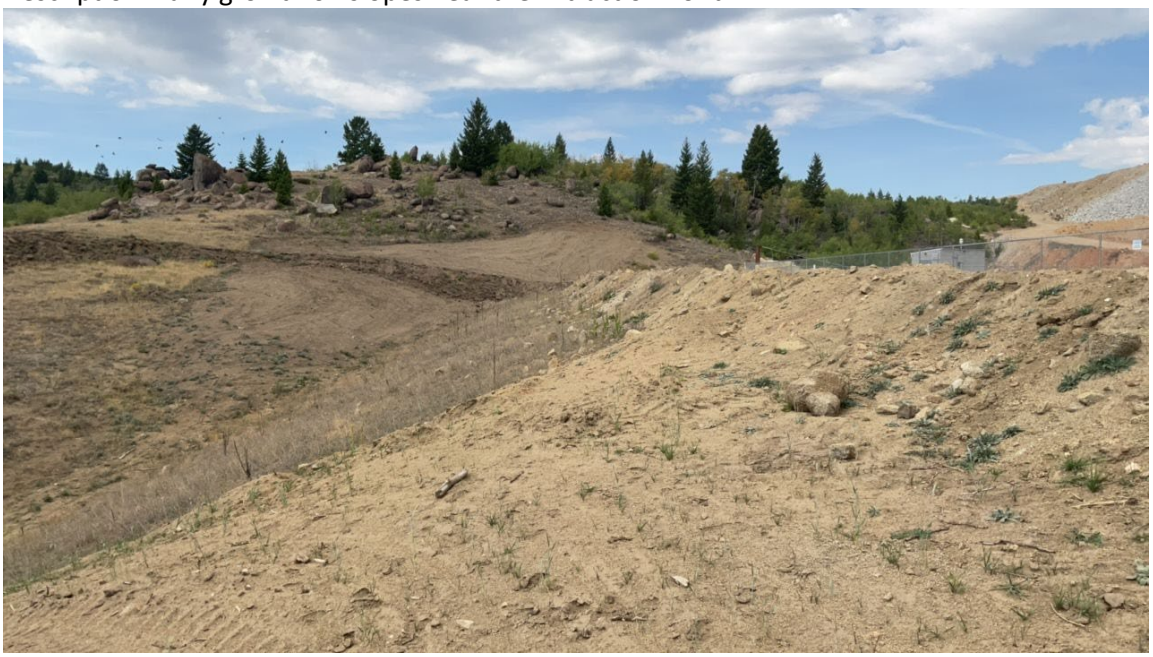

Photo #: 44
File: image-20240904-202412.jpg
Location: -112.52093, 46.04058
Date, Time: 2024/09/04, 14:24:12
Description: Looking across the North/Northwest Dumps, a portion of this area was purchased by MR.

