



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

1313 Sherman St. Room 215  
Denver, CO 80203

February 27, 2020

Mr. George Glasier  
Pinon Ridge Mining LLC  
P O Box 825  
31161 Highway 90  
Nucla, CO 81424

**Re: St Jude Mine, Permit No. M-1978-039-HR, Financial Warranty Increase, Revision No. SI-3**

Dear Mr. Glasier:

In an effort to ensure the Financial Warranty for the above referenced site adequately reflects the actual current costs of fulfilling the requirements of the approved reclamation plan, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed).

Division calculations estimate the cost to reclaim the above referenced site to be **\$69,828.00**. This is an increase of **\$8,807.00** over the **\$61,021.00** currently held by the Division. This estimate is based on conditions observed during the February 11, 2020 inspection. The additional amount needs to be submitted and accepted prior to **Monday, April 27, 2020**.

Please make arrangements with Gabriel Benvenuti at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Gabriel Benvenuti.

If you require additional information, or have questions or concerns, please feel free to contact me. Lucas West at the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, CO 80203, by phone at 303-866-3567 Extension 8187 or by email at [lucas.west@state.co.us](mailto:lucas.west@state.co.us).

Sincerely,

Lucas J. West  
Environmental Protection Specialist

Enclosure: Reclamation Cost Estimate Worksheets



CC: Gabriel R. Benvenuti, DRMS Statewide Financial Warranty Specialist  
James Blair, Bureau of Land Management  
Travis Marshall, Senior Environmental Protection Specialist  
Russ Means, Active Mines Program Director (Minerals)  
Jeff Fugate, DRMS Minerals AGO Counsel

## COST SUMMARY WORK

Task description: \_\_\_\_\_

Site: St Jude Mine

Permit Action: 2020 Update

Permit/Job#: M1978039HR

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 2/25/2020

County: San Miguel

Filename: M039-000

User: LJW

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Demolish onsite structures; underground or surface disposal	DEMOLISH	1	30.00	\$8,414
002a	Remove Operational Soils from lined ore pad, fold up liner	EXCAVATE	1	0.75	\$101
002b	Load and Carry liner underground for disposal	TRUCK1	1	0.74	\$146
002c	Grade out material from deconstructed Ore Pad	DOZER	1	0.38	\$107
003	Portal closure (backfill and recontour)	MINESEAL	1	24.00	\$6,220
004	Grade waste dump (DRA), pad and portal areas	DOZER	1	21.39	\$6,042
005	Rip compaction on pad and Roads	RIPPER	1	5.63	\$1,644
006	Carry topsoil to pad for spreading	LOADER	1	11.57	\$980
007	Spread topsoil on pad areas	DOZER	1	2.84	\$801
008	Grade access road	DOZER	1	0.52	\$147
009	Revegetate disturbed areas	REVEGE	1	24.00	\$16,289
010	Haul reclamation equipment to and from site	MOBILIZE	1	10.00	\$9,043
<b><u>SUBTOTALS:</u></b>				<b>131.82</b>	<b>\$49,934</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02  
Performance bond: 1.05  
Job superintendent: 65.91  
Profit: 10.00

Total = \$1,009

Total = \$524

Total = \$4,573

Total = \$4,993

TOTAL O & P = \$11,100

CONTRACT AMOUNT (direct + O & P) = \$61,034

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500  
Engineering work and/or contract/bid preparation: 8.59  
Reclamation management and/or administration: 5.00

