

## COST SUMMARY WORK

Task description: Cost Summary of Reclamation Tasks

Site: The Orr Pit

Permit Action: CN01 Cost Estimate

Permit/Job#: M2009074

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 2/12/2018

County: Pueblo

Filename: M074-000

User: ERR

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Cut/Fill Working Face	DOZER	1	4.20	\$862.00
002	Rip Mine Floor for Grading	GRADER	1	17.50	\$1,937.00
003	Grade Mine Floor	GRADER	1	15.79	\$1,748.00
004	Spread Gravel on Remaining Mine Floor	DOZER	1	5.93	\$1,218.00
005	Revegetate Mine Slopes	REVEGE	1	5.00	\$3,424.00
006	Mob/Demob of Reclamation Equipment	MOBILIZE	1	1.67	\$2,822.00
<b><u>SUBTOTALS:</u></b>				<b>50.09</b>	<b>\$12,011</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$242.62

Performance bond: 1.05

Total = \$126.12

Job superintendent: 0.00

Total = \$0.00

Profit: 10.00

Total = \$1,201.10

TOTAL O & P = \$1,569.84

CONTRACT AMOUNT (direct + O & P) = \$13,580.84

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 0.00

Total = 0.00

Engineering work and/or contract/bid preparation: 4.25

Total = \$577.19

Reclamation management and/or administration: 5.00

\$679.04

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$2,826.07

**TOTAL BOND AMOUNT (direct + indirect) = \$14,837.07**

**BULLDOZER WORK**Task description: **Cut/Fill Working Face**Site: **The Orr Pit**Permit Action: **CN01 Cost Estimate**Permit/Job#: **M2009074****PROJECT IDENTIFICATION**Task #: **001**State: **Colorado**Abbreviation: **None**Date: **2/12/2018**County: **Pueblo**Filename: **M074-001**User: **ERR**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8SU**Horsepower: **310**Blade Type: **Semi-Universal**Attachment: **3-shank ripper**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$83.81	NA
Operating Cost/Hour:	\$66.17	100
Ripper own. Cost/Hour:	\$7.55	NA
Ripper op. Cost/Hour:	\$7.21	100
Operator Cost/Hour:	\$40.52	NA

Total unit Cost/Hour: **\$205.26**Total Fleet Cost/Hour: **\$205.26****MATERIAL QUANTITIES**Initial Volume: **1,748**Swell factor: **1.165**Loose volume: **2,036 LCY**Source of estimated volume: **Application**Source of estimated swell  
factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **100 feet**Unadjusted hourly  
production: **852.6 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push  
gradient: **-30 %**Average site altitude: **4,630 feet**Material weight: **2,900 lbs/LCY**Weight description: **Decomposed rock - 50% Rock, 50% Earth****Job Condition Correction Factor**Operator Skill: **0.750**Source  
(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:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5690

Adjusted unit  
production: 485.13 LCY/hr

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Adjusted fleet  
production: **485.13** LCY/hr

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### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

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Unit cost: \$0.423/LCY

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Total job time: **4.20** Hours

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Total job cost: **\$862**

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## MOTOR GRADER WORK

Task description: Rip Mine Floor for Grading

Site: The Orr Pit

Permit Action: CN01 Cost Estimate

Permit/Job#: M2009074

### PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 2/12/2018

County: Pueblo

Filename: M074-002

User: ERR

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 140M

Horsepower: 183

Ripper Attachment: Multi-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$35.08	NA
Operating Cost/Hour:	\$33.24	100
Ripper Ownership Cost/Hour:	\$1.99	NA
Ripper Operating Cost/Hour:	\$2.16	100
Operator Cost/Hour:	\$38.16	NA
Total Unit Cost/Hour:	\$110.63	
Total Fleet Cost/Hour:	<b>\$110.63</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 20.51 acres

Source of estimated acreage: Application

### 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:	7.58	feet
Unadjusted Hourly Unit Production:	1.3782	acres/hour

#### Job Condition Correction Factors

Site Altitude: 4630 feet

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

Adjusted Hourly Unit Production: 1.1715 acres/Hour

Adjusted Hourly Fleet Production: **1.1715** acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **17.51** Hours

Unit cost: \$94.44 per acre Total job cost: **\$1,937**

## MOTOR GRADER WORK

Task description: Grade Mine Floor

Site: The Orr Pit

Permit Action: CN01 Cost Estimate

Permit/Job#: M2009074

### PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None  
Date: 2/12/2018 County: Pueblo Filename: M074-003  
User: ERR

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 140M Horsepower: 183  
Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day  
Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$35.08	NA
Operating Cost/Hour:	\$33.24	100
Ripper Ownership Cost/Hour:	\$1.99	NA
Ripper Operating Cost/Hour:	\$2.16	100
Operator Cost/Hour:	\$38.16	NA
Total Unit Cost/Hour:	\$110.63	
Total Fleet Cost/Hour:	<b>\$110.63</b>	

