



STATE OF
COLORADO

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Hardship Lode Quarry, M1987027- Revised Cost Estimate

1 message

Girardi - DNR, Chris <chris.girardi@state.co.us>

Fri, Apr 18, 2025 at 1:38 PM

To: Nicole Martin <nicole@coloradoquarries.com>

Cc: Jared Ebert - DNR <jared.ebert@state.co.us>

Good afternoon,

Attached to this email is a pdf of the Division's revised cost estimate to complete reclamation at the Hardship Lode Quarry permit. The Division will issue a Surety Increase for the change in reclamation liability shortly.

A hard copy will not be mailed unless requested. Feel free to contact me if you have any questions.

Sincerely,

Chris Girardi

Environmental Protection Specialist Intern



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

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HardshipLodeQuarry_2025RevisedCostEstimate.pdf

248K

COST SUMMARY WORK

Task description: Reclaim site

Site: Hardship Lode Quarry

Permit Action: 2025 Inspection

Permit/Job#: M1987027

PROJECT IDENTIFICATION

Task #: 000
Date: 3/11/2025
User: CMG

State: Colorado
County: Custer

Abbreviation: None
Filename: M027-000

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grade slopes to 3H:1V	DOZER	1	2.63	\$906
002	Spread topsoil	SCRAPER1	1	16.40	\$27,594
003	Revegetation	REVEGE	1	13.00	\$29,104
004	Mobilization	MOBILIZE	1	6.76	\$10,536
<u>SUBTOTALS:</u>				38.79	\$68,140

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	<u>\$1,376</u>
Performance bond:	1.05	Total =	<u>\$715</u>
Job superintendent:	19.39	Total =	<u>\$1,537</u>
Profit:	10.00	Total =	<u>\$6,814</u>
		TOTAL O & P =	<u>\$10,443</u>
		CONTRACT AMOUNT (direct + O & P) =	<u>\$78,583</u>

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>\$500</u>	Total =	<u>\$500</u>
Engineering work and/or contract/bid preparation:	<u>8.00</u>	Total =	<u>\$6,287</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$3,929</u>

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$21,159

TOTAL BOND AMOUNT (direct + indirect) = \$89,299

BULLDOZER WORK

Task description: Grade slopes to 3H:1V

Site: Hardship Lode Quarry Permit Action: 2025 Inspection Permit/Job#: M1987027

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 3/13/2025 County: Custer Filename: M027-001a
User: CMG

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:

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$173.32</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$109.71</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$14.53</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$7.95</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.59</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$344.10</u>	
Total Fleet Cost/Hour:	<u>\$344.10</u>	

MATERIAL QUANTITIES

Initial Volume: 600
Swell factor: 1.430
Loose volume: 858 LCY

Source of estimated volume: Cut down portion of eastern highwall of pit
Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 150 feet
Unadjusted hourly
production: 634.3 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: -15 %
Average site altitude: 8,100 feet

Material weight: 3,300 lbs/LCY

Weight description: Decomposed rock - 75% Rock, 25% Earth

<u>Job Condition</u>	<u>Correction Factor</u>	<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5138

Adjusted unit
production: 325.90 LCY/hr

Adjusted fleet
production: **325.9** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.056/LCY

Total job time: **2.63** Hours
Total job cost: **\$906**

SCRAPER TEAM WORK

Task description: Spread topsoil

Site: Hardship Lode Quarry Permit Action: 2025 Inspection Permit/Job#: M1987027

PROJECT IDENTIFICATION

Task #: 002 State: Colorado Abbreviation: None
Date: 4/15/2025 County: Custer Filename: M027-001
User: CMG

Agency or organization name: DRMS

HOURLY EQUIPMENT COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	Cat D8T - 8SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown: Scraper Work Team Support Equipment Maintenance Equipment

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	50	NA	NA	NA	NA
Ownership cost/hour:	\$329.66	\$173.32	NA	NA	NA	NA
Operating cost/hour:	\$347.48	\$54.86	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$30.90	\$38.59	NA	NA	NA	NA
Unit Subtotals:	\$708.04	\$266.76	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work:	\$1,682.84	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: \$1,682.84

