

COST SUMMARY WORK

Task description: Reclaim the Henderson Mine

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 12/17/2019

County: Clear Creek

Filename: M342-000

User: ZTT

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
A01	Demo Mine Site	DEMOLISH	1	160.00	\$504,411
A02	Demo Mill Site	DEMOLISH	1	200.00	\$10,058,279
A03	Rip Mine Site Asphalt	RIPPER	1	22.91	\$5,640
A04	Rip Mill Site Asphalt	RIPPER	1	50.40	\$12,409
B01	Hydroseed Vent Shaft	REVEGE	1	0.50	\$2,419
B02	Maintenance	REVEGE	1	0.50	\$70
C01	Backfill and Grade Pond 1	TRUCK1	1	22.29	\$14,494
C02	Backfill and Grade Pond 1.1	TRUCK1	1	7.93	\$5,157
C03	Backfill and Grade Pond 1.2	TRUCK1	1	27.86	\$18,113
C04	Haul and Spread Cap on Pond 1.2	TRUCK1	1	12.42	\$8,071
C05	Rip Roads at Mine	RIPPER	1	38.18	\$9,400
C06	Finish Grade Mine Site	GRADER	1	72.75	\$7,010
C07	Mix Sludge and Chips	DOZER	1	497.10	\$113,022
C08	Drill Seed Mine Site	REVEGE	1	30.00	\$53,229
C09	Hydroseed Mine Site	REVEGE	1	22.00	\$106,414
C10	Shrub/Tree Plant Mine Site	REVEGE	1	50.00	\$41,500
C11	Maintenance Fertilization	REVEGE	1	50.00	\$6,965
C12	Clear Creek Culvert Removal	DEMOLISH	1	8.00	\$73,467
C13	Excavate Clear Creek Channel	TRUCK1	1	488.05	\$284,888
C14	Place Hazard Signs at Glory Hole	SITEMAINT ENANCE	1	1.00	\$36
C15	Plug Vent Shafts #1, 3, and 4	MINESEAL	1	120.00	\$450,000
D01	Rip Portal Area	DOZER	1	598.98	\$142,429
D02	Backfill and Regrade Portal Area	DOZER	1	83.48	\$18,981
D03	Reestablish Williams Fork Drainage	GRADER	1	941.40	\$90,704
D04	Drill Seed Portal Area	REVEGE	1	10.50	\$18,630
D05	Shrub/Tree Plant Portal Area	REVEGE	1	10.50	\$8,715
D06	Maintenance Fertilization	REVEGE	1	12.50	\$1,741
E01	Surface Railroad	DOZER	1	662.48	\$150,623
E02	Reestablish Williams Fork Drainage	GRADER	1	66.93	\$6,449
E03	Seed Mix - Drill Seeding	REVEGE	1	18.00	\$31,937
E04	Shrub/Tree Plant Conveyor Access Road	REVEGE	1	18.00	\$14,940
E05	Maintenance Fertilization	REVEGE	1	12.50	\$1,741
F01	Backfill and Grade Mill Site	DOZER	1	1,250.91	\$284,409
F02	Reclaim Mill Access Road	DOZER	1	230.46	\$52,397
F03	Drill Seed Mill Yard and Access Road	REVEGE	1	61.50	\$109,119
F04	Shrub/Tree Plant Mill Yard and Access Road	REVEGE	1	61.50	\$51,045
F05	Maintenance Fertilization	REVEGE	1	61.50	\$8,567
G01	Excavate/Haul Sediment from EB Reservoir	TRUCK1	1	54.28	\$22,949

G02	Drill Seed Foot Print and Access Roads to UB HS UC Reservoir	REVEGE	1	2.00	\$3,637
G03	Shrub/Tree Plant EB HS UC Res. and Access Roads	REVEGE	1	2.00	\$1,701
G04	Maintenance Fertilization	REVEGE	1	2.50	\$348
H01	Cover Soil - Bone Yard to Dams	TRUCK1	1	11,513.70	\$11,832,973
H02	Spread Cover on Dams and Dry Beach	DOZER	1	6,353.44	\$1,444,532
H03	Cover Soil - N + E Stockpiles to Pond and Dry Beach	TRUCK1	1	4,953.24	\$5,090,593
H04	Spread Cover on Pond, Wet Beach	DOZER	1	6,155.41	\$1,399,507
H05	Haul Rock Armor from West Portal	TRUCK1	1	1,469.66	\$1,510,412
H06	Spread Rock Armor	DOZER	1	2,256.00	\$512,928
H07	Finish Grade Soil Borrow Area	GRADER	1	145.50	\$14,019
H08	Grade Ultimate Canal	DOZER	1	385.78	\$87,712
H09	Rip Haul Roads	DOZER	1	514.48	\$122,337
H10	Hydroseed TDA	REVEGE	1	637.00	\$3,081,179
H11	Hydroseed Spillway	REVEGE	1	17.00	\$82,229
H12	Shrub/Tree Planting	REVEGE	1	1.00	\$830
H13	Reshape and Fill Buttress 1 and 2	DOZER	1	1,038.15	\$278,813
H14	Wet Beach Cover Support	SITEMAINT ENANCE	1	100.00	\$11,148,940
H15	TDA Diversion	POSTMININ G	1	7,887.98	\$2,864,223
H16	Spillway to Ranger Gulch	DOZER	1	12,931.86	\$3,473,073
H17	Armor Spillway to Ranger Gulch	SITEMAINT ENANCE	1	2,699.00	\$1,230,848
H18	Haul Sacrificial Fill in Former Pond	TRUCK1	1	2,284.86	\$2,348,220
H19	Spillway Inlet, Barge Relocation, Embankment Cover and Bench	SITEMAINT ENANCE	1	320.00	\$5,615,000
I01	Gravel Pit Regrade	DOZER	1	431.68	\$98,148
I02	Topsoil to Gravel Pit	TRUCK1	1	49.99	\$32,498
I03	Drill Seed Gravel Pit	REVEGE	1	17.50	\$31,050
I04	Shrub/Tree Plant Gravel Pit	REVEGE	1	17.50	\$14,525
I05	Maintenance Fertilization Gravel Pit	REVEGE	1	20.00	\$2,786
J01	Regrade Rectifier 6 Laydown Yard	DOZER	1	205.56	\$46,736
J02	Drill Seed Rectifier 6 Laydown Yard	REVEGE	1	2.50	\$4,436
J03	Shrub/Tree Planting Rectifier 6 Laydown Yard	REVEGE	1	2.50	\$2,075
J04	Maintenance Fertilization Rectifier 6 Laydown Yard	REVEGE	1	2.50	\$348
K01	Regrade Williams Form Pumphouse	DOZER	1	33.30	\$7,570
K02	Drill Seed Williams Fork Pump House	REVEGE	1	0.50	\$887
K03	Maintenance Fertilization Williams Fork Pump House	REVEGE	1	4.00	\$557
L01	Regrade Tailings Line and Power Lines	DOZER	1	422.73	\$96,112
L02	Drill Seed Tailings and Power Line	REVEGE	1	5.00	\$8,871
L03	Shrub/Tree Planting Talings and Power Line	REVEGE	1	5.00	\$4,150
L04	Maintenance Fertilization Talings and Power Line	REVEGE	1	24.50	\$3,413
M01	Regrade Pond Shop and Road Area	DOZER	1	394.54	\$89,705
M02	Drill Seed Talings Facility Area	REVEGE	1	7.00	\$12,420
M03	Shrub/Tree Plant Talings Facility Area	REVEGE	1	7.00	\$5,810
M04	Maintenance Fertilization Talings Facility Area	REVEGE	1	7.00	\$975
N01	Regrade Mill Water Return Pipe Line	DOZER	1	140.67	\$31,982
N02	Rip Mill Water Return Pipe Line Access Road	DOZER	1	241.91	\$57,522
N03	Drill Seed Mill Water Return Pipe Line	REVEGE	1	8.50	\$15,081
N04	Shrub/Tree Plant Mill Water Return Line	REVEGE	1	8.50	\$7,055
N05	Maintenance Fertilization	REVEGE	1	15.50	\$2,159

O01	Rip Topsoil Roads and Area	DOZER	1	1,209.51	\$287,607
O02	Drill Seed Topsoil Roads and Area	REVEGE	1	25.00	\$44,357
O03	Shrub/Tree Plant Topsoil Roads and Area	REVEGE	1	25.00	\$20,750
O04	Maintenance Fertilization Topsoil Roads and Area	REVEGE	1	25.00	\$3,483
P01	Cover Soil - Bone Yard to Dams	TRUCK1	1	2.36	\$905
P02	Hydroseed PC3 Conveyor Area	REVEGE	1	26.50	\$128,181
P03	Shrub/Tree Plant PC3 Conveyor Area	REVEGE	1	31.00	\$25,730
Q01	Water Treatment Capex O&M (10 yr)	NA	1	0.00	\$76,215,765
R01	Mobilization Year 1	MOBILIZE	1	24.30	\$225,348
R02	Mobilization Year 2	MOBILIZE	1	24.30	\$225,348
R03	Mobilization Year 3	MOBILIZE	1	24.30	\$225,348
<u>SUBTOTALS:</u>				71200.52	\$142,914,117

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$2,886,865
Performance bond:	1.05	Total =	\$1,500,598
Job superintendent:	35,600.26	Total =	\$2,470,302
Profit:	10.00	Total =	\$14,291,412
		TOTAL O & P =	\$21,149,177
		CONTRACT AMOUNT (direct + O & P) =	\$164,063,294

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	2.00	Total =	\$3,281,266
Reclamation management and/or administration:	1.91		\$3,133,609

CONTINGENCY:	0.00	Total =	\$0
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TOTAL INDIRECT COST =	\$27,564,552
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TOTAL BOND AMOUNT (direct + indirect) =	\$170,478,669
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DEMOLITION WORK

Task description: Demo Mine Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task A01

State: Colorado

Abbreviation: None

#:

Date: 12/18/2019

County: Clear Creek

Filename: M342-A01

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Location adjustment:

90.00 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Compressor Buildings	160,835 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	160,835.00	CF	\$0.35	\$56,292.25
- Floor Demo	8,465 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	8,465.00	SF	\$1.21	\$10,235.03
Plant Services Buildings	59,625 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	59,625.00	CF	\$0.35	\$20,868.75
- Floor Demo	3,975 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	3,975.00	SF	\$1.21	\$4,806.17
#1-Shaft	500,526 cf	Demo. only, large urban projects (multi-story bldgs.) - Steel structures	500,526.00	CF	\$0.19	\$94,599.41
- Floor Demo	5,382 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	5,382.00	SF	\$1.15	\$6,210.83
#1-Shaft Hoist House	290,070 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	290,070.00	CF	\$0.37	\$107,848.03
- Floor Demo	9,669	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	9,669.00	SF	\$1.21	\$11,690.79
#3-Shaft	500,526 cf	Demo. only, large urban projects	500,526.00	CF	\$0.19	\$94,599.41

