

COST SUMMARY WORK

Task description: Estimate for application

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-000

10:24:09 AM

User: BFB

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
100	Reduce Highwall (2500'x25') sidewalls (300'x12')	DOZER	1	13.66	\$3,651
101	Regrade Wastepile- estimated 1 yr production	DOZER	2	416.65	\$222,746
201	Structure demo	DEMOLISH	1	160.00	\$1,512,481
202	Slab and Footer Demo	DEMOLISH	1	160.00	\$392,726
203	Sales Road Demo	DEMOLISH	1	80.00	\$261,604
400	Rip facilities area	RIPPER	1	67.28	\$19,710
401	Rip Haul Roads	RIPPER	1	40.37	\$11,826
402	Rip Topsoil Piles TS-0 & TS-1	RIPPER	1	46.14	\$13,516
500	Topsoil Facilities Area	TRUCK1	2	69.67	\$87,500
501	Topsoil Waste Pile	TRUCK1	2	184.55	\$288,190
502	Topsoil Haul Roads	TRUCK1	2	24.19	\$30,378
503	Topsoil Active Pit Area 184 acres	TRUCK1	2	207.05	\$323,335
600	Reveg- 66 ac Facilities	REVEGE	1	66.00	\$106,335
601	Reveg- Waste Pile 164 ac	REVEGE	1	164.00	\$242,496
602	Reveg- Haul Roads 21 ac	REVEGE	1	21.00	\$33,834
603	Reveg- Active Pit Area 184 ac	REVEGE	1	184.00	\$272,068
604	Reveg- Topsoil piles TS-0 & TS-1, 24 ac	REVEGE	1	24.00	\$38,667
700	Mobilize Equipment	MOBILIZE	1	3.20	\$12,850
701	Vehicles for onsite support	MISCTRUK	2	300.00	\$29,475
702	Fuel truck 1.5 hour daily, 6 mos	MISCTRUK	1	200.00	\$13,174
703	Heavy equipment support vehicle 4 hrs/week, 6 mos	MISCTRUK	1	100.00	\$7,161
<u>SUBTOTALS:</u>				2531.76	\$3,923,723

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$79,259

Performance bond: 1.05

Total = \$41,199

Job superintendent: 988.62

Total = \$68,600

Profit: 10.00

Total = \$392,372

TOTAL O & P = \$581,431

CONTRACT AMOUNT (direct + O & P) = \$4,505,154

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	<u>\$0</u>	Total =	<u>\$0</u>
Engineering work and/or contract/bid preparation:	<u>4.25</u>	Total =	<u>\$191,469</u>
Reclamation management and/or administration:	<u>5.00</u>		<u>\$225,258</u>
CONTINGENCY:	0.00	Total =	<u>\$0</u>
		TOTAL INDIRECT COST =	<u>\$998,158</u>
		TOTAL BOND AMOUNT (direct + indirect) =	<u>\$4,921,881</u>

BULLDOZER WORKTask description: **Reduce Highwall (2500'x25') sidewalls (300'x12')**Site: **Keenesburg No. 2 Mine**Permit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 100State: ColoradoAbbreviation: NoneDate: 5/22/2020County: WeldFilename: M058-10010:25:01 AMUser: BFBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData 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:	\$39.98	NA
Total unit Cost/Hour:	\$267.31	
Total Fleet Cost/Hour:	\$267.31	

MATERIAL QUANTITIESInitial Volume: 16,103Swell factor: 1.124Loose volume: **18,093 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell
factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly
production: 2,110.5 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push
gradient: -15 %Average site altitude: 4,800 feetMaterial weight: 2,400 lbs/LCYWeight description: Sand - Dry, loose

Job Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6277

Adjusted unit
production: 1,324.76 LCY/hr
Adjusted fleet
production: **1324.76** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.202/LCY

Total job time: **13.66** Hours
Total job cost: **\$3,651**

BULLDOZER WORKTask description: **Regrade Wastepile- estimated 1 yr production**Site: **Keenesburg No. 2 Mine**Permit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 101State: ColoradoAbbreviation: NoneDate: 5/22/2020County: WeldFilename: M058-101User: BFBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D9T - 9SUHorsepower: 405Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData 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:	\$39.98	NA

