



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

July 17, 2023

Nathan/ Jason Rinderle  
Upland Gravel, LLC  
3202 Springfield Rd  
Grand Junction, CO 81503

***RE: Upland Gravel Pit Np. 3, Permit No. M-2005-077, Proposed Surety Increase (SI-1)***

Dear Mr. Rinderle:

This reclamation cost update was in response to the site inspection conducted on July 5, 2023. It is Division policy to periodically update its costs to ensure that the Financial Warranty adequately, reflects the actual current cost of fulfilling the requirements of the approved reclamation plan.

The bond was last recalculated in 2005 and no increases have occurred since the permit issuance. Below is a table summarizing input values that have been updated based on site conditions. This table does not account for price changes resulting from inflation or other RS Means cost changes. Bond calculations are based on a combination of field observations and worst case scenario based on the approved reclamation plan.

General Assumptions:

- All slopes go to a 3H: 1V or less. No need for backfill at this time.
- 2 ft overburden replacement and 1 foot topsoil replacement. Stockpiles are centrally located with an average centroid to centroid distance of approx. 300'
- Pocking of slopes per rec plan.
- Broadcast seed, Disk 6", mulch w/ 2 ton/ac of straw, weed treatment of Halogeton
- Overall seeding amount higher than 2D area depicted on map due to sloping 12.5 ac vs 13.1
- Decreased seeding failure form 60% to 50% based on previous success.
- Currently hold, \$57,785. In a corporate surety. No increases since permit issuance in 2006.

Problems:

- Rec Plan states max of 6 ac requiring reveg, this needs to be revised

Suggestion/ Edits:

- Change seeding to drill seeding since you're already disking the pockets. Would reduce overall seed cost. Or propose dropping pocking in general unless necessary, cross ripping is usually sufficient.



- Provide the number of acres for which overburden has already been replaced if any.
- What's the number of acres reclaimed in Phase 1 and 2? This area can be subtracted from the total amount needing overburden, topsoil and reveg.
- In general provide updated/corrected values for any of the inputs listed below. Be sure to include a source.
- Can make one or several revisions under one Technical Revision (TR) for the same fee.

Task	Form Used	Description
01a	Excavator	Phase 1- Pull back slopes – 3738 CY 300 LF, Vertical, 15'H
01b	Dozer	Phase 1 & 2 - Highwall Reduction – 1557 CY 500 LF, Vertical, @ 15' H, cut fill
01c	Dozer	Phase 4 - Highwall Reduction - 4049 CY 1,300 LF, Vertical, @ 15' H, cut fill
02a	Scraper	Overburden Replacement Pit Floor 33,234 CY Phase 1, 2 and 4 bottoms ~10.3 ac @ 2' 300' avg push
02b	Grader	Ripping Pit Floor Phase 1, 2 and 4 bottoms ~10.3 ac
02c	Scraper	Topsoil Replacement Pit Floor 16,617 CY Phase 1, 2 and 4 bottoms ~10.3 ac @ 1' 300' avg push
03a	Scraper	Overburden Replacement Slopes 9,034 CY Phase 1, 2 and 4 (47'x 2100 LF) 2.8 ac @2' 300' avg push
03b	Scraper	Topsoil Replacement Slopes 4,517 CY Phase 1, 2 and 4 (47'x 2100 LF) 2.8ac @ 1' 300' avg push
03c	Excavator	Pocketing Slopes 4517 CY Phase 1, 2 and 4 (47'x 2100 LF) = 2.8ac * 2' D / 2(half area)

04a	Grader	Rip Haul Road (1.75 ac) 3800LF * 20' W
05a	Reveg	Phase 1 Reveg ~4.15 ac
05b	Reveg	Phase 2 Reveg ~4.45 ac
05c	Reveg	Phase 4 Reveg ~4.49 ac
05d	Reveg	Haul Road Reveg ~1.75ac
10a	Mob	Initial Mobilization D9 x 4, 637 x 2, 345 x 1, 14M x 1, 2500 gal x 1, Power mulcher, Crimper, Tractor, Crew Truck x 2, Flatbed x 1
10b	Mob	Secondary Mobilization Power mulcher, Crimper, Tractor, Crew Truck x 2
Indirect		BLM Requires Davis Bacon Wages (equivalent to DRMS costs) DRMS has statutory 23.5% cost (32-32.5-117(4)(b)(i)), cumulative of all indirect costs