		(multi-story bldgs.) - Steel structures				
- Floor Demo	5,382 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	5,382.00	SF	\$1.15	\$6,210.83
#3-Shaft Heater Building	217,440 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	217,440.00	CF	\$0.37	\$80,844.19
- Floor Demo	7,248 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	7,248.00	SF	\$1.15	\$8,364.19
Aggregate Stacking Building	27,825 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	27,825.00	CF	\$0.35	\$9,738.75
- Floor Demo	1,855 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	1,855.00	SF	\$1.15	\$2,140.67
Building Adjacent Stacking Building	2,600 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	2,600.00	CF	\$0.35	\$910.00
- Floor Demo	200 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	200.00	SF	\$1.15	\$230.80
Batch Plant	21,870 cf	Plant (1S) demo./off-site disposal in approved landfill - Max. 15 mile haul	21,870.00	CF	\$0.64	\$14,066.78
- Floor Demo	1,458 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	1,458.00	SF	\$1.15	\$1,682.53
Bulk Oil Storage Building	18,000 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	18,000.00	CF	\$0.37	\$6,692.40
- Floor Demo	1,200 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	1,200.00	SF	\$1.15	\$1,384.80
Building Adjacent to Used Oil Tank	1,260 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	1,260.00	CF	\$0.35	\$441.00
- Floor Demo	126 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	126.00	SF	\$1.15	\$145.40

Fan Control/Switch Gear Building	38,064 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	38,064.00	CF	\$0.37	\$14,152.20
- Floor Demo	2,928 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	2,928.00	SF	\$1.15	\$3,378.91
Propane Building	6,280 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	6,280.00	CF	\$0.35	\$2,198.00
- Floor Demo	628 sf	Demo. and on-site disposal in existing pit, 8 in. thick - Max. 50 ft. push	628.00	SF	\$1.15	\$724.71

Job Hours:	<u>160.00</u>	Subtotal	(unadjusted):	<u>\$560,456.83</u>	Total Cost	(adjusted for location):	<u>\$504,411.15</u>
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DEMOLITION WORK

Task description: Demo Mill Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task A02

State: Colorado

Abbreviation: None

#:

Date: 12/18/2019

County: Clear Creek

Filename: M342-A02

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Location adjustment:

90.00 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
PC2/PC3 Transfer Building	899,640 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	899,640.00	CF	\$0.37	\$334,486.15
- Floor Demo	82,840 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	42,840.00	SF	\$1.21	\$51,797.84
PC3/SC1 Transfer Building	463,382 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	463,382.00	CF	\$0.37	\$172,285.43
- Floor Demo	16,953 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	16,953.00	SF	\$1.21	\$20,497.87
Conveyor Maintenance Shop	1,483,488 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	1,483,488.00	CF	\$0.37	\$551,560.84
- Floor Demo	43,632 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	43,632.00	SF	\$1.21	\$52,755.45

Tailing &Transportation Shop	115,900 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	115,900.00	CF	\$0.37	\$43,091.62
- Floor Demo	6,100 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	6,100.00	SF	\$1.21	\$7,375.51
Mill Building	9,532,900	Plant (3S) demo./off-site disposal in approved landfill - Max. 15 mile haul	9,532,900.00	CF	\$0.64	\$6,083,896.78
- Floor Demo	242,640 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	242,640.00	SF	\$1.21	\$293,376.02
Ore Storage & Conv. Terminus	541,600 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	541,600.00	CF	\$0.35	\$189,560.00
- Floor Demo	30,910 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	30,910.00	SF	\$1.21	\$37,373.28
- Footer Demo	640 lf	Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft. - Max. 200 ft. push	640.00	LF	\$3.74	\$2,390.72
Concentrate Thickener	345,576 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	345,576.00	CF	\$0.35	\$120,951.60
- Floor Demo	31,416 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	30,910.00	SF	\$1.21	\$37,373.28

Mobile Equipment Shop	220,128 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	220,128.00	CF	\$0.37	\$81,843.59
- Floor Demo	6,879 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	6,879.00	SF	\$1.21	\$8,317.40
Nokes Storage Building	163,494 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	163,494.00	CF	\$0.37	\$60,787.07
- Floor Demo	5,274 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	5,274.00	SF	\$1.21	\$6,376.79
Hazard Waste/Flammable Building	24,922 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	24,922.00	CF	\$0.35	\$8,722.70
- Floor Demo	1,466 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	1,466.00	SF	\$1.21	\$1,772.54
Bulk Storage Whse	95,200 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	95,200.00	CF	\$0.35	\$33,320.00
- Floor Demo	5,600 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	5,600.00	SF	\$1.21	\$6,770.96
Truck Scale Building	28,158 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	28,158.00	CF	\$0.35	\$9,855.30
- Floor Demo	1,482 sf	Demo. and on-site	1,482.00	SF	\$1.21	\$1,791.89

		disposal in excavated pit, 8 in. thick - Max. 50 ft. push				
Electric Switch Gear Building	24,480 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	24,480.00	CF	\$0.35	\$8,568.00
- Floor Demo	1,530 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	1,530.00	SF	\$1.21	\$1,849.92
Sewage Treatment Building	500 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	500.00	CF	\$0.35	\$175.00
- Floor Demo	500 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	500.00	SF	\$1.21	\$604.55
Potable WaterTanks	214,560 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	214,560.00	CF	\$0.37	\$79,773.41
- Floor Demo	6,705 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	6,705.00	SF	\$1.21	\$8,107.02
Topsoil Shop	187,200 cf	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 15 mile haul	187,200.00	CF	\$0.37	\$69,600.96
- Floor Demo	380 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	380.00	SF	\$1.21	\$459.46
Tailings Operations/Maintenance Shop	66,400 cf	Bldg. (SN) demo./off-site disposal in	66,400.00	CF	\$0.35	\$23,240.00

		approved landfill - Max. 15 mile haul				
- Floor Demo	3,320 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	3,320.00	SF	\$1.21	\$4,014.21
Ute Park Pump Station	81,216 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	81,216.00	CF	\$0.35	\$28,425.60
- Floor Demo	5,076 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	5,076.00	SF	\$1.21	\$6,137.39
East Branch Pump Station	83,754 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	83,754.00	CF	\$0.35	\$29,313.90
- Floor Demo	4,653 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	4,653.00	SF	\$1.21	\$5,625.94
West Portal Building	25,752 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	25,752.00	CF	\$0.35	\$9,013.20
- Floor Demo	1,133 sf	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 50 ft. push	1,133.00	SF	\$1.21	\$1,369.91
Rectifier Station 5	75,4112 cf	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	75,411.00	CF	\$0.35	\$26,393.85
- Floor Demo	3,969 sf	Demo. and on-site disposal in excavated pit, 8 in. thick -	3,969.00	SF	\$1.21	\$4,798.92

		Max. 50 ft. push				
Grave Pit Spur Power Line	3 @ 200' spacing	Disposal of utility pole and hardware surplus material	600.00	LF	\$0.02	\$12.00
- Power Poles	3	Utility Poles, Wood 35' - 45' high (each pole)	3.00	EA	\$265.00	\$795.00
- Cross Arm	3	Utility Pole Cross Arm	3.00	EA	\$96.00	\$288.00
Pond Shop Spur Power Line	11 @ 200' spacing	Disposal of utility pole and hardware surplus material	2,200.00	LF	\$0.02	\$44.00
- Power Poles	11	Utility Poles, Wood 35' - 45' high (each pole)	11.00	EA	\$265.00	\$2,915.00
- Cross Arm	11	Utility Pole Cross Arm	11.00	EA	\$96.00	\$1,056.00
Pond Shop Spur Power Line	67 @ 200' spacing	Disposal of utility pole and hardware surplus material	13,400.00	LF	\$0.02	\$268.00
- Power Poles	67	Utility Poles, Wood 35' - 45' high (each pole)	67.00	EA	\$265.00	\$17,755.00
- Cross Arm	67	Utility Pole Cross Arm	67.00	EA	\$96.00	\$6,432.00
Williams Fork Bridge Removal	1,600 sf	Bridge Demolition - Steel	1,600.00	SF	\$9.12	\$14,592.00
S. Branch Williams Fork Bridge	1,600 sf	Bridge Demolition - Steel	1,600.00	SF	\$9.12	\$14,592.00
Tailings Distribution System	18,300 lf	Pipe, reinforced concrete (RCP) - 36 in. diameter pipe	18,300.00	LF	\$34.19	\$625,680.66
Overland Conveyor	431,060 sf @ 8' H	Conveyor, demolition, off-site disposal in approved landfill, 15 mile haul	3,448,480.00	CF	\$0.57	\$1,965,633.60

Job Hours:	200.00	Subtotal	(unadjusted):	\$11,175,865.13	Total Cost	(adjusted for	location):	\$10,058,278.62
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BULLDOZER RIPPING WORK

Task description: Rip Mine Site Asphalt

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: A03

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-A03

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU

Horsepower: 310

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper Ownership Cost/Hour:	\$10.43	NA
Ripper Operating Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$246.17	
Total Fleet Cost/Hour:	\$246.17	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 15.00 acres

Rip Depth (ft): 1.00

Volume: 24,200

BCY or CCY

Source of estimated quantity: 2019 Henderson RCE @ 72,600 sq yd

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>1.00</u>	feet/pass
Average Ripping Width:	<u>7.08</u>	feet/pass
Average Ripping Length:	<u>250.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>0.789</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.789 Acres/hr

Site Altitude: 10,000 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.65 Acres/hr

Adjusted Hourly Fleet Production: **0.65** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s)

Total job time: **22.91** Hours

Unit cost: \$376.016 Per acre

Total job cost: \$5,640

BULLDOZER RIPPING WORK

Task description: Rip Mill Site Asphalt

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: A04

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-A04

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU

Horsepower: 310

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper Ownership Cost/Hour:	\$10.43	NA
Ripper Operating Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$246.17	
Total Fleet Cost/Hour:	\$246.17	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 33.00 acres

Rip Depth (ft): 1.00

Volume: 53,240

BCY or CCY

Source of estimated quantity: 2019 Henderson RCE @ 159,976 sq yd

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>1.00</u>	feet/pass
Average Ripping Width:	<u>7.08</u>	feet/pass
Average Ripping Length:	<u>250.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>0.789</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.789 Acres/hr

Site Altitude: 10,000 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.65 Acres/hr

Adjusted Hourly Fleet Production: **0.65** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s)

Total job time: **50.41** Hours

Unit cost: \$376.016 Per acre

Total job cost: \$12,409

REVEGETATION WORK

Task description: Hydroseed Vent Shaft

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: B01

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-B01

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
NA-fertilizer application incl. with hydroseeding	\$0.00
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
Alpine Bluegrass	0.22	5.05	\$3.14
Arizona Fescue - Redondo	0.90	10.33	\$8.33
Mountain Brome - Bromar	3.40	5.46	\$12.92
Kentucky Bluegrass - Lato	0.18	8.88	\$0.60
Rocky Mountain Fescue	0.34	5.46	\$2.47
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	3.48	2.04	\$243.51
Slender Wheatgrass - Native	1.36	4.96	\$6.29
Vetch, American	2.66	1.20	\$265.80
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.90	5.97	\$14.85
Timothy, Alpine - Native	0.50	14.92	\$12.13
Tufted Hairgrass	0.34	19.51	\$3.75

Penstemon, Rocky Mountain	0.54	8.46	\$15.93
Yarrow, Western	0.10	6.08	\$4.18
Totals Seed Mix	15.12	101.51	\$603.76

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
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	Cost /Acre:	\$2,030.71
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,551.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$2,030.71
Reseeding Job Cost:	\$387.80
Total Job Cost:	\$2,419
Job Hours:	0.50

REVEGETATION WORK

Task description: Maintenance

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: B02

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-B02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$69.65
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$70
Job Hours:	0.50