Total unit Cost/Hour: \$267.31Total Fleet Cost/Hour: **\$534.61****MATERIAL QUANTITIES**Initial Volume: 799,134Swell factor: 1.000Loose volume: **799,134 LCY**Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 100 feetUnadjusted hourly production: 1,243.2 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: -10 %Average site altitude: 4,800 feetMaterial weight: 2,400 lbs/LCYWeight description: Sand - Dry, loose**Job Condition Correction Factor****Source**

Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.958	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7714

Adjusted unit
production: 959.00 LCY/hr
Adjusted fleet
production: **1918 LCY/hr**

JOB TIME AND COST

Fleet size: 2 Dozer(s)
Unit cost: \$0.279/LCY

Total job time: **416.65 Hours**
Total job cost: **\$222,746**

DEMOLITION WORK

Task description: Structure demo

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 201

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-201

10:24:28 AM

User: BFB

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 89.40 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Dry Sand Storage Building	125x450x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	1,125,000.00	CF	\$0.32	\$363,712.50
Mobile equipment Shop	75x100x25	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	187,500.00	CF	\$0.32	\$60,618.75
Maintenance Parts Storage	75x150x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	225,000.00	CF	\$0.32	\$72,742.50
Wet Sand and Storage Building	180x610x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	2,196,000.00	CF	\$0.32	\$709,966.80
Air compressor 1 and 2	30x30x16 x2	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 5 mile haul	28,800.00	CF	\$0.30	\$8,668.80
Scales Loadout	110x155	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	13,797.00	SF	\$1.25	\$17,180.02
Water Treatment	60x130x20	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	156,000.00	CF	\$0.32	\$50,434.80
Wet Plant Enclosure	190x190x35	Bldg. (MN) demo./off-site disposal in approved landfill - Max. 5 mile haul	1,263,500.00	CF	\$0.32	\$408,489.55

Job Hours: 160.00

Subtotal
(unadjusted): \$1,691,813.72

Total Cost
(adjusted for location): \$1,512,481.47

DEMOLITION WORK

Task description: Slab and Footer Demo

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 202

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-202

10:24:40 AM

User: BFB

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 89.40 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Dry Sand Storage Building	125x450	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	56,250.00	SF	\$1.87	\$105,063.75
Mobile equipment Shop	75x100	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	7,500.00	SF	\$1.87	\$14,008.50
Maintenance Parts Storage	75x150	Demo. and on-site disposal in excavated pit, 10 in. thick - Max. 200 ft. push	11,250.00	SF	\$1.56	\$17,510.63
Wet Sand and Storage Building	180x610	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	109,800.00	SF	\$1.87	\$205,084.44
Air compressor 1 and 2	30x30 x2	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	1,800.00	SF	\$0.93	\$1,681.02
Scales Loadout	110x155	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	17,050.00	SF	\$1.25	\$21,230.66
Water Treatment	60x130	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	7,800.00	SF	\$0.93	\$7,284.42
Wet Plant Enclosure	190x190	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	36,100.00	SF	\$1.87	\$67,427.58

Job Hours: 160.00

Subtotal
(unadjusted): \$439,291.00

Total Cost
(adjusted for
location): \$392,726.15

DEMOLITION WORK

Task description: Sales Road Demo

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 203

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-203

10:24:47 AM

User: BFB

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 89.40 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Sales road	2800x84x8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	235,000.00	SF	\$1.25	\$292,622.00

Job Hours: 80.00

Subtotal
(unadjusted): \$292,622.00

Total Cost
(adjusted for location): \$261,604.07

BULLDOZER RIPPING WORK

Task description: Rip facilities area

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 400

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-400

11:25:32 AM

User: BFB

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Ripper Attachment: 1-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper Ownership Cost/Hour:	\$15.98	NA
Ripper Operating Cost/Hour:	\$9.64	100
Operator Cost/Hour:	\$39.98	NA
Total Unit Cost/Hour:	\$292.92	
Total Fleet Cost/Hour:	\$292.92	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 35.00 acres

