

COST SUMMARY WORK

Task description: Cost Summary of Reclamation Tasks

Site: Bad Boys Pit

Permit Action: 2017 Update

Permit/Job#: M1996081

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 11/9/2017

County: Teller

Filename: M081-000

User: ERR

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill Overburden	DOZER	1	7.53	\$1,501.00
002	Haul Topsoil	LOADER	1	11.65	\$1,111.00
003	Spread Topsoil	DOZER	1	1.73	\$357.00
004	Revegetate the Site	REVEGE	1	2.00	\$1,413.00
005	Mob/Demob of Reclamation Equipment	MOBILIZE	1	5.67	\$2,781.00
<u>SUBTOTALS:</u>				28.58	\$7,163

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$144.69

Performance bond: 1.05

Total = \$75.21

Job superintendent: 0.00

Total = \$0.00

Profit: 10.00

Total = \$716.30

TOTAL O & P = \$936.20

CONTRACT AMOUNT (direct + O & P) = \$8,099.20

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): 0.00

Total = 0.00

Engineering work and/or contract/bid preparation: 0.00

Total = \$0.00

Reclamation management and/or administration: 5.00

\$404.96

CONTINGENCY: 0.00

Total = \$0.00

TOTAL INDIRECT COST = \$1,341.16

TOTAL BOND AMOUNT (direct + indirect) = \$8,504.16

BULLDOZER WORKTask description: **Backfill Overburden**Site: **Bad Boys Pit** Permit Action: **2017 Update** Permit/Job#: **M1996081****PROJECT IDENTIFICATION**

Task #: **001** State: **Colorado** Abbreviation: **None**
 Date: **11/9/2017** County: **Teller** Filename: **M-1996-081**
 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:	\$0.00	0
Operator Cost/Hour:	\$41.85	NA
Total unit Cost/Hour:	\$199.38	
Total Fleet Cost/Hour:	\$199.38	

MATERIAL QUANTITIES

Initial Volume: **5,463**
 Swell factor: **1.000**
 Loose volume: **5,463 LCY**

Source of estimated volume: **Division of Reclamation, Mining & Safety**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Average push distance: **100 feet**
 Unadjusted hourly production: **852.6 LCY/hr**

Materials consistency description: **Partly consolidated stockpile 1.1**

Average push gradient: **0 %**
 Average site altitude: **9,750 feet**

Material weight: **1,850 lbs/LCY**Weight description: **Coal - Anthracite, Washed**

Job Condition Correction Factor Source
 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:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.243	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8511

Adjusted unit
production: 725.65 LCY/hr

Adjusted fleet
production: **725.65** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.275/LCY

Total job time: **7.53** Hours

Total job cost: **\$1,501**

WHEEL LOADER – LOAD AND CARRY WORKTask description: **Haul Topsoil**Site: **Bad Boys Pit** Permit Action: **2017 Update** Permit/Job#: **M1996081****PROJECT IDENTIFICATION**

Task #: **002** State: **Colorado** Abbreviation: **None**
 Date: **11/9/2017** County: **Teller** Filename: **M081-002**
 User: **ERR**

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

Basic Machine: **CAT 950H** Horsepower: **197**
 Attachment 1: **ROPS Cab** Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$25.38	NA
Operating Cost/Hour:	\$28.79	100
Operator Cost/Hour:	\$41.20	NA
Total Unit Cost/Hour:	\$95.37	
Total Fleet Cost/Hour:	\$95.37	

MATERIAL QUANTITIES

Initial volume: **1,711** CCY Swell factor: **1.215**
 Loose volume: **2,079** LCY

Source of estimated volume: **Division of Reclamation, Mining & Safety**
 Source of estimated swell factor: **Cat Handbook**

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): **0.500** minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(Cat HB)
Truck Ownership:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		0.000	minutes
Adjusted Basic Cycle Time:		0.500	minutes