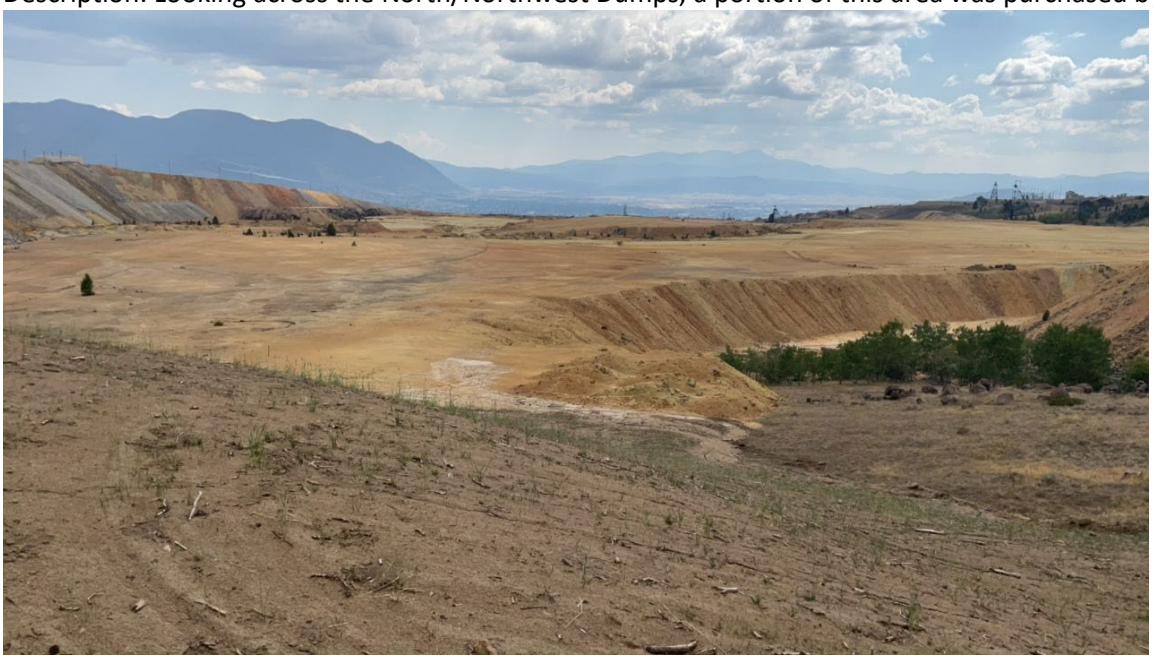

Photo #: 45
File: image-20240904-202456.jpg
Location: -112.52084, 46.0407
Date, Time: 2024/09/04, 14:24:56
Description: West Embankment Extraction Pond continues to manage seepage, with ample capacity.

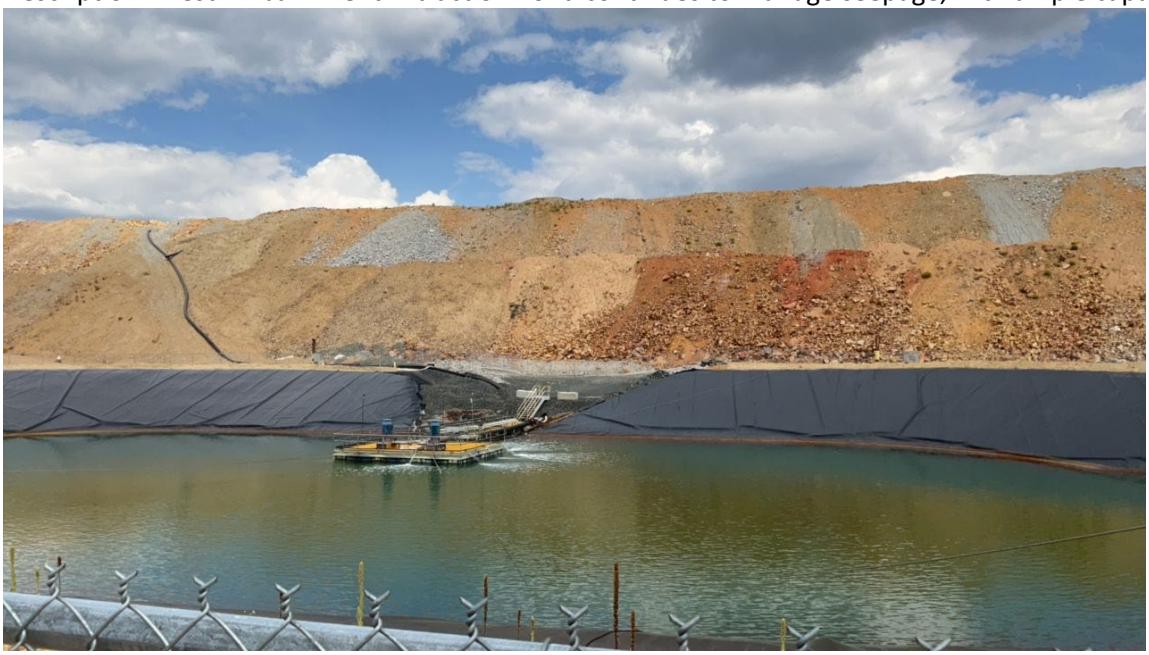

Photo #: 46
File: image-20240904-203150.jpg
Location: -112.5098, 46.03313
Date, Time: 2024/09/04, 14:31:50
Description: Overview of Horseshoe Bend area and ongoing construction of rock drains.

Photo #: 47
File: image-20240904-203159.jpg
Location: -112.50983, 46.03313
Date, Time: 2024/09/04, 14:31:59
Description: Overview of Horseshoe Bend, Seep 10 conveyance channel, and Berkeley Pit

Photo #: 48
File: image-20240904-204308.jpg
Location: -112.50223, 46.02403
Date, Time: 2024/09/04, 14:43:08
Description: Construction of the rock drains in the Horseshoe Bend area.