Per policy I wanted to send this out for review prior to issuance. Please look it over and let me know if there are errors or concerns. As noted you may also wish to revise your reclamation plan. If no response is received by **Friday, September 22, 2023** then I'll issue SI-1 the following Monday as is. SI-1 will result in a total required bond amount of **\$306,321**, which is an increase of \$248,536 over the \$57,785 currently held.

Please feel free to contact me with any further questions. Amy Yeldell at the Division of Reclamation, Mining and Safety, Rm 215, 1001 E 62<sup>nd</sup> Ave, Denver CO 80216. Direct contact can be made by phone at 303-866-3567 Ext 8183 or via email at amy.yeldell@state.co.us

Sincerely,



**Amy Yeldell**  
 Environmental Protection Specialist

## COST SUMMARY WORK

Task description: Post inspection update 07-05-2023

Site: Upland Gravel Pit No. 3

Permit Action: 07-2023

Permit/Job#: M2005077

### PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 7/17/2023

County: Mesa

Filename: M077-ACY

User: ACY

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Phase 1- Pull back slopes	EXCAVATE	1	7.34	\$1,945
01b	Phase 1 & 2- Highwall Reduction	DOZER	4	0.69	\$1,268
01c	Phase 4 - Highwall Reduction	DOZER	4	1.79	\$3,298
02a	Overburden Replacement Pit Floor	SCRAPER1	1	28.87	\$93,149
02b	Ripping Pit Floor	GRADER	1	7.84	\$2,343
02c	Topsoil Replacement Pit Floor	SCRAPER1	1	14.11	\$45,540
03a	Overburden Replacement Slopes	SCRAPER1	1	7.85	\$25,321
03b	Topsoil Replacement Slopes	SCRAPER1	1	3.84	\$12,319
03c	Pocketing Slopes	EXCAVATE	1	8.87	\$2,350
04a	Rip Haul Road	GRADER	1	1.33	\$398
05a	Phase 1 Reveg	REVEGE	1	8.30	\$11,726
05b	Phase 2 Reveg	REVEGE	1	8.90	\$12,573
05c	Phase 2 Reveg	REVEGE	1	8.90	\$12,573
05d	Haul Road Reveg	REVEGE	1	3.50	\$4,945
10a	Initial Mobilization	MOBILIZE	1	2.50	\$12,931
10b	Secondary Mobilization	MOBILIZE	1	2.50	\$1,521
<b><u>SUBTOTALS:</u></b>				<b>117.13</b>	<b>\$244,200</b>

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

Liability insurance:	2.02	Total =	\$4,933
Performance bond:	1.05	Total =	\$2,564
Job superintendent:	58.56	Total =	\$3,811
Profit:	10.00	Total =	\$24,420
		TOTAL O & P =	\$35,728
		CONTRACT AMOUNT (direct + O & P) =	\$279,928

**LEGAL - ENGINEERING - PROJECT MANAGEMENT:**

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.25	Total =	\$11,897
Reclamation management and/or administration:	5.00		\$13,996
CONTINGENCY: 0.00		Total =	\$0

TOTAL INDIRECT COST = \$62,121

**TOTAL BOND AMOUNT (direct + indirect) = \$306,321**

## HYDRAULIC EXCAVATOR WORK

Task description: Phase 1- Pull back slopes

Site: Upland Gravel Pit No. 3

Permit Action: 07-2023

Permit/Job#: M2005077

### PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 7/17/2023

County: Mesa

Filename: M077-01a

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 345D L 12'-10" Stick  
Attachment 1: ROPS Cab