TRUCK/LOADER TEAM WORK

Task description: Backfill and Grade Pond 1

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C01

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C01

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	NA	\$103.86	NA	NA
Operating cost/hour:	\$59.78	\$33.66	NA	\$82.26	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$32.93	\$40.65	NA	\$41.24	NA	NA
Unit Subtotals:	\$160.98	\$100.79	NA	\$227.36	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$422.75	Support:	\$227.36	Maint:	\$0.00

Total work team cost/hour: \$650.11

MATERIAL QUANTITIES

Initial volume: 7,650

CCY

Swell factor: 1.250

Loose volume: 9,563

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,550	Pounds/LCY
Description:	Earth - Dry packed	
Rated Payload:	87,000	Pounds
Payload Capacity:	34.12	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.755** minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.755</u>	Minutes	Adjusted for site altitude:	<u>2.755</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	1.00	2.00	3.00	3005	1.458

Haul Time: 1.458 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-1.00	2.00	1.00	3706	0.744

Return Time: 0.744 minutes

Total Truck Cycle Time: 6.908 minutes

Loading Tool unit

Production 516.76 LCY/Hour

Adjusted for job efficiency: 428.91 LCY/Hour

Truck Unit Production

260.82 LCY/Hour

Adjusted for job efficiency: 216.48 LCY/Hour

Optimal No. of Trucks: 2 Truck(s)

Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 432.96 LCY/Hour

Adjusted single truck/loader team production: 428.91 LCY/Hour

Adjusted multiple truck/loader team production: 428.91 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s)

Total job time: 22.29 Hours

Unit cost: \$1.516 /LCY

Total job cost: \$14,494

TRUCK/LOADER TEAM WORK

Task description: Backfill and Grade Pond 1.1

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C02

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C02

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	NA	\$103.86	NA	NA
Operating cost/hour:	\$59.78	\$33.66	NA	\$82.26	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$32.93	\$40.65	NA	\$41.24	NA	NA
Unit Subtotals:	\$160.98	\$100.79	NA	\$227.36	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$422.75	Support:	\$227.36	Maint:	\$0.00

Total work team cost/hour: \$650.11

MATERIAL QUANTITIES

Initial volume: 2,722

CCY

Swell factor: 1.250

Loose volume: 3,403

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,550	Pounds/LCY
Description:	Earth - Dry packed	
Rated Payload:	87,000	Pounds
Payload Capacity:	34.12	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.755** minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.755</u>	Minutes	Adjusted for site altitude:	<u>2.755</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	1.00	2.00	3.00	3005	1.458

Haul Time: 1.458 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-1.00	2.00	1.00	3706	0.744

Return Time: 0.744 minutes

Total Truck Cycle Time: 6.908 minutes

Loading Tool unit

Production	<u>516.76</u>	LCY/Hour	Adjusted for job efficiency:	<u>428.91</u>	LCY/Hour
Truck Unit Production	<u>260.82</u>	LCY/Hour	Adjusted for job efficiency:	<u>216.48</u>	LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production:	<u>432.96</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>428.91</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>428.91</u>	LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 7.93 Hours

Unit cost: \$1.516 /LCY Total job cost: \$5,157

TRUCK/LOADER TEAM WORK

Task description: Backfill and Grade Pond 1.2

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C03

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C03

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	NA	\$103.86	NA	NA
Operating cost/hour:	\$59.78	\$33.66	NA	\$82.26	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$32.93	\$40.65	NA	\$41.24	NA	NA
Unit Subtotals:	\$160.98	\$100.79	NA	\$227.36	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$422.75	Support:	\$227.36	Maint:	\$0.00

Total work team cost/hour: **\$650.11**

MATERIAL QUANTITIES

Initial volume: 9,560

CCY

Swell factor: 1.250

Loose volume: **11,950**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,550	Pounds/LCY
Description:	Earth - Dry packed	
Rated Payload:	87,000	Pounds
Payload Capacity:	34.12	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.755** minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.755</u>	Minutes	Adjusted for site altitude:	<u>2.755</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	1.00	2.00	3.00	3005	1.458

Haul Time: 1.458 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-1.00	2.00	1.00	3706	0.744

Return Time: 0.744 minutes

Total Truck Cycle Time: 6.908 minutes

Loading Tool unit

Production	<u>516.76</u>	LCY/Hour	Adjusted for job efficiency:	<u>428.91</u>	LCY/Hour
Truck Unit Production	<u>260.82</u>	LCY/Hour	Adjusted for job efficiency:	<u>216.48</u>	LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production:	<u>432.96</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>428.91</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>428.91</u>	LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 27.86 Hours

Unit cost: \$1.516 /LCY Total job cost: \$18,113

TRUCK/LOADER TEAM WORK

Task description: Haul and Spread Cap on Pond 1.2

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C04

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C04

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	100	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	NA	\$103.86	NA	NA
Operating cost/hour:	\$59.78	\$33.66	NA	\$82.26	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	NA	NA
Operator cost/hour:	\$32.93	\$40.65	NA	\$41.24	NA	NA
Unit Subtotals:	\$160.98	\$100.79	NA	\$227.36	NA	NA
Number of Units:	2	1	0	1	0	0
Group Subtotals:	Work:	\$422.75	Support:	\$227.36	Maint:	\$0.00

Total work team cost/hour: **\$650.11**

MATERIAL QUANTITIES

Initial volume: 4,260

CCY

Swell factor: 1.250

Loose volume: **5,325**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,550	Pounds/LCY
Description:	Earth - Dry packed	
Rated Payload:	87,000	Pounds
Payload Capacity:	34.12	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		0.443	minutes
Net Load Time per Truck:		2.755	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.755</u>	Minutes	Adjusted for site altitude:	<u>2.755</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	1.00	2.00	3.00	3005	1.458

Haul Time: 1.458 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-1.00	2.00	1.00	3706	0.744

Return Time: 0.744 minutes

Total Truck Cycle Time: 6.908 minutes

Loading Tool unit

Production 516.76 LCY/Hour

Adjusted for job efficiency: 428.91 LCY/Hour

Truck Unit Production

260.82 LCY/Hour

Adjusted for job efficiency: 216.48 LCY/Hour

Optimal No. of Trucks: 2 Truck(s)

Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production: 432.96 LCY/Hour

Adjusted single truck/loader team production: 428.91 LCY/Hour

Adjusted multiple truck/loader team production: 428.91 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s)

Total job time: 12.42 Hours

Unit cost: \$1.516 /LCY

Total job cost: \$8,071

BULLDOZER RIPPING WORK

Task description: Rip Roads at Mine

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C05

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C05

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU

Horsepower: 310

Ripper Attachment: 3-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper Ownership Cost/Hour:	\$10.43	NA
Ripper Operating Cost/Hour:	\$8.38	100
Operator Cost/Hour:	\$41.24	NA
Total Unit Cost/Hour:	\$246.17	
Total Fleet Cost/Hour:	\$246.17	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 25.00 acres

Rip Depth (ft): 1.00

Volume: 40,333

BCY or CCY

Source of estimated quantity: 2019 Henderson RCE

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>1.00</u>	feet/pass
Average Ripping Width:	<u>7.08</u>	feet/pass
Average Ripping Length:	<u>250.00</u>	feet/pass
Average Dozer Speed:	<u>88.00</u>	feet/minute
Average Maneuver Time:	<u>0.25</u>	minutes/pass
Production per unit area:	<u>0.789</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.789 Acres/hr

Site Altitude: 10,000 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.65 Acres/hr

Adjusted Hourly Fleet Production: **0.65** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s)

Total job time: **38.19** Hours

Unit cost: \$376.016 Per acre

Total job cost: **\$9,400**

MOTOR GRADER WORK

Task description: Finish Grade Mine Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C06

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C06

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M

Horsepower: 158

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$33.62	NA
Operating Cost/Hour:	\$34.22	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.52	NA
Total Unit Cost/Hour:	\$96.35	
Total Fleet Cost/Hour:	\$96.35	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 100.00 acres

Source of estimated acreage: 2019 Henderson RCE

HOURLY PRODUCTION

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

Job Condition Correction Factors

Site Altitude: 10000 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.90</u>	(1sh/d, fav.)
Net Correction:	<u>0.9000</u>	multiplier

Adjusted Hourly Unit Production: 1.3745 acres/Hour

Adjusted Hourly Fleet Production: **1.3745** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **72.75** Hours

Unit cost: \$70.10 per acre Total job cost: **\$7,010**

BULLDOZER WORK

Task description: Mix Sludge and Chips

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C07

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C07

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 322,667

Swell factor: 1.000

Loose volume: 322,667 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 1,000 lbs/LCY

Weight description: User Provided

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	2.300	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.7181

Adjusted unit
production: 649.10 LCY/hr
Adjusted fleet
production: **649.1** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.350/LCY

Total job time: **497.10** Hours
Total job cost: **\$113,022**

REVEGETATION WORK

Task description: Drill Seed Mine Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C08

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-C08

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	60	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$45,146.40
Reseeding Job Cost:	\$8,082.15
Total Job Cost:	\$53,229
Job Hours:	30.00

REVEGETATION WORK

Task description: Hydroseed Mine Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C09

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-C09

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
NA-fertilizer application incl. with hydroseeding	\$0.00
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
Alpine Bluegrass	0.22	5.05	\$3.14
Arizona Fescue - Redondo	0.90	10.33	\$8.33
Mountain Brome - Bromar	3.40	5.46	\$12.92
Kentucky Bluegrass - Lato	0.18	8.88	\$0.60
Rocky Mountain Fescue	0.34	5.46	\$2.47
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	3.48	2.04	\$243.51
Slender Wheatgrass - Native	1.36	4.96	\$6.29
Vetch, American	2.66	1.20	\$265.80
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.90	5.97	\$14.85
Timothy, Alpine - Native	0.50	14.92	\$12.13
Tufted Hairgrass	0.34	19.51	\$3.75

Penstemon, Rocky Mountain	0.54	8.46	\$15.93
Yarrow, Western	0.10	6.08	\$4.18
Totals Seed Mix	15.12	101.51	\$603.76

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
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:	44	Cost /Acre:	\$2,030.71
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,551.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$89,351.24
Reseeding Job Cost:	\$17,063.09
Total Job Cost:	\$106,414
Job Hours:	22.00

REVEGETATION WORK

Task description: Shrub/Tree Plant Mine Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C10

State: Colorado

Abbreviation: None

Date: 12/18/2019

County: Clear Creek

Filename: M342-C10

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	100	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$33,200.00
Reseeding Job Cost:	\$8,300.00
Total Job Cost:	\$41,500
Job Hours:	50.00

REVEGETATION WORK

Task description: Maintenance Fertilization

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C11

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-C11

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	100	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$6,965.00
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$6,965
Job Hours:	50.00

DEMOLITION WORK

Task description: Clear Creek Culvert Removal

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task C12

State: Colorado

Abbreviation: None

#:

Date: 12/19/2019

County: Clear Creek

Filename: M342-C12

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Location adjustment:

90.00 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Culvert Removal	2,000 lf	Pipe, corrugated metal (CMP) - 108 in. diameter pipe	2,000.00	LF	\$40.81	\$81,629.60

Job Hours: <u>8.00</u>	Subtotal (unadjusted): <u>\$81,629.60</u>	Total Cost (adjusted for location): <u>\$73,466.64</u>
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TRUCK/LOADER TEAM WORK