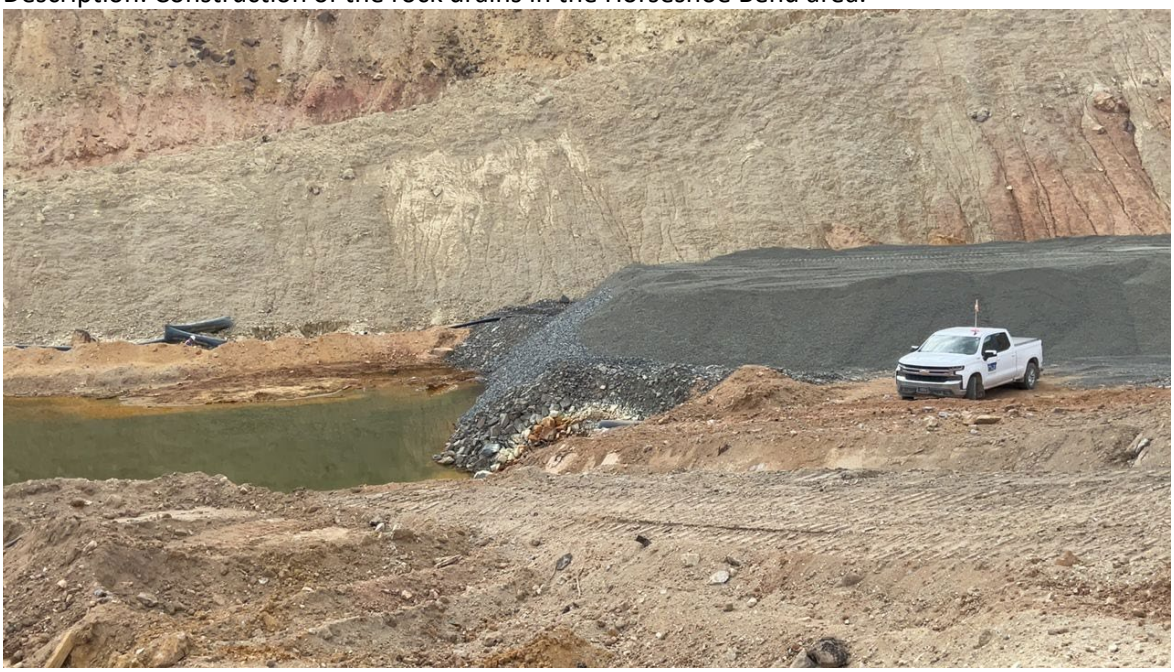

Photo #: 49
File: image-20240904-204320.jpg
Location: -112.50251, 46.02413
Date, Time: 2024/09/04, 14:43:20
Description: Construction of the rock drains in the Horseshoe Bend area.