Horsepower: 380  
Weight (MT): 49.37  
Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$121.73</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$96.14</u>	<u>100</u>
Operator Cost/Hour:	<u>\$46.87</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$264.74</u>	
Total Fleet Cost/Hour:	<u>\$264.74</u>	

### MATERIAL QUANTITIES

Initial volume: 3,738 CCY Swell factor: 1.000  
Loose volume: 3,738 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: 0.315 minutes

#### Load Bucket Capacity

Rated Capacity: 3.14 LCY (heaped)  
Bucket Fill Factor: 1.025 Bank Clay; Earth (100%-105%) 1.025  
Adjusted Capacity: 3.22 LCY

Bucket Size Class: Medium

#### Job Condition Correction Factors

Site Altitude: 5000 feet

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

Unadjusted Hourly Unit Production: 613.05 LCY/Hour  
Adjusted Hourly Unit Production: 508.83 LCY/Hour  
Adjusted Hourly Fleet Production: 508.83 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 7.35 Hours  
Unit cost: \$0.520 /LCY Total job cost: \$1,945

**BULLDOZER WORK**Task description: **Phase 1 & 2- Highwall Reduction**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**Task #: **01B**State: **Colorado**Abbreviation: **None**Date: **7/17/2023**County: **Mesa**Filename: **M077-01b**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$238.76	NA
Operating Cost/Hour:	\$162.29	100
Ripper own. Cost/Hour:	\$18.32	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: **\$459.41**Total Fleet Cost/Hour: **\$1,837.62****MATERIAL QUANTITIES**Initial Volume: **1,557**Swell factor: **1.330**Loose volume: **2,071 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **50 feet**Unadjusted hourly production: **2,110.5 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **5,000 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: 750.07 LCY/hr

Adjusted fleet production: **3000.28** LCY/hr

### **JOB TIME AND COST**

Fleet size: 4 Dozer(s)

Unit cost: \$0.612/LCY

Total job time: **0.69** Hours

Total job cost: **\$1,268**



**BULLDOZER WORK**Task description: **Phase 4 - Highwall Reduction**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**Task #: **01C**State: **Colorado**Abbreviation: **None**Date: **7/17/2023**County: **Mesa**Filename: **M077-01c**User: **ACY**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D9T - 9SU**Horsepower: **405**Blade Type: **Semi-Universal**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$238.76	NA
Operating Cost/Hour:	\$162.29	100
Ripper own. Cost/Hour:	\$18.32	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: **\$459.41**Total Fleet Cost/Hour: **\$1,837.62****MATERIAL QUANTITIES**Initial Volume: **4,049**Swell factor: **1.330**Loose volume: **5,385 LCY**Source of estimated volume: **Division of Reclamation, Mining & Safety**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **50 feet**Unadjusted hourly production: **2,110.5 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **5,000 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: 750.07 LCY/hr

Adjusted fleet production: **3000.28** LCY/hr

### **JOB TIME AND COST**

Fleet size: 4 Dozer(s)

Unit cost: \$0.612/LCY

Total job time: **1.79** Hours

Total job cost: **\$3,298**

**SCRAPER TEAM WORK**Task description: **Overburden Replacement Pit Floor**Site: **Upland Gravel Pit No. 3**Permit Action: 07-2023Permit/Job#: M2005077**PROJECT IDENTIFICATION**Task #: 02AState: ColoradoAbbreviation: NoneDate: 7/17/2023County: MesaFilename: M077-02aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	100	50	100
Ownership cost/hour:	\$255.23	\$238.76	\$238.76	\$238.76	\$149.33	\$16.65
Operating cost/hour:	\$280.59	\$162.29	\$162.29	\$162.29	\$46.40	\$37.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$47.07	\$40.04	\$40.04	\$40.04	\$46.87	\$0.00
Unit Subtotals:	\$582.89	\$441.09	\$441.09	\$441.09	\$242.60	\$54.25
Number of Units:	2	2	1	1	1	1
Group Subtotals:	Work: \$2,047.96		Support: \$882.18		Maint: \$296.85	

