

STATE OF  
COLORADO

Renfro - DNR, Joel &lt;joel.renfro@state.co.us&gt;

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## Proctor Pit Adequacy Review

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Renfro - DNR, Joel &lt;joel.renfro@state.co.us&gt;

Thu, Jul 11, 2024 at 12:07 PM

To: Travis Bell &lt;tbell@crcllc.com&gt;

Cc: Amy Brooks &lt;abrooks@crcllc.com&gt;, Amy Eschberger - DNR &lt;amy.eschberger@state.co.us&gt;

Hey Travis,

As I mentioned in our phone call, your adequacy response looks good and it looks like you addressed all the items I asked for. Thanks for highlighting everything too, it made it very easy to follow.

We're in the final steps now before permit approval. I calculated what it would cost to reclaim the site given the proposed mining plan and reclamation plan, and found that the Division will require a bond of **\$27,898** to reclaim this site. Please review the attached cost estimate, which breaks down how we calculate the cost of each task and how we got to that number. Most of the additional costs come from indirect costs and mobilization of machinery. Let me know if my estimation appears accurate given the mining and reclamation plan. Please note that some factors in the calculation such as equipment, materials, and indirect costs are associated with fixed rates usually determined by the CAT handbook, so most rates I cannot be flexible with changing.

The decision date for this permit is set for tomorrow, so if you have any questions please feel free to email or call me at (720) 812-2002 and I will get back to you shortly. I am about to take my lunch break but will be back in the office at 1 PM today.

Thanks,

Joel

[Quoted text hidden]



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**Proctor Pit Bond Calc.pdf**

237K

## COST SUMMARY WORK

Task description: Cost Summary

Site: Proctor Pit

Permit Action: New Application

Permit/Job#: M2024027

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 7/10/2024

County: Logan

Filename: M027-000

User: JR2

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Spread topsoil 6" thick across 6.03ac	SCRAPER1	1	15.34	\$10,016
002	Reveg 6.03ac	REVEGE	1	10.55	\$9,661
003	Mobilization	MOBILIZE	1	2.12	\$1,874
<b><u>SUBTOTALS:</u></b>				<b>28.01</b>	<b>\$21,551</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$435

Performance bond: 1.05

Total = \$226

Job superintendent: 14.01

Total = \$1,110

Profit: 10.00

Total = \$2,155

TOTAL O & P = \$3,927

CONTRACT AMOUNT (direct + O & P) = \$25,478

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 0.00

Total = \$0

Reclamation management and/or administration: 5.00

\$1,274

CONTINGENCY: 3.00

Total = \$647

TOTAL INDIRECT COST = \$6,347

**TOTAL BOND AMOUNT (direct + indirect) = \$27,898**

**SCRAPER TEAM WORK**Task description: **Spread topsoil 6" thick across 6.03ac**Site: **Proctor Pit**Permit Action: New ApplicationPermit/Job#: M2024027**PROJECT IDENTIFICATION**Task #: 001State: ColoradoAbbreviation: NoneDate: 7/11/2024County: LoganFilename: M027-001User: JR2Agency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 623G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 140M
-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	100	NA
Ownership cost/hour:	\$265.74	NA	NA	NA	\$77.29	NA
Operating cost/hour:	\$194.31	NA	NA	NA	\$56.87	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	\$0.00	NA
Ripper op. cost/hour:	NA	NA	NA	NA	\$0.00	NA
Operator cost/hour:	\$30.90	NA	NA	NA	\$27.76	NA
Unit Subtotals:	\$490.95	NA	NA	NA	\$161.92	NA
Number of Units:	1	0	0	0	1	0
Group Subtotals:	Work: \$490.95		Support:	\$0.00	Maint:	\$161.92

Total work team cost/hour: **\$652.87****MATERIAL QUANTITIES**Initial volume: 4,864

CCY

Swell factor: 1.215Loose volume: **5,910**

LCY

Source of estimated volume: 6" x 6.03acSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>18.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>23.00</u>	LCY
Rated Payload:	<u>55,200 pounds</u>	Average Volume:	<u>20.50</u>	LCY
Payload Capacity:	<u>34.50 LCY</u>	Adjusted Capacity:	<b><u>20.50</u></b>	LCY

Cycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.70 MinutesJob Condition Correction:

Site Altitude: 3920 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, 1" tire penetration 4.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	550.00	5.00	4.00	9.00	715	0.79

Haul Time: 0.79 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	550.00	-5.00	4.00	-1.00	2774	0.26

Return Time: 0.26 minutesTotal Scraper team cycle time: 2.65 minutesAdjusted for job conditions: 385.25 LCY/HourSelected Number of Scrapers: 1 Scraper(s)Adjusted single scraper team (unit) hourly production: 385.25 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 385.25 LCY/HourUnadjusted unit production/hour: 464.15 LCY/Hour

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

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 15.34 HoursUnit cost: \$1.695 /LCYTotal job cost: \$10,016

REVEGETATION WORKTask description: Reveg 6.03acSite: Proctor PitPermit Action: New ApplicationPermit/Job#: M2024027PROJECT IDENTIFICATIONTask #: 002State: ColoradoAbbreviation: NoneDate: 7/11/2024County: LoganFilename: M027-002User: JR2Agency or organization name: DRMSFERTILIZING**Materials**

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

**Application**

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

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Sand Dropseed	0.25	29.84	\$3.25
Russian Wildrye - Bozoisky	3.00	12.05	\$33.22
Intermediate Wheatgrass - Oahe	2.50	5.34	\$11.61
Pubescent Wheatgrass - Mandan	3.00	6.20	\$14.01
Slender Wheatgrass - Native	2.00	7.30	\$14.13
Western Wheatgrass - Native	2.00	5.05	\$18.01
<b>Totals Seed Mix</b>	<b>12.75</b>	<b>65.78</b>	<b>\$94.25</b>

**Application**

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

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$492.78	\$985.56
<b>Total Mulch Materials Cost/Acre</b>				<b>\$985.56</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
<b>Total Mulch Application Cost/Acre</b>	<b>\$85.37</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: 6.03                      Cost /Acre: \$1,519.43  
 Estimated Failure Rate: 25%                      Cost /Acre\*: \$330.89  
 \*Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$9,162.16**  
 Reseeding Job Cost: **\$498.82**  
 Total Job Cost: **\$9,661**  
 Job Hours: **10.55**

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization**Site: **Proctor Pit**Permit Action: **New Application**Permit/Job#: **M2024027****PROJECT IDENTIFICATION**Task #: **003**State: **Colorado**Abbreviation: **None**Date: **7/11/2024**County: **Logan**Filename: **M027-003**User: **JR2**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:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

**NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat 623G	41.35	\$265.74	\$122.78	1	\$388.52	\$122.78	\$250.00
CAT 140M	16.68	\$77.29	\$59.44	1	\$136.73	\$59.44	\$250.00

Subtotals: **\$525.25** **\$182.22** **\$500.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$24.60	1	\$24.60	\$24.60

Subtotals: **\$24.60** **\$24.60**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	STERLING	
Total one-way travel distance:	21.00	miles
Average Travel Speed:	55.00	mph

Total Non-Roadable Mob/Demob Cost *	\$1,855.40
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	\$18.79
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.38	0.38
Return Time (Hours):	0.38	0.38
Loading Time (Hours):	0.15	NA
Unloading Time (Hours):	0.15	NA
Subtotals:	1.06	0.76

**JOB TIME AND COST**

Total job time:	2.13	Hours
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Total job cost:	\$1,874
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