

## COST SUMMARY WORK

Task description: SI-02 Cost Summary Estimate

Site: Iverson Mine

Permit Action: SI-02 Estimate

Permit/Job#: M2011001

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 2/28/2021

County: Weld

Filename: M001-001

User: PSH

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
002	Import Backfill Material	SITEMAINT ENANCE	1	0.00	\$3,163,744
003	Revegetate 28 Acres	REVEGE	1	40.00	\$62,043
004	Mob/Demob	MOBILIZE	1	5.33	\$5,307
005	Compact Imported Fill	COMPACT	1	475.23	\$125,986
006	Backfill Imported Material	DOZER	1	1,457.70	\$358,622
<b><u>SUBTOTALS:</u></b>				<b>1978.26</b>	<b>\$3,715,702</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$75,057

Performance bond: 1.05

Total = \$39,015

Job superintendent: 989.13

Total = \$68,794

Profit: 10.00

Total = \$371,570

TOTAL O & P = \$554,436

CONTRACT AMOUNT (direct + O & P) = \$4,270,138

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$181,481

Reclamation management and/or administration: 5.00

\$213,507

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$949,924

**TOTAL BOND AMOUNT (direct + indirect) = \$4,665,600 (Rounded)**

## SITE MAINTENANCE

Task description: **Import Backfill Material**

Site: **Iverson Mine**

Permit Action: SI-02 Estimate

Permit/Job#: M2011001

### PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 2/28/2021

County: Weld

Filename: M001-002

User: PSH

Agency or organization name: DRMS

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Import Backfill Material - 26.5 Acres at 18.5 Avg. Depth	1.00	USER PROVIDED ITEM	790,936.00	1	\$4.00	\$3,163,744.00

Job Hours: 0.00

Total Cost: \$3,163,744.00

**REVEGETATION WORK**Task description: Revegetate 28 AcresSite: Iverson MinePermit Action: SI-02 EstimatePermit/Job#: M2011001**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 2/28/2021County: WeldFilename: M001-003User: PSHAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
0-20-20, 4-8-12, 10-10-10	29.10	pound	\$0.21	\$5.97
			<b>Total Fertilizer Materials Cost/Acre</b>	<b>\$5.97</b>

**Application**

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$37.03
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$37.03</b>

**TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$107.16
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
<b>Total Tilling Cost/Acre</b>	<b>\$300.76</b>

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.15	5.85	\$4.27
Switchgrass - Pathfinder	1.05	9.38	\$13.39
Mountain Brome - Bromar	2.55	4.10	\$9.69
Sideoats Grama - Butte	2.63	8.63	\$23.67
Western Wheatgrass - Arriba	2.55	6.44	\$16.58
Sweetvetch, Utah or Northern	1.50	0.68	\$112.50
Needle and Thread	1.95	5.15	\$81.61
Rose, Wood's	1.28	0.00	\$26.24
Prairie Sandreed - Goshen	0.15	0.94	\$1.55
Globemallow, Scarlet (or copper)	0.45	5.10	\$60.98

Penstemon, Rocky Mountain	0.75	11.76	\$22.13
<b>Totals Seed Mix</b>	15.01	58.02	<b>\$372.59</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
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$301.00	\$602.00
Herbicide - Tordon 22K @ 1.0 pt/ac	1.00	ACRE	\$12.88	\$12.88
<b>Total Mulch Materials Cost/Acre</b>				<b>\$614.88</b>

**Application**

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
<b>Total Mulch Application Cost/Acre</b>	<b>\$70.17</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:	28	Cost /Acre:	\$1,633.40
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,289.64
*Selected Replanting Work Items:	SEEDING,MULCHING		
Initial Job Cost:	\$45,735.20		
Reseeding Job Cost:	\$9,027.48		
Total Job Cost:	\$54,763		
Job Hours:	40.00		

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mob/Demob**Site: **Iverson Mine**Permit Action: SI-02 EstimatePermit/Job#: M2011001**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 2/28/2021County: WeldFilename: M001-004User: PSHAgency 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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
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 D8T - 8SU	47.71	\$116.22	\$123.81	1	\$240.03	\$123.81	\$250.00
CAT 825H	36.08	\$135.67	\$123.81	1	\$259.48	\$123.81	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.72	\$67.39	1	\$74.11	\$67.39	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$11.19	\$67.39	1	\$78.58	\$67.39	\$250.00

