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: Lopez Quarry No. 2	**MINE/PROSPECTING ID#:** M-2007-034	**MINERAL:** Sand and gravel	**COUNTY:** Las Animas
INSPECTION TYPE: Monitoring	**WEATHER:** Clear	**INSP. DATE:** November 29, 2023	**INSP. TIME:** 08:15
OPERATOR: S & S Services	**OPERATOR REPRESENTATIVE:** Lonnie Lopez	**TYPE OF OPERATION:** 110c - Construction Limited Impact	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $24,832.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
INSPECTOR(S): Amber Gibson	**INSPECTOR'S SIGNATURE:** 	**SIGNATURE DATE:** December 11, 2023

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Sediment Control
PROBLEM: Erosion gullies and ruts were observed on-site. This is a problem at this time for failure to protect the affected land from erosion pursuant to C.R.S. 34-32.5-116 (4) (j).
CORRECTIVE ACTIONS: The Operator shall provide photo documentation to the Division verifying erosion gullies and ruts have been repaired, and that the site has have been reconstructed and stabilized to prevent erosion damage by the corrective action date.
CORRECTIVE ACTION DUE DATE: 2/12/24

INSPECTION TOPIC: Signs & Markers
PROBLEM: The affected area boundary markers are incorrectly placed. This is a problem for failure to maintain boundary markers around the affected area as required by Section 3.1.12(2) of the rule.
CORRECTIVE ACTIONS: The Operator shall replace the boundary markers in the correct location(s). The Operator shall provide photographic and/or GPS coordinates of the replaced marker as proof to the Division that this has been done by the corrective action date.
CORRECTIVE ACTION DUE DATE: 2/12/24

INSPECTION TOPIC: Topsoil
PROBLEM: An area of the east side of the topsoil stockpile does not have established vegetation on it and therefore is susceptible to erosion. Some rills were observed on the pile during the inspection. Rule 3.1.9(1) states if topsoil is not replaced into the backfill area within a time short enough to avoid deterioration of the topsoil, vegetative cover or other means shall be employed so that the topsoil is protected from erosion.
CORRECTIVE ACTIONS: The Operator shall seed the stockpile with the seed mix that was submitted as part of the approved Reclamation Plan. The Operator shall demonstrate compliance by submitting seed tags, a bill of sale or photographs of seeding activities.
CORRECTIVE ACTION DUE DATE: 2/12/24

OBSERVATIONS

The Lopez Quarry No. 2 was inspected by Amber Gibson with the Division of Reclamation, Mining and Safety (Division/DRMS). The inspection was conducted as a routine monitoring inspection as part of the Division's Normal I & E Program. Lonnie Lopez represented the Operator, S & S Services, accompanied me during the inspection. The weather was cool and clear at the time of the inspection.

This site is an active, 9.80 acre, 110c permit held by S & S Services. This site is located approximately 5 miles east of Weston, CO. The main mining commodities at the site are sand and gravel. Both the pre and post mining land use is rangeland.

Availability of Records:
The annual report, map, and fee are paid through September 7, 2024. The annual report states that the affected acres at the site (including mining and incomplete and/or unreleased reclamation) is 9 acres. However, in review of the site from aerial imagery, it appears that the disturbance is actually around 7.5 acres (see Figure 1).

Backfilling and Grading:
A few highwalls currently exist at the site (Photos 1-3, and purple path lines on Map 1). The northernmost highwall on Map 1 used to extend westward to the western boundary. There also used to be a pit extending eastward from the location of Photo 4, indicating the observed disturbance boundary (Photo 4; Map 1). These areas have since been backfilled by the Operator. The area at the disturbance boundary has been graded (Photo 4; Map 1), but the south-western area where the highwall had extended has not. Erosion in the form of ruts and gullies was observed in this area (Photos 5-9; Map 1). However, the Operator has placed and maintained a berm along the south boundary of the permit to ensure that excess sediment has not left the site (Photos 10 & 11; Map 1). The excess erosion in this area has been **cited as a problem** above. The Operator shall grade and stabilize this area to prevent further erosion. Once this area has been stabilized, the Operator shall submit photo evidence as proof by the corrective action date.