### MATERIAL QUANTITIES

Total Area to be graded or ripped: 20.51 acres

Source of estimated acreage: Application

### HOURLY PRODUCTION

Average Grader Speed: 1.50 mph  
Selected Application: Finish grading (0-2.5 mph) - 1.5  
Selected Blade Angle: 30 degrees  
Effective Blade Length: 10.40 feet  
Width of blade overlap per pass: 2.00 feet  
Net grading or ripping width per pass: 8.40 feet  
Unadjusted Hourly Unit Production: 1.5273 acres/hour

#### Job Condition Correction Factors

Site Altitude: 4630 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: 1.2982 acres/Hour  
Adjusted Hourly Fleet Production: **1.2982** acres/Hour

### JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **15.80** Hours

Unit cost: \$85.22 per acre Total job cost: **\$1,748**

**BULLDOZER WORK**Task description: **Spread Gravel on Remaining Mine Floor**Site: **The Orr Pit**Permit Action: CN01 Cost EstimatePermit/Job#: M2009074**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 2/12/2018County: PuebloFilename: M074-004User: ERRAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: 3-shank ripperShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$83.81	NA
Operating Cost/Hour:	\$66.17	100
Ripper own.		
Cost/Hour:	\$7.55	NA
Ripper op. Cost/Hour:	\$7.21	100
Operator Cost/Hour:	\$40.52	NA

Total unit Cost/Hour: \$205.26Total Fleet Cost/Hour: **\$205.26****MATERIAL QUANTITIES**Initial Volume: 2,726Swell factor: 1.000Loose volume: **2,726 LCY**Source of estimated volume: ApplicationSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 852.6 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 4,630 feetMaterial weight: 2,550 lbs/LCYWeight description: Gravel - Dry**Job Condition Correction Factor**Operator Skill: 0.750Source  
(AVG.)

Material consistency:	1.200	(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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5390

Adjusted unit production: 459.55 LCY/hr

Adjusted fleet production: **459.55** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.447/LCY

Total job time: **5.93** Hours

Total job cost: **\$1,218**

**REVEGETATION WORK**Task description: Revegetate Mine SlopesSite: The Orr PitPermit Action: CN01 Cost EstimatePermit/Job#: M2009074**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 2/12/2018County: PuebloFilename: M074-005User: ERRAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	121.20	pound	\$0.34	\$41.21
Triple superphosphate, 0-46-0	86.60	pound	\$0.43	\$37.24
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$78.45</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$144.62
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$144.62</b>

**TILLING**

Description	Cost /Acre
Chisel plowing {DMG}	\$90.60
<b>Total Tilling Cost/Acre</b>	<b>\$90.60</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Rye, Perennial Tetraploid - Aubisque	1.00	5.67	\$1.68
Orchardgrass - Paiute	1.00	12.40	\$3.62
Crested Wheatgrass - Hy-Crest	1.00	4.59	\$4.42
Smooth Brome - Lincoln	2.00	6.66	\$8.50
Intermediate Wheatgrass - Oahe	2.00	4.27	\$7.68
Slender Wheatgrass - San Luis	1.00	3.65	\$3.24
Dahurian Wildrye	2.00	8.03	\$7.90
<b>Totals Seed Mix</b>	<b>10.00</b>	<b>45.27</b>	<b>\$37.04</b>



**Application**

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
<b>Total Seed Application Cost/Acre</b>	<b>\$232.00</b>

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

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	\$261.00	\$261.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$261.00</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$66.02
<b>Total Mulch Application Cost/Acre</b>	<b>\$66.02</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: 2.83 Cost /Acre: \$909.73  
 Estimated Failure Rate: 33% Cost /Acre\*: \$909.73  
 \*Selected Replanting Work Items: FERTILIZING,TILLING,SEEDING,MU  
LCHING

Initial Job Cost: \$2,574.54  
 Reseeding Job Cost: \$849.60  
 Total Job Cost: \$3,424  
 Job Hours: 5.00

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mob/Demob of Reclamation Equipment**Site: **The Orr Pit**Permit Action: **CN01 Cost Estimate**Permit/Job#: **M2009074****PROJECT IDENTIFICATION**Task #: **006**State: **Colorado**Abbreviation: **None**Date: **2/12/2018**County: **Pueblo**Filename: **M074-006**User: **ERR**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:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

**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 D8T - 8SU	53.08	\$91.36	\$125.45	1	\$216.81	\$125.45	\$250.00
CAT 140M	16.68	\$37.07	\$88.67	1	\$125.74	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	1	\$100.89	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00

Subtotals: **\$539.14** **\$391.46** **\$1,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
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Subtotals: **\$0.00** **\$0.00**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	<u>PUEBLO, CO</u>	
Total one-way travel distance:	<u>13.40</u>	miles
Average Travel Speed:	<u>50.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,822.29</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$0.00</u>
** one round trip, no haul rig:	

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.27</u>	<u>0.27</u>
Return Time (Hours):	<u>0.27</u>	<u>0.27</u>
Loading Time (Hours):	<u>0.15</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.15</u>	<u>NA</u>
Subtotals:	<u>0.84</u>	<u>0.54</u>

**JOB TIME AND COST**

Total job time:	<u>1.67</u>	Hours
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Total job cost:	<u>\$2,822</u>
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