Subtotals: **\$652.20** **\$382.40** **\$1,000.00****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: GREELEY, CO  
 Total one-way travel distance: 10.00 miles  
 Average Travel Speed: 30.00 mph

Total Non-Roadable Mob/Demob Cost \* \$5,298.53  
 \*\* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$8.82  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.33	0.33
Return Time (Hours):	0.33	0.33
Loading Time (Hours):	1.00	NA
Unloading Time (Hours):	1.00	NA
Subtotals:	2.67	0.67

**JOB TIME AND COST**

Total job time: 5.33 Hours

Total job cost: \$5,307

## COMPACTION WORK

Task description: Compact Imported Fill

Site: Iverson Mine

Permit Action: SI-02 Estimate

Permit/Job#: M2011001

### PROJECT IDENTIFICATION

Task #: 005

State: Colorado

Abbreviation: None

Date: 2/28/2021

County: Weld

Filename: M001-005

User: PSH

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: CAT 825H

Horsepower: 354

Compactor Type: Soil - tamping foot

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

Ownership Cost/Hour:	\$135.67	Utilization %	NA
Operating Cost/Hour:	\$97.93		100
Operator Cost/Hour:	\$31.50		NA
Total Unit Cost/Hour:	\$265.10		
Total Fleet Cost/Hour:	<b>\$265.10</b>		

### MATERIAL QUANTITIES

Loose volume: 790,936

LCY

Shrinkage factor: 0.895

Compacted volume: **707,888**

CCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated shrinkage factor: Cat Handbook

### HOURLY PRODUCTION

Unadjusted hourly production =  $(W \times S \times L \times C) / P$

Compacted width per pass (W):	<u>7.34</u>	feet
Average Compactor Speed (S):	<u>5.00</u>	mph
Compacted thickness of each lift (L):	<u>6.00</u>	inches
Conversion Constant (C):	<u>16.3</u>	(5,280ft./12in./27cu.ft.)
Required number of machine passes (P):	<u>2</u>	passes
Unadjusted Hourly Unit Production:	<u>1,794.63</u>	CCY/hour

#### Job Condition Correction Factors

Site Altitude: 4,690 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.83</u>	(1 shift/day)
Net Correction:	<u>0.8300</u>	multiplier

Adjusted Hourly Unit Production: 1,489.54 CCY/Hour

Adjusted Hourly Fleet Production: **1,489.54** CCY/Hour

### JOB TIME AND COST

Fleet size: 1 Compactor(s)

Total job time: **475.24** Hours

Unit cost: \$0.178 per CCY

Total job cost: **\$125,986**

**BULLDOZER WORK**Task description: **Backfill Imported Material**Site: **Iverson Mine**Permit Action: **SI-02 Estimate**Permit/Job#: **M2011001****PROJECT IDENTIFICATION**Task #: **006**State: **Colorado**Abbreviation: **None**Date: **2/28/2021**County: **Weld**Filename: **M001-006**User: **PSH**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8SU**Horsepower: **310**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$116.22	NA
Operating Cost/Hour:	\$89.77	100
Ripper own.		
Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	100
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: **\$246.02**Total Fleet Cost/Hour: **\$246.02****MATERIAL QUANTITIES**Initial Volume: **790,936**Swell factor: **1.000**Loose volume: **790,936 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: **Loose stockpile 1.2**Average push gradient: **0 %**Average site altitude: **4,690 feet**Material weight: **2,700 lbs/LCY**Weight description: **Sand and clay - Loose****Job Condition Correction Factor**Operator Skill: **0.750**Source  
(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:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.852	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6364

Adjusted unit production: 542.59 LCY/hr

Adjusted fleet production: **542.59** LCY/hr

### **JOB TIME AND COST**

Fleet size: 1 Dozer(s)

Unit cost: \$0.453/LCY

Total job time: **1,457.70** Hours

Total job cost: **\$358,622**