Financial Warranty:
The Division currently holds a reclamation bond in the amount of $24,832 for this site. The Division has estimated the reclamation liability at the site based on what is currently disturbed and found it to be $34,227--a difference of $9,395 from the bond currently held. The Division's cost estimate is enclosed with this report. The Operator will have until December 29, 2023 to submit any questions on the cost estimate. If no questions are received, the Division may issue a surety increase notice for the difference. The Operator will have 60 days from the date of the notice to submit and obtain acceptance of the increase in financial warranty from the Division in accordance with Rule 4.2.1(2).

Hydrologic Balance:
No surface water was observed onsite. This is a dry operation and does not encounter groundwater. Storm water runs south-west at the site. Storm water run-off is prevented from leaving the site through the maintenance of a berm lining the southern border.

Gen. Compliance with Mine Plan:
The only product stockpile currently onsite was purchased from Leone Sand and Gravel, LLC, and was

imported to the site. There are two sections of highwalls on-site, with a maximum height of about 13 feet (purple lines; Map 1). The Operator stated that the current highwalls would likely be the last areas that will be mined before ending operations and beginning final reclamation. The Operator also stated that the last time the site was actively excavated was approximately five years ago. Since then, activity onsite involved mixing and hauling product, importing and storing product, backfilling cuts, and site maintenance.

Equipment onsite included a loader, a grizzly screener, and a water tank (Photo 3; Map 1). There is also a white tank acquired from the gas company that is currently being stored onsite, but will likely be converted to scrap (Photo 3; Map 1). Overall, the site is operating according to the approved mine plan, the affected acres are within the permit boundary, and no off-site damage was observed.

Right of Entry:
The Operator owns the land where the site is located, and therefore maintains a Legal Right of Entry per Rule 6.3.7.

Revegetation:
The affected land on-site has not been top soiled or re-vegetated at this time.

Signs and Markers:
A permit sign, posted in compliance with Rule 3.1.12(1) was observed at the entrance to the site (Photo 12.1; Map 1). The corners of the active pit area were marked with signs on the fence line (Photos 12.2-12.4; Map 1). At the inspection, the Division brought the Operator's September 2023 annual report map. On the map, there is a boundary drawn as the 'pit boundary'. The pit is within the approved permit boundary. However, the way that the boundary is illustrated on the map, gives the impression that there is mining disturbance outside of the approved affected area. This has been **cited as a problem** above, pursuant to Rule 3.1.12(2) which states that the affected area must be marked by boundaries. As a 110c operation, the entire permitted area is approved to be affected. The Operator stated during the inspection that they do not intend to mine north of what has already been affected. Because of this, the Operator was instructed during the inspection to move their north-east corner boundary more to the east, but within the permit boundary, to encompass the entire on-site disturbance.

However, upon further review of the site, the marked corners, and the approved map, there appears to be multiple discrepancies as to where the permit boundary lies (see Figure 1). The Operator shall conduct a survey and supply and updated map to correct these discrepancies, and to clarify the permit boundary so that it matches the on-ground features by the corrective action date.

Topsoil:
A topsoil pile was observed running east to west near the south-east corner of the pit boundary. The majority of the pile appears to be stable (Photo 13; Map 1). The Operator stated that they seeded the topsoil pile in 2020 along the south side. On the south-west portion of the pile, on the north facing side, some erosion rills are forming (Photo 14: Map 1). This has been **cited as a problem** above. The Operator shall stabilize the pile and provide photo evidence to the Division by the corrective action date.

Conclusion:
This concludes the Division's Inspection Report; a map and figure displaying topics discussed during the inspection, and a subset of corresponding photographs that were taken during the time of the inspection, are

included below. If you need additional information or have any questions, please contact me by email at amber.gibson@state.co.us or by telephone at (720) 836-0967.

Inspection Contact Address
Lonnie Lopez
S & S Services
20999 State Highway 12
Weston, CO 81091

Enclosure: 2023 Reclamation Cost Estimate

CC: Jared Ebert, DRMS

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

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

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

PHOTOGRAPHS

Photo 1: Looking north-west at the taller (west) highwall.

Photo 2: Looking east along the shorter (east) highwall, north of the topsoil pile (red arrow).

Photo 3: Looking north from the topsoil pile at the west and east highwalls. In the photo is the grizzly screener, red water tank, loader, and extra tank.