MATERIAL QUANTITIES

Initial volume: 19,360 CCY Swell factor: 1.125
Loose volume: 21,780 LCY

Source of estimated volume: CN01 Exhibit E
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight:	<u>2,650 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Decomposed rock - 25% Rock, 75% Earth</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>30.79 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 8100 feet

	Scraper	Push Dozer	Source
Altitude Adj:	0.980	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.813	0.830	

Travel Time:

Road Condition: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	450.00	-2.00	8.00	6.00	1477	0.38

Haul Time: 0.38 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	450.00	2.00	8.00	10.00	1476	0.35

Return Time: 0.35 minutes

Total Scraper team cycle time: 2.13 minutes
 Adjusted for job conditions: 664.14 LCY/Hour
 Selected Number of Scrapers: 2 Scraper(s)
 Adjusted single scraper team (unit) hourly production: 1,328.28 LCY/Hour
 Adjusted multiple scraper team (fleet) hourly production: 1,328.28 LCY/Hour

Unadjusted unit production/hour: 816.90 LCY/Hour

Optimal Number of Scrapers per push
 dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 16.40 Hours

Unit cost: \$1.267 /LCY Total job cost: \$27,594

REVEGETATION WORK

Task description: Revegetation

Site: Hardship Lode Quarry Permit Action: 2025 Inspection Permit/Job#: M1987027

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 3/11/2025 County: Custer Filename: M027-002
User: CMG

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Total Tilling Cost/Acre	\$117.61

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	1.50	24.48	\$42.97
Indian Ricegrass - Nespar	5.00	16.18	\$86.11
Arizona Fescue - Redondo	2.50	28.70	\$37.66
Ryegrass, Perennial - Belramo	5.00	28.35	\$12.89
Slender Wheatgrass - San Luis	5.50	20.08	\$33.20
Western Wheatgrass - Arriba	8.00	20.20	\$72.27
Totals Seed Mix	27.50	137.99	\$285.10

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$236.64
Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$492.78	\$985.56
Herbicide - Transline @ 1.0 pt/ac	1.00	ACRE	\$27.11	\$27.11
Total Mulch Materials Cost/Acre				\$1,012.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Power mulcher (MEANS 32 91 13.16 0350)	\$157.25
Weed spray, truck, non-aquatic area, nox. [DMG]	\$83.26
Total Mulch Application Cost/Acre	\$325.89

NURSERY STOCK PLANTING

Common Name	No/ Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre					\$0.00

JOB TIME AND COST

No. of Acres:	13	Cost /Acre:	\$1,977.91
Estimated Failure Rate:	50%	Cost /Acre*:	\$521.74
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$25,712.83
Reseeding Job Cost:	\$3,391.31
Total Job Cost:	\$29,104
Job Hours:	13.00

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization**

Site: **Hardship Lode Quarry** Permit Action: 2025 Inspection Permit/Job#: M1987027

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 4/15/2025 County: Custer Filename: M027-003
User: CMG

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:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

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 637G	57.28	\$329.66	\$125.64	2	\$910.60	\$251.28	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$41.02	\$59.44	2	\$200.92	\$118.88	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$27.21	\$59.44	1	\$86.65	\$59.44	\$250.00
Cat D8T - 8SU	47.71	\$173.32	\$122.78	1	\$296.10	\$122.78	\$250.00

Subtotals:

\$1,494.27	\$552.38	\$1,000.00
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ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Lube Truck, 4x2, 190 HP	\$41.41	1	\$41.41	\$41.41
Generic 5-6 cy, 4x2	\$67.88	1	\$67.88	\$67.88

Subtotals:

\$109.29	\$109.29
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EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:

CAÑON CITY

Total one-way travel distance:

47.00 miles

Average Travel Speed:

50.00 mph

Total Non-Roadable Mob/Demob Cost *

\$10,330.51

* two round trips with haul rig:

Total Roadable Mob/Demob Cost **

\$205.47

** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.94	0.94
Return Time (Hours):	0.94	0.94
Loading Time (Hours):	0.75	NA
Unloading Time (Hours):	0.75	NA
Subtotals:	3.38	1.88

JOB TIME AND COSTTotal job time: **6.76** HoursTotal job cost: **\$10,536**