Task description: Excavate Clear Creek Channel

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: C13

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-C13

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	NA	NA
Operating cost/hour:	\$59.78	\$33.66	NA	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$32.93	\$40.65	NA	NA	NA	NA
Unit Subtotals:	\$160.98	\$100.79	NA	NA	NA	NA
Number of Units:	3	1	0	0	0	0
Group Subtotals:	Work:	\$583.73	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$583.73**

MATERIAL QUANTITIES

Initial volume: 183,488

CCY

Swell factor: 1.120

Loose volume: **205,507**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	3,400	Pounds/LCY
Description:	Gravel - Wet (1/4" - 2" diam.)	
Rated Payload:	87,000	Pounds
Payload Capacity:	25.59	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	25.59	LCY

Final Truck Volume Based on Number of Loader Passes: 25.74 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 6 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.313** minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.313</u>	Minutes	Adjusted for site altitude:	<u>2.313</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	2.00	2.00	4.00	2421	2.691

Haul Time: 2.691 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	-2.00	2.00	0.00	3706	1.527

Return Time: 1.527 minutes

Total Truck Cycle Time: 8.482 minutes

Loading Tool unit				
Production	<u>507.32</u>	LCY/Hour	Adjusted for job efficiency:	<u>421.08</u> LCY/Hour
Truck Unit Production	<u>182.09</u>	LCY/Hour	Adjusted for job efficiency:	<u>151.13</u> LCY/Hour
Optimal No. of Trucks:	<u>3</u>	Truck(s)	Selected Number of Trucks:	<u>3</u> Truck(s)

Adjusted hourly truck team production:	<u>453.39</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>421.08</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>421.08</u>	LCY/Hour

JOB TIME AND COST

Fleet size:	<u>1</u>	Team(s)	Total job time:	<u>488.05</u>	Hours
Unit cost:	<u>\$1.386</u>	/LCY	Total job cost:	<u>\$284,888</u>	

SITE MAINTENANCE

Task description: Place Hazard Signs at Glory Hole

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task C14 State: Colorado Abbreviation: None

#:

Date: 12/19/2019

County: Clear Creek

Filename: M342-C14

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Safety Signs	0.00	USER PROVIDED ITEM	3.00	EA	\$11.84	\$35.52

Job Hours: 1.00

Total Cost: \$35.52

SAFEGUARDING UNDERGROUND OPENINGS

Task description: Plug Vent Shafts #1, 3, and 4

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task C15 State: Colorado Abbreviation: None

#:

Date: 12/19/2019

County: Clear Creek

Filename: M342-C15

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Plug Vent Shafts and Remove Collar	N/A	USER PROVIDED ITEM	3.00	EA	\$150,000.00	\$450,000.00

Job Hours: 120.00

Total Cost: \$450,000.00

BULLDOZER WORK

Task description: Rip Portal Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: D01

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-D01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$237.79

Total Fleet Cost/Hour: \$237.79

MATERIAL QUANTITIES

Initial Volume: 101,640

Swell factor: 1.125

Loose volume: 114,345 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5053

Adjusted unit
production: 190.90 LCY/hr
Adjusted fleet
production: **190.9** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.246/LCY

Total job time: **598.98** Hours
Total job cost: **\$142,429**

BULLDOZER WORK

Task description: Backfill and Regrade Portal Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: D02

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-D02

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 33,880

Swell factor: 1.000

Loose volume: 33,880 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.0742

Adjusted unit
production: 405.83 LCY/hr

Adjusted fleet
production: **405.83** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.560/LCY

Total job time: **83.48** Hours

Total job cost: **\$18,981**

MOTOR GRADER WORK

Task description: Reestablish Williams Fork Drainage

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: D03

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-D03

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M

Horsepower: 158

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$33.62	NA
Operating Cost/Hour:	\$34.22	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.52	NA
Total Unit Cost/Hour:	\$96.35	
Total Fleet Cost/Hour:	\$96.35	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 1,294.00 acres

Source of estimated acreage: 2019 Henderson RCE

HOURLY PRODUCTION

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

Job Condition Correction Factors

Site Altitude: 10000 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.90</u>	(1sh/d, fav.)
Net Correction:	<u>0.9000</u>	multiplier

Adjusted Hourly Unit Production: 1.3745 acres/Hour

Adjusted Hourly Fleet Production: **1.3745** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **941.40** Hours

Unit cost: \$70.10 per acre Total job cost: **\$90,704**

REVEGETATION WORK

Task description: Drill Seed Portal Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: D04

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-D04

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	21	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$15,801.24
Reseeding Job Cost:	\$2,828.75
Total Job Cost:	\$18,630
Job Hours:	10.50

REVEGETATION WORK

Task description: Shrub/Tree Plant Portal Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: D05

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-D05

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	21	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$6,972.00
Reseeding Job Cost:	\$1,743.00
Total Job Cost:	\$8,715
Job Hours:	10.50

REVEGETATION WORK

Task description: Maintenance Fertilization

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: D06

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-D06

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	25	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$1,741.25
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$1,741
Job Hours:	12.50

BULLDOZER WORK

Task description: Surface Railroad

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: E01

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-E01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 116,160

Swell factor: 1.215

Loose volume: 141,134 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5639

Adjusted unit
production: 213.04 LCY/hr

Adjusted fleet
production: **213.04** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.067/LCY

Total job time: **662.48** Hours

Total job cost: **\$150,623**

MOTOR GRADER WORK

Task description: Reestablish Williams Fork Drainage

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: E02

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-E02

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M

Horsepower: 158

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$33.62	NA
Operating Cost/Hour:	\$34.22	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.52	NA
Total Unit Cost/Hour:	\$96.35	
Total Fleet Cost/Hour:	\$96.35	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 92.00 acres

Source of estimated acreage: 2019 Henderson RCE

HOURLY PRODUCTION

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

Job Condition Correction Factors

Site Altitude: 10000 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.90</u>	(1sh/d, fav.)
Net Correction:	<u>0.9000</u>	multiplier

Adjusted Hourly Unit Production: 1.3745 acres/Hour

Adjusted Hourly Fleet Production: **1.3745** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **66.93** Hours

Unit cost: \$70.10 per acre Total job cost: **\$6,449**

REVEGETATION WORK

Task description: Seed Mix - Drill Seeding

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: E03

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-E03

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	36	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$27,087.84		
Reseeding Job Cost:	\$4,849.29		
Total Job Cost:	\$31,937		
Job Hours:	18.00		

REVEGETATION WORK

Task description: Shrub/Tree Plant Conveyor Access Road

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: E04

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-E04

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	36	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$11,952.00
Reseeding Job Cost:	\$2,988.00
Total Job Cost:	\$14,940
Job Hours:	18.00

REVEGETATION WORK

Task description: Maintenance Fertilization

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: E05

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-E05

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	25	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$1,741.25
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$1,741
Job Hours:	12.50

BULLDOZER WORK

Task description: Backfill and Grade Mill Site

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: F01

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-F01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 182,021

Swell factor: 1.125

Loose volume: 204,774 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: -10 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4333

Adjusted unit
production: 163.70 LCY/hr
Adjusted fleet
production: **163.7** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.389/LCY

Total job time: **1,250.91** Hours
Total job cost: **\$284,409**

BULLDOZER WORK

Task description: Reclaim Mill Access Road

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: F02

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-F02

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 60,080

Swell factor: 1.215

Loose volume: 72,997 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: -5 %

Average site altitude: 10,000 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8384

Adjusted unit
production: 316.75 LCY/hr

Adjusted fleet
production: **316.75** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.718/LCY

Total job time: **230.46** Hours

Total job cost: **\$52,397**

REVEGETATION WORK

Task description: Drill Seed Mill Yard and Access Road

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: F03

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-F03

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	123	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$92,550.12
Reseeding Job Cost:	\$16,568.41
Total Job Cost:	\$109,119
Job Hours:	61.50

REVEGETATION WORK

Task description: Shrub/Tree Plant Mill Yard and Access Road

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: F04

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-F04

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	123	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$40,836.00
Reseeding Job Cost:	\$10,209.00
Total Job Cost:	\$51,045
Job Hours:	61.50

REVEGETATION WORK

Task description: Maintenance Fertilization

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: F05

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-F05

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	123	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$8,566.95
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$8,567
Job Hours:	61.50

TRUCK/LOADER TEAM WORK

Task description: Excavate/Haul Sediment from EB Reservoir

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: G01

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-G01

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	NA	NA
Operating cost/hour:	\$59.78	\$33.66	NA	NA	NA	NA
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	NA
Operator cost/hour:	\$32.93	\$40.65	NA	NA	NA	NA
Unit Subtotals:	\$160.98	\$100.79	NA	NA	NA	NA
Number of Units:	2	1	0	0	0	0
Group Subtotals:	Work:	\$422.75	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: **\$422.75**

MATERIAL QUANTITIES

Initial volume: 18,796

CCY

Swell factor: 1.000

Loose volume: **18,796**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,700	Pounds/LCY
Description:	Earth - Wet excavated	
Rated Payload:	87,000	Pounds
Payload Capacity:	32.22	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.755** minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.755</u>	Minutes	Adjusted for site altitude:	<u>2.755</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	-5.00	2.00	-3.00	3005	1.715

Haul Time: 1.715 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5000.00	5.00	2.00	7.00	2470	2.217

Return Time: 2.217 minutes

Total Truck Cycle Time: 8.638 minutes

Loading Tool unit

Production	<u>516.76</u>	LCY/Hour	Adjusted for job efficiency:	<u>428.91</u>	LCY/Hour
Truck Unit Production	<u>208.58</u>	LCY/Hour	Adjusted for job efficiency:	<u>173.13</u>	LCY/Hour

Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)

Adjusted hourly truck team production:	<u>346.25</u>	LCY/Hour
Adjusted single truck/loader team production:	<u>346.25</u>	LCY/Hour
Adjusted multiple truck/loader team production:	<u>346.25</u>	LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 54.28 Hours

Unit cost: \$1.221 /LCY Total job cost: \$22,949

REVEGETATION WORK

Task description: Drill Seed Foot Print and Access Roads to UB HS UC Reservoir

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: G02

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-G02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	4.1	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$3,085.00		
Reseeding Job Cost:	\$552.28		
Total Job Cost:	\$3,637		
Job Hours:	2.00		

REVEGETATION WORK

Task description: Shrub/Tree Plant EB HS UC Res. and Access Roads

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: G03

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-G03

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	4.1	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$1,361.20
Reseeding Job Cost:	\$340.30
Total Job Cost:	\$1,701
Job Hours:	2.00

REVEGETATION WORK

Task description: Maintenance Fertilization

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: G04

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-G04

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	5	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$348.25
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$348
Job Hours:	2.50

TRUCK/LOADER TEAM WORK

Task description: Cover Soil - Bone Yard to Dams

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H01

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-H01

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	10	20
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$33.66	NA	NA	\$3.42	\$8.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$160.98	\$100.79	NA	NA	\$65.55	\$56.49
Number of Units:	5	1	0	0	1	1
Group Subtotals:	Work:	\$905.69	Support:	\$0.00	Maint:	\$122.04

Total work team cost/hour: **\$1,027.73**

MATERIAL QUANTITIES

Initial volume: 2,210,934

CCY

Swell factor: 1.215

Loose volume: **2,686,285**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	1,600	Pounds/LCY
Description:	Top Soil	
Rated Payload:	87,000	Pounds
Payload Capacity:	54.38	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		0.443	minutes
Net Load Time per Truck:		2.755	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.732	Minutes
Truck Load Time:	2.755	Minutes	Adjusted for site altitude:	2.755	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.220	Minutes