Total = \$500

Total = \$5,243

\$3,052

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$19,894

**TOTAL BOND AMOUNT (direct + indirect) = \$69,828**

## DEMOLITION WORK

Task description: Demolish onsite structures; underground or surface disposal

Site: St Jude Mine

Permit Action: 2020 Update

Permit/Job#: M1978039HR

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 2/25/2020

County: San Miguel

Filename: M039-2020

User: LJW

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 96.90 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Shop/dry/office metal bldg.	40x50x15	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 200 ft. push	30,000.00	CF	\$0.18	\$5,460.00
Shop/dry/office bldg. concrete slab	40x50	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 200 ft. push	2,000.00	SF	\$0.60	\$1,190.00
Denison-owned powerlines	630 LF	Disposal of utility pole cross arms and hardware surplus material	630.00	LF	\$0.01	\$6.30
Electric substation, fenced	10x15x6	Fencing, chain link, including posts and fabric - to 6 ft. high	50.00	LF	\$2.68	\$134.00
Electric transformers, non-PCB	20x36 in	Hazardous waste removal - Drum solids/liquids, per drum, (1-6 drum job)	2.00	DRUM	\$609.35	\$1,218.69
Wood-cribbed loadouts	40x15x5	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	3,000.00	CF	\$0.18	\$534.00
Misc parts and debris	20x20x10 mass	Push demolished materials/rubble/debris into pit - Max. 100 ft. push	150.00	CY	\$0.93	\$140.10

Job Hours: 30.00

Subtotal  
(unadjusted): \$8,683.09

Total Cost  
(adjusted for location): \$8,413.91

## HYDRAULIC EXCAVATOR WORK

Task description: Remove Operational Soils from lined ore pad, fold up liner

Site: St Jude Mine

Permit Action: 2020 Update

Permit/Job#: M1978039HR

### PROJECT IDENTIFICATION

Task #: 002A

State: Colorado

Abbreviation: None

Date: 2/25/2020

County: San Miguel

Filename: M039-002a

User: LJW

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 324D L 9'-8" Stick

Attachment 1: ROPS Cab

Horsepower: 194

Weight (MT): 24.85

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$46.78	NA
Operating Cost/Hour:	\$49.99	100
Operator Cost/Hour:	\$37.27	NA
Total Unit Cost/Hour:	\$134.03	
Total Fleet Cost/Hour:	\$134.03	

### MATERIAL QUANTITIES

Initial volume: 200

CCY

Swell factor: 1.335

Loose volume: 267

LCY

Source of estimated volume: 60' x 60' ore pad, 1.5' deep / 27 = 200 CY

Source of estimated swell factor: Cat Handbook

### HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: AVERAGE

Secondary Job Condition within Basic Description: AVERAGE

Cycle Time Value: 0.293 minutes

#### Load Bucket Capacity

Bucket Size Class: Medium

Rated Capacity: 2.26 LCY (heaped)

Bucket Fill Factor: 0.925 Loose material - 1/8" to 3/8" (90 - 95%) 0.925

Adjusted Capacity: 2.09 LCY

#### Job Condition Correction Factors

Site Altitude: 5800 feet

Altitude Adj:	1.00	Source (CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production: 428.09 LCY/Hour

Adjusted Hourly Unit Production: 355.31 LCY/Hour

Adjusted Hourly Fleet Production: 355.31 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 0.75 Hours

Unit cost: \$0.377 /LCY Total job cost: \$101

**TRUCK/LOADER TEAM WORK**Task description: Load and Carry liner underground for disposalSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 002BState: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-002bUser: LJWAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Generic 2-4 cy, 4x2
-Loader:	Cat 324D L 9'-8" Stick
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$9.75	\$46.78	NA	NA	NA	NA
Operating cost/hour:	\$22.73	\$49.99	NA	NA	NA	NA
%Utilization-ripper:	NA	0	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:	\$31.87	\$37.27	NA	NA	NA	NA
Unit Subtotals:	\$64.35	\$134.03	NA	NA	NA	NA
Number of Units:	1	1	0	0	0	0
Group Subtotals:	Work: \$198.38		Support: \$0.00		Maint: \$0.00	

Total work team cost/hour: \$198.38**MATERIAL QUANTITIES**Initial volume: 75

CCY

Swell factor: 1.000Loose volume: 75

LCY

Source of estimated volume: Rolled and folded 30 Mil PVC LinerSource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:****Truck Payload (weight) Basis:**Material weight: 1

Pounds/LCY

Description: User ProvidedRated Payload: 12,420

Pounds

Payload Capacity: 12,420.00 LCY**Truck Bed (volume) Basis:**

Struck Volume: 2.00 LCY  
 Heaped Volume: 4.00 LCY  
 Average Volume: 3.00 LCY  
 Adjusted Volume: 4.00 LCY

Final Truck Volume Based on Number of Loader Passes: 4.07 LCY**Loading Tool Capacity**Bucket Size Class: Medium

