



Simmons - DNR, Leigh &lt;leigh.simmons@state.co.us&gt;

**C1981022, Elk Creek Mine, SI-1, Adequacy letter and updated RCE**

1 message

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

To: Doug Smith &lt;Doug.Smith@oxbow.com&gt;

Doug,

Please find my letter and draft Reclamation Cost Estimate attached.

Leigh Simmons  
Environmental Protection Specialist



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

P 303.866.3567 x 8121 | C 720.220.1180 | F 303.832.8106

1313 Sherman Street, Room 215, Denver, CO 80203

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

On Thu, Aug 5, 2021 at 11:46 AM Simmons - DNR, Leigh &lt;leigh.simmons@state.co.us&gt; wrote:

Thanks for your participation in the informal conference today. Here's my version of what was agreed:

1. Doug will work with Mike Savage to come up with a proposed failure rate for revegetated areas based on the history of re-seeding at the site
2. I will look again at the cost estimate generated with MT8 in an attempt to find cost reductions that were previously overlooked. I will review:
  - Dozer push distances
  - Truck and Scraper haul distances
  - Demo of structures that were entirely or partially within the SL-1 or SL-4 parcels (though I think I already got everything)
  - Reveg tasks 016, 120, 121 and 122: I'll remove the cost of initial seeding for areas that have received Phase II bond release, and will review costs for Mulching, Weed Spraying, Re-Savage).
3. Jim will revisit the question of bonding for structure demolition after structures have been demolished, but before the land has been Phase I released, with OSM

We also discussed some possible areas that could easily be bond released (e.g. the Silos).

My best summary of how to approach future bond release applications was given in the MT8 findings so I won't duplicate it here, but I'm happy to field any follow-up questions.

Leigh Simmons  
Environmental Protection Specialist



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

P 303.866.3567 x 8121 | C 720.220.1180 | F 303.832.8106

1313 Sherman Street, Room 215, Denver, CO 80203

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

On Fri, Jul 23, 2021 at 10:50 AM Simmons - DNR, Leigh &lt;leigh.simmons@state.co.us&gt; wrote:

All,

Per the request of Oxbow Mining, LLC. an informal conference on proposed Surety Increase no. 1 (SI-1) has been scheduled for Thursday, August 5th at 10am.

The link to the video conference is [meet.google.com/asf-mrur-uji](https://meet.google.com/asf-mrur-uji)

Leigh Simmons  
Environmental Protection Specialist



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

P 303.866.3567 x 8121 | C 720.220.1180 | F 303.832.8106

1313 Sherman Street, Room 215, Denver, CO 80203

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

----- Forwarded message -----

From: **Mike Ludlow** <Mike.Ludlow@oxbow.com>

Date: Fri, Jul 23, 2021 at 10:05 AM

Subject: RE: Informal Conference

To: Simmons - DNR, Leigh &lt;leigh.simmons@state.co.us&gt;

Cc: Doug Smith &lt;Doug.Smith@oxbow.com&gt;, Roy Schorsch &lt;Roy.Schorsch@oxbow.com&gt;, Scott Stewart &lt;Scott.Stewart@oxbow.com&gt;

Yes, Thursday August 5 at 10 am will work for me.

Thanks

Mike

**From:** Simmons - DNR, Leigh [mailto:[leigh.simmons@state.co.us](mailto:leigh.simmons@state.co.us)]  
**Sent:** Friday, July 23, 2021 9:27 AM  
**To:** Mike Ludlow <[Mike.Ludlow@OXBOW.COM](mailto:Mike.Ludlow@OXBOW.COM)>  
**Cc:** Doug Smith <[Doug.Smith@OXBOW.COM](mailto:Doug.Smith@OXBOW.COM)>; Roy Schorsch <[Roy.Schorsch@OXBOW.COM](mailto:Roy.Schorsch@OXBOW.COM)>; Scott Stewart <[Scott.Stewart@OXBOW.COM](mailto:Scott.Stewart@OXBOW.COM)>  
**Subject:** Re: Informal Conference

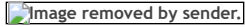
[external email-use caution]

Thank you Mike.

Would Thursday, August 5th at 10am work for you for the informal conference?

Leigh Simmons

Environmental Protection Specialist



P 303.866.3567 x 8121 | C 720.220.1180 | F 303.832.8106

1313 Sherman Street, Room 215, Denver, CO 80203

[leigh.simmons@state.co.us](mailto:leigh.simmons@state.co.us) | <https://drms.colorado.gov>


On Thu, Jul 22, 2021 at 3:45 PM Mike Ludlow <[Mike.Ludlow@oxbow.com](mailto:Mike.Ludlow@oxbow.com)> wrote:

Leigh, please accept this email as a request for an informal hearing regarding the bonding cost calculations as calculated at the midterm permit review. I have reviewed the cost summr cost on your review calculations was \$1,974,914. I have used the divisions costs to perform the remaining tasks and have added the direct cost for the remaining work to be \$543,468 tasks crossed out that have been completed which should not be included in the remaining work to be performed. Section 3.02.2(4) requires the division to adjust the bond for the futu methodology of calculating the bond for Elk Creek does not give adequate credit for the work that has been completed. The work completed has been clearly documented in the Quar

Best Regards,

Michael W Ludlow  
President  
Oxbow Mining, LLC  
Elk Creek Mine  
P.O. Box 535  
Somerset, CO 81434  
970-929-5494 Office  
970-261-5142 Cell

**Attention:** This email was sent from outside the company. Please use caution when opening attachments or clicking on links that are unexpected or arrive from unknown senders.

 **SI1\_Adequacy\_1.pdf**  
2963K



Doug Smith  
Oxbow Mining, LLC.  
PO Box 535  
Somerset, CO 81434

November 18, 2021

**Re: Elk Creek Mine (C-1981-022)**  
**Proposed Surety Increase (SI-1)**

Dear Mr. Smith,

Following discussion at the SI-1 informal conference on August 5, 2021, and the subsequent approval of MR-456, I have reviewed the entire site-wide reclamation cost estimate for the Elk Creek Mine.

I edited 5 tasks from the version completed with MT-8, details are given below:

- Task 001 (Dozer)
  - Average push distance reduced from 400' to 200'
  - Direct cost reduced from \$220,672 to \$102,325
- Tasks 016, 121 and 122 (Reveg)
  - Since all areas these tasks apply to have received Phase II bond release, initial seeding costs have been removed
  - Mulching costs have been removed
  - Re-seeding is applicable to 2% of the total acreage
  - Herbicide is applicable to 5% of the total acreage
  - Work hours = total acreage
  - Direct cost reduced from \$33,770 to \$517 (task 016); from \$82,858 to \$1033 (task 121); and from \$60,188 to \$1033 (task 122)
- Task 120 (Reveg)
  - Since this area has not yet received Phase II bond release, initial seeding costs have been retained
  - Mulching costs have been removed
  - Re-seeding is applicable to 10% of the total acreage
  - Work hours = 2 x total acreage
  - Direct cost reduced from \$400,136 to \$88,171

I have attached a copy of the full SI-1 cost estimate. As you will see, the total dollar amount including indirect costs is estimated at \$1,755,100.

If you concur with the attached estimate I will update the record and finalize SI-1.



Sincerely,

A handwritten signature in blue ink, appearing to read "L. Simmons". The signature is fluid and cursive, with a large initial "L" and a stylized "S".