Total work team cost/hour: **\$3,226.99****MATERIAL QUANTITIES**Initial volume: 33,234

CCY

Swell factor: 1.125Loose volume: **37,388**

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: 5000 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2800	0.38

Haul Time: 0.38 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2949	0.25

Return Time: 0.25 minutesTotal Scraper team cycle time: 2.23 minutesAdjusted for job conditions: 1,295.25 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,295.25 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,295.25 LCY/HourUnadjusted unit production/hour: 1,560.54 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 28.87 HoursUnit cost: \$2.491 /LCYTotal job cost: \$93,149

## MOTOR GRADER WORK

Task description: Ripping Pit Floor

Site: Upland Gravel Pit No. 3

Permit Action: 07-2023

Permit/Job#: M2005077

### PROJECT IDENTIFICATION

Task #: 02B

State: Colorado

Abbreviation: None

Date: 7/17/2023

County: Mesa

Filename: M077-02b

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 14M

Horsepower: 259

Ripper Attachment: Multi-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$149.33	NA
Operating Cost/Hour:	\$92.79	100
Ripper Ownership Cost/Hour:	\$5.83	NA
Ripper Operating Cost/Hour:	\$4.02	100
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$298.84	
Total Fleet Cost/Hour:	<b>\$298.84</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 10.30 acres

Source of estimated acreage: Phase 1, 2 and 4 bottoms ~10.3 ac

### HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Ripping (0-3 mph) - 1.50</u>	
Selected Blade Angle:	<u>-1</u>	degrees
Effective Blade Length:	<u>0.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>8.50</u>	feet
Unadjusted Hourly Unit Production:	<u>1.5455</u>	acres/hour

#### Job Condition Correction Factors

Site Altitude: 5000 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.85</u>	(1sh/d, mod.)
Net Correction:	<u>0.8500</u>	multiplier

Adjusted Hourly Unit Production: 1.3136 acres/Hour

Adjusted Hourly Fleet Production: **1.3136** acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **7.84** Hours

Unit cost: \$227.49 per acre Total job cost: **\$2,343**

**SCRAPER TEAM WORK**Task description: **Topsoil Replacement Pit Floor**Site: **Upland Gravel Pit No. 3**Permit Action: 07-2023Permit/Job#: M2005077**PROJECT IDENTIFICATION**Task #: 02CState: ColoradoAbbreviation: NoneDate: 7/17/2023County: MesaFilename: M077-02cUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:****Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	100	50	100
Ownership cost/hour:	\$255.23	\$238.76	\$238.76	\$238.76	\$149.33	\$16.65
Operating cost/hour:	\$280.59	\$162.29	\$162.29	\$162.29	\$46.40	\$37.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$47.07	\$40.04	\$40.04	\$40.04	\$46.87	\$0.00
Unit Subtotals:	\$582.89	\$441.09	\$441.09	\$441.09	\$242.60	\$54.25
Number of Units:	2	2	1	1	1	1
Group Subtotals:	Work:	\$2,047.96	Support:	\$882.18	Maint:	\$296.85

Total work team cost/hour: **\$3,226.99****MATERIAL QUANTITIES**Initial volume: 16,617

CCY

Swell factor: 1.115Loose volume: **18,528**

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>2,100 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Loam</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>38.86 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: 5000 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2800	0.35

Haul Time: 0.35 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2949	0.25

Return Time: 0.25 minutesTotal Scraper team cycle time: 2.20 minutesAdjusted for job conditions: 1,312.91 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,312.91 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,312.91 LCY/HourUnadjusted unit production/hour: 1,581.82 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 14.11 HoursUnit cost: \$2.458 /LCYTotal job cost: \$45,540