Rip Depth (ft): 1.50

Volume: 84,700

BCY or CCY

Source of estimated quantity: Permit application

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>4.05</u>	feet/pass
Average Ripping Width:	<u>6.08</u>	feet/pass
Average Ripping Length:	<u>125.00</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>0.627</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.627 Acres/hr

Site Altitude: 4,800 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.52 Acres/hr

Adjusted Hourly Fleet Production: 0.52 Acres/hr

JOB TIME AND COST

Fleet size: 1

Grader(s)

Total job time: 67.29

Hours

Unit cost: \$563.156 Per acre

Total job cost: **\$19,710**

BULLDOZER RIPPING WORK

Task description: RipHaul Roads

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 401

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-401

11:25:44 AM

User: BFB

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Ripper Attachment: 1-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper Ownership Cost/Hour:	\$15.98	NA
Ripper Operating Cost/Hour:	\$9.64	100
Operator Cost/Hour:	\$39.98	NA
Total Unit Cost/Hour:	\$292.92	
Total Fleet Cost/Hour:	\$292.92	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 21.00 acres

Rip Depth (ft): 1.50

Volume: 50,820

BCY or CCY

Source of estimated quantity: Permit application

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>4.05</u>	feet/pass
Average Ripping Width:	<u>6.08</u>	feet/pass
Average Ripping Length:	<u>125.00</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>0.627</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.627 Acres/hr

Site Altitude: 4,800 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.52 Acres/hr

Adjusted Hourly Fleet Production: 0.52 Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s)

Total job time: 40.37 Hours

Unit cost: \$563.156 Per acre

Total job cost: \$11,826

BULLDOZER RIPPING WORK

Task description: Rip Topsoil Piles TS-0 & TS-1

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 402

State: Colorado

Abbreviation: None

Date: 5/22/2020

County: Weld

Filename: M058-402

User: BFB

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU

Horsepower: 405

Ripper Attachment: 1-Shank Ripper

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$121.49	NA
Operating Cost/Hour:	\$105.84	100
Ripper Ownership Cost/Hour:	\$15.98	NA
Ripper Operating Cost/Hour:	\$9.64	100
Operator Cost/Hour:	\$39.98	NA
Total Unit Cost/Hour:	\$292.92	
Total Fleet Cost/Hour:	\$292.92	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA

Bank Volume: NA

BCY NA

Area: 24.00 acres

Rip Depth (ft): 1.50

Volume: 58,080

BCY or CCY

Source of estimated quantity: Permit application

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth:	<u>4.05</u>	feet/pass
Average Ripping Width:	<u>6.08</u>	feet/pass
Average Ripping Length:	<u>125.00</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>0.627</u>	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.627 Acres/hr

Site Altitude: 4,800 feet

Altitude Adj: 1.00 (CAT HB)

Job Efficiency: 0.83 (1 shift/day)

Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.52 Acres/hr

Adjusted Hourly Fleet Production: **0.52** Acres/hr

JOB TIME AND COST

Fleet size: 1

Grader(s)

Total job time: **46.14**

Hours

Unit cost: \$563.156

Per acre

Total job cost: **\$13,516**

TRUCK/LOADER TEAM WORKTask description: **Topsoil Facilities Area**Site: **Keenesburg No. 2 Mine**Permit Action: **2020 Application**Permit/Job#: **M2019058****PROJECT IDENTIFICATION**Task #: **500**State: **Colorado**Abbreviation: **None**Date: **4/29/2020**County: **Weld**Filename: **M058-500**User: **BFB**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Shift basis: **1 per day**

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	\$103.86	\$42.12	\$13.51
Operating cost/hour:	\$59.78	\$61.51	NA	\$82.26	\$9.92	\$7.24
%Utilization-ripper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	\$39.98	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	\$226.10	\$97.42	\$20.75
Number of Units:	4	2	0	1	1	1
Group Subtotals:	Work: \$911.64		Support: \$226.10		Maint: \$118.17	