Photo 4: Looking east along the northern disturbance boundary. The area to the left of the trees is un-affected.

Photo 5: Area where the highwall that extended to the western boundary of the permit has been backfilled. The arrows indicate an area where the old highwall is partially exposed.

Photo 6: Area south of the old highwall area where erosion gullies have formed.

Photo 7: Area south of the old highwall that has been backfilled but has begun to erode.

Photo 8: Southern edge of the west highwall where it dwindles out in a westward direction (south of Photo 8's icon on Map 1).

Photo 9: Looking north from near the south-west corner of the pit at the old highwall (red arrows) and the current highwall's corner (yellow line).

Photo 10: Looking south at an area where the water and sediment from the erosion in the west side of the pit is accumulating and is contained by a southern berm.

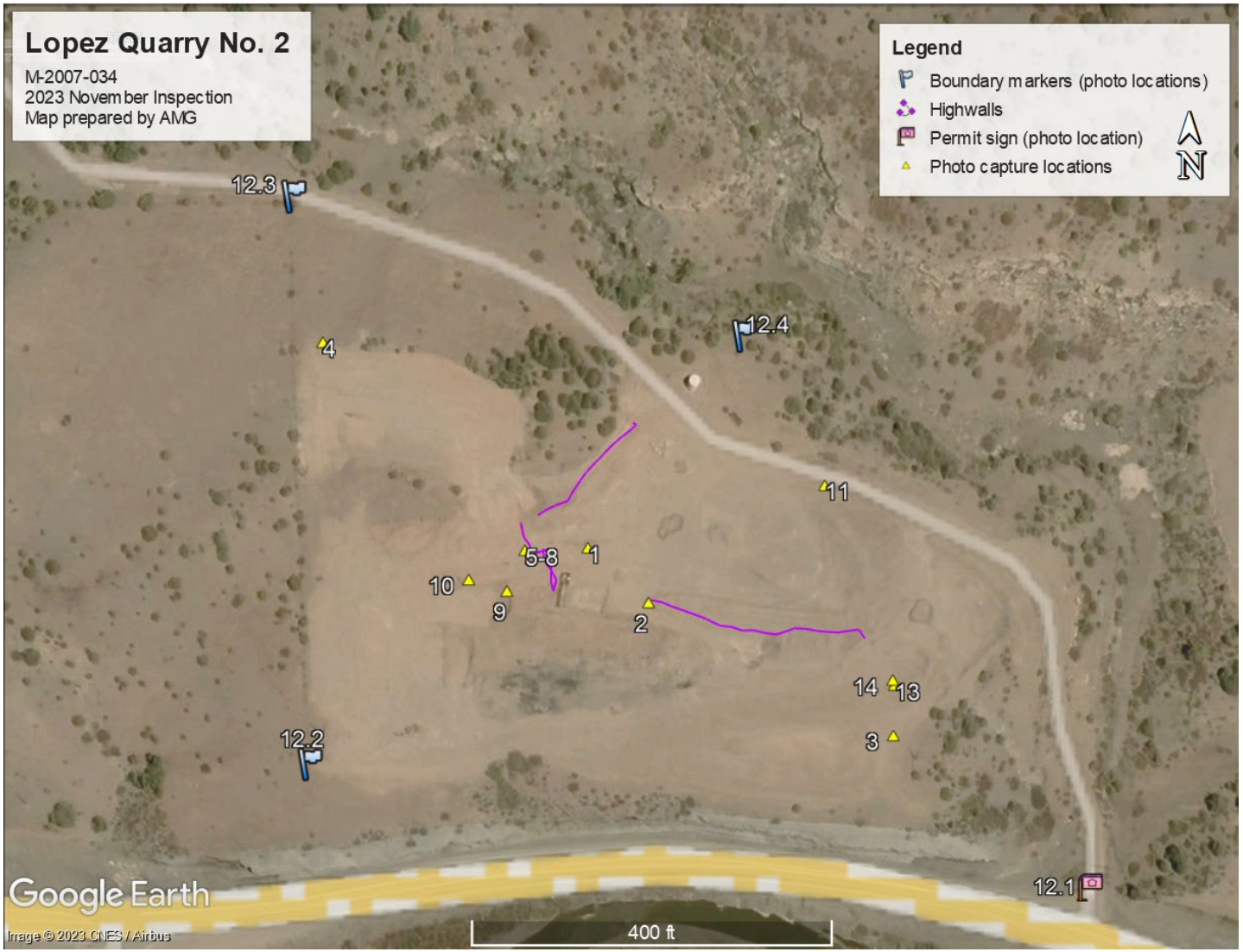
Photo 11: Looking south-east at an area where the water and sediment from storm water on the east side of the pit is accumulating and is contained by a southern berm.