**SCRAPER TEAM WORK**Task description: **Overburden Replacement Slopes**Site: **Upland Gravel Pit No. 3**Permit Action: 07-2023Permit/Job#: M2005077**PROJECT IDENTIFICATION**Task #: 03AState: ColoradoAbbreviation: NoneDate: 7/17/2023County: MesaFilename: M077-03aUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	100	50	100
Ownership cost/hour:	\$255.23	\$238.76	\$238.76	\$238.76	\$149.33	\$16.65
Operating cost/hour:	\$280.59	\$162.29	\$162.29	\$162.29	\$46.40	\$37.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$47.07	\$40.04	\$40.04	\$40.04	\$46.87	\$0.00
Unit Subtotals:	\$582.89	\$441.09	\$441.09	\$441.09	\$242.60	\$54.25
Number of Units:	2	2	1	1	1	1
Group Subtotals:	Work:	\$2,047.96	Support:	\$882.18	Maint:	\$296.85

Total work team cost/hour: **\$3,226.99****MATERIAL QUANTITIES**Initial volume: 9,034

CCY

Swell factor: 1.125Loose volume: **10,163**

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: 5000 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2800	0.38

Haul Time: 0.38 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2949	0.25

Return Time: 0.25 minutesTotal Scraper team cycle time: 2.23 minutesAdjusted for job conditions: 1,295.25 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,295.25 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,295.25 LCY/HourUnadjusted unit production/hour: 1,560.54 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 7.85 HoursUnit cost: \$2.491 /LCYTotal job cost: \$25,321

**SCRAPER TEAM WORK**Task description: **Topsoil Replacement Slopes**Site: **Upland Gravel Pit No. 3**Permit Action: 07-2023Permit/Job#: M2005077**PROJECT IDENTIFICATION**Task #: 03BState: ColoradoAbbreviation: NoneDate: 7/17/2023County: MesaFilename: M077-03bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 14M
-Water Truck:	Water Tanker, 3,500 Gal.

**Cost Breakdown:**

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	100	50	100
Ownership cost/hour:	\$255.23	\$238.76	\$238.76	\$241.38	\$149.33	\$16.65
Operating cost/hour:	\$280.59	\$162.29	\$162.29	\$143.92	\$46.40	\$37.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$47.07	\$40.04	\$40.04	\$40.04	\$46.87	\$0.00
Unit Subtotals:	\$582.89	\$441.09	\$441.09	\$425.34	\$242.60	\$54.25
Number of Units:	2	2	1	1	1	1
Group Subtotals:	Work:	\$2,047.96	Support:	\$866.43	Maint:	\$296.85

Total work team cost/hour: **\$3,211.24****MATERIAL QUANTITIES**Initial volume: 4,517

CCY

Swell factor: 1.115Loose volume: **5,036**

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>2,100 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Earth - Loam</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>38.86 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: 5000 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2800	0.35

Haul Time: 0.35 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2949	0.25

Return Time: 0.25 minutesTotal Scraper team cycle time: 2.20 minutesAdjusted for job conditions: 1,312.91 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,312.91 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,312.91 LCY/HourUnadjusted unit production/hour: 1,581.82 LCY/Hour

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

**JOB TIME AND COST**Fleet size: 1 Team(s)Total job time: 3.84 HoursUnit cost: \$2.446 /LCYTotal job cost: \$12,319

## HYDRAULIC EXCAVATOR WORK

Task description: Pocketing Slopes

Site: Upland Gravel Pit No. 3

Permit Action: 07-2023

Permit/Job#: M2005077

### PROJECT IDENTIFICATION

Task #: 03C

State: Colorado

Abbreviation: None

Date: 7/17/2023

County: Mesa

Filename: M077-03c

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat 345D L 12'-10" Stick  
Attachment 1: ROPS Cab

Horsepower: 380  
Weight (MT): 49.37  
Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$121.73	NA
Operating Cost/Hour:	\$96.14	100
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$264.74	
Total Fleet Cost/Hour:	\$264.74	

### MATERIAL QUANTITIES

Initial volume: 4,517 CCY      Swell factor: 1.000  
Loose volume: 4,517 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: 0.315 minutes