Total work team cost/hour: **\$1,255.91****MATERIAL QUANTITIES**Initial volume: **72,309**

CCY

Swell factor: **1.215**Loose volume: **87,855**

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: 31.50 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity: 7.500 LCY (heaped)
 Bucket Fill Factor: 1.050 Moist loam or sandy clay (100% - 110%) 1.050
 Adjusted Capacity: 7.875 LCY

Job Condition Corrections:

Site Altitude (ft.): 4800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
 Truck: 4 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): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.060	minutes
	Adjusted Loader Cycle Time:	0.490	minutes
	Net Load Time per Truck:	1.570	minutes

Truck Cycle Time:

Truck Exchange Time: 0.60 Minutes Adjusted for site altitude: 0.600 Minutes
 Truck Load Time: 1.570 Minutes Adjusted for site altitude: 1.570 Minutes
 Truck Maneuver and Dump Time: 1.00 Minutes Adjusted for site altitude: 1.000 Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0

Road Condition: Hard, smooth, stabilized, surfaced, watered.

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1800.00	0.00	2.00	2.00	3005	1.062

Haul Time: **1.062** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1800.00	0.00	2.00	2.00	3005	0.744

Return Time: **0.744** minutesTotal Truck Cycle Time: **4.976** minutes

Loading Tool unit
 Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour
 Truck Unit Production 379.82 LCY/Hour Adjusted for job efficiency: 315.25 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)
 Adjusted hourly truck team production: 630.51 LCY/Hour
 Adjusted single truck/loader team production: 630.51 LCY/Hour
 Adjusted multiple truck/loader team production: **1,261.01** LCY/Hour

JOB TIME AND COSTFleet size: 2 Team(s) Total job time: **69.67** HoursUnit cost: \$0.996 /LCY Total job cost: **\$87,500**

TRUCK/LOADER TEAM WORKTask description: Topsoil Waste PileSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 501State: ColoradoAbbreviation: NoneDate: 4/29/2020County: WeldFilename: M058-501User: BFBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	\$103.86	\$42.12	\$13.51
Operating cost/hour:	\$59.78	\$61.51	NA	\$82.26	\$9.92	\$7.24
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	\$39.98	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	\$226.10	\$97.42	\$20.75
Number of Units:	6	2	0	1	1	1
Group Subtotals:	Work: \$1,217.32		Support: \$226.10		Maint: \$118.17	

Total work team cost/hour: \$1,561.59**MATERIAL QUANTITIES**Initial volume: 219,607

CCY

Swell factor: 1.215Loose volume: 266,823

LCY

Source of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 1,600

Pounds/LCY

Description: Top SoilRated 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: 31.50 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>7.500</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.050</u>	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	<u>7.875</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 4800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
 Truck: 4 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): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.490	minutes
Net Load Time per Truck:		1.570	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.570</u>	Minutes	Adjusted for site altitude:	<u>1.570</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0

Road Condition: Hard, smooth, stabilized, surfaced, watered.

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3200.00	0.00	2.00	2.00	3005	1.528

Haul Time: **1.528** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3200.00	0.00	2.00	2.00	3005	1.210

Return Time: **1.210** minutesTotal Truck Cycle Time: **5.908** minutes

Loading Tool unit
 Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour
 Truck Unit Production
319.91 LCY/Hour Adjusted for job efficiency: 265.52 LCY/Hour
 Optimal No. of Trucks: 3 Truck(s) Selected Number of Trucks: 3 Truck(s)
 Adjusted hourly truck team production: 796.56 LCY/Hour
 Adjusted single truck/loader team production: 722.90 LCY/Hour
 Adjusted multiple truck/loader team production: **1,445.81** LCY/Hour

JOB TIME AND COSTFleet size: 2 Team(s) Total job time: **184.55** HoursUnit cost: \$1.080 /LCY Total job cost: **\$288,190**

