

COST SUMMARY WORK

Task description: Cost Summary

Site: Colorado Rose Red Pit

Permit Action: AM02

Permit/Job#: M1978332

PROJECT IDENTIFICATION

Task #: 000
Date: 1/5/2018
User: JLE

State: Colorado
County: Larimer

Abbreviation: None
Filename: M332-000

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grated Adit Closure with Doors	MINESEAL	1	48.00	\$14,148.00
002	Grade and shape parking areas	LOADER	1	1.27	\$262.00
003	Spread Soil Over Bench Areas	LOADER	1	3.57	\$736.00
004	Revegetation	REVEGE	1	2.08	\$1,259.00
005	Weed Control	REVEGE	1	5.74	\$386.00
006	Mobilization	MOBILIZE	1	4.36	\$1,585.00
<u>SUBTOTALS:</u>				65.02	\$18,376

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$371.20
Performance bond:	1.05	Total =	\$192.95
Job superintendent:	32.51	Total =	\$2,374.86
Profit:	10.00	Total =	\$1,837.60
		TOTAL O & P =	\$4,776.61
		CONTRACT AMOUNT (direct + O & P) =	\$23,152.61

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 =	\$983.99
Reclamation management and/or administration:	5.00		\$1,157.63

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$6,918.23

TOTAL BOND AMOUNT (direct + indirect) = \$25,294.23

Required Bond Amount: **\$25,300.00**

SAFEGUARDING UNDERGROUND OPENINGS

Task description: Grated Adit Closure with Doors

Site: Colorado Rose Red Pit Permit Action: AM02 Permit/Job#: M1978332

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 1/5/2018 County: Larimer Filename: M332-001
User: JLE

Agency or organization name: DRMS

UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Room Closures	3 Openings	Adit closure - grated door (per opening)	3.00	EA	\$4,716.00	\$14,148.00

Job Hours: 48.00

Total Cost: \$14,148.00

WHEEL LOADER – LOAD AND CARRY WORK

Task description: Grade and shape parking areas

Site: Colorado Rose Red Pit

Permit Action: AM02

Permit/Job#: M1978332

PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 1/5/2018

County: Larimer

Filename: M332-002

User: JLE

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 988H

Attachment 1: ROPS Cab

Horsepower: 475

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$83.38	NA
Operating Cost/Hour:	\$81.23	100
Operator Cost/Hour:	\$41.46	NA
Total Unit Cost/Hour:	\$206.07	
Total Fleet Cost/Hour:	\$206.07	

MATERIAL QUANTITIES

Initial volume: 1,120

CCY

Swell factor: 1.000

Loose volume: 1,120

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):

0.575

minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:		-0.060	minutes
Adjusted Basic Cycle Time:		0.515	minutes

Rolling Resistance – Road Conditions

Haul: Very hard, smooth, asphalt or concrete, no tire penetration 1.2
Return: Very hard, smooth, asphalt or concrete, no tire penetration 1.2

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	60	0.00	1.20	1.20	0.0289	(Cat HB)
Return Route:	60	0.00	1.20	1.20	0.0291	(Cat HB)

Total Travel Time: 0.0580 minutes
Total Cycle Time: **0.5730** minutes

Load Bucket Capacity

Rated Capacity: 9.20 LCY (heaped)
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: **10.12** LCY

Job Condition Correction Factors

Site Altitude: 7040 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: 1,059.74 LCY/Hour
Adjusted Hourly Unit Production: 879.58 LCY/Hour
Adjusted Hourly Fleet Production: **879.58** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: **1.27** Hours
Unit cost: \$0.234 /LCY Total job cost: **\$262**

WHEEL LOADER – LOAD AND CARRY WORK

Task description: Spread Soil Over Bench Areas

Site: Colorado Rose Red Pit

Permit Action: AM02

Permit/Job#: M1978332

PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 1/5/2018

County: Larimer

Filename: M332-003

User: JLE

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 988H

Attachment 1: ROPS Cab

Horsepower: 475

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$83.38	NA
Operating Cost/Hour:	\$81.23	100
Operator Cost/Hour:	\$41.46	NA
Total Unit Cost/Hour:	\$206.07	
Total Fleet Cost/Hour:	\$206.07	

MATERIAL QUANTITIES

Initial volume: 2,237

CCY

Swell factor: 1.000

Loose volume: 2,237

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):