#### Load Bucket Capacity

Rated Capacity: 3.14 LCY (heaped)      Bucket Size Class: Medium  
Bucket Fill Factor: 1.025 Bank Clay; Earth (100%-105%) 1.025  
Adjusted Capacity: 3.22 LCY

#### Job Condition Correction Factors

Site Altitude: 5000 feet

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

Unadjusted Hourly Unit Production: 613.05 LCY/Hour  
Adjusted Hourly Unit Production: 508.83 LCY/Hour  
Adjusted Hourly Fleet Production: 508.83 LCY/Hour

### JOB TIME AND COST

Fleet size: 1 Excavator      Total job time: 8.88 Hours  
Unit cost: \$0.520 /LCY      Total job cost: \$2,350

## MOTOR GRADER WORK

Task description: Rip Haul Road

Site: Upland Gravel Pit No. 3

Permit Action: 07-2023

Permit/Job#: M2005077

### PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None  
Date: 7/17/2023 County: Mesa Filename: M077-04a  
User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 14M Horsepower: 259  
Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$149.33	NA
Operating Cost/Hour:	\$92.79	100
Ripper Ownership Cost/Hour:	\$5.83	NA
Ripper Operating Cost/Hour:	\$4.02	100
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$298.84	
Total Fleet Cost/Hour:	<b>\$298.84</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 1.75 acres

Source of estimated acreage: 3800LF \* 20' W

### HOURLY PRODUCTION

Average Grader Speed: 1.50 mph  
Selected Application: Ripping (0-3 mph) - 1.50  
Selected Blade Angle: -1 degrees  
Effective Blade Length: 0.00 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 8.50 feet  
Unadjusted Hourly Unit Production: 1.5455 acres/hour

#### Job Condition Correction Factors

Site Altitude: 5000 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.85</u>	(CAT HB)
Net Correction:	<u>0.8500</u>	(1sh/d, mod.)
		multiplier

Adjusted Hourly Unit Production: 1.3136 acres/Hour  
Adjusted Hourly Fleet Production: **1.3136** acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **1.33** Hours

Unit cost: \$227.49 per acre Total job cost: **\$398**

**REVEGETATION WORK**Task description: **Phase 1 Reveg**Site: **Upland Gravel Pit No. 3**Permit Action: 07-2023Permit/Job#: M2005077**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 7/17/2023County: MesaFilename: M077-05aUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

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

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
<b>Total Tilling Cost/Acre</b>	<b>\$112.82</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	4.00	12.95	\$44.50
Crested Wheatgrass - Ephraim	3.20	14.69	\$13.84
Sand Dropseed	0.10	11.94	\$0.98
Pubescent Wheatgrass - Luna	6.00	12.40	\$20.40
Galleta	5.40	19.71	\$120.69
Saltbush, Four Wing	6.00	8.26	\$75.00
Saltbush, Shadscale	6.00	8.95	\$60.00
<b>Totals Seed Mix</b>	<b>30.70</b>	<b>88.90</b>	<b>\$335.41</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 - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$4.01	\$4.01
Herbicide - Plateau @ 1.0 pt/ac	1.00	ACRE	\$19.79	\$19.79
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
<b>Total Mulch Materials Cost/Acre</b>				<b>\$883.37</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Power mulcher (MEANS 32 91 13.16 0350)	\$147.67
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
<b>Total Mulch Application Cost/Acre</b>	<b>\$284.85</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: 4.15 Cost /Acre: \$1,883.67  
 Estimated Failure Rate: 50% Cost /Acre\*: \$1,883.67  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$7,817.23**  
 Reseeding Job Cost: **\$3,908.62**  
 Total Job Cost: **\$11,726**  
 Job Hours: **8.30**