Photos 12.1-12.4: 1) Permit sign at entrance from public road. 2-4) Pit boundary corner posts. **The south-east corner was also marked and observed by the Division, but the point taken in the field did not save.*

Photo 13: Looking west along the topsoil pile.

Photo 14: Looking south at an area on the north facing side of the east portion of the topsoil pile where erosion is occurring.

MAPS



Map 1: Map of the permit area during the November 29, 2023 DRMS inspection. This map was generated using Google Earth Pro, with the most recent aerial imagery being from May 2020.

FIGURES

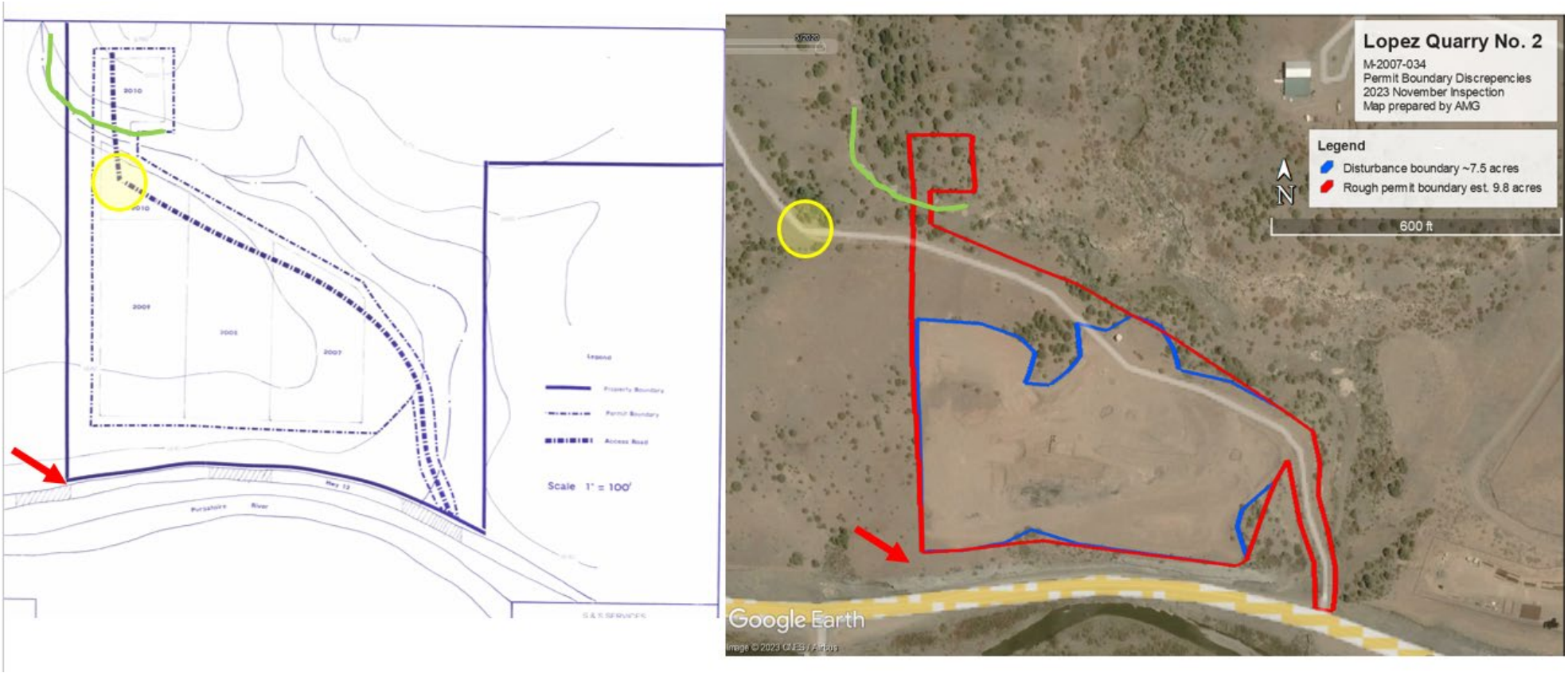


Figure 1: This figure highlights the main discrepancies in the permit boundary. The map on the left is the approved mining plan map with the approved boundary. The map on the right contains a red polygon that represents an approximation of how the permit boundary actually falls in the area, and a blue polygon that highlights the disturbance boundary onsite. When looking at aerial imagery in Google Earth (right image), we see that a few features on the ground are not as depicted on the Mining Plan Map (yellow circle, green line, and red arrow). The yellow circle highlights where the access road bends to the north-west. The red arrow highlights the proximity of the permit extent to the highway. The green line highlights where the river bends in relation to the bend in the access road.

COST SUMMARY WORK

Task description: **Reclamation Cost Summary for the Lopez Quarry No. 2**

Site: **Lopez Quarry No. 2** Permit Action: 2023 Inspection Permit/Job#: M2007034

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 12/7/2023 County: Las Animas Filename: M034-000
User: AMG

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Cut slopes to 3:1	DOZER	1	0.51	$227
002	Apply 6 inches of topsoil over 6 acres	DOZER	1	17.74	$7,839
003	Apply 2 inches of topsoil over 1.5 acres	DOZER	1	1.42	$627
004	Re-vegetate 7.5 acres	REVEGE	1	7.50	$12,828
005	Mobilization and demobilization of equipment	MOBILIZE	1	4.24	$4,878
	SUBTOTALS:			**31.41**	**$26,399**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$533
Performance bond:	1.05	Total =	$277
Job superintendent:	15.71	Total =	$1,022
Profit:	10.00	Total =	$2,640
		TOTAL O & P =	$4,472
		CONTRACT AMOUNT (direct + O & P) =	$30,871

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	4.25	Total =	$1,312
Reclamation management and/or administration:	5.00		$1,544