0.575

minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(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:		-0.060	minutes
Adjusted Basic Cycle Time:		0.515	minutes

Rolling Resistance – Road Conditions

Haul: Very hard, smooth, asphalt or concrete, no tire penetration 1.2
Return: Very hard, smooth, asphalt or concrete, no tire penetration 1.2

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	300	0.00	1.20	1.20	0.1444	(Cat HB)
Return Route:	300	0.00	1.20	1.20	0.1454	(Cat HB)

Total Travel Time: 0.2899 minutes
Total Cycle Time: **0.8049** minutes

Load Bucket Capacity

Rated Capacity: 9.20 LCY (heaped)
Bucket Fill Factor: 1.100 Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity: **10.12** LCY

Job Condition Correction Factors

Site Altitude: 7040 feet

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

Unadjusted Hourly Unit Production: 754.42 LCY/Hour
Adjusted Hourly Unit Production: 626.17 LCY/Hour
Adjusted Hourly Fleet Production: **626.17** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: **3.57** Hours
Unit cost: \$0.329 /LCY Total job cost: **\$736**

REVEGETATION WORK

Task description: Revegetation

Site: Colorado Rose Red Pit

Permit Action: AM02

Permit/Job#: M1978332

PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 1/5/2018

County: Larimer

Filename: M332-004

User: JLE

Agency or organization name: DRMS

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Hachita	1.00	16.32	\$16.27
Beardless Wheatgrass - Whitmar	7.20	23.47	\$61.20
Indian Ricegrass - Paloma	0.80	2.59	\$7.80
Sheep Fescue - Covar	1.00	15.61	\$5.23
Streambank Wheatgrass - Sodar	4.40	14.34	\$26.80
Needlegrass, Green - Lodorm	3.00	12.47	\$14.61
Totals Seed Mix	17.40	84.80	\$131.91

Application

Description	Cost /Acre
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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:	2.08	Cost /Acre:	\$505.42
Estimated Failure Rate:	25%	Cost /Acre*:	\$399.13
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$1,051.27
Reseeding Job Cost:	\$207.55
Total Job Cost:	\$1,259
Job Hours:	2.08

REVEGETATION WORK

Task description: Weed Control

Site: Colorado Rose Red Pit

Permit Action: AM02

Permit/Job#: M1978332

PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 1/5/2018

County: Larimer

Filename: M332-005

User: JLE

Agency or organization name: DRMS

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

Application

Description	Cost /Acre
	\$
	\$0.00

Total Seed Application Cost/Acre	
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MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.08	ACRE	\$2.74	\$5.70
Total Mulch Materials Cost/Acre				\$5.70

Application

Description	Cost /Acre
Weed spray, hand, non-aquatic area, nox. [DMG]	\$180.00
Total Mulch Application Cost/Acre	\$180.00

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:	2.08	Cost /Acre:	\$185.70
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		

Initial Job Cost:	\$386.26
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$386
Job Hours:	5.74

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization**

Site: **Colorado Rose Red Pit**

Permit Action: **AM02**

Permit/Job#: **M1978332**

PROJECT IDENTIFICATION

Task #: **006**

State: **Colorado**

Abbreviation: **None**

Date: **1/5/2018**

County: **Larimer**

Filename: **M332-006**

User: **JLE**

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:

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 988H	54.46	\$83.38	\$125.45	1	\$208.83	\$125.45	\$250.00

Subtotals: **\$208.83** **\$125.45** **\$250.00**

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	\$47.96	2	\$95.92	\$95.92
Fuel Tanker, 6x4, 210 HP	\$74.87	1	\$74.87	\$74.87

Subtotals: **\$170.79** **\$170.79**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: LYONS

Total one-way travel distance: 8.00 miles

Average Travel Speed: 8.00 mph

Total Non-Roadable Mob/Demob Cost * \$1,243.74

 '* two round trips with haul rig:

Total Roadable Mob/Demob Cost ** \$341.58

 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.00</u>	<u>1.00</u>
Return Time (Hours):	<u>1.00</u>	<u>1.00</u>
Loading Time (Hours):	<u>0.09</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.09</u>	<u>NA</u>
Subtotals:	<u>2.18</u>	<u>2.00</u>

JOB TIME AND COST

Total job time: 4.36 Hours

Total job cost: \$1,585