Truck Travel (Haul & Return) Time: _____ Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	22700.00	1.00	3.00	4.00	2421	10.002
2	14300.00	-2.00	3.00	1.00	3005	4.789

Haul Time: **14.791** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	14300.00	2.00	3.00	5.00	3005	4.998
2	22700.00	-1.00	3.00	2.00	3005	7.554

Return Time: **12.552** minutes

Total Truck Cycle Time: **32.049** minutes

Loading Tool unit				
Production	516.76	LCY/Hour	Adjusted for job efficiency:	428.91 LCY/Hour
Truck Unit Production	56.22	LCY/Hour	Adjusted for job efficiency:	46.66 LCY/Hour
Optimal No. of Trucks:	9	Truck(s)	Selected Number of Trucks:	5 Truck(s)
	Adjusted hourly truck team production:	233.31	LCY/Hour	
	Adjusted single truck/loader team production:	233.31	LCY/Hour	
	Adjusted multiple truck/loader team production:	233.31	LCY/Hour	

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	11,513.70	Hours
Unit cost:	\$4.405	/LCY	Total job cost:	\$11,832,973	

BULLDOZER WORK

Task description: Spread Cover on Dams and Dry Beach

Site: Henderson Mine Permit Action: 2019 RCE Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #:	H02	State:	Colorado	Abbreviation:	None
Date:	12/19/2019	County:	Clear Creek	Filename:	M342-H02
User:	ZTT				

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$227.36	
Total Fleet Cost/Hour:	\$227.36	

MATERIAL QUANTITIES

Initial Volume:	2,210,934
Swell factor:	1.000
Loose volume:	2,210,934 LCY

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

HOURLY PRODUCTION

Average push distance:	250 feet
Unadjusted hourly production:	377.8 LCY/hr

Materials consistency description:	Loose stockpile 1.2
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Average push gradient:	-10 %
Average site altitude:	10,000 feet

Material weight:	1,600 lbs/LCY
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Weight description:	Top Soil
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Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction:	0.9211
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Adjusted unit production:	347.99 LCY/hr
Adjusted fleet production:	347.99 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.653/LCY
Total job time:	6,353.44 Hours
Total job cost:	\$1,444,532

TRUCK/LOADER TEAM WORK

Task description: Cover Soil - N + E Stockpiles to Pond and Dry Beach

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H03

State: Colorado

Abbreviation: None

Date: 12/19/2019

County: Clear Creek

Filename: M342-H03

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	10	20
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$33.66	NA	NA	\$3.42	\$8.00
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$160.98	\$100.79	NA	NA	\$65.55	\$56.49
Number of Units:	5	1	0	0	1	1
Group Subtotals:	Work:	\$905.69	Support:	\$0.00	Maint:	\$122.04

Total work team cost/hour: **\$1,027.73**

MATERIAL QUANTITIES

Initial volume: 1,748,567

CCY

Swell factor: 1.215

Loose volume: **2,124,509**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	1,600	Pounds/LCY
Description:	Top Soil	
Rated Payload:	87,000	Pounds
Payload Capacity:	54.38	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.755** minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.755</u>	Minutes	Adjusted for site altitude:	<u>2.755</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6000.00	1.00	3.00	4.00	2421	3.104

Haul Time: 3.104 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6000.00	-1.00	3.00	2.00	3005	2.142

Return Time: 2.142 minutes

Total Truck Cycle Time: 9.952 minutes

Loading Tool unit

Production 516.76 LCY/Hour

Adjusted for job efficiency: 428.91 LCY/Hour

Truck Unit Production

181.05 LCY/Hour

Adjusted for job efficiency: 150.27 LCY/Hour

Optimal No. of Trucks: 3 Truck(s)

Selected Number of Trucks: 5 Truck(s)

Adjusted hourly truck team production: 751.34 LCY/Hour

Adjusted single truck/loader team production: 428.91 LCY/Hour

Adjusted multiple truck/loader team production: 428.91 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s)

Total job time: 4,953.24 Hours

Unit cost: \$2.396 /LCY

Total job cost: \$5,090,593

BULLDOZER WORK

Task description: Spread Cover on Pond, Wet Beach

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H04

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H04

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 1,748,567

Swell factor: 1.000

Loose volume: 1,748,567 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7519

Adjusted unit
production: 284.07 LCY/hr
Adjusted fleet
production: **284.07** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.800/LCY

Total job time: **6,155.41** Hours
Total job cost: **\$1,399,507**

TRUCK/LOADER TEAM WORK

Task description: Haul Rock Armor from West Portal

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H05

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H05

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	10	20
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$33.66	NA	NA	\$3.42	\$8.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$160.98	\$100.79	NA	NA	\$65.55	\$56.49
Number of Units:	5	1	0	0	1	1
Group Subtotals:	Work:	\$905.69	Support:	\$0.00	Maint:	\$122.04

Total work team cost/hour: **\$1,027.73**

MATERIAL QUANTITIES

Initial volume: 342,889

CCY

Swell factor: 1.000

Loose volume: **342,889**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,700	Pounds/LCY
Description:	Stone - crushed	
Rated Payload:	87,000	Pounds
Payload Capacity:	32.22	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		0.443	minutes
Net Load Time per Truck:		2.755	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.732	Minutes
Truck Load Time:	2.755	Minutes	Adjusted for site altitude:	2.755	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.220	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	22700.00	1.00	3.00	4.00	2421	10.002
2	14300.00	-2.00	3.00	1.00	3005	4.789

Haul Time: **14.791** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	14300.00	2.00	3.00	5.00	3005	4.998
2	22700.00	-1.00	3.00	2.00	3005	7.554

Return Time: **12.552** minutes

Total Truck Cycle Time: **32.049** minutes

Loading Tool unit

Production	516.76	LCY/Hour	Adjusted for job efficiency:	428.91	LCY/Hour
Truck Unit Production	56.22	LCY/Hour	Adjusted for job efficiency:	46.66	LCY/Hour

Optimal No. of Trucks: 9 Truck(s) Selected Number of Trucks: 5 Truck(s)

Adjusted hourly truck team production:	233.31	LCY/Hour
Adjusted single truck/loader team production:	233.31	LCY/Hour
Adjusted multiple truck/loader team production:	233.31	LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **1,469.66** Hours

Unit cost: \$4.405 /LCY Total job cost: **\$1,510,412**

BULLDOZER WORK

Task description: Spread Rock Armor

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H06

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H06

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$227.36	
Total Fleet Cost/Hour:	\$227.36	

MATERIAL QUANTITIES

Initial Volume: 342,889

Swell factor: 1.000

Loose volume: **342,889** LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: 5 %

Average site altitude: 10,000 feet

Material weight: 2,700 lbs/LCY

Weight description: Stone - crushed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.852	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4023

Adjusted unit
production: 151.99 LCY/hr
Adjusted fleet
production: **151.99** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.496/LCY

Total job time: **2,256.00** Hours
Total job cost: **\$512,928**

MOTOR GRADER WORK

Task description: Finish Grade Soil Borrow Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H07

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H07

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M

Horsepower: 158

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$33.62	NA
Operating Cost/Hour:	\$34.22	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$28.52	NA
Total Unit Cost/Hour:	\$96.35	
Total Fleet Cost/Hour:	\$96.35	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 200.00 acres

Source of estimated acreage: 2019 Henderson RCE

HOURLY PRODUCTION

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

Job Condition Correction Factors

Site Altitude: 10000 feet

		Source
Altitude Adj:	<u>1.00</u>	(CAT HB)
Job Efficiency:	<u>0.90</u>	(1sh/d, fav.)
Net Correction:	<u>0.9000</u>	multiplier

Adjusted Hourly Unit Production: 1.3745 acres/Hour

Adjusted Hourly Fleet Production: 1.3745 acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s)

Total job time: 145.50 Hours

Unit cost: \$70.10 per acre

Total job cost: **\$14,019**

BULLDOZER WORK

Task description: Grade Ultimate Canal

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H08

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H08

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$227.36	
Total Fleet Cost/Hour:	\$227.36	

MATERIAL QUANTITIES

Initial Volume: 55,000

Swell factor: 1.250

Loose volume: **68,750 LCY**

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4717

Adjusted unit
production: 178.21 LCY/hr
Adjusted fleet
production: **178.21** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.276/LCY

Total job time: **385.78** Hours
Total job cost: **\$87,712**

BULLDOZER WORK

Task description: Rip Haul Roads

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H09

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H09

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$237.79	
Total Fleet Cost/Hour:	\$237.79	

MATERIAL QUANTITIES

Initial Volume: 55,000

Swell factor: 1.250

Loose volume: **68,750 LCY**

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3537

Adjusted unit
production: 133.63 LCY/hr
Adjusted fleet
production: **133.63** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.779/LCY

Total job time: **514.48** Hours
Total job cost: **\$122,337**

REVEGETATION WORK

Task description: Hydroseed TDA

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H10

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H10

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
NA-fertilizer application incl. with hydroseeding	\$0.00
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
Alpine Bluegrass	0.22	5.05	\$3.14
Arizona Fescue - Redondo	0.90	10.33	\$8.33
Mountain Brome - Bromar	3.40	5.46	\$12.92
Kentucky Bluegrass - Lato	0.18	8.88	\$0.60
Rocky Mountain Fescue	0.34	5.46	\$2.47
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	3.48	2.04	\$243.51
Slender Wheatgrass - Native	1.36	4.96	\$6.29
Vetch, American	2.66	1.20	\$265.80
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.90	5.97	\$14.85

Timothy, Alpine - Native	0.50	14.92	\$12.13
Tufted Hairgrass	0.34	19.51	\$3.75
Penstemon, Rocky Mountain	0.54	8.46	\$15.93
Yarrow, Western	0.10	6.08	\$4.18
Totals Seed Mix	15.12	101.51	\$603.76

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
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:	1274	Cost /Acre:	\$2,030.71
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,551.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$2,587,124.54
Reseeding Job Cost:	\$494,054.02
Total Job Cost:	\$3,081,179
Job Hours:	637.00

REVEGETATION WORK

Task description: Hydroseed Spillway

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H11

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H11

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
NA-fertilizer application incl. with hydroseeding	\$0.00
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
Alpine Bluegrass	0.22	5.05	\$3.14
Arizona Fescue - Redondo	0.90	10.33	\$8.33
Mountain Brome - Bromar	3.40	5.46	\$12.92
Kentucky Bluegrass - Lato	0.18	8.88	\$0.60
Rocky Mountain Fescue	0.34	5.46	\$2.47
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	3.48	2.04	\$243.51
Slender Wheatgrass - Native	1.36	4.96	\$6.29
Vetch, American	2.66	1.20	\$265.80
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.90	5.97	\$14.85

Timothy, Alpine - Native	0.50	14.92	\$12.13
Tufted Hairgrass	0.34	19.51	\$3.75
Penstemon, Rocky Mountain	0.54	8.46	\$15.93
Yarrow, Western	0.10	6.08	\$4.18
Totals Seed Mix	15.12	101.51	\$603.76

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
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:	34	Cost /Acre:	\$2,030.71
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,551.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$69,044.14
Reseeding Job Cost:	\$13,185.12
Total Job Cost:	\$82,229
Job Hours:	17.00

REVEGETATION WORK

Task description: Shrub/Tree Planting

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H12

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H12

User: ZTT

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
	\$

Total Seed Application Cost/Acre	\$0.00
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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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	2	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:	NURSERY		