Leigh Simmons  
Environmental Protection Specialist

## COST SUMMARY WORK

Task description: Updated sitewide estimate for SI-1

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: C022-000

User: LDS

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill and Regrade Elk Creek Facilities Area	DOZER	3	90.27	\$102,325
004	Backfill and Grade Material Used to Widen Access Road	DOZER	3	1.53	\$1,738
005	Backfill and Regrade Elk Creek Mine Area	DOZER	3	101.64	\$115,215
006	Move Fill Material from Elk Creek Mine to Elk Creek Faciliti	SCRAPER1	1	45.33	\$40,628
008	Backfill and Regrade Primary Riprap Borrow Area	DOZER	3	4.75	\$5,390
009	Backfill and Regrade Secondary Riprap Borrow Area	DOZER	3	12.05	\$13,654
010	Backfill and Regrade Elk Creek Mine Rock Safety Catch Bench	DOZER	3	23.52	\$26,665
011	Backfill and Regrade Temporary Conveyor Corridor	DOZER	3	11.87	\$13,457
012	Regrade Expanded Elk Creek Mine Fan Bench	DOZER	3	1.06	\$1,197
016	Re-seed Drill Pads and Roads, 20.72 acres @ 2% failure rate	REVEGE	1	20.72	\$812
023	Spread Overburden on East Refuse Pile	SCRAPER1	1	12.91	\$11,567
034	Rip All Surface Facility Areas	RIPPER	3	29.04	\$36,310
041	Regrade Lower Power Line Access Road	EXCAVATE	1	41.01	\$7,993
042	Regrade Pond C Access Road	DOZER	3	3.85	\$4,364
050	Finish Grade All Disturbed Areas	GRADER	1	53.85	\$9,411
066	Remove Upper Hubbard Creek Sediment Pond	DOZER	1	2.99	\$1,128
067	Regrade East Bench Pond	DOZER	1	0.61	\$229
068	Excavate/Backfill Pond C Wall Area	EXCAVATE	1	1.67	\$326
069	Regrade West Valley Fill Diversion	EXCAVATE	1	1.81	\$354
071	Remove Sewage Leach Field	DOZER	1	0.61	\$229
072	Regrade Pond A	DOZER	1	0.61	\$229
073	Regrade Pond B	DOZER	1	26.02	\$9,830
075	Regrade Pond E	DOZER	1	4.39	\$1,657
077	Regrade Pond F	DOZER	1	2.26	\$853
090	Replace Topsoil from Stockpile to Previously Disturbed Elk A	SCRAPER1	1	1.86	\$1,670
092	Replace Topsoil from Stockpile to East Refuse Area	SCRAPER1	1	5.07	\$4,545
093	Replace Topsoil from Stockpile to West Valley Fill Area	SCRAPER1	1	27.58	\$24,724
094	Replace Topsoil from Stockpile to II-West Refuse Pile	SCRAPER1	1	5.80	\$5,195

095	Replace Topsoil from Stockpile to II West Refuse Pile Road	SCRAPER1	1	1.09	\$977
096	Replace Topsoil from Stockpile to Expanded Elk Creek Mine Fa	DOZER	3	0.13	\$152
098	Replace Topsoil from Stockpile to Elk Creek Mine Area	SCRAPER1	1	18.89	\$16,934
103	Replace Topsoil from Stockpile to Pond F, Ditches and Plunge	DOZER	1	2.86	\$1,079
120	Broadcast Seed Mine Site	REVEGE	1	216.50	\$88,281
121	Re-seed Drill Pads, MR's and TR's, 46.23 acres @ 2% failure	REVEGE	1	46.23	\$1,033
122	Re-seed Light-Use Roads, MR's and TR's, 35.59 acres @ 2% fai	REVEGE	1	35.59	\$1,522
130	Demolish and Remove All Mine Facilities	DEMOLISH	1	600.00	\$747,568
131	Plug and Seal 7 Monitoring wells	BOREHOLE	1	42.00	\$11,422
140	Mobilize/Demobilize Equipment for Initial Reclamation	MOBILIZE	1	10.00	\$25,203
141	Mobilize/Demobilize Equipment for Pond Removal	MOBILIZE	1	7.14	\$5,880
142	Mobilize/Demobilize Equipment for Site Maintenance	MOBILIZE	1	14.00	\$13,875
150	Yearly site maintenance	SITEMAINT ENANCE	1	140.00	\$12,275
<b><u>SUBTOTALS:</u></b>				<b>1669.11</b>	<b>\$1,367,896</b>

**INDIRECT COSTS****OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$27,631
Performance bond:	1.05	Total =	\$14,363
Job superintendent:	834.56	Total =	\$60,113
Profit:	10.00	Total =	\$136,790
		TOTAL O & P =	\$238,897
		CONTRACT AMOUNT (direct + O & P) =	\$1,606,793

**LEGAL - ENGINEERING - PROJECT MANAGEMENT:**

Financial warranty processing (legal/related costs):	\$0	Total =	\$0
Engineering work and/or contract/bid preparation:	5.23	Total =	\$84,035
Reclamation management and/or administration:	4.00		\$64,272

CONTINGENCY:	0.00	Total =	\$0
--------------	------	---------	-----

TOTAL INDIRECT COST = \$387,204

**TOTAL BOND AMOUNT (direct + indirect) = \$1,755,100**

**BULLDOZER WORK**Task description: **Backfill and Regrade Elk Creek Facilities Area**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **001**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-001**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **80,000**Swell factor: **1.125**Loose volume: **90,000 LCY**Source of estimated volume: **Appendix K**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **946.0 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **5 %**Average site altitude: **6,150 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: 332.33 LCY/hr

Adjusted fleet production: **996.99** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$1.137/LCY

Total job time: **90.27** Hours

Total job cost: **\$102,325**

**BULLDOZER WORK**Task description: **Backfill and Grade Material Used to Widen Access Road**Site: **Elk Creek Mine** Permit Action: **SI1** Permit/Job#: **C1981022****PROJECT IDENTIFICATION**

Task #: **004** State: **Colorado** Abbreviation: **None**  
 Date: **11/18/2021** County: **Delta** Filename: **022-004**  
 User: **LDS**

Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**

Basic Machine: **Cat D10T - 10SU**  
 Horsepower: **574**  
 Blade Type: **Semi-Universal**  
 Attachment: **NA**  
 Shift Basis: **1 per day**  
 Data Source: **(CRG)**

**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**  
 Total Fleet Cost/Hour: **\$1,133.53**

**MATERIAL QUANTITIES**

Initial Volume: **1,600**  
 Swell factor: **1.165**  
 Loose volume: **1,864 LCY**

Source of estimated volume: **Technical Revision 21**  
 Source of estimated swell factor: **Cat Handbook**

**HOURLY PRODUCTION**

Average push distance: **125 feet**  
 Unadjusted hourly production: **1,450.0 LCY/hr**

Materials consistency description: **Compacted fill or embankment 0.9**

Average push gradient: **10 %**  
 Average site altitude: **6,100 feet**

Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 405.13 LCY/hr

Adjusted fleet production: **1215.39** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$0.933/LCY

Total job time: **1.53** Hours

Total job cost: **\$1,738**

**BULLDOZER WORK**Task description: **Backfill and Regrade Elk Creek Mine Area**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **005**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-005**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **88,000**Swell factor: **1.165**Loose volume: **102,520 LCY**Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **946.0 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **6,300 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 336.21 LCY/hr

Adjusted fleet production: **1008.63** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$1.124/LCY

Total job time: **101.64** Hours

Total job cost: **\$115,215**

**SCRAPER TEAM WORK**Task description: **Move Fill Material from Elk Creek Mine to Elk Creek Faciliti**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **006**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-006**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: **22,000**

CCY

Swell factor: **1.125**Loose volume: **24,750**

LCY

Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

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

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6200 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2800.00	-10.00	5.00	-5.00	2972	0.99

Haul Time: 0.99 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2800.00	10.00	5.00	15.00	1047	2.70