**REVEGETATION WORK**Task description: **Phase 2 Reveg**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**Task #: **05B**State: **Colorado**Abbreviation: **None**Date: **7/17/2023**County: **Mesa**Filename: **M077-05b**User: **ACY**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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
<b>Total Tilling Cost/Acre</b>	<b>\$112.82</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	4.00	12.95	\$44.50
Crested Wheatgrass - Ephraim	3.20	14.69	\$13.84
Sand Dropseed	0.10	11.94	\$0.98
Pubescent Wheatgrass - Luna	6.00	12.40	\$20.40
Galleta	5.40	19.71	\$120.69
Saltbush, Four Wing	6.00	8.26	\$75.00
Saltbush, Shadscale	6.00	8.95	\$60.00
<b>Totals Seed Mix</b>	<b>30.70</b>	<b>88.90</b>	<b>\$335.41</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 - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$4.01	\$4.01
Herbicide - Plateau @ 1.0 pt/ac	1.00	ACRE	\$19.79	\$19.79
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
<b>Total Mulch Materials Cost/Acre</b>				<b>\$883.37</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Power mulcher (MEANS 32 91 13.16 0350)	\$147.67
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
<b>Total Mulch Application Cost/Acre</b>	<b>\$284.85</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: 4.45                      Cost /Acre: \$1,883.67  
 Estimated Failure Rate: 50%                      Cost /Acre\*: \$1,883.67  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$8,382.33**  
 Reseeding Job Cost: **\$4,191.17**  
 Total Job Cost: **\$12,573**  
 Job Hours: **8.90**

**REVEGETATION WORK**Task description: **Phase 2 Reveg**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**Task #: **05C**State: **Colorado**Abbreviation: **None**Date: **7/17/2023**County: **Mesa**Filename: **M077-05c**User: **ACY**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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
<b>Total Tilling Cost/Acre</b>	<b>\$112.82</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	4.00	12.95	\$44.50
Crested Wheatgrass - Ephraim	3.20	14.69	\$13.84
Sand Dropseed	0.10	11.94	\$0.98
Pubescent Wheatgrass - Luna	6.00	12.40	\$20.40
Galleta	5.40	19.71	\$120.69
Saltbush, Four Wing	6.00	8.26	\$75.00
Saltbush, Shadscale	6.00	8.95	\$60.00
<b>Totals Seed Mix</b>	<b>30.70</b>	<b>88.90</b>	<b>\$335.41</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 - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$4.01	\$4.01
Herbicide - Plateau @ 1.0 pt/ac	1.00	ACRE	\$19.79	\$19.79
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
<b>Total Mulch Materials Cost/Acre</b>				<b>\$883.37</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Power mulcher (MEANS 32 91 13.16 0350)	\$147.67
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
<b>Total Mulch Application Cost/Acre</b>	<b>\$284.85</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: 4.45                      Cost /Acre: \$1,883.67  
 Estimated Failure Rate: 50%                      Cost /Acre\*: \$1,883.67  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$8,382.33**  
 Reseeding Job Cost: **\$4,191.17**  
 Total Job Cost: **\$12,573**  
 Job Hours: **8.90**

**REVEGETATION WORK**Task description: **Haul Road Reveg**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**Task #: **05D**State: **Colorado**Abbreviation: **None**Date: **7/17/2023**County: **Mesa**Filename: **M077-05d**User: **ACY**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
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
<b>Total Tilling Cost/Acre</b>	<b>\$112.82</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Paloma	4.00	12.95	\$44.50
Crested Wheatgrass - Ephraim	3.20	14.69	\$13.84
Sand Dropseed	0.10	11.94	\$0.98
Pubescent Wheatgrass - Luna	6.00	12.40	\$20.40
Galleta	5.40	19.71	\$120.69
Saltbush, Four Wing	6.00	8.26	\$75.00
Saltbush, Shadscale	6.00	8.95	\$60.00
<b>Totals Seed Mix</b>	<b>30.70</b>	<b>88.90</b>	<b>\$335.41</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 - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$4.01	\$4.01
Herbicide - Plateau @ 1.0 pt/ac	1.00	ACRE	\$19.79	\$19.79
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$429.79	\$859.57
<b>Total Mulch Materials Cost/Acre</b>				<b>\$883.37</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$74.46
Power mulcher (MEANS 32 91 13.16 0350)	\$147.67
Weed spray, truck, aquatic area, nox. [DMG]	\$62.72
<b>Total Mulch Application Cost/Acre</b>	<b>\$284.85</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: 1.75                      Cost /Acre: \$1,883.67  
 Estimated Failure Rate: 50%                      Cost /Acre\*: \$1,883.67  
 \*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$3,296.42  
 Reseeding Job Cost: \$1,648.21  
 Total Job Cost: \$4,945  
 Job Hours: 3.50