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$7,828
		TOTAL BOND AMOUNT (direct + indirect) =	**$34,227**

BULLDOZER WORK

Task description: **Cut slopes to 3:1**

Site: **Lopez Quarry No. 2** Permit Action: 2023 Inspection Permit/Job#: M2007034

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 12/7/2023 County: Las Animas Filename: 1
User: AMG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$241.38	NA
Operating Cost/Hour:	$143.92	100
Ripper own. Cost/Hour:	$14.11	NA
Ripper op. Cost/Hour:	$3.73	50
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $444.44
Total Fleet Cost/Hour: **$444.44**

MATERIAL QUANTITIES

Initial Volume: 396
Swell factor: 1.266
Loose volume: **501** LCY

Source of estimated volume: Avg 9' x 500' (remaining HWs)
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet
Unadjusted hourly production: 1,400.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -10 %
Average site altitude: 6,630 feet

Material weight: 2,700 lbs/LCY

Weight description: Sand and clay - Loose

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.852	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7017

Adjusted unit production: 982.38 LCY/hr

Adjusted fleet production: **982.38** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $0.452/LCY

Total job time: **0.51** Hours

Total job cost: **$227**

BULLDOZER WORK

Task description: **Apply 6 inches of topsoil over 6 acres**

Site: **Lopez Quarry No. 2** Permit Action: 2023 Inspection Permit/Job#: M2007034

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 12/7/2023 County: Las Animas Filename: 2
User: AMG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$241.38	NA
Operating Cost/Hour:	$143.92	100
Ripper own. Cost/Hour:	$14.11	NA
Ripper op. Cost/Hour:	$1.12	15
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $441.83
Total Fleet Cost/Hour: **$441.83**

MATERIAL QUANTITIES

Initial Volume: 4,840
Swell factor: 1.215
Loose volume: **5,881** LCY

Source of estimated volume: 6” over 6 acres of mined area
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet
Unadjusted hourly production: 377.8 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: -10 %
Average site altitude: 6,630 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8773

Adjusted unit production: 331.44 LCY/hr

Adjusted fleet production: **331.44** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $1.333/LCY