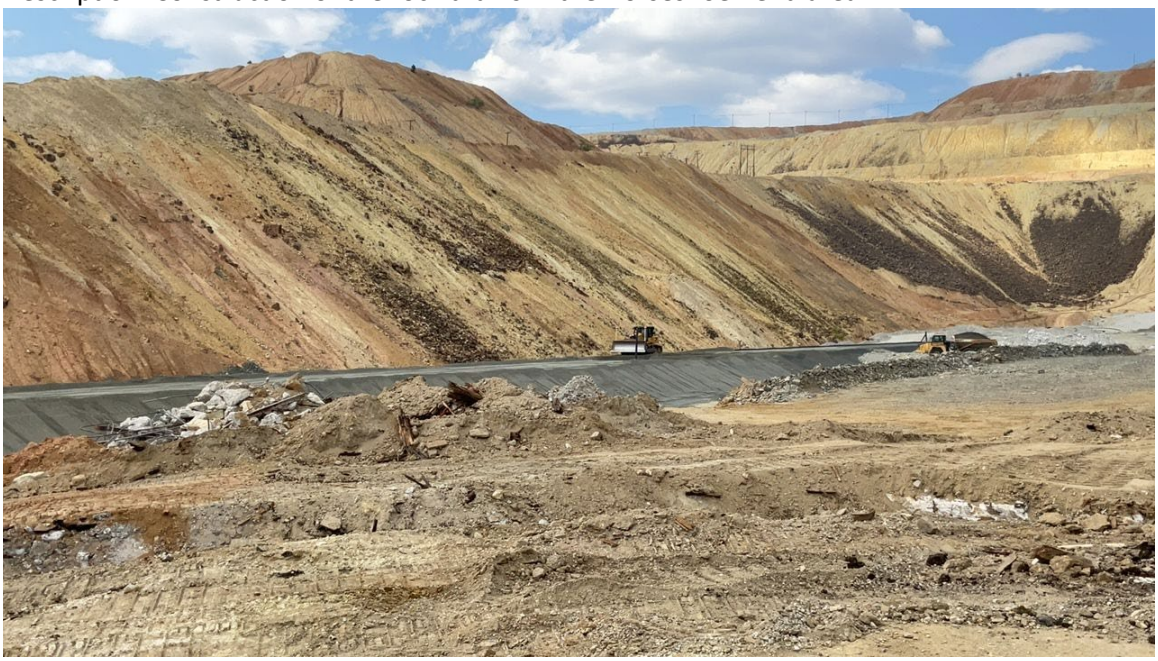

Photo #: 50
File: image-20240904-204336.jpg
Location: -112.50249, 46.02416
Date, Time: 2024/09/04, 14:43:36
Description: Mechanic shops remain in this area, but the old precipitation plant has been removed.

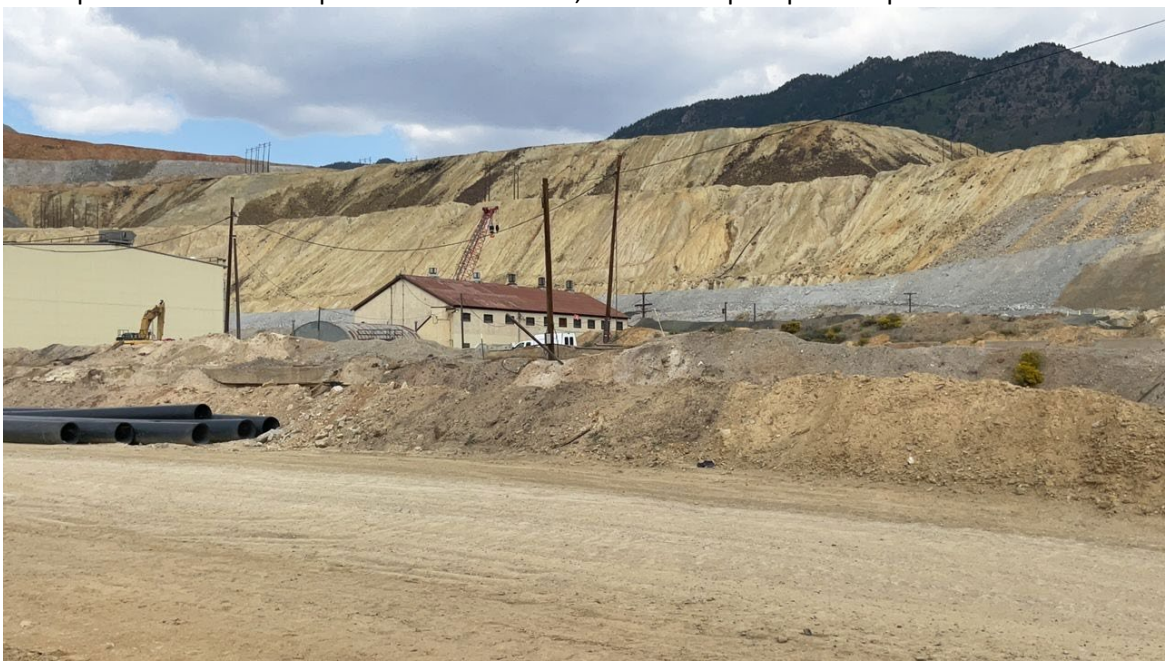

Photo #: 51
File: image-20240904-204622.jpg
Location: -112.50204, 46.02768
Date, Time: 2024/09/04, 14:46:22
Description: Contact of rock drain and underlying surface, seepage is routed away in a channel.

Photo #: 52
File: image-20240904-204633.jpg
Location: -112.50203, 46.02768
Date, Time: 2024/09/04, 14:46:33
Description: Contact of rock drain and underlying surface, zones within the drain are visible.