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Initial Mobilization**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**

Task #: **10A** State: **Colorado** Abbreviation: **None**  
 Date: **7/17/2023** County: **Mesa** Filename: **M077-10a**  
 User: **ACY**

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:	\$20.26	\$36.04	\$47.05
Operating Cost/Hour:	\$39.51	\$76.08	\$82.85
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$82.29	\$158.17	\$175.95

**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 D9T - 9SU	66.13	\$257.08	\$175.95	4	\$1,732.12	\$703.80	\$1,000.00
Cat 637G w/push-pull	59.59	\$255.23	\$175.95	2	\$862.36	\$351.90	\$500.00
Cat 345D L 12'-10" Stick	54.31	\$121.73	\$175.95	1	\$297.68	\$175.95	\$250.00
CAT 14M	23.57	\$155.16	\$82.29	1	\$237.45	\$82.29	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.73	\$82.29	1	\$89.02	\$82.29	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$25.94	\$82.29	1	\$108.23	\$82.29	\$250.00

Subtotals: **\$3,326.86** **\$1,478.52** **\$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.	\$93.16	1	\$93.16	\$93.16
Flatbed Truck, 4x2, 30K GVW	\$64.45	1	\$64.45	\$64.45
Light Duty Pickup, 4x4, 3/4 T.	\$72.29	2	\$144.58	\$144.58

Subtotals: 

<b>\$302.19</b>	<b>\$302.19</b>
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**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: GRAND JUNCTION  
 Total one-way travel distance: 5.00 miles  
 Average Travel Speed: 40.00 mph

Total Non-Roadable Mob/Demob Cost \* \$12,855.07  
 \* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$75.55  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.13	0.13
Return Time (Hours):	0.13	0.13
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.25	0.25

**JOB TIME AND COST**

Total job time: 2.50 Hours

Total job cost: \$12,931

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Secondary Mobilization**Site: **Upland Gravel Pit No. 3**Permit Action: **07-2023**Permit/Job#: **M2005077****PROJECT IDENTIFICATION**Task #: **10B**State: **Colorado**Abbreviation: **None**Date: **7/17/2023**County: **Mesa**Filename: **M077-10b**User: **ACY**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:	\$20.26	\$36.04	\$47.05
Operating Cost/Hour:	\$39.51	\$76.08	\$82.85
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$82.29	\$158.17	\$175.95

**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
Drill/Broadcast Seeder with Tractor	25.00	\$6.73	\$82.29	1	\$89.02	\$82.29	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$25.94	\$82.29	1	\$108.23	\$82.29	\$250.00
Subtotals:					<b>\$197.25</b>	<b>\$164.58</b>	<b>\$500.00</b>

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$72.29	2	\$144.58	\$144.58
Subtotals:			<b>\$144.58</b>	<b>\$144.58</b>



**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>GRAND JUNCTION</u>	
Total one-way travel distance:	<u>5.00</u>	miles
Average Travel Speed:	<u>40.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$1,484.96</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$36.15</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.13</u>	<u>0.13</u>
Return Time (Hours):	<u>0.13</u>	<u>0.13</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.25</u>	<u>0.25</u>

**JOB TIME AND COST**

Total job time:	<u>2.50</u>	Hours
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Total job cost:	<u>\$1,521</u>
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