Total job time: **17.74** Hours

Total job cost: **$7,839**

BULLDOZER WORK

Task description: **Apply 2 inches of topsoil over 1.5 acres**

Site: **Lopez Quarry No. 2** Permit Action: 2023 Inspection Permit/Job#: M2007034

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 12/7/2023 County: Las Animas Filename: M034-003
User: AMG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$241.38	NA
Operating Cost/Hour:	$143.92	100
Ripper own. Cost/Hour:	$14.11	NA
Ripper op. Cost/Hour:	$1.12	15
Operator Cost/Hour:	$41.30	NA

Total unit Cost/Hour: $441.83
Total Fleet Cost/Hour: **$441.83**

MATERIAL QUANTITIES

Initial Volume: 387
Swell factor: 1.215
Loose volume: **470** LCY

Source of estimated volume: 2" over 1.5 acres of remaining disturbance
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet
Unadjusted hourly production: 377.8 LCY/hr

Materials consistency description: Consolidated stockpile 1.0

Average push gradient: -10 %
Average site altitude: 6,630 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8773

Adjusted unit production: 331.44 LCY/hr

Adjusted fleet production: **331.44** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $1.333/LCY

Total job time: **1.42** Hours

Total job cost: **$627**

REVEGETATION WORK

Task description: **Re-vegetate 7.5 acres**

Site: **Lopez Quarry No. 2** Permit Action: 2023 Inspection Permit/Job#: M2007034

PROJECT IDENTIFICATION

Task #: 004 State: Colorado Abbreviation: None
Date: 12/7/2023 County: Las Animas Filename: 4
User: AMG

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Superphosphate, 0-20-0 with 12% S	30.00	pound	$0.69	$20.70
			Total Fertilizer Materials Cost/Acre	**$20.70**

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	$41.82
Total Fertilizer Application Cost/Acre	**$41.82**

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	$112.82
Total Tilling Cost/Acre	**$112.82**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	2.00	32.64	$31.95
Little Bluestem - Native	1.00	5.97	$13.57
Smooth Brome - Lincoln	7.50	24.97	$24.94
Milk Vetch, Cicer - Lutana	1.00	3.33	$8.20
Western Wheatgrass - Arriba	8.00	20.20	$52.00
Totals Seed Mix	19.50	87.11	**$130.65**

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	$429.79	$859.57
Total Mulch Materials Cost/Acre				**$859.57**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$74.46
Power mulcher (MEANS 32 91 13.16 0350)	$147.67
Total Mulch Application Cost/Acre	**$222.13**

JOB TIME AND COST

No. of Acres:	7.5	Cost /Acre:	$1,619.69
Estimated Failure Rate:	25%	Cost /Acre*:	$362.65
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	**$12,147.68**
Reseeding Job Cost:	**$679.97**
Total Job Cost:	**$12,828**
Job Hours:	**7.50**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization and demobilization of equipment**

Site: **Lopez Quarry No. 2** Permit Action: 2023 Inspection Permit/Job#: M2007034

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 12/7/2023 County: Las Animas Filename: M034-005
User: AMG

Agency or organization name: DRMS

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	$20.26	$36.04	$47.05
Operating Cost/Hour:	$39.51	$76.08	$82.85
Operator Cost/Hour:	$22.52	$22.52	$22.52
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$82.29	$158.17	$175.95

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	53.08	$255.49	$175.95	1	$431.44	$175.95	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$6.73	$82.29	2	$178.04	$164.58	$500.00
Power Mulcher (Bowie LD-90)	6.00	$25.94	$82.29	1	$108.23	$82.29	$250.00
Subtotals:					**$717.71**	**$422.82**	**$1,000.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	$88.63	1	$88.63	$88.63
Subtotals:			**$88.63**	**$88.63**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	TRINIDAD	
Total one-way travel distance:	20.00	miles
Average Travel Speed:	50.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$4,807.18	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$70.90	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.40	0.40
Return Time (Hours):	0.40	0.40
Loading Time (Hours):	0.66	NA
Unloading Time (Hours):	0.66	NA
Subtotals:	2.12	0.80

JOB TIME AND COST

Total job time:	**4.24**	Hours
Total job cost:	**$4,878**	