Rated Capacity: 2.260 LCY (heaped)  
 Bucket Fill Factor: 0.900 Other - cemented materials (85 - 95%) 0.900  
 Adjusted Capacity: 2.034 LCY

**Job Condition Corrections:**Site Altitude (ft.): 5800 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	<b>0.830</b>	<b>0.830</b>	

**Loading Tool Cycle Time:**Number of Loading Tool Passes Required to Fill  
Truck: 2 passes**Excavators and Front Shovels:**

Machine Cycle Time vs. Job Condition Rating: ABOVE AVERAGE  
 Selected Value within this Basic Rating: AVERAGE

Track Loaders – Material Description: \_\_\_\_\_

**Cycle Time Elements (min.):**Load: NA Maneuver: NA Dump: 0.100Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)

Net Cycle Time Adjustment: NA minutes  
 Adjusted Loader Cycle Time: 0.239 minutes  
 Net Load Time per Truck: 0.339 minutes

**Truck Cycle Time:**

Truck Exchange Time: 0.50 Minutes Adjusted for site altitude: 0.500 Minutes  
 Truck Load Time: 0.339 Minutes Adjusted for site altitude: 0.339 Minutes  
 Truck Maneuver and Dump Time: 0.80 Minutes Adjusted for site altitude: 0.800 Minutes

**Truck Travel (Haul & Return) Time:**  
penetration 4.0Road Condition: Rutted dirt, little maintenance, no water, 1" tire

## Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	350.00	0.00	4.00	4.00	2665	0.204

Haul Time: 0.204 minutes

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	350.00	0.00	4.00	4.00	2849	0.150

Return Time: 0.150 minutesTotal Truck Cycle Time: 1.993 minutes

Loading Tool unit Production 290.92 LCY/Hour  
 Truck Unit Production 122.47 LCY/Hour  
 Optimal No. of Trucks: 2 Truck(s)

Adjusted for job efficiency: 241.46 LCY/Hour  
 Adjusted for job efficiency: 101.65 LCY/Hour  
 Selected Number of Trucks: 1 Truck(s)

Adjusted hourly truck team production: 101.65 LCY/Hour  
 Adjusted single truck/loader team production: 101.65 LCY/Hour  
 Adjusted multiple truck/loader team production: 101.65 LCY/Hour

**JOB TIME AND COST**

Fleet size: 1 Team(s) Total job time: 0.74 Hours  
 Unit cost: \$1.952 /LCY Total job cost: \$146



**BULLDOZER WORK**Task description: Grade out material from deconstructed Ore PadSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 002CState: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-002cUser: LJWAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$121.49</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$105.84</u>	<u>100</u>
Ripper own.		
Cost/Hour:	<u>\$13.94</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.24</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$282.50</u>	
Total Fleet Cost/Hour:	<u>\$282.50</u>	

**MATERIAL QUANTITIES**Initial Volume: 200Swell factor: 1.335Loose volume: 267 LCYSource of estimated volume: Ore Pad underlayment and Operational SoilsSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 2,110.5 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 5,800 feetMaterial weight: 2,700 lbs/LCYWeight description: Stone - crushed**Job Condition Correction Factor****Source**

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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.852	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3341

Adjusted unit production: 705.12 LCY/hr

Adjusted fleet production: 705.12 LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.401/LCY

Total job time: 0.38 Hours

Total job cost: \$107

## SAFEGUARDING UNDERGROUND OPENINGS

Task description: Portal closure (backfill and recontour)

Site: St Jude Mine

Permit Action: 2020 Update

Permit/Job#: M1978039HR

### PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 2/25/2020

County: San Miguel

Filename: M039-2020

User: LJW

Agency or organization name: DRMS

### UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Backfill inert debris/rock in adit	10x10	Adit closure - backfilling (per cu. yd.)	200.00	CY	\$20.00	\$4,000.00
Backfill earth and recontour portal	10x10	Adit closure - backfilling (per cu. yd.)	111.00	CY	\$20.00	\$2,220.00

Job Hours: 24.00

Total Cost: \$6,220.00

**BULLDOZER WORK**Task description: Grade waste dump (DRA), pad and portal areasSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-2020User: LJWAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$282.50	
Total Fleet Cost/Hour:	\$282.50	

