

COST SUMMARY WORK

Task description: _____

Site: Kichelmann one

Permit Action: 2020-10-05 AM-01

Permit/Job#: M2019007

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 10/6/2020

County: Montrose

Filename: M007-000

User: DMC

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Backfill/Grade Dig Areas	LOADER	1	13.49	\$1,530
02a	Distribute topsoil	LOADER	1	17.04	\$1,932
03a	Revegetate Affected Area	REVEGE	1	2.00	\$6,740
04a	Mobilize reclamation crew/equipment	MOBILIZE	1	3.14	\$815
<u>SUBTOTALS:</u>				35.67	\$11,017

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 0.00
Profit: 10.00

Total = \$223

Total = \$116

Total = \$0

Total = \$1,102

TOTAL O & P = \$1,440

CONTRACT AMOUNT (direct + O & P) = \$12,457

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$0

Total = \$0

Engineering work and/or contract/bid preparation: 0.00

Total = \$0

Reclamation management and/or administration: 5.00

\$623

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$2,063

TOTAL BOND AMOUNT (direct + indirect) = \$13,080

WHEEL LOADER – LOAD AND CARRY WORKTask description: **Backfill/Grade Dig Areas**Site: **Kichelmann one**Permit Action: **2020-10-05 AM-01**Permit/Job#: **M2019007****PROJECT IDENTIFICATION**

Task #: **01A** State: **Colorado** Abbreviation: **None**
 Date: **10/6/2020** County: **Montrose** Filename: **M2019007 01a**
 User: **DMC**

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

Basic Machine: **CAT 450E**
 Attachment 1: **ROPS Cab**

Horsepower: **101**
 Shift Basis: **1 per day**
 Data Source: **(CRG)**

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$37.14	NA
Operating Cost/Hour:	\$35.52	100
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$113.36	
Total Fleet Cost/Hour:	\$113.36	

MATERIAL QUANTITIES

Initial volume: **1,500** CCY Swell factor: **1.000**
 Loose volume: **1,500** 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): **0.475** minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		-0.010	minutes
Adjusted Basic Cycle Time:		0.465	minutes

Rolling Resistance – Road Conditions

Haul: **Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0**
 Return: **Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0**

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
--	---------------	----------------	------------------	----------------	-----------------------	--------

Haul Route:	100	0.00	8.00	8.00	0.0951	(Cat HB)
Return Route:	100	0.00	8.00	8.00	0.0951	(Cat HB)

Total Travel Time: 0.1902 minutesTotal Cycle Time: **0.6552** minutesLoad Bucket Capacity

Rated Capacity:	<u>1.50</u>	LCY (heaped)
Bucket Fill Factor:	<u>0.975</u>	Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity:	<u>1.46</u>	LCY

Job Condition Correction FactorsSite Altitude: 5800 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:	<u>133.93</u>	LCY/Hour
Adjusted Hourly Unit Production:	<u>111.16</u>	LCY/Hour
Adjusted Hourly Fleet Production:	<u>111.16</u>	LCY/Hour

JOB TIME AND COSTFleet size: 1 Loader(s) Total job time: **13.49** HoursUnit cost: \$1.020 /LCY Total job cost: **\$1,530**

WHEEL LOADER – LOAD AND CARRY WORKTask description: Distribute topsoilSite: Kichelmann onePermit Action: 2020-10-05 AM-01Permit/Job#: M2019007**PROJECT IDENTIFICATION**Task #: 02AState: ColoradoAbbreviation: NoneDate: 10/6/2020County: MontroseFilename: M2019007 02aUser: DMCAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 450EAttachment 1: ROPS CabHorsepower: 101Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$37.14	NA
Operating Cost/Hour:	\$35.52	100
Operator Cost/Hour:	\$40.71	NA
Total Unit Cost/Hour:	\$113.36	
Total Fleet Cost/Hour:	\$113.36	

MATERIAL QUANTITIESInitial volume: 2,018

CCY

Swell factor: 1.000Loose volume: 2,018

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Loader Cycle Time:**Unadjusted Basic Cycle Time (load, dump,
maneuver):

0.475

minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(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:		-0.050	minutes
Adjusted Basic Cycle Time:		0.425	minutes

Rolling Resistance – Road ConditionsHaul: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0Return: Soft, rutted dirt, no maintenance or water, 4" tire penetration 8.0**Haul and Return Time**

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	100	0.00	8.00	8.00	0.0951	(Cat HB)
Return Route:	100	0.00	8.00	8.00	0.0951	(Cat HB)

Total Travel Time: 0.1902 minutes
Total Cycle Time: **0.6152** minutes

Load Bucket Capacity

Rated Capacity: 1.50 LCY (heaped)
Bucket Fill Factor: 0.975 Loose material - mixed moist aggregates (95-100%) 0.975
Adjusted Capacity: **1.46** LCY

Job Condition Correction Factors

Site Altitude: 5800 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: 142.64 LCY/Hour
Adjusted Hourly Unit Production: 118.39 LCY/Hour
Adjusted Hourly Fleet Production: **118.39** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Loader(s) Total job time: **17.04** Hours
Unit cost: \$0.958 /LCY Total job cost: **\$1,932**

REVEGETATION WORKTask description: Revegetate Affected AreaSite: Kichelmann onePermit Action: 2020-10-05 AM-01Permit/Job#: M2019007**PROJECT IDENTIFICATION**Task #: 03AState: ColoradoAbbreviation: NoneDate: 10/6/2020County: MontroseFilename: M2019007 03aUser: DMCAgency 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
Chisel plowing {DMG}	\$94.63
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$288.23

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	3.70	11.98	\$24.05
Galleta	4.38	15.99	\$97.89
Needle and Thread	6.06	16.00	\$253.61
Western Wheatgrass - Native	5.52	13.94	\$33.12
Globemallow, Scarlet (or copper)	0.50	5.66	\$67.75
Basin Wildrye - Trailhead	6.06	24.62	\$93.38
Totals Seed Mix	26.22	88.19	\$569.81

Application

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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
Total Mulch Materials Cost/Acre				\$602.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Total Mulch Application Cost/Acre	\$70.17

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: 3 Cost /Acre: \$1,797.43
 Estimated Failure Rate: 25% Cost /Acre*: \$1,797.43
 *Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$5,392.29**
 Reseeding Job Cost: **\$1,348.07**
 Total Job Cost: **\$6,740**
 Job Hours: **2.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize reclamation crew/equipment**Site: **Kichelmann one**Permit Action: 2020-10-05 AM-01Permit/Job#: M2019007**PROJECT IDENTIFICATION**Task #: 04AState: ColoradoAbbreviation: NoneDate: 10/6/2020County: MontroseFilename: M2019007 04aUser: DMCAgency 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:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

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 450E	9.80	\$37.14	\$67.39	1	\$104.53	\$67.39	\$250.00
Subtotals:					\$104.53	\$67.39	\$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, 3/4 T.	\$13.23	1	\$13.23	\$13.23
Subtotals:			\$13.23	\$13.23

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: NUCLA
 Total one-way travel distance: 10.00 miles
 Average Travel Speed: 35.00 mph

Total Non-Roadable Mob/Demob Cost * \$807.30
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$7.56
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.29	0.29
Return Time (Hours):	0.29	0.29
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.57	0.57

JOB TIME AND COST

Total job time: 3.14 Hours

Total job cost: \$815