Initial Job Cost:	\$664.00
Reseeding Job Cost:	\$166.00
Total Job Cost:	\$830
Job Hours:	1.00

BULLDOZER WORK

Task description: Reshape and Fill Buttress 1 and 2

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H13

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H13

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: NA

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$268.57	
Total Fleet Cost/Hour:	\$268.57	

MATERIAL QUANTITIES

Initial Volume: 338,889

Swell factor: 1.125

Loose volume: **381,250** LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 546.0 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: -20 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6726

Adjusted unit
production: 367.24 LCY/hr
Adjusted fleet
production: **367.24** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.731/LCY

Total job time: **1,038.15** Hours
Total job cost: **\$278,813**

SITE MAINTENANCE

Task description: Wet Beach Cover Support

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H14

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H14

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Geogrid	100.00	USER PROVIDED ITEM	2,623,280.00	sy	\$4.25	\$11,148,940.00

Job Hours: 100.00

Total Cost: \$11,148,940.00

Post-Mining Drainage Channel Construction (Ditches)

Task description: TDA Diversion

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H15

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H15

User: ZTT

Agency or organization name: DRMS

Channel	Length (ft)	Depth (ft)	Width (bottom) (ft)	Side Slopes (XH:1V)	Width (top) (ft)	Excavated Vol./LF (CY)	Excavated Vol. (total) (CY)
Perimeter Diversion	32,000	3.00	10.00	2.00	22.00	1.7778	56,889
Totals:	32,000						56,889

Riprap	Riprap Thickness (2xD50) (ft)	Perimeter, P (ft)	Area for Geotextile (excl. anchor trenches) (sf)	Riprap Vol. (CY)
	1.50	23.42	749,325	41,629
Totals:			749,325	41,629

Materials Needed:

Geotextile (SY incl. 15% wastage):	95,747
Riprap (CY):	41,629
Excavation (CY):	56,889

Costs:

Material Costs:	Geotextile (SY):	\$1.77	Riprap (CY):	\$31.50	Excavation (CY):	\$0.00
Labor Cost:		\$0.27		\$12.70		\$2.46
Equipment Cost:		\$0.00		\$14.65		\$1.39
Means Reference	31 32 1916 1510		31 37 1310 0100		31 23 1642 0310	

Totals:

Geotextile (SY):	\$195,324.06
Riprap (CY):	\$2,449,876.63
Excavation (CY):	\$219,022.22

Hours:

Geotextile (SY): 87.50 SY/HR	1,094.25
Riprap (CY): 7.75 CY/HR	5,371.51
Excavation (CY): 40.00 CY/HR	1,422.22

Total Post-Mining Channel Reconstruction hours:	7,887.98	Hours
Total Post-Mining Channel Reconstruction Cost:	\$2,864,223	

BULLDOZER WORK

Task description: Spillway to Ranger Gulch

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H16

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H16

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Blade Type: Semi-Universal

Attachment: NA

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$268.57

Total Fleet Cost/Hour: \$268.57

MATERIAL QUANTITIES

Initial Volume: 2,664,480

Swell factor: 1.250

Loose volume: 3,330,600 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 546.0 LCY/hr

Materials consistency
description: Loose stockpile 1.2

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4717

Adjusted unit
production: 257.55 LCY/hr

Adjusted fleet
production: **257.55** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.043/LCY

Total job time: **12,931.86** Hours

Total job cost: **\$3,473,073**

SITE MAINTENANCE

Task description: Armor Spillway to Ranger Gulch

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task H17
#:

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H17

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Armor Spillway (31 37 1310 0100)	2699.00	USER PROVIDED ITEM	1,230,848.00	1	\$1.00	\$1,230,848.00

Job Hours: 2,699.00

Total Cost: \$1,230,848.00

TRUCK/LOADER TEAM WORK

Task description: Haul Sacrificial Fill in Former Pond

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: H18

State: Colorado

Abbreviation: None

Date: 12/31/2019

County: Clear Creek

Filename: M342-H18

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	10	20
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$33.66	NA	NA	\$3.42	\$8.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$160.98	\$100.79	NA	NA	\$65.55	\$56.49
Number of Units:	5	1	0	0	1	1
Group Subtotals:	Work:	\$905.69	Support:	\$0.00	Maint:	\$122.04

Total work team cost/hour: **\$1,027.73**

MATERIAL QUANTITIES

Initial volume: 800,000

CCY

Swell factor: 1.000

Loose volume: **800,000**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight: 2,550

Pounds/LCY

Description: Earth - Dry packed

Rated Payload: 87,000

Pounds

Payload Capacity: 34.12 LCY

Truck Bed (volume) Basis:

Struck Volume:	<u>24.20</u>	LCY
Heaped Volume:	<u>31.40</u>	LCY
Average Volume:	<u>27.80</u>	LCY
Adjusted Volume:	<u>31.40</u>	LCY

Final Truck Volume Based on Number of Loader Passes: 30.03 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>3.900</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.100</u>	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	<u>4.290</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA

Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump,
maneuver): 0.483 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:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		<u>-0.060</u>	minutes
Adjusted Loader Cycle Time:		<u>0.423</u>	minutes
Net Load Time per Truck:		<u>2.635</u>	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.732</u>	Minutes
Truck Load Time:	<u>2.635</u>	Minutes	Adjusted for site altitude:	<u>2.635</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.220</u>	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	20000.00	2.00	3.00	5.00	1845	11.169

Haul Time: **11.169** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	20000.00	-2.00	3.00	1.00	3706	5.601

Return Time: **5.601** minutes

Total Truck Cycle Time: **21.356** minutes

Loading Tool unit

Production 535.18 LCY/Hour Adjusted for job efficiency: 444.20 LCY/Hour

Truck Unit Production 84.37 LCY/Hour Adjusted for job efficiency: 70.03 LCY/Hour

Optimal No. of Trucks: 6 Truck(s) Selected Number of Trucks: 5 Truck(s)

Adjusted hourly truck team production: 350.13 LCY/Hour

Adjusted single truck/loader team production: 350.13 LCY/Hour

Adjusted multiple truck/loader team production: **350.13** LCY/Hour

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **2,284.86** Hours

Unit cost: \$2.935 /LCY Total job cost: **\$2,348,220**

SITE MAINTENANCE

Task description: Spillway Inlet, Barge Relocation, Embankment Cover and Bench

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task H19 State: Colorado Abbreviation: None
#: _____

Date: 1/2/2020

County: Clear Creek

Filename: M342-H19

User: ZTT

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Construct Spillway Inlet Structure	80.00	USER PROVIDED ITEM	1.00	EA	\$100,000.00	\$100,000.00
Barge Relocation	80.00	USER PROVIDED ITEM	2.00	EA	\$500,000.00	\$1,000,000.00
Embankment Rock Cover	80.00	USER PROVIDED ITEM	10.00	EA	\$352,000.00	\$3,520,000.00
Bench Channels	80.00	USER PROVIDED ITEM	1.00	EA	\$995,000.00	\$995,000.00

Job Hours: 320.00

Total Cost: \$5,615,000.00

BULLDOZER WORK

Task description: Gravel Pit Regrade

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: I01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-I01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 63,524

Swell factor: 1.125

Loose volume: 71,465 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Consolidated stockpile 1.0

Average push
gradient: -5 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4382

Adjusted unit
production: 165.55 LCY/hr
Adjusted fleet
production: **165.55 LCY/hr**

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.373/LCY

Total job time: **431.68 Hours**
Total job cost: **\$98,148**

TRUCK/LOADER TEAM WORK

Task description: Topsoil to Gravel Pit

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: I02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-I02

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	NA
Road Maintenance -Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	NA	NA
Ownership cost/hour:	\$68.27	\$26.49	\$103.86	NA	NA	NA
Operating cost/hour:	\$59.78	\$33.66	\$82.26	NA	NA	NA
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	NA	NA
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	NA	NA
Operator cost/hour:	\$32.93	\$40.65	\$41.24	NA	NA	NA
Unit Subtotals:	\$160.98	\$100.79	\$227.36	NA	NA	NA
Number of Units:	2	1	1	0	0	0
Group Subtotals:	Work:	\$422.75	Support:	\$227.36	Maint:	\$0.00

Total work team cost/hour: **\$650.11**

MATERIAL QUANTITIES

Initial volume: 15,740

CCY

Swell factor: 1.215

Loose volume: **19,124**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	1,600	Pounds/LCY
Description:	Top Soil	
Rated Payload:	87,000	Pounds
Payload Capacity:	54.38	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.040 minutes
Adjusted Loader Cycle Time: **0.443** minutes
Net Load Time per Truck: **2.755** minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.732	Minutes
Truck Load Time:	2.755	Minutes	Adjusted for site altitude:	2.755	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.220	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4000.00	-2.00	2.00	0.00	3005	1.584

Haul Time: **1.584** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4000.00	2.00	2.00	4.00	3005	1.528

Return Time: **1.528** minutes

Total Truck Cycle Time: **7.818** minutes

Loading Tool unit					
Production	516.76	LCY/Hour	Adjusted for job efficiency:	428.91	LCY/Hour
Truck Unit Production	230.46	LCY/Hour	Adjusted for job efficiency:	191.28	LCY/Hour
Optimal No. of Trucks:	2	Truck(s)	Selected Number of Trucks:	2	Truck(s)
	Adjusted hourly truck team production:	382.57	LCY/Hour		
	Adjusted single truck/loader team production:	382.57	LCY/Hour		
	Adjusted multiple truck/loader team production:	382.57	LCY/Hour		

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	49.99	Hours
Unit cost:	\$1.699	/LCY	Total job cost:	\$32,498	

REVEGETATION WORK

Task description: Drill Seed Gravel Pit

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: I03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-I03

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	35	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$26,335.40
Reseeding Job Cost:	\$4,714.59
Total Job Cost:	\$31,050
Job Hours:	17.50

REVEGETATION WORK

Task description: Shrub/Tree Plant Gravel Pit

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: I04

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-I04

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	35	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$11,620.00
Reseeding Job Cost:	\$2,905.00
Total Job Cost:	\$14,525
Job Hours:	17.50

REVEGETATION WORK

Task description: Maintenance Fertilization Gravel Pit

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: I05

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-I05

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	40	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$2,786.00
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$2,786
Job Hours:	20.00

BULLDOZER WORK

Task description: Regrade Rectifier 6 Laydown Yard

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: J01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-J01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 27,225

Swell factor: 1.125

Loose volume: 30,628 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: -5 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	0.700	(FND-MF)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3944

Adjusted unit
production: 149.00 LCY/hr

Adjusted fleet
production: **149** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.526/LCY

Total job time: **205.56** Hours

Total job cost: **\$46,736**

REVEGETATION WORK

Task description: Drill Seed Rectifier 6 Laydown Yard

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: J02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-J02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	5	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$3,762.20
Reseeding Job Cost:	\$673.51
Total Job Cost:	\$4,436
Job Hours:	2.50

REVEGETATION WORK

Task description: Shrub/Tree Planting Rectifier 6 Laydown Yard

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: J03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-J03

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	5	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$1,660.00
Reseeding Job Cost:	\$415.00
Total Job Cost:	\$2,075
Job Hours:	2.50

REVEGETATION WORK

Task description: Maintenance Fertilization Rectifier 6 Laydown Yard

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: J04

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-J04

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	5	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$348.25
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$348
Job Hours:	2.50