**MATERIAL QUANTITIES**Initial Volume: 12,000Swell factor: 1.335Loose volume: 16,020 LCYSource of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell

factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly  
production: 2,110.5 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push  
gradient: 5 %Average site altitude: 5,800 feetMaterial weight: 2,550 lbs/LCYWeight description: Sandstone**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:	0.700	(FND-MF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3549

Adjusted unit production:	749.02 LCY/hr
Adjusted fleet production:	749.02 LCY/hr

### **JOB TIME AND COST**

Fleet size:	1 Dozer(s)
Unit cost:	\$0.377/LCY
Total job time:	21.39 Hours
Total job cost:	\$6,042

## BULLDOZER RIPPING WORK

Task description: Rip compaction on pad and Roads

Site: St Jude Mine

Permit Action: 2020 Update

Permit/Job#: M1978039HR

### PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 2/25/2020

County: San Miguel

Filename: M039-2020

User: LJW

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU  
Ripper Attachment: 3-Shank Ripper

Horsepower: 405  
Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper Ownership Cost/Hour:	\$13.94	NA
Ripper Operating Cost/Hour:	\$8.96	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$291.46	
Total Fleet Cost/Hour:	\$291.46	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 4.00 acres Rip Depth (ft): 1.00 Volume: 6,453 BCY or CCY

Source of estimated quantity: AM-1 maps

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 2.63 feet/pass  
Average Ripping Width: 7.67 feet/pass  
Average Ripping Length: 250.00 feet/pass  
Average Dozer Speed: 88.00 feet/minute  
Average Maneuver Time: 0.25 minutes/pass  
Production per unit area: 0.855 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.855 Acres/hr  
Site Altitude: 5,800 feet  
Altitude Adj: 1.00 (CAT HB)  
Job Efficiency: 0.83 (1 shift/day)  
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.71 Acres/hr  
Adjusted Hourly Fleet Production: 0.71 Acres/hr

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: 5.64 Hours

Unit cost: \$410.949 Per acre Total job cost: \$1,644



**WHEEL LOADER – LOAD AND CARRY WORK**Task description: Carry topsoil to pad for spreadingSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-2020User: LJWAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 924HHorsepower: 128Attachment 1: ROPS CabShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$20.17	NA
Operating Cost/Hour:	\$23.84	100
Operator Cost/Hour:	\$40.65	NA
Total Unit Cost/Hour:	\$84.65	
Total Fleet Cost/Hour:	\$84.65	

**MATERIAL QUANTITIES**Initial volume: 1,500

CCY

Swell factor: 1.000Loose volume: 1,500

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Loader Cycle Time:**Unadjusted Basic Cycle Time (load, dump, maneuver): 0.475 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.020	minutes
Adjusted Basic Cycle Time:		0.455	minutes

**Rolling Resistance – Road Conditions**Haul: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0Return: Rutted dirt, little maintenance, no water, 1" tire penetration 4.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	200	0.00	4.00	4.00	0.1269	(Cat HB)



Return Route:	200	0.00	4.00	4.00	0.1269	(Cat HB)
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Total Travel Time:	0.2539	minutes
Total Cycle Time:	0.7089	minutes

**Load Bucket Capacity**

Rated Capacity:	2.70	LCY (heaped)
Bucket Fill Factor:	1.050	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	2.84	LCY

**Job Condition Correction Factors**Site Altitude: 5800 feet

Altitude Adj:	1.00	Source (CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	239.96	LCY/Hour
Adjusted Hourly Unit Production:	199.16	LCY/Hour
Adjusted Hourly Fleet Production:	199.16	LCY/Hour

**JOB TIME AND COST**

Fleet size:	1	Loader(s)	Total job time:	7.53	Hours
Unit cost:	\$0.425	/LCY	Total job cost:	\$638	

**BULLDOZER WORK**Task description: Spread topsoil on pad areasSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 007State: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-2020User: LJWAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$121.49</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$105.84</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$13.94</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.24</u>	<u>NA</u>