Rolling Resistance – Road Conditions

Haul: **Rutted dirt, little maintenance, no water, 1" tire penetration 4.0**
 Return: **Rutted dirt, little maintenance, no water, 1" tire penetration 4.0**

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	450	-5.00	4.00	-1.00	0.3235	(Cat HB)

Return Route:	450	5.00	4.00	9.00	0.4971	(Cat HB)
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Total Travel Time: 0.8205 minutes
Total Cycle Time: 1.3205 minutes

Load Bucket Capacity

Rated Capacity: 4.30 LCY (heaped)
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: 4.73 LCY

Job Condition Correction Factors

Site Altitude: 9750 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: 214.91 LCY/Hour
Adjusted Hourly Unit Production: 178.38 LCY/Hour
Adjusted Hourly Fleet Production: 178.38 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: 11.65 Hours
Unit cost: \$0.535 /LCY Total job cost: \$1,111

BULLDOZER WORKTask description: Spread TopsoilSite: Bad Boys PitPermit Action: 2017 UpdatePermit/Job#: M1996081**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 11/9/2017County: TellerFilename: M081-003User: 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.	\$7.55	NA
Cost/Hour:		
Ripper op. Cost/Hour:	\$7.21	100
Operator Cost/Hour:	\$41.85	NA
Total unit Cost/Hour:	\$206.59	
Total Fleet Cost/Hour:	\$206.59	

MATERIAL QUANTITIESInitial Volume: 1,711Swell factor: 1.215Loose volume: **2,079 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,400.0 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 9,750 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit
production: 1,203.02 LCY/hr

Adjusted fleet
production: **1203.02** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.172/LCY

Total job time: **1.73** Hours

Total job cost: **\$357**

REVEGETATION WORKTask description: **Revegetate the Site**Site: **Bad Boys Pit**Permit Action: 2017 UpdatePermit/Job#: M1996081**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 11/9/2017County: TellerFilename: M081-004User: 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	86.90	pound	\$0.43	\$37.37
			Total Fertilizer Materials Cost/Acre	\$78.58

Application

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

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Meadow Brome - Fleet	8.30	7.62	\$41.50
Arizona Fescue - Redondo	1.60	18.37	\$18.94
Russian Wildrye - Bozoisky	4.00	16.07	\$25.32
Streambank Wheatgrass - Sodar	5.70	18.58	\$34.71
Western Wheatgrass - Arriba	12.00	30.30	\$96.96
Totals Seed Mix	31.60	90.94	\$217.44

Application

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

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres: 1.5 Cost /Acre: \$798.46
 Estimated Failure Rate: 25% Cost /Acre*: \$575.26
 *Selected Replanting Work Items: TILLING,SEEDING

Initial Job Cost: **\$1,197.69**
 Reseeding Job Cost: **\$215.72**
 Total Job Cost: **\$1,413**
 Job Hours: **2.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mob/Demob of Reclamation Equipment**Site: **Bad Boys Pit**Permit Action: 2017 UpdatePermit/Job#: M1996081**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 11/9/2017County: TellerFilename: M081-005User: ERRAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per dayCost Data Source: CRG DataTruck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)Truck Trailer Description: GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)**Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
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 950H	20.13	\$25.38	\$88.67	1	\$114.05	\$88.67	\$250.00

Subtotals: **\$330.86** **\$214.12** **\$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	\$75.38	1	\$75.38	\$75.38

Subtotals: **\$75.38** **\$75.38**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>COLORADO SPRINGS</u>	
Total one-way travel distance:	<u>52.60</u>	miles
Average Travel Speed:	<u>45.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$2,604.90</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$176.22</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.17</u>	<u>1.17</u>
Return Time (Hours):	<u>1.17</u>	<u>1.17</u>
Loading Time (Hours):	<u>0.25</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.25</u>	<u>NA</u>
Subtotals:	<u>2.84</u>	<u>2.34</u>

JOB TIME AND COST

Total job time:	<u>5.68</u>	Hours
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Total job cost:	<u>\$2,781</u>
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