BULLDOZER WORK

Task description: Regrade Williams Form Pumphouse

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: K01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-K01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 5,650

Swell factor: 1.125

Loose volume: 6,356 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 0 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5053

Adjusted unit
production: 190.90 LCY/hr
Adjusted fleet
production: **190.9** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.191/LCY

Total job time: **33.30** Hours
Total job cost: **\$7,570**

REVEGETATION WORK

Task description: Drill Seed Williams Fork Pump House

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: K02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-K02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	1	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$752.44
Reseeding Job Cost:	\$134.70
Total Job Cost:	\$887
Job Hours:	0.50

REVEGETATION WORK

Task description: Maintenance Fertilization Williams Fork Pump House

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: K03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-K03

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	8	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$557.20
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$557
Job Hours:	4.00

BULLDOZER WORK

Task description: Regrade Tailings Line and Power Lines

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: L01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-L01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 56,386

Swell factor: 1.125

Loose volume: 63,434 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 10 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3972

Adjusted unit
production: 150.06 LCY/hr

Adjusted fleet
production: **150.06** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.515/LCY

Total job time: **422.73** Hours

Total job cost: **\$96,112**

REVEGETATION WORK

Task description: Drill Seed Tailings and Power Line

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: L02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-L02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	10	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$7,524.40
Reseeding Job Cost:	\$1,347.03
Total Job Cost:	\$8,871
Job Hours:	5.00

REVEGETATION WORK

Task description: Shrub/Tree Planting Talings and Power Line

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: L03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-L03

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	10	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$3,320.00
Reseeding Job Cost:	\$830.00
Total Job Cost:	\$4,150
Job Hours:	5.00

REVEGETATION WORK

Task description: Maintenance Fertilization Talings and Power Line

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: L04

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-L04

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	49	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$3,412.85
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$3,413
Job Hours:	24.50

BULLDOZER WORK

Task description: Regrade Pond Shop and Road Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: M01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-M01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 52,627

Swell factor: 1.125

Loose volume: 59,205 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 10 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3972

Adjusted unit
production: 150.06 LCY/hr

Adjusted fleet
production: **150.06** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.515/LCY

Total job time: **394.54** Hours

Total job cost: **\$89,705**

REVEGETATION WORK

Task description: Drill Seed Talings Facility Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: M02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-M02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	14	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$10,534.16		
Reseeding Job Cost:	\$1,885.84		
Total Job Cost:	\$12,420		
Job Hours:	7.00		

REVEGETATION WORK

Task description: Shrub/Tree Plant Talings Facility Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: M03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-M03

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	14	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$4,648.00
Reseeding Job Cost:	\$1,162.00
Total Job Cost:	\$5,810
Job Hours:	7.00

REVEGETATION WORK

Task description: Maintenance Fertilization Talings Facility Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: M04

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-M04

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	14	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$975.10
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$975
Job Hours:	7.00

BULLDOZER WORK

Task description: Regrade Mill Water Return Pipe Line

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: N01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-N01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$227.36

Total Fleet Cost/Hour: \$227.36

MATERIAL QUANTITIES

Initial Volume: 18,763

Swell factor: 1.125

Loose volume: 21,108 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 10 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3972

Adjusted unit
production: 150.06 LCY/hr

Adjusted fleet
production: **150.06** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.515/LCY

Total job time: **140.67** Hours

Total job cost: **\$31,982**

BULLDOZER WORK

Task description: Rip Mill Water Return Pipe Line Access Road

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: N02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-N02

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$237.79

Total Fleet Cost/Hour: \$237.79

MATERIAL QUANTITIES

Initial Volume: 32,267

Swell factor: 1.125

Loose volume: 36,300 LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 10 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3972

Adjusted unit
production: 150.06 LCY/hr

Adjusted fleet
production: **150.06** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.585/LCY

Total job time: **241.91** Hours

Total job cost: **\$57,522**

REVEGETATION WORK

Task description: Drill Seed Mill Water Return Pipe Line

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: N03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-N03

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	17	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$12,791.48
Reseeding Job Cost:	\$2,289.94
Total Job Cost:	\$15,081
Job Hours:	8.50

REVEGETATION WORK

Task description: Shrub/Tree Plant Mill Water Return Line

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: N04

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-N04

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	17	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$5,644.00
Reseeding Job Cost:	\$1,411.00
Total Job Cost:	\$7,055
Job Hours:	8.50

REVEGETATION WORK

Task description: Maintenance Fertilization

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: N05

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-N05

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	31	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$2,159.15
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$2,159
Job Hours:	15.50

BULLDOZER WORK

Task description: Rip Topsoil Roads and Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: O01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-O01

User: ZTT

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:	\$103.86	NA
Operating Cost/Hour:	\$82.26	100
Ripper own. Cost/Hour:	\$10.43	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA

Total unit Cost/Hour: \$237.79

Total Fleet Cost/Hour: **\$237.79**

MATERIAL QUANTITIES

Initial Volume: 161,333

Swell factor: 1.125

Loose volume: **181,500** LCY

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

Source of estimated swell
factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 250 feet

Unadjusted hourly
production: 377.8 LCY/hr

Materials consistency
description: Compacted fill or embankment 0.9

Average push
gradient: 10 %

Average site altitude: 10,000 feet

Material weight: 2,550 lbs/LCY

Weight description: Earth - Dry packed

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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:	1.000	(DOZ-OC)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3972

Adjusted unit
production: 150.06 LCY/hr

Adjusted fleet
production: **150.06** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$1.585/LCY

Total job time: **1,209.51** Hours

Total job cost: **\$287,607**

REVEGETATION WORK

Task description: Drill Seed Topsoil Roads and Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: O02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-O02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.57
Arizona Fescue - Redondo	0.45	5.17	\$4.16
Mountain Brome - Bromar	1.70	2.73	\$6.46
Kentucky Bluegrass - Lato	0.09	4.44	\$0.30
Rocky Mountain Fescue	0.17	2.73	\$1.23
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	1.74	1.02	\$121.76
Slender Wheatgrass - Native	0.68	2.48	\$3.15
Vetch, American	1.33	0.60	\$132.90
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.45	2.99	\$7.43
Timothy, Alpine - Native	0.25	7.46	\$6.06
Tufted Hairgrass	0.17	9.76	\$1.87

Penstemon, Rocky Mountain	0.27	4.23	\$7.97
Yarrow, Western	0.05	3.04	\$2.09
Totals Seed Mix	7.66	52.34	\$306.81

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
EcoFlex (mulch tackifier)	100.00	Pound	\$0.81	\$80.81
Total Mulch Materials Cost/Acre				\$80.81

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:	50	Cost /Acre:	\$752.44
Estimated Failure Rate:	25%	Cost /Acre*:	\$538.81
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost:	\$37,622.00		
Reseeding Job Cost:	\$6,735.13		
Total Job Cost:	\$44,357		
Job Hours:	25.00		

REVEGETATION WORK

Task description: Shrub/Tree Plant Topsoil Roads and Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: O03

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-O03

User: ZTT

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
	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	50	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$16,600.00
Reseeding Job Cost:	\$4,150.00
Total Job Cost:	\$20,750
Job Hours:	25.00

REVEGETATION WORK

Task description: Maintenance Fertilization Topsoil Roads and Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: O04

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-O04

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Ammonium nitrate, 33-0-0	100.00	pound	\$0.34	\$33.50
			Total Fertilizer Materials Cost/Acre	\$33.50

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$36.15
Total Fertilizer Application Cost/Acre	\$36.15

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
	\$
Total Seed Application Cost/Acre	\$0.00

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:	50	Cost /Acre:	\$69.65
Estimated Failure Rate:	0%	Cost /Acre*:	\$69.65
*Selected Replanting Work Items:	FERTILIZING		

Initial Job Cost:	\$3,482.50
Reseeding Job Cost:	\$0.00
Total Job Cost:	\$3,483
Job Hours:	25.00

TRUCK/LOADER TEAM WORK

Task description: Cover Soil - Bone Yard to Dams

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: P01

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-P01

User: ZTT

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

Equipment Description	
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 938H
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	10	20
Ownership cost/hour:	\$68.27	\$26.49	NA	NA	\$33.62	\$27.40
Operating cost/hour:	\$59.78	\$33.66	NA	NA	\$3.42	\$8.00
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$32.93	\$40.65	NA	NA	\$28.52	\$21.09
Unit Subtotals:	\$160.98	\$100.79	NA	NA	\$65.55	\$56.49
Number of Units:	1	1	0	0	1	1
Group Subtotals:	Work:	\$261.77	Support:	\$0.00	Maint:	\$122.04

Total work team cost/hour: **\$383.81**

MATERIAL QUANTITIES

Initial volume: 110

CCY

Swell factor: 1.000

Loose volume: **110**

LCY

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

Source of estimated swell factor: Cat Handbook

Material Purchase Cost: \$0.00

Total Cost: \$0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	2,700	Pounds/LCY
Description:	Stone - crushed	
Rated Payload:	87,000	Pounds
Payload Capacity:	32.22	LCY

Truck Bed (volume) Basis:

Struck Volume:	24.20	LCY
Heaped Volume:	31.40	LCY
Average Volume:	27.80	LCY
Adjusted Volume:	31.40	LCY

Final Truck Volume Based on Number of Loader Passes: **30.03** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	3.900	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	4.290	LCY

Job Condition Corrections:

Site Altitude (ft.): 10000 feet

	Truck	Loader	Source
Altitude Adj:	0.820	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	0.681	0.830	

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
Truck: 7 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: NA
Selected Value within this Basic Rating: NA

Track Loaders – Material Description: _____

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): 0.483 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:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.040	minutes
Adjusted Loader Cycle Time:		0.443	minutes
Net Load Time per Truck:		2.755	minutes

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	0.732	Minutes
Truck Load Time:	2.755	Minutes	Adjusted for site altitude:	2.755	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.220	Minutes

Truck Travel (Haul & Return) Time: _____ Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	22700.00	1.00	3.00	4.00	2421	10.002
2	14300.00	-2.00	3.00	1.00	3005	4.789

Haul Time: **14.791** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	14300.00	2.00	3.00	5.00	3005	4.998
2	22700.00	-1.00	3.00	2.00	3005	7.554

Return Time: **12.552** minutes

Total Truck Cycle Time: **32.049** minutes

Loading Tool unit					
Production	516.76	LCY/Hour	Adjusted for job efficiency:	428.91	LCY/Hour
Truck Unit Production	56.22	LCY/Hour	Adjusted for job efficiency:	46.66	LCY/Hour
Optimal No. of Trucks:	9	Truck(s)	Selected Number of Trucks:	1	Truck(s)
			Adjusted hourly truck team production:	46.66	LCY/Hour
			Adjusted single truck/loader team production:	46.66	LCY/Hour
			Adjusted multiple truck/loader team production:	46.66	LCY/Hour

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	2.36	Hours
Unit cost:	\$8.225	/LCY	Total job cost:	\$905	

REVEGETATION WORK

Task description: Hydroseed PC3 Conveyor Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: P02

State: Colorado

Abbreviation: None

Date: 1/2/2020

County: Clear Creek

Filename: M342-P02

User: ZTT

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-24-24, 10-20-10, 15-15-15	100.00	pound	\$0.27	\$26.50
			Total Fertilizer Materials Cost/Acre	\$26.50