TRUCK/LOADER TEAM WORKTask description: Topsoil Haul RoadsSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 502State: ColoradoAbbreviation: NoneDate: 5/21/2020County: WeldFilename: M058-502User: BFBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	\$103.86	\$42.12	\$13.51
Operating cost/hour:	\$59.78	\$61.51	NA	\$82.26	\$9.92	\$7.24
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	\$39.98	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	\$226.10	\$97.42	\$20.75
Number of Units:	4	2	0	1	1	1
Group Subtotals:	Work: \$911.64		Support: \$226.10		Maint: \$118.17	

Total work team cost/hour: \$1,255.91**MATERIAL QUANTITIES**Initial volume: 28,109

CCY

Swell factor: 1.215Loose volume: 34,152

LCY

Source of estimated volume: Adequcy response 4/6/20- road area of 21 acresSource of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 1,600

Pounds/LCY

Description: Top SoilRated 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: 31.50 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>7.500</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.050</u>	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	<u>7.875</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 4800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
 Truck: 4 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): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.490	minutes
Net Load Time per Truck:		1.570	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.570</u>	Minutes	Adjusted for site altitude:	<u>1.570</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0

Road Condition: Hard, smooth, stabilized, surfaced, watered.

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	2.00	2.00	3005	0.796

Haul Time: **0.796** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	2.00	2.00	3005	0.478

Return Time: **0.478** minutesTotal Truck Cycle Time: **4.444** minutes

Loading Tool unit
 Production 870.97 LCY/Hour Adjusted for job efficiency: 722.90 LCY/Hour
 Truck Unit Production 425.29 LCY/Hour Adjusted for job efficiency: 352.99 LCY/Hour
 Optimal No. of Trucks: 2 Truck(s) Selected Number of Trucks: 2 Truck(s)
 Adjusted hourly truck team production: 705.99 LCY/Hour
 Adjusted single truck/loader team production: 705.99 LCY/Hour
 Adjusted multiple truck/loader team production: **1,411.97** LCY/Hour

JOB TIME AND COSTFleet size: 2 Team(s) Total job time: **24.19** HoursUnit cost: \$0.889 /LCY Total job cost: **\$30,378**

TRUCK/LOADER TEAM WORKTask description: Topsoil Active Pit Area 184 acresSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 503State: ColoradoAbbreviation: NoneDate: 5/21/2020County: WeldFilename: M058-503User: BFBAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	Cat 740
-Loader:	CAT 980H
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 140M
-Water Truck:	Water Tanker, 3,500 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	100	25	25
Ownership cost/hour:	\$68.27	\$52.71	NA	\$103.86	\$42.12	\$13.51
Operating cost/hour:	\$59.78	\$61.51	NA	\$82.26	\$9.92	\$7.24
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$24.79	\$35.93	NA	\$39.98	\$45.39	\$0.00
Unit Subtotals:	\$152.84	\$150.14	NA	\$226.10	\$97.42	\$20.75
Number of Units:	6	2	0	1	1	1
Group Subtotals:	Work: \$1,217.32		Support: \$226.10		Maint: \$118.17	

Total work team cost/hour: \$1,561.59**MATERIAL QUANTITIES**Initial volume: 246,388

CCY

Swell factor: 1.215Loose volume: 299,361

LCY

Source of estimated volume: Adequcy response 4/6/20-Source of estimated swell factor: Cat HandbookMaterial Purchase Cost: \$0.00Total Cost: \$0.00**HOURLY PRODUCTION****Truck Capacity:**Truck Payload (weight) Basis:Material weight: 1,600

Pounds/LCY

Description: Top SoilRated 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: 31.50 LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	<u>7.500</u>	LCY (heaped)
Bucket Fill Factor:	<u>1.050</u>	Moist loam or sandy clay (100% - 110%) 1.050
Adjusted Capacity:	<u>7.875</u>	LCY

Job Condition Corrections:

Site Altitude (ft.): 4800 feet

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

Loading Tool Cycle Time:

Number of Loading Tool Passes Required to Fill
 Truck: 4 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): 0.550 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material up to 1/8" diameter 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.060	minutes
Adjusted Loader Cycle Time:		0.490