

STATE OF
COLORADO

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P2022004, Eagle Mine - Upper and East Mining Areas, Reclamation Cost Estimate

1 message

Simmons - DNR, Leigh <leigh.simmons@state.co.us>

Fri, Sep 30, 2022 at 5:25 PM

To: Jon Edeen <Jon.Edeen@americangypsum.com>, "Cocina, Brittany A" <bcocina@blm.gov>

Jon, Brittany,

After reviewing the P2022004 application, and the BLM's Determination of NEPA Adequacy document, I had very minor questions which Jon quickly answered via email. All that remains before the application can be approved is to put in place the financial warranty. To that end, please find attached a cost estimate for the reclamation of the disturbance proposed with the P2022004 application.

As always, the Division bonds for a worst-case scenario (i.e. the permittee walking away from the maximum permitted disturbance), and the estimate reflects what it would cost for the Division to complete reclamation; clearly this will be significantly more than what it would cost for American Gypsum to complete the work.

I have shared a copy of a [spreadsheet](#) I use to calculate the inputs for the borehole, dozer and revegetation tasks, which also shows some of the assumptions I made.

Please review the estimate and let me know if you have any comments. If you concur, the total \$ amount on the summary page will be the required financial warranty.

Leigh Simmons
Environmental Protection Specialist

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

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leigh.simmons@state.co.us | <https://drms.colorado.gov>**P2022004 ReclamationCostEstimate.pdf**

605K

COST SUMMARY WORK

Task description: Reclamation of 9 exp. holes and associated surface disturb.

Site: Eagle Mine - Upper and East Mining Areas Permit Action: Application Permit/Job#: P2022004

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 9/30/2022 County: Eagle Filename: P004-000
User: LDS

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Plug and seal 9 exp. holes, avg. 370' deep	BOREHOLE	1	26.64	\$24,340
002	Regrade and rip 2 acres of disturbance	DOZER	1	4.62	\$1,638
003	Spread topsoil on 2 acres of disturbance	DOZER	1	2.87	\$943
004	Reseed 2 acres of disturbance	REVEGE	1	2.00	\$1,085
005	Mobilize equipment for reclamation	MOBILIZE	1	2.26	\$2,369
<u>SUBTOTALS:</u>				38.39	\$30,375

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$614
Performance bond:	1.05	Total =	\$319
Job superintendent:	19.19	Total =	\$1,442
Profit:	10.00	Total =	\$3,038

TOTAL O & P = \$5,412

CONTRACT AMOUNT (direct + O & P) = \$35,787

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>8.59</u>	Total =	<u>\$3,074</u>
Reclamation management and/or administration:	<u>6.20</u>		<u>\$2,219</u>

CONTINGENCY: 0.00 Total = \$0

TOTAL INDIRECT COST = \$11,205

TOTAL BOND AMOUNT (direct + indirect) = \$41,580

BOREHOLE SEALING WORK

Task description: Plug and seal 9 exp. holes, avg. 370' deep

Site: Eagle Mine - Upper and East
Mining Areas

Permit Action: Application

Permit/Job#: P2022004

PROJECT IDENTIFICATION

Task #: 001
Date: 9/30/2022
User: LDS

State: Colorado
County: Eagle

Abbreviation: None
Filename: P004-001

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	NA	NA	9.00	EA	\$33.98	\$305.82
Fill hole with cement	Portland cement grout (Bag, material cost only...94 lb. bag)	NA	NA	375.00	bag	\$19.95	\$7,481.25
Cut casing at surface	Exposed casing removal - Calculate Circumference in Linear Feet	6	NA	14.00	LF	\$3.26	\$45.64
Borehole marker	Borehole location/identification marker (EA, material cost only)	NA	NA	9.00	EA	\$37.50	\$337.50
Drill rig time	SCHRAMM T450WS	NA	NA	26.64	EA	\$555.24	\$14,791.59
Water truck time	Water Tanker, 2,500 Gal.	NA	NA	26.64	EA	\$51.72	\$1,377.82