Application

Description	Cost /Acre
NA-fertilizer application incl. with hydroseeding	\$0.00
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
Alpine Bluegrass	0.22	5.05	\$3.14
Arizona Fescue - Redondo	0.90	10.33	\$8.33
Mountain Brome - Bromar	3.40	5.46	\$12.92
Kentucky Bluegrass - Lato	0.18	8.88	\$0.60
Rocky Mountain Fescue	0.34	5.46	\$2.47
Elderberry, Red	0.16	1.05	\$9.08
Lupine, Silver	3.48	2.04	\$243.51
Slender Wheatgrass - Native	1.36	4.96	\$6.29
Vetch, American	2.66	1.20	\$265.80
Sagebrush, Mountain or Big	0.04	2.11	\$0.79
Flax, Lewis Blue	0.90	5.97	\$14.85
Timothy, Alpine - Native	0.50	14.92	\$12.13

Tufted Hairgrass	0.34	19.51	\$3.75
Penstemon, Rocky Mountain	0.54	8.46	\$15.93
Yarrow, Western	0.10	6.08	\$4.18
Totals Seed Mix	15.12	101.51	\$603.76

Application

Description	Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)	\$947.43
Total Seed Application Cost/Acre	\$947.43

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch tackifier, >15 ac. {Materials Only}	1.00	ACRE	\$453.02	\$453.02
Total Mulch Materials Cost/Acre				\$453.02

Application

Description	Cost /Acre
NA-mulch application incl. with hydroseeding	\$0.00
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:	53	Cost /Acre:	\$2,030.71
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,551.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$107,627.63
Reseeding Job Cost:	\$20,553.27
Total Job Cost:	\$128,181
Job Hours:	26.50

REVEGETATION WORK

Task description: Shrub/Tree Plant PC3 Conveyor Area

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: P03

State: Colorado

Abbreviation: None

Date: 1/6/2020

County: Clear Creek

Filename: M342-P03

User: ZTT

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

	\$
Total Seed Application Cost/Acre	\$0.00

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
Aspen	50	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$54.50
Pine, Lodgepole	50	Tubling, 3 cu. in. container (MEANS)	\$1.19	\$0.00	\$59.50
Serviceberry	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Snowberry, Western	100	Tubling, 3 cu. in. container (MEANS)	\$1.09	\$0.00	\$109.00
Totals Nursery Stock Cost / Acre					\$332.00

JOB TIME AND COST

No. of Acres:	62	Cost /Acre:	\$332.00
Estimated Failure Rate:	25%	Cost /Acre*:	\$332.00
*Selected Replanting Work Items:		NURSERY	

Initial Job Cost:	\$20,584.00
Reseeding Job Cost:	\$5,146.00
Total Job Cost:	\$25,730
Job Hours:	31.00

Task Q - Water Treatment Capex O&M (10 yr)*			
Task	Work Type	Area	Cost
WTP Construction	CAPEX	Mill	\$ 20,061,845.00
WTP Operation	O&M	Mill	\$ 20,116,720.00
WTP Operation	O&M	Urad	\$ 14,679,800.00
Underground Pumping System Construction	CAPEX	Mine	\$ 3,011,000.00
Pumping from Underground Workings	O&M	Mine	\$ 4,778,400.00
Bulkhead Construction	CAPEX	Underground	\$ 13,568,000.00
Total Costs			\$ 76,215,765.00
*Costs based on the Reclamation Cost Estimate provided by Henderson			

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilization Year 1

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: R01

State: Colorado

Abbreviation: None

Date: 1/3/2020

County: Clear Creek

Filename: M342-R01

User: ZTT

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:	\$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 740	36.49	\$68.27	\$123.81	15	\$2,881.20	\$1,857.15	\$3,750.00
Cat D6T XL	23.25	\$58.87	\$67.39	3	\$378.78	\$202.17	\$750.00
Cat D7R DS Series II LGP	34.57	\$75.47	\$123.81	5	\$996.40	\$619.05	\$750.00
Cat D8T - 8SU	47.71	\$103.86	\$123.81	4	\$910.68	\$495.24	\$1,000.00
Cat D9T - 9SU	66.13	\$135.43	\$141.54	4	\$1,107.88	\$566.16	\$1,000.00
CAT 938H	16.34	\$26.49	\$67.39	3	\$281.64	\$202.17	\$750.00
CAT 12M	16.01	\$33.62	\$67.39	3	\$303.03	\$202.17	\$750.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	4	\$342.16	\$269.56	\$1,000.00
Hydroseeder with Tractor	28.00	\$23.59	\$123.81	4	\$589.60	\$495.24	\$1,000.00
Power Mulcher (Bowie LD-90)	6.00	\$9.74	\$67.39	2	\$154.26	\$134.78	\$500.00
Water Tanker, 10,000 Gal.	41.10	\$68.95	\$123.81	1	\$192.76	\$123.81	\$250.00
Submersible pump - 230v, 4 in.	0.30	\$5.07	\$67.39	1	\$72.46	\$67.39	\$250.00
Broderson IC-250- 3B, 61', 16.3MT	14.38	\$21.98	\$67.39	3	\$268.11	\$202.17	\$750.00

Subtotals: **\$8,478.96** **\$5,437.06** **\$12,500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$67.39	2	\$134.78	\$134.78
Light Duty Pickup, 4x4, 3/4 T.	\$12.96	5	\$64.80	\$64.80
Fuel Tanker, 6x4, 210 HP	\$42.46	4	\$169.84	\$169.84

Subtotals: **\$369.42** **\$369.42**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: DENVER

Total one-way travel distance: 70.00 miles

Average Travel Speed: 65.00 mph

Total Non-Roadable Mob/Demob Cost * \$224,552.17

* two round trips with haul rig:

Total Roadable Mob/Demob Cost ** \$795.67

** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	1.08	1.08
Return Time (Hours):	1.08	1.08
Loading Time (Hours):	5.00	NA
Unloading Time (Hours):	5.00	NA
Subtotals:	12.15	2.15

JOB TIME AND COST

Total job time: 24.31 Hours

Total job cost: \$225,348

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilization Year 2

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: R02

State: Colorado

Abbreviation: None

Date: 1/3/2020

County: Clear Creek

Filename: M342-R02

User: ZTT

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:	\$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 740	36.49	\$68.27	\$123.81	15	\$2,881.20	\$1,857.15	\$3,750.00
Cat D6T XL	23.25	\$58.87	\$67.39	3	\$378.78	\$202.17	\$750.00
Cat D7R DS Series II LGP	34.57	\$75.47	\$123.81	5	\$996.40	\$619.05	\$750.00
Cat D8T - 8SU	47.71	\$103.86	\$123.81	4	\$910.68	\$495.24	\$1,000.00
Cat D9T - 9SU	66.13	\$135.43	\$141.54	4	\$1,107.88	\$566.16	\$1,000.00
CAT 938H	16.34	\$26.49	\$67.39	3	\$281.64	\$202.17	\$750.00
CAT 12M	16.01	\$33.62	\$67.39	3	\$303.03	\$202.17	\$750.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	4	\$342.16	\$269.56	\$1,000.00
Hydroseeder with Tractor	28.00	\$23.59	\$123.81	4	\$589.60	\$495.24	\$1,000.00
Power Mulcher (Bowie LD-90)	6.00	\$9.74	\$67.39	2	\$154.26	\$134.78	\$500.00
Water Tanker, 10,000 Gal.	41.10	\$68.95	\$123.81	1	\$192.76	\$123.81	\$250.00
Submersible pump - 230v, 4 in.	0.30	\$5.07	\$67.39	1	\$72.46	\$67.39	\$250.00
Broderson IC-250- 3B, 61', 16.3MT	14.38	\$21.98	\$67.39	3	\$268.11	\$202.17	\$750.00

Subtotals: **\$8,478.96** **\$5,437.06** **\$12,500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$67.39	2	\$134.78	\$134.78
Light Duty Pickup, 4x4, 3/4 T.	\$12.96	5	\$64.80	\$64.80
Fuel Tanker, 6x4, 210 HP	\$42.46	4	\$169.84	\$169.84

Subtotals: **\$369.42** **\$369.42**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: DENVER

Total one-way travel distance: 70.00 miles

Average Travel Speed: 65.00 mph

Total Non-Roadable Mob/Demob Cost * \$224,552.17

** two round trips with haul rig:

Total Roadable Mob/Demob Cost ** \$795.67

** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.08</u>	<u>1.08</u>
Return Time (Hours):	<u>1.08</u>	<u>1.08</u>
Loading Time (Hours):	<u>5.00</u>	<u>NA</u>
Unloading Time (Hours):	<u>5.00</u>	<u>NA</u>
Subtotals:	<u>12.15</u>	<u>2.15</u>

JOB TIME AND COST

Total job time: 24.31 Hours

Total job cost: \$225,348

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilization Year 3

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: R03

State: Colorado

Abbreviation: None

Date: 1/3/2020

County: Clear Creek

Filename: M342-R03

User: ZTT

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:	\$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 740	36.49	\$68.27	\$123.81	15	\$2,881.20	\$1,857.15	\$3,750.00
Cat D6T XL	23.25	\$58.87	\$67.39	3	\$378.78	\$202.17	\$750.00
Cat D7R DS Series II LGP	34.57	\$75.47	\$123.81	5	\$996.40	\$619.05	\$750.00
Cat D8T - 8SU	47.71	\$103.86	\$123.81	4	\$910.68	\$495.24	\$1,000.00
Cat D9T - 9SU	66.13	\$135.43	\$141.54	4	\$1,107.88	\$566.16	\$1,000.00
CAT 938H	16.34	\$26.49	\$67.39	3	\$281.64	\$202.17	\$750.00
CAT 12M	16.01	\$33.62	\$67.39	3	\$303.03	\$202.17	\$750.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	4	\$342.16	\$269.56	\$1,000.00
Hydroseeder with Tractor	28.00	\$23.59	\$123.81	4	\$589.60	\$495.24	\$1,000.00
Power Mulcher (Bowie LD-90)	6.00	\$9.74	\$67.39	2	\$154.26	\$134.78	\$500.00
Water Tanker, 10,000 Gal.	41.10	\$68.95	\$123.81	1	\$192.76	\$123.81	\$250.00
Submersible pump - 230v, 4 in.	0.30	\$5.07	\$67.39	1	\$72.46	\$67.39	\$250.00
Broderson IC-250- 3B, 61', 16.3MT	14.38	\$21.98	\$67.39	3	\$268.11	\$202.17	\$750.00

Subtotals: **\$8,478.96** **\$5,437.06** **\$12,500.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$67.39	2	\$134.78	\$134.78
Light Duty Pickup, 4x4, 3/4 T.	\$12.96	5	\$64.80	\$64.80
Fuel Tanker, 6x4, 210 HP	\$42.46	4	\$169.84	\$169.84

Subtotals: **\$369.42** **\$369.42**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: DENVER

Total one-way travel distance: 70.00 miles

Average Travel Speed: 65.00 mph

Total Non-Roadable Mob/Demob Cost * \$224,552.17

* two round trips with haul rig:

Total Roadable Mob/Demob Cost ** \$795.67

** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.08</u>	<u>1.08</u>
Return Time (Hours):	<u>1.08</u>	<u>1.08</u>
Loading Time (Hours):	<u>5.00</u>	<u>NA</u>
Unloading Time (Hours):	<u>5.00</u>	<u>NA</u>
Subtotals:	<u>12.15</u>	<u>2.15</u>

JOB TIME AND COST

Total job time: 24.31 Hours

Total job cost: \$225,348