Total unit Cost/Hour: \$282.50Total Fleet Cost/Hour: \$282.50**MATERIAL QUANTITIES**Initial Volume: 1,500Swell factor: 1.125Loose volume: 1,688 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell  
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly  
production: 1,514.3 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push  
gradient: 0 %Average site altitude: 5,800 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3930

Adjusted unit  
production: 595.12 LCY/hr

Adjusted fleet  
production: 595.12 LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.475/LCY

Total job time: 2.84 Hours

Total job cost: \$801

**BULLDOZER WORK**Task description: Grade access roadSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 008State: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-2020User: LJWAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$13.94	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$282.50	
Total Fleet Cost/Hour:	\$282.50	

**MATERIAL QUANTITIES**Initial Volume: 325Swell factor: 1.165Loose volume: 379 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell  
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly  
production: 2,110.5 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push  
gradient: 0 %Average site altitude: 5,800 feetMaterial weight: 2,900 lbs/LCYWeight description: Decomposed rock - 50% Rock, 50% Earth**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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3455

Adjusted unit production: 729.18 LCY/hr

Adjusted fleet production: 729.18 LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.387/LCY

Total job time: 0.52 Hours

Total job cost: \$147

**REVEGETATION WORK**Task description: Revegetate disturbed areasSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 009State: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-2020User: LJWAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
<b>Total Tilling Cost/Acre</b>	<b>\$101.93</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Native	0.96	15.67	\$13.18
Indian Ricegrass - Native	7.42	24.02	\$48.23
Sand Dropseed	0.14	16.71	\$1.37
Bottlebrush Squirreltail	4.08	17.98	\$66.20
Galleta	4.94	18.03	\$110.41
Muttongrass	0.20	4.13	\$6.88
Sagebrush, Mountain or Big	0.20	10.56	\$3.95
Saltbush, Four Wing	0.50	0.69	\$6.25
Winter Fat	0.50	1.27	\$10.25

<b>Totals Seed Mix</b>	<b>18.94</b>	<b>109.07</b>	<b>\$266.71</b>
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**Application**

<b>Description</b>	<b>Cost /Acre</b>
Broadcast seeding [DMG]	\$267.22
<b>Total Seed Application Cost/Acre</b>	<b>\$267.22</b>

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Herbicide - 2,4D @ 1.0 pt/ac	9.00	ACRE	\$2.74	\$24.66
<b>Total Mulch Materials Cost/Acre</b>				<b>\$614.66</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$70.17
Weed spray, truck, non-aquatic area, nox. [DMG]	\$71.50
<b>Total Mulch Application Cost/Acre</b>	<b>\$141.67</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres:	9	Cost /Acre:	\$1,392.19
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,392.19
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$12,529.71		
Reseeding Job Cost:	\$3,758.91		
Total Job Cost:	\$16,289		
Job Hours:	24.00		

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: Haul reclamation equipment to and from siteSite: St Jude MinePermit Action: 2020 UpdatePermit/Job#: M1978039HR**PROJECT IDENTIFICATION**Task #: 010State: ColoradoAbbreviation: NoneDate: 2/25/2020County: San MiguelFilename: M039-2020User: LJWAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

**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	\$135.43	\$141.54	1	\$276.97	\$141.54	\$250.00
CAT 924H	12.69	\$20.17	\$67.39	1	\$87.56	\$67.39	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$9.74	\$67.39	1	\$77.13	\$67.39	\$250.00
Cat 324D L 9'-8" Stick	27.33	\$46.78	\$123.81	1	\$170.59	\$123.81	\$250.00

Subtotals: **\$697.79** **\$467.52** **\$1,250.00****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.	\$12.96	1	\$12.96	\$12.96

Subtotals: **\$12.96** **\$12.96**



**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	NATURITA	
Total one-way travel distance:	40.00	miles
Average Travel Speed:	40.00	mph

Total Non-Roadable Mob/Demob Cost *	\$9,017.36
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$25.92
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.00	1.00
Return Time (Hours):	1.00	1.00
Loading Time (Hours):	1.50	NA
Unloading Time (Hours):	1.50	NA
Subtotals:	5.00	2.00

**JOB TIME AND COST**

Total job time:	10.00	Hours
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Total job cost:	\$9,043
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