Job Hours: 26.64

Total Cost: \$24,340.00

BULLDOZER WORKTask description: **Regrade and rip 2 acres of disturbance**Site: **Eagle Mine - Upper and East
Mining Areas**Permit Action: **Application**Permit/Job#: **P2022004****PROJECT IDENTIFICATION**Task #: **002**
Date: **9/30/2022**
User: **LDS**State: **Colorado**
County: **Eagle**Abbreviation: **None**
Filename: **P004-002**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**
Horsepower: **405**
Blade Type: **Semi-Universal**
Attachment: **3-shank ripper**
Shift Basis: **1 per day**
Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$146.30	NA
Operating Cost/Hour:	\$141.41	100
Ripper own. Cost/Hour:	\$17.01	NA
Ripper op. Cost/Hour:	\$8.85	100
Operator Cost/Hour:	\$41.30	NA
Total unit Cost/Hour:	\$354.87	
Total Fleet Cost/Hour:	\$354.87	

MATERIAL QUANTITIESInitial Volume: **1,613**
Swell factor: **1.250**
Loose volume: **2,016 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**
Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**
Unadjusted hourly production: **1,243.2 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **5 %**
Average site altitude: **7,000 feet**Material weight: **2,650 lbs/LCY**Weight description: **Decomposed rock - 25% Rock, 75% Earth****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3513

Adjusted unit production: 436.74 LCY/hr

Adjusted fleet production: **436.74** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.813/LCY

Total job time: **4.62** Hours

Total job cost: **\$1,638**

BULLDOZER WORKTask description: Spread topsoil on 2 acres of disturbanceSite: Eagle Mine - Upper and East
Mining AreasPermit Action: ApplicationPermit/Job#: P2022004**PROJECT IDENTIFICATION**Task #: 003
Date: 9/30/2022
User: LDSState: Colorado
County: EagleAbbreviation: None
Filename: P004-003Agency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SU
Horsepower: 405
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$146.30</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$141.41</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>100</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: \$329.01
Total Fleet Cost/Hour: **\$329.01****MATERIAL QUANTITIES**Initial Volume: 1,613
Swell factor: 1.429
Loose volume: **2,304 LCY**Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feet
Unadjusted hourly production: 1,243.2 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 5 %
Average site altitude: 7,000 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.000</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6467

Adjusted unit production: 803.98 LCY/hr

Adjusted fleet production: **803.98** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.409/LCY

Total job time: **2.87** Hours

Total job cost: **\$943**

REVEGETATION WORKTask description: Reseed 2 acres of disturbanceSite: Eagle Mine - Upper and East
Mining AreasPermit Action: ApplicationPermit/Job#: P2022004**PROJECT IDENTIFICATION**Task #: 004
Date: 9/30/2022
User: LDSState: Colorado
County: EagleAbbreviation: None
Filename: P004-004Agency 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
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	2.50	8.09	\$16.25
Bottlebrush Squirreltail	1.40	6.17	\$22.72
Sandberg Bluegrass - VNS	0.40	8.49	\$3.36
Thickspike Wheatgrass - Critana	2.50	8.84	\$17.19
Muttongrass	0.30	6.20	\$10.32
Rabbitbrush, Rubber	0.25	3.72	\$16.07
Winter Fat	1.50	3.82	\$30.75
Bluebunch Wheatgrass - Goldar	2.80	9.00	\$12.88

Totals Seed Mix	11.65	54.34	\$129.54
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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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

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

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: 2 Cost /Acre: \$361.54
 Estimated Failure Rate: 50% Cost /Acre*: \$361.54
 *Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$723.08**
 Reseeding Job Cost: **\$361.54**
 Total Job Cost: **\$1,085**
 Job Hours: **2.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize equipment for reclamation**Site: **Eagle Mine - Upper and East
Mining Areas**

Permit Action:

ApplicationPermit/Job#: P2022004**PROJECT IDENTIFICATION**Task #: 005
Date: 9/30/2022
User: LDSState: Colorado
County: EagleAbbreviation: None
Filename: P004-005Agency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per day
Cost Data Source: CRG DataTruck 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:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

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 D9T - 9SU	66.13	\$163.31	\$136.92	1	\$300.23	\$136.92	\$250.00
SCHRAMM T450WS	0.00	\$258.41	\$68.22	1	\$326.63	\$68.22	\$250.00

Subtotals:

\$626.86	\$205.14	\$500.00
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ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$30.60	1	\$30.60	\$30.60

Subtotals:

\$30.60	\$30.60
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EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: GYPSUM
 Total one-way travel distance: 2.00 miles
 Average Travel Speed: 30.00 mph

Total Non-Roadable Mob/Demob Cost * \$2,364.65
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$4.08
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.07	0.07
Return Time (Hours):	0.07	0.07
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.13	0.13

JOB TIME AND COST

Total job time: 2.27 Hours

Total job cost: \$2,369