Return Time: 2.70 minutesTotal Scraper team cycle time: 5.29 minutesAdjusted for job conditions: 546.01 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 546.01 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 546.01 LCY/HourUnadjusted unit production/hour: 657.84 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 45.33 HoursUnit cost: \$1.642 /LCYTotal job cost: \$40,628

**BULLDOZER WORK**Task description: **Backfill and Regrade Primary Riprap Borrow Area**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **008**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-008**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **1,500**Swell factor: **1.165**Loose volume: **1,748 LCY**Source of estimated volume: **Map 18**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **946.0 LCY/hr**Materials consistency description: **Partly consolidated stockpile 1.1**Average push gradient: **30 %**Average site altitude: **6,400 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(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:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1295

Adjusted unit production: 122.51 LCY/hr

Adjusted fleet production: **367.53** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$3.084/LCY

Total job time: **4.75** Hours

Total job cost: **\$5,390**

**BULLDOZER WORK**Task description: **Backfill and Regrade Secondary Riprap Borrow Area**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **009**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-009**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **3,800**Swell factor: **1.165**Loose volume: **4,427 LCY**Source of estimated volume: **Map 18**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **946.0 LCY/hr**Materials consistency description: **Partly consolidated stockpile 1.1**Average push gradient: **30 %**Average site altitude: **6,400 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(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:	0.298	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1295

Adjusted unit production: 122.51 LCY/hr

Adjusted fleet production: **367.53** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$3.084/LCY

Total job time: **12.05** Hours

Total job cost: **\$13,654**

**BULLDOZER WORK**Task description: **Backfill and Regrade Elk Creek Mine Rock Safety Catch Bench**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **010**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-010**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **11,100**Swell factor: **1.165**Loose volume: **12,932 LCY**Source of estimated volume: **Division Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **946.0 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **20 %**Average site altitude: **6,700 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.545	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.1937

Adjusted unit production: 183.24 LCY/hr

Adjusted fleet production: **549.72 LCY/hr**

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$2.062/LCY

Total job time: **23.52 Hours**

Total job cost: **\$26,665**

**BULLDOZER WORK**Task description: **Backfill and Regrade Temporary Conveyor Corridor**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **011**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-011**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **7,400**Swell factor: **1.165**Loose volume: **8,621 LCY**Source of estimated volume: **Operator Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **250 feet**Unadjusted hourly production: **754.3 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **5 %**Average site altitude: **6,250 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production: 242.05 LCY/hr

Adjusted fleet production: **726.15** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$1.561/LCY

Total job time: **11.87** Hours

Total job cost: **\$13,457**

**BULLDOZER WORK**Task description: **Regrade Expanded Elk Creek Mine Fan Bench**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 012State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-012User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$377.84Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: 1,500Swell factor: 1.165Loose volume: **1,748 LCY**Source of estimated volume: Operator EstimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,718.9 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,900 lbs/LCYWeight description: Decomposed rock - 50% Rock, 50% 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:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production: 551.60 LCY/hr

Adjusted fleet production: **1654.8** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$0.685/LCY

Total job time: **1.06** Hours

Total job cost: **\$1,197**

**REVEGETATION WORK**Task description: Re-seed Drill Pads and Roads, 20.72 acres @ 2% failure rateSite: Elk Creek MinePermit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 016State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-016User: LDSAgency 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
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
<b>Total Tilling Cost/Acre</b>	<b>\$290.40</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.50	4.89	\$17.59
Indian Ricegrass - Native	0.50	1.62	\$3.25
Mountain Brome - Bromar	2.00	3.21	\$7.60
Sandberg Bluegrass - VNS	1.50	31.85	\$12.60
Coreopsis, Lance Leafed	0.15	3.84	\$4.28
Western Wheatgrass - Arriba	2.00	5.05	\$13.00
Prairie Junegrass	0.25	13.29	\$6.50
Penstemon, Rocky Mountain	0.15	2.35	\$4.43
Yarrow, White	0.05	3.18	\$2.00

<b>Totals Seed Mix</b>	8.10	69.28	<b>\$71.25</b>
------------------------	------	-------	----------------

**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>
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	\$7.78	\$15.56
Herbicide - Escort @ 1.0 pt/ac	2.00	ACRE	\$194.52	\$389.04
<b>Total Mulch Materials Cost/Acre</b>				<b>\$404.60</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	0.5	Cost /Acre:	\$1,033.47
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	<b>\$516.74</b>
Reseeding Job Cost:	<b>\$0.00</b>
Total Job Cost:	<b>\$517</b>
Job Hours:	<b>20.72</b>

**SCRAPER TEAM WORK**Task description: **Spread Overburden on East Refuse Pile**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 023State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-023User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 14,100

CCY

Swell factor: 1.125Loose volume: **15,863**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY  
 Material description: Decomposed rock - 25% Rock, 75% Earth  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 30.79 LCY

Struck Volume: 24.00 LCY  
 Heaped Volume: 34.00 LCY  
 Average Volume: 29.00 LCY  
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6200 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	1867	0.40

Haul Time: 0.40 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	5.00	5.00	2795	0.35

Return Time: 0.35 minutesTotal Scraper team cycle time: 2.35 minutesAdjusted for job conditions: 1,229.11 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,229.11 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,229.11 LCY/HourUnadjusted unit production/hour: 1,480.85 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 12.91 HoursUnit cost: \$0.729 /LCYTotal job cost: \$11,567

## BULLDOZER RIPPING WORK

Task description: Rip All Surface Facility Areas

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 034

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-034

User: LDS

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D10T - 10SU  
Ripper Attachment: 3-Shank Ripper

Horsepower: 574

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper Ownership Cost/Hour:	\$25.19	NA
Ripper Operating Cost/Hour:	\$13.74	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$416.77	
Total Fleet Cost/Hour:	<b>\$1,250.32</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 70.80 acres Rip Depth (ft): 2.00 Volume: 228,448 BCY or CCY

Source of estimated quantity: Page 2.05-20

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 2.00 feet/pass  
Average Ripping Width: 8.67 feet/pass  
Average Ripping Length: 300.00 feet/pass  
Average Dozer Speed: 88.00 feet/minute  
Average Maneuver Time: 0.25 minutes/pass  
Production per unit area: 0.979 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.979 Acres/hr  
Site Altitude: 6,200 feet  
Altitude Adj: 1.00 (CAT HB)  
Job Efficiency: 0.83 (1 shift/day)  
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.81 Acres/hr  
Adjusted Hourly Fleet Production: 2.44 Acres/hr

### JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: 29.04 Hours

Unit cost: \$512.847 Per acre Total job cost: \$36,310

## HYDRAULIC EXCAVATOR WORK

Task description: Regrade Lower Power Line Access Road

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 041

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-041

User: LDS

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick

Attachment 1: ROPS Cab

Horsepower: 268

Weight (MT): 29.30

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$83.42	NA
Operating Cost/Hour:	\$74.14	100
Operator Cost/Hour:	\$37.32	NA
Total Unit Cost/Hour:	\$194.88	
Total Fleet Cost/Hour:	\$194.88	

### MATERIAL QUANTITIES

Initial volume: 7,500

CCY

Swell factor: 1.125

Loose volume: 8,438

LCY

Source of estimated volume: Appendix E-1; Map S-038

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: 0.321 minutes

#### Load Bucket Capacity

Bucket Size Class: Small

Rated Capacity: 1.56 LCY (heaped)

Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850

Adjusted Capacity: 1.33 LCY

#### Job Condition Correction Factors

Site Altitude: 6400 feet

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

Unadjusted Hourly Unit Production: 247.85 LCY/Hour

Adjusted Hourly Unit Production: 205.72 LCY/Hour

Adjusted Hourly Fleet Production: 205.72 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 41.02 Hours

Unit cost: \$0.947 /LCY Total job cost: \$7,993

**BULLDOZER WORK**Task description: **Regrade Pond C Access Road**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **042**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-042**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$1,133.53****MATERIAL QUANTITIES**Initial Volume: **3,333**Swell factor: **1.165**Loose volume: **3,883 LCY**Source of estimated volume: **Division Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **200 feet**Unadjusted hourly production: **946.0 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **6,100 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 336.21 LCY/hr

Adjusted fleet production: **1008.63** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$1.124/LCY

Total job time: **3.85** Hours

Total job cost: **\$4,364**

## MOTOR GRADER WORK

Task description: Finish Grade All Disturbed Areas

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 050

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-050

User: LDS

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 14M

Horsepower: 259

Ripper Attachment: \_\_\_\_\_

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$85.80	NA
Operating Cost/Hour:	\$60.40	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.56	NA
Total Unit Cost/Hour:	\$174.76	
Total Fleet Cost/Hour:	<b>\$174.76</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 89.00 acres

Source of estimated acreage: Page 2.05-20; Division Estimate

### HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>30</u>	degrees
Effective Blade Length:	<u>12.10</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.10</u>	feet
Unadjusted Hourly Unit Production:	<u>1.8364</u>	acres/hour

#### Job Condition Correction Factors

Site Altitude: 6200 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.90</u>	(1sh/d, fav.)
Net Correction:	<u>0.9000</u>	multiplier

Adjusted Hourly Unit Production: 1.6527 acres/Hour

Adjusted Hourly Fleet Production: **1.6527** acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **53.85** Hours

Unit cost: \$105.74 per acre Total job cost: **\$9,411**

**BULLDOZER WORK**Task description: **Remove Upper Hubbard Creek Sediment Pond**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **066**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-066**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<b><u>Utilization %</u></b>
Ownership Cost/Hour:	<b><u>\$169.60</u></b>	<b><u>NA</u></b>
Operating Cost/Hour:	<b><u>\$166.94</u></b>	<b><u>100</u></b>
Ripper own. Cost/Hour:	<b><u>\$0.00</u></b>	<b><u>NA</u></b>
Ripper op. Cost/Hour:	<b><u>\$0.00</u></b>	<b><u>0</u></b>
Operator Cost/Hour:	<b><u>\$41.30</u></b>	<b><u>NA</u></b>

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **1,968**Swell factor: **1.165**Loose volume: **2,293 LCY**Source of estimated volume: **TR-05; Appendix K**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **50 feet**Unadjusted hourly production: **2,748.7 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor**

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

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 767.99 LCY/hr

Adjusted fleet production: **767.99** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.492/LCY

Total job time: **2.99** Hours

Total job cost: **\$1,128**

**BULLDOZER WORK**Task description: **Regrade East Bench Pond**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **067**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-067**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **400**Swell factor: **1.165**Loose volume: **466 LCY**Source of estimated volume: **Map 15**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **50 feet**Unadjusted hourly production: **2,748.7 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 767.99 LCY/hr

Adjusted fleet production: **767.99** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.492/LCY

Total job time: **0.61** Hours

Total job cost: **\$229**

## HYDRAULIC EXCAVATOR WORK

Task description: Excavate/Backfill Pond C Wall Area

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 068

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-068

User: LDS

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick

Horsepower: 268

Attachment 1: ROPS Cab

Weight (MT): 29.30

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$83.42</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$74.14</u>	<u>100</u>
Operator Cost/Hour:	<u>\$37.32</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$194.88</u>	
Total Fleet Cost/Hour:	<u>\$194.88</u>	

### MATERIAL QUANTITIES

Initial volume: 275

CCY

Swell factor: 1.250

Loose volume: 344

LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

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: 0.321 minutes

#### Load Bucket Capacity

Bucket Size Class: Small

Rated Capacity: 1.56 LCY (heaped)

Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850

Adjusted Capacity: 1.33 LCY

#### Job Condition Correction Factors

Site Altitude: 6000 feet

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

Unadjusted Hourly Unit Production: 247.85 LCY/Hour

Adjusted Hourly Unit Production: 205.72 LCY/Hour

Adjusted Hourly Fleet Production: 205.72 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 1.67 Hours

Unit cost: \$0.947 /LCY Total job cost: \$326

## HYDRAULIC EXCAVATOR WORK

Task description: Regrade West Valley Fill Diversion

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 069

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-069

User: LDS

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick

Attachment 1: ROPS Cab

Horsepower: 268

Weight (MT): 29.30

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$83.42	NA
Operating Cost/Hour:	\$74.14	100
Operator Cost/Hour:	\$37.32	NA
Total Unit Cost/Hour:	\$194.88	
Total Fleet Cost/Hour:	\$194.88	

### MATERIAL QUANTITIES

Initial volume: 332

CCY

Swell factor: 1.125

Loose volume: 374

LCY

Source of estimated volume: Map E-3211

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: 0.321 minutes

#### Load Bucket Capacity

Bucket Size Class: Small

Rated Capacity: 1.56 LCY (heaped)

Bucket Fill Factor: 0.850 Hard, tough clay (80% - 90%) 0.850

Adjusted Capacity: 1.33 LCY

#### Job Condition Correction Factors

Site Altitude: 6300 feet

Altitude Adj: 1.00

Source  
(CAT HB)

Job Efficiency: 0.83

(1 shift/day)

Net Correction: 0.83

multiplier

Unadjusted Hourly Unit Production: 247.85 LCY/Hour

Adjusted Hourly Unit Production: 205.72 LCY/Hour

Adjusted Hourly Fleet Production: 205.72 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 1.82 Hours

Unit cost: \$0.947 /LCY Total job cost: \$354



**BULLDOZER WORK**Task description: **Remove Sewage Leach Field**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **071**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-071**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **250**Swell factor: **1.165**Loose volume: **291 LCY**Source of estimated volume: **Map E-3207R**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly production: **1,718.9 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 480.26 LCY/hr

Adjusted fleet production: **480.26** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.787/LCY

Total job time: **0.61** Hours

Total job cost: **\$229**

**BULLDOZER WORK**Task description: **Regrade Pond A**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **072**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-072**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **400**Swell factor: **1.165**Loose volume: **466 LCY**Source of estimated volume: **Map S-040**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **50 feet**Unadjusted hourly production: **2,748.7 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **10 %**Average site altitude: **6,400 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production: 767.99 LCY/hr

Adjusted fleet production: **767.99** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.492/LCY

Total job time: **0.61** Hours

Total job cost: **\$229**

**BULLDOZER WORK**Task description: **Regrade Pond B**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **073**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-073**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **11,333**Swell factor: **1.165**Loose volume: **13,203 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **175 feet**Unadjusted hourly production: **1,074.3 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **-15 %**Average site altitude: **6,100 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4724

Adjusted unit production: 507.50 LCY/hr

Adjusted fleet production: **507.5** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.745/LCY

Total job time: **26.02** Hours

Total job cost: **\$9,830**

**BULLDOZER WORK**Task description: **Regrade Pond E**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **075**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-075**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **2,300**Swell factor: **1.165**Loose volume: **2,680 LCY**Source of estimated volume: **Division Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly production: **1,718.9 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **6,000 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3554

Adjusted unit production: 610.90 LCY/hr

Adjusted fleet production: **610.9** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.619/LCY

Total job time: **4.39** Hours

Total job cost: **\$1,657**



**BULLDOZER WORK**Task description: **Regrade Pond F**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **077**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-077**User: **LDS**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D10T - 10SU**Horsepower: **574**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: **\$377.84**Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: **1,020**Swell factor: **1.330**Loose volume: **1,357 LCY**Source of estimated volume: **Map 2.05-M5J; Division Estimate**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **90 feet**Unadjusted hourly production: **1,873.5 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **5 %**Average site altitude: **6,300 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% 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:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production: 601.21 LCY/hr

Adjusted fleet production: **601.21** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.628/LCY

Total job time: **2.26** Hours

Total job cost: **\$853**

**SCRAPER TEAM WORK**Task description: **Replace Topsoil from Stockpile to Previously Disturbed Elk A**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 090State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-090User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 1,500

CCY

Swell factor: 1.125Loose volume: **1,688**

LCY

Source of estimated volume: Operator EstimateSource 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:	<b><u>29.00</u></b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6200 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	-12.50	5.00	-7.50	1628	0.61

Haul Time: 0.61 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	12.50	5.00	17.50	832	0.98

Return Time: 0.98 minutesTotal Scraper team cycle time: 3.19 minutesAdjusted for job conditions: 905.45 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 905.45 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 905.45 LCY/HourUnadjusted unit production/hour: 1,090.91 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 1.86 HoursUnit cost: \$0.990 /LCYTotal job cost: \$1,670

**SCRAPER TEAM WORK**Task description: **Replace Topsoil from Stockpile to East Refuse Area**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 092State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-092User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 3,500

CCY

Swell factor: 1.125Loose volume: **3,938**

LCY

Source of estimated volume: Map E3207RSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,550 lbs/LCY  
 Material description: Earth - Dry packed  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 32.00 LCY

Struck Volume: 24.00 LCY  
 Heaped Volume: 34.00 LCY  
 Average Volume: 29.00 LCY  
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6200 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	10.00	5.00	15.00	589	1.71

Haul Time: 1.71 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-10.00	5.00	-5.00	2972	0.41

Return Time: 0.41 minutesTotal Scraper team cycle time: 3.72 minutesAdjusted for job conditions: 776.45 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 776.45 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 776.45 LCY/HourUnadjusted unit production/hour: 935.48 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 5.07 HoursUnit cost: \$1.154 /LCYTotal job cost: \$4,545

**SCRAPER TEAM WORK**Task description: **Replace Topsoil from Stockpile to West Valley Fill Area**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 093State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-093User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 18,300

CCY

Swell factor: 1.125Loose volume: **20,588**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,550 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Dry packed</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>32.00 LCY</u>	Adjusted Capacity:	<b><u>29.00</u></b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6200 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2350.00	-1.00	5.00	4.00	2394	1.21

Haul Time: 1.21 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2350.00	1.00	5.00	6.00	2638	1.06

Return Time: 1.06 minutesTotal Scraper team cycle time: 3.87 minutesAdjusted for job conditions: 746.36 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 746.36 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 746.36 LCY/HourUnadjusted unit production/hour: 899.22 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 27.58 HoursUnit cost: \$1.201 /LCYTotal job cost: \$24,724



**SCRAPER TEAM WORK**Task description: **Replace Topsoil from Stockpile to II-West Refuse Pile**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 094State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-094User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 4,650

CCY

Swell factor: 1.125Loose volume: **5,231**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,550 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Dry packed</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>32.00 LCY</u>	Adjusted Capacity:	<b><u>29.00</u></b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6300 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	10.00	5.00	15.00	589	1.28

Haul Time: 1.28 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	750.00	-10.00	5.00	-5.00	2972	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 3.20 minutesAdjusted for job conditions: 902.63 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 902.63 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 902.63 LCY/HourUnadjusted unit production/hour: 1,087.50 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 5.80 HoursUnit cost: \$0.993 /LCYTotal job cost: \$5,195

**SCRAPER TEAM WORK**Task description: **Replace Topsoil from Stockpile to II West Refuse Pile Road**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 095State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-095User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 1,000

CCY

Swell factor: 1.125Loose volume: **1,125**

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>2,550 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Dry packed</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>32.00 LCY</u>	Adjusted Capacity:	<b><u>29.00</u></b>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6300 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	4.00	5.00	9.00	1042	0.81

Haul Time: 0.81 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	-4.00	5.00	1.00	2963	0.39

Return Time: 0.39 minutesTotal Scraper team cycle time: 2.80 minutesAdjusted for job conditions: 1,031.57 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,031.57 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,031.57 LCY/HourUnadjusted unit production/hour: 1,242.86 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 1.09 HoursUnit cost: \$0.869 /LCYTotal job cost: \$977

**BULLDOZER WORK**Task description: Replace Topsoil from Stockpile to Expanded Elk Creek Mine FaSite: Elk Creek MinePermit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 096State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-096User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$377.84Total Fleet Cost/Hour: \$1,133.53**MATERIAL QUANTITIES**Initial Volume: 250Swell factor: 1.125Loose volume: 281 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,718.9 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 5 %Average site altitude: 7,500 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
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	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4056

Adjusted unit production: 697.19 LCY/hr

Adjusted fleet production: **2091.57** LCY/hr

### **JOB TIME AND COST**

Fleet size: 3 Dozer(s)

Unit cost: \$0.542/LCY

Total job time: **0.13** Hours

Total job cost: **\$152**

**SCRAPER TEAM WORK**Task description: **Replace Topsoil from Stockpile to Elk Creek Mine Area**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 098State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-098User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
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	NA	NA	NA	NA	NA
Ownership cost/hour:	\$223.48	NA	NA	NA	NA	NA
Operating cost/hour:	\$193.77	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.90	NA	NA	NA	NA	NA
Unit Subtotals:	\$448.15	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work: \$896.30		Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$896.30****MATERIAL QUANTITIES**Initial volume: 13,400

CCY

Swell factor: 1.125Loose volume: **15,075**

LCY

Source of estimated volume: Operator EstimateSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,550 lbs/LCY  
 Material description: Earth - Dry packed  
 Rated Payload: 81,600 pounds  
 Payload Capacity: 32.00 LCY

Struck Volume: 24.00 LCY  
 Heaped Volume: 34.00 LCY  
 Average Volume: 29.00 LCY  
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 6200 feet

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

Travel Time:Road Condition: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	-10.00	5.00	-5.00	2972	0.56

Haul Time: 0.56 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	10.00	5.00	15.00	1047	1.46

Return Time: 1.46 minutesTotal Scraper team cycle time: 3.62 minutesAdjusted for job conditions: 797.90 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 797.90 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 797.90 LCY/HourUnadjusted unit production/hour: 961.33 LCY/Hour

Optimal Number of Scrapers per push dozer: \_\_\_\_\_

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 18.89 HoursUnit cost: \$1.123 /LCYTotal job cost: \$16,934



**BULLDOZER WORK**Task description: **Replace Topsoil from Stockpile to Pond F, Ditches and Plunge**Site: **Elk Creek Mine**Permit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 103State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-103User: LDSAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D10T - 10SUHorsepower: 574Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$169.60	NA
Operating Cost/Hour:	\$166.94	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$377.84Total Fleet Cost/Hour: **\$377.84****MATERIAL QUANTITIES**Initial Volume: 1,300Swell factor: 1.125Loose volume: **1,463 LCY**Source of estimated volume: Map 2.05-M4 (Sheet 5 of 5); Map 2.05-M5JSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 125 feetUnadjusted hourly production: 1,450.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 10 %Average site altitude: 6,400 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
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	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3531

Adjusted unit production: 512.00 LCY/hr

Adjusted fleet production: **512** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.738/LCY

Total job time: **2.86** Hours

Total job cost: **\$1,079**

**REVEGETATION WORK**Task description: **Broadcast Seed Mine Site**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **120**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **C022-120**User: **LDS**Agency 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
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
<b>Total Tilling Cost/Acre</b>	<b>\$290.40</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.00	3.26	\$11.73
Bitterbrush, Antelope	1.50	0.46	\$29.25
Aster, Engelman's	0.13	0.60	\$24.44
Mountain Brome - Bromar	1.50	2.41	\$5.70
Great Basin Wildrye - Magnar	0.50	2.03	\$5.78
Sandberg Bluegrass - VNS	0.12	2.55	\$1.01
Sheep Fescue - Covar	1.00	15.61	\$6.10
Milk Vetch, Cicer - Lutana	2.00	6.66	\$16.40
Sainfoin - Remont	2.00	0.87	\$6.32
Thickspike Wheatgrass - Critana	0.25	0.88	\$1.72

Western Wheatgrass - Arriba	0.50	1.26	\$3.25
Rabbitbrush, Rubber	0.50	7.45	\$32.15
Needlegrass, Green - Lodorm	0.50	2.08	\$5.89
Sage, Fringed	0.06	5.01	\$2.46
Sagebrush, Mountain or Big	0.12	6.34	\$2.37
Flax, Lewis Blue	0.66	4.38	\$10.89
Sagebrush, Silver	0.12	2.33	\$3.72
Penstemon, Palmer	0.25	5.53	\$13.63
Penstemon, Rocky Mountain	0.50	7.84	\$14.75
Yarrow, Western	0.06	3.65	\$2.51
<b>Totals Seed Mix</b>	<b>13.27</b>	<b>81.20</b>	<b>\$200.05</b>

**Application**

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

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - Curtail @ 4.0 pt/ac	0.05	ACRE	\$7.78	\$0.39
Herbicide - Escort @ 1.0 pt/ac	0.05	ACRE	\$194.52	\$9.73
<b>Total Mulch Materials Cost/Acre</b>				<b>\$10.12</b>

**Application**

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

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres:	108.25	Cost /Acre:	\$767.79
Estimated Failure Rate:	10%	Cost /Acre*:	\$467.27
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$83,113.27		
Reseeding Job Cost:	\$5,058.20		
Total Job Cost:	\$88,171		
Job Hours:	216.50		



**REVEGETATION WORK**Task description: Re-seed Drill Pads, MR's and TR's, 46.23 acres @ 2% failureSite: Elk Creek MinePermit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 121State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-121User: LDSAgency 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
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
<b>Total Tilling Cost/Acre</b>	<b>\$290.40</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.50	4.89	\$17.59
Indian Ricegrass - Native	0.50	1.62	\$3.25
Mountain Brome - Bromar	2.00	3.21	\$7.60
Sandberg Bluegrass - VNS	1.50	31.85	\$12.60
Coreopsis, Lance Leafed	0.15	3.84	\$4.28
Western Wheatgrass - Arriba	2.00	5.05	\$13.00
Prairie Junegrass	0.25	13.29	\$6.50
Penstemon, Rocky Mountain	0.15	2.35	\$4.43
Yarrow, White	0.05	3.18	\$2.00

<b>Totals Seed Mix</b>	8.10	69.28	<b>\$71.25</b>
------------------------	------	-------	----------------

**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>
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	\$7.78	\$15.56
Herbicide - Escort @ 1.0 pt/ac	2.00	ACRE	\$194.52	\$389.04
<b>Total Mulch Materials Cost/Acre</b>				<b>\$404.60</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	1	Cost /Acre:	\$1,033.47
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	<b>\$1,033.47</b>
Reseeding Job Cost:	<b>\$0.00</b>
Total Job Cost:	<b>\$1,033</b>
Job Hours:	<b>46.23</b>

**REVEGETATION WORK**Task description: Re-seed Light-Use Roads, MR's and TR's, 35.59 acres @ 2% faiSite: Elk Creek MinePermit Action: SI1Permit/Job#: C1981022**PROJECT IDENTIFICATION**Task #: 122State: ColoradoAbbreviation: NoneDate: 11/18/2021County: DeltaFilename: 022-122User: LDSAgency 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
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
<b>Total Tilling Cost/Acre</b>	<b>\$290.40</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.50	4.89	\$17.59
Indian Ricegrass - Native	0.50	1.62	\$3.25
Mountain Brome - Bromar	2.00	3.21	\$7.60
Sandberg Bluegrass - VNS	1.50	31.85	\$12.60
Coreopsis, Lance Leafed	0.15	3.84	\$4.28
Western Wheatgrass - Arriba	2.00	5.05	\$13.00
Prairie Junegrass	0.25	13.29	\$6.50
Penstemon, Rocky Mountain	0.15	2.35	\$4.43
Yarrow, White	0.05	3.18	\$2.00



<b>Totals Seed Mix</b>	8.10	69.28	<b>\$71.25</b>
------------------------	------	-------	----------------

**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>
Herbicide - Curtail @ 4.0 pt/ac	2.00	ACRE	\$7.78	\$15.56
Herbicide - Escort @ 1.0 pt/ac	2.00	ACRE	\$194.52	\$389.04
<b>Total Mulch Materials Cost/Acre</b>				<b>\$404.60</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</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:	1	Cost /Acre:	\$1,033.47
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	<b>\$1,033.47</b>
Reseeding Job Cost:	<b>\$0.00</b>
Total Job Cost:	<b>\$1,033</b>
Job Hours:	<b>35.59</b>

## DEMOLITION WORK

Task description: Demolish and Remove All Mine Facilities

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 130

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-130

User: LDS

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 91.30 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Elk Creek Fan Structures	15'x10'x50'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	15,000.00	CF	\$0.22	\$3,285.00
- Pads	18'x60'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	2,160.00	SF	\$1.00	\$2,162.16
Substation No. 4	25'x25'x20'	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	12,500.00	CF	\$0.22	\$2,737.50
- Pad	25'x25'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	625.00	SF	\$1.00	\$625.63
- Fencing	100 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	\$3.08	\$308.00
- Transformer	NA	NON-PCB Transformer Removal	1.00	EA	\$2,238.20	\$2,238.20
200,000 Gallon Water Tank	200,000 Gallons	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	28,510.00	CF	\$0.24	\$6,728.36
Rock Dust Tanks (2)	20'x15' Diameter	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	7,069.00	CF	\$0.24	\$1,668.28
- Pads	16'x8'x8"	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	256.00	SF	\$1.33	\$341.50
- Footings	8@8.75'x2'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	24.00	LF	\$12.01	\$288.24
Overland Conveyors	2,400 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	40.00	EA	\$3,125.00	\$125,000.00
- Transfer Towers (3)	10'x20'x25'	Bldg. (MN) demo./on-site disposal in excavated pit - Max.	15,000.00	CF	\$0.24	\$3,540.00

		10,000 ft. haul				
- Pads	10'x20'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	600.00	SF	\$2.00	\$1,201.20
Powerlines	3,100 LF	Utility Poles, Wood 35' - 45' high (each pole)	30.00	EA	\$292.00	\$8,760.00
Elk Creek Culvert	300 LF x 9' D	Pipe, corrugated metal (CMP) - 108 in. diameter pipe	300.00	LF	\$51.18	\$15,352.80
Substation No. 1 Transformers (3)	NA	NON-PCB Transformer Removal	3.00	EA	\$2,238.20	\$6,714.60
- Equipment	6'x8'x6'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	288.00	CF	\$0.22	\$61.92
- Pad	25'x25'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	625.00	SF	\$1.00	\$625.63
- Fence	100 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	\$3.08	\$308.00
Explosives Magazine	20'x25'x10'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	10,000.00	CF	\$0.22	\$2,150.00
Dump Station	140'x40'x12'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	67,200.00	CF	\$0.24	\$15,859.20
- Pad	140'x40'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,600.00	SF	\$1.00	\$5,605.60
- Footing	1'x2'x360 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	360.00	LF	\$4.00	\$1,440.00
125 and 500 Ton Steel Bins	NA	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	21,094.00	CF	\$0.24	\$4,978.18
Truck Scale Pad	10'x60'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	600.00	SF	\$2.00	\$1,201.20
- Building	Assume 5' Deep	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	3,000.00	CF	\$0.22	\$645.00
- Footing	1.5'x3'x140 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	140.00	LF	\$9.01	\$1,261.40
Tipple Structure	30'x50'x50'	Bldg. (MN) demo./on-site disposal in excavated pit - Max.	75,000.00	CF	\$0.24	\$17,700.00

		10,000 ft. haul				
- Pad	30'x50'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	1,500.00	SF	\$2.00	\$3,003.00
- Footing	1.5'x3'x160 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	160.00	LF	\$9.01	\$1,441.60
Coal Screening Facility	35'x35'x55'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	67,375.00	CF	\$0.24	\$15,900.50
- Pad	35'x55'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	1,225.00	SF	\$2.00	\$2,452.45
- Footing	1.5'x3'x140 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	140.00	LF	\$9.01	\$1,261.40
Dump Station/Truck Scale Conveyors	140 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	2.00	EA	\$3,125.00	\$6,250.00
Crusher/Feeder Conveyor	160 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	2.00	EA	\$3,125.00	\$6,250.00
Crusher Bypass Conveyor	200 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	3.00	EA	\$3,125.00	\$9,375.00
Silo Feeder Conveyor	380 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	6.00	EA	\$3,125.00	\$18,750.00
Loadout Feeder Conveyor	350 LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	6.00	EA	\$3,125.00	\$18,750.00
Coal Storage Silo	140'x70' Diameter	Explosive demolition, large projects - Concrete structures	539,000.00	CF	\$0.32	\$172,480.00
- Headhouse	20'x20'x10'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,000.00	CF	\$0.24	\$944.00
- Pad	12'x70' Diameter	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	3,848.00	SF	\$2.00	\$7,703.70
- Footing	2'x3'x220 LF	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	220.00	LF	\$12.01	\$2,642.20
Batch-Weigh Loadout	27'x27'x100'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	72,900.00	CF	\$0.24	\$17,204.40
- Pad	27'x27'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	729.00	SF	\$2.00	\$1,459.46

- Footing	1.5'x3'x108 LF	Demo. and on-site disposal in existing pit, 1.5 ft. x 3 ft. - Max. 10,000 ft. haul	108.00	LF	\$9.01	\$973.08
- Surge and Weigh Bins	300 and 120 Tons	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	14,175.00	CF	\$0.24	\$3,345.30
- Transfer Chutes	40'x36'x18'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	25,920.00	CF	\$0.24	\$6,117.12
- Discharge Chute	40'x36'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,440.00	SF	\$1.00	\$1,441.44
Woman's Change House	45'x30'x14'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	18,900.00	CF	\$0.22	\$4,063.50
- Pad	45'x30'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,350.00	SF	\$1.00	\$1,351.35
Waste Barrel Storage Structure	10'x20'; 30'x30'x12'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	13,200.00	CF	\$0.22	\$2,838.00
- Pads	10'x20'; 30'x30'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,100.00	SF	\$1.00	\$1,101.10
Office Septic Tank	1,500 Gallons	Excavate and load tank onto trailer, non-leaking - 3,000 gal. to 5,000 gal.	1.00	EA	\$614.00	\$614.00
- Remove Septic Tank Sludge	Assume 500 Gals	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$238.00	\$238.00
- Dispose of Sludge Off-Site	Assume 500 Gals	Dispose of tank sludge off-site - Average	500.00	GAL	\$6.80	\$3,400.00
- Haul Tank to Certified Dump	1,500 Gallons	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
Metal Storage Building	30'x60'x12'	Bldg. (SN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	21,600.00	CF	\$0.22	\$4,644.00
- Pad	30'x60'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	1,800.00	SF	\$1.00	\$1,801.80
Train Car Antifreeze Tanks (2)	12,000 Gallons	Excavate and load tank onto trailer, non-leaking - 9,000 gal. to 12,000 gal.	2.00	EA	\$1,050.00	\$2,100.00
- Remove Sludge from Tank Bottom	Assume 2,400 Gals	Remove sludge, water, and rem. product from	2.00	EA	\$397.00	\$794.00

		tank - 9,000 to 12,000 gal.				
- Dispose of Sludge Off-Site	Assume 2,400 Gals	Dispose of tank sludge off-site - Average	2,400.00	GAL	\$6.80	\$16,320.00
- Haul Tank to Certified Dump	12,000 Gallons	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	2.00	EA	\$1,050.00	\$2,100.00
Train Car Antifreeze Tank	6,000 Gallons	Excavate and load tank onto trailer, non-leaking - 6,000 gal. to 8,000 gal.	1.00	EA	\$880.00	\$880.00
- Remove Sludge from Tank Bottom	Assume 600 Gals	Remove sludge, water, and rem. product from tank - 6,000 to 8,000 gal.	1.00	EA	\$298.00	\$298.00
- Dispose of Sludge Off-Site	Assume 600 Gals	Dispose of tank sludge off-site - Average	600.00	GAL	\$6.80	\$4,080.00
- Haul Tank to Certified Dump	6,000 Gallons	Haul tank to certified salvage dump - 6,000 to 8,000 gal. tank	1.00	EA	\$880.00	\$880.00
Main Septic Tank	3,000 Gallons	Excavate and load tank onto trailer, non-leaking - 3,000 gal. to 5,000 gal.	1.00	EA	\$614.00	\$614.00
- Remove Sludge from Tank Bottom	Assume 500 Gals	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$238.00	\$238.00
- Dispose of Sludge Off-Site	Assume 500 Gals	Dispose of tank sludge off-site - Average	500.00	GAL	\$6.80	\$3,400.00
- Haul Tank to Certified Dump	3,000 Gallons	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
Compressor House	30'x54'x16'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	25,920.00	CF	\$0.24	\$6,117.12
- Footers	1'x2'x168 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	168.00	LF	\$4.00	\$672.00
Office	62,424 CF	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	62,424.00	CF	\$0.24	\$14,732.06
- Pad	5,400 SF	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	5,400.00	SF	\$1.00	\$5,405.40
- Footers	1'x2'x315 LF	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	315.00	LF	\$4.00	\$1,260.00
Bath House	100'x110'x18'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	185,850.00	CF	\$0.24	\$43,860.60
- Pad	100'x110'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000	11,000.00	SF	\$1.00	\$11,011.00

		ft. haul				
- Footers	2'x3'x420 LF	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	420.00	LF	\$12.01	\$5,044.20
Concrete Dams	14'x155'x2'	Wall, concrete, demolition only, average reinforcing - 24 in. thick	2,170.00	SF	\$4.45	\$9,656.50
- Dam Base	15'x155'x2'	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	172.00	CY	\$133.50	\$22,962.00
Culvert IIW-4	12"x100 LF	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	100.00	LF	\$4.10	\$409.70
Culvert IIW-5	12"x100 LF	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	100.00	LF	\$4.10	\$409.70
Tank Containment Walls	16'x44'x4' (8")	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	485.00	SF	\$3.08	\$1,493.80
Covered Oil Storage	25'x16'x20'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	6,400.00	CF	\$0.24	\$1,510.40
Water Treatment Room	10'x20'x20'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	4,000.00	CF	\$0.24	\$944.00
Sump	39.3'x14'x4' (8")	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 10,000 ft. haul	426.00	SF	\$3.08	\$1,312.08
Clean Oil/Water/Mud out of Sump	12,000 Gallons	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	\$397.00	\$397.00
- Dispose of Sludge Off-Site	Assume 2,000 Gals	Dispose of tank sludge off-site - Average	2,000.00	GAL	\$6.80	\$13,600.00
Sanborn Substation No. 2 Transformers	NA	NON-PCB Transformer Removal	3.00	EA	\$2,238.20	\$6,714.60
- Equipment Removal	6'x8'x6'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	288.00	CF	\$0.24	\$67.97
- Pad	25'x25'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	625.00	SF	\$2.00	\$1,251.25
- Fence	100 LF	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	\$3.08	\$308.00
Sanborn Overland Conveyor	1500LF	Conveyor, Horizontal Belt 24" Belt, 61.5' Length	24.00	EA	\$3,125.00	\$75,000.00
- Transfer Buildings (4)	10'x20'x25'	Bldg. (MN) demo./on-site disposal in excavated pit - Max.	20,000.00	CF	\$0.24	\$4,720.00

		10,000 ft. haul				
- Pads (4)	10'x20'x12"	Demo. and on-site disposal in existing pit, 12 in. thick - Max. 10,000 ft. haul	800.00	SF	\$2.00	\$1,601.60
- Equipment Removal	10'x20'x25'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	1,000.00	CF	\$0.24	\$236.00
Air Compressor Building #2	30'x30'x16'	Bldg. (MN) demo./on-site disposal in excavated pit - Max. 10,000 ft. haul	14,400.00	CF	\$0.24	\$3,398.40
- Pad	30'x30'x6"	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 10,000 ft. haul	900.00	SF	\$1.00	\$900.90

**Job Hours:** 600.00

**Subtotal (unadjusted):** \$818,804.28

**Total Cost (adjusted for location):** \$747,568.31



## BOREHOLE SEALING WORK

Task description: Plug and Seal 7 Monitoring wells

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 131

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-131

User: LDS

Agency or organization name: DRMS

### UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
4" Holes (7)	PVC plug - 4 in. diameter borehole	4"	NA	7.00	EA	\$33.98	\$237.86
- Fill Holes with Cement	Portland cement grout ( Bag, material cost only...94 lb. bag)	4"	50' EA	15.00	bag	\$19.95	\$299.25
- Cut Casing at Surface	Exposed casing removal - Calculate Circumference in Linear Feet	4"	NA	7.00	LF	\$3.26	\$22.82
- Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	7.00	EA	\$37.50	\$262.50
- Drill Rig Time	ATLAS COPCO ROC D7-11,4.0 in.	NA	NA	42.00	EA	\$176.95	\$7,431.90
Water Truck Time - ALLHoles	Water Tanker, 5,000 Gal.	NA	NA	42.00	EA	\$75.41	\$3,167.22

Job Hours: 42.00

Total Cost: \$11,422.00

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilize/Demobilize Equipment for Initial Reclamation**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **140**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-140**User: **LDS**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

**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 815F	22.88	\$91.25	\$68.37	1	\$159.62	\$68.37	\$250.00
Cat D10T - 10SU	84.53	\$169.60	\$147.95	3	\$952.65	\$443.85	\$750.00
ATLAS COPCO ROC D7-11,4.0 in.	0.00	\$94.21	\$68.37	1	\$162.58	\$68.37	\$250.00
Cat 336D L 10'-6" Stick	32.23	\$83.42	\$132.49	1	\$215.91	\$132.49	\$250.00
CAT 14M	23.57	\$85.80	\$68.37	1	\$154.17	\$68.37	\$250.00
Cat 637G w/push- pull	59.59	\$223.48	\$147.95	2	\$742.86	\$295.90	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00

Subtotals: **\$2,464.14** **\$1,145.72** **\$2,500.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 3,500 Gal.	\$46.35	1	\$46.35	\$46.35
Fuel Tanker, 6x4, 210 HP	\$46.35	1	\$46.35	\$46.35
Lube Truck, 6x4, 250 HP	\$46.35	1	\$46.35	\$46.35

Flatbed Truck, 6x4, 45K GVW	\$49.15	1	\$49.15	\$49.15
Light Duty Pickup, 4x4, 1 T. Crew	\$20.51	1	\$20.51	\$20.51

Subtotals:	<b>\$208.71</b>	<b>\$208.71</b>
------------	-----------------	-----------------

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: GRAND JUNCTION  
 Total one-way travel distance: 80.00 miles  
 Average Travel Speed: 40.00 mph

Total Non-Roadable Mob/Demob Cost \* \$24,367.72  
 \*\* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$834.84  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	2.00	2.00
Return Time (Hours):	2.00	2.00
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	5.00	4.00

**JOB TIME AND COST**

Total job time: 10.00 Hours

Total job cost: \$25,203

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilize/Demobilize Equipment for Pond Removal**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **141**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-141**User: **LDS**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

**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 D10T - 10SU	84.53	\$169.60	\$147.95	1	\$317.55	\$147.95	\$250.00
Cat 623G	41.35	\$207.90	\$132.49	1	\$340.39	\$132.49	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00
Subtotals:					<b>\$734.29</b>	<b>\$348.81</b>	<b>\$750.00</b>

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	\$49.15	1	\$49.15	\$49.15
Subtotals:			<b>\$49.15</b>	<b>\$49.15</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: DELTA  
 Total one-way travel distance: 45.00 miles  
 Average Travel Speed: 35.00 mph

Total Non-Roadable Mob/Demob Cost \* \$5,753.69  
 \* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$126.39  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.29	1.29
Return Time (Hours):	1.29	1.29
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	3.57	2.57

**JOB TIME AND COST**

Total job time: 7.14 Hours

Total job cost: \$5,880

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilize/Demobilize Equipment for Site Maintenance**Site: **Elk Creek Mine**Permit Action: **SI1**Permit/Job#: **C1981022****PROJECT IDENTIFICATION**Task #: **142**State: **Colorado**Abbreviation: **None**Date: **11/18/2021**County: **Delta**Filename: **022-142**User: **LDS**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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

**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 D3K XL - 3P	9.22	\$27.67	\$68.37	10	\$960.40	\$683.70	\$0.00
Subtotals:					<b>\$960.40</b>	<b>\$683.70</b>	<b>\$0.00</b>

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	\$49.15	10	\$491.50	\$491.50
Subtotals:			<b>\$491.50</b>	<b>\$491.50</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: DELTA  
 Total one-way travel distance: 45.00 miles  
 Average Travel Speed: 45.00 mph

Total Non-Roadable Mob/Demob Cost \* \$12,892.20

\* two round trips with haul rig:

Total Roadable Mob/Demob Cost \*\* \$983.00

\*\* 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):	2.50	NA
Unloading Time (Hours):	2.50	NA
Subtotals:	7.00	2.00

**JOB TIME AND COST**

Total job time: 14.00 Hours

Total job cost: \$13,875



## SITE MAINTENANCE

Task description: Yearly site maintenance

Site: Elk Creek Mine

Permit Action: SI1

Permit/Job#: C1981022

### PROJECT IDENTIFICATION

Task #: 150

State: Colorado

Abbreviation: None

Date: 11/18/2021

County: Delta

Filename: 022-150

User: LDS

Agency or organization name: DRMS

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Pond Cleaning	10.00	Cat 307D 7'-3" Stick	100.00	EA	\$86.23	\$8,623.00
Elk Creek Stream Channel Maintenance	2.00	Cat D3K XL - 3P	20.00	EA	\$96.36	\$1,927.20
Elk Creek Ditch Maintenance	2.00	Cat 307D 7'-3" Stick	20.00	EA	\$86.23	\$1,724.60

Job Hours: 140.00

Total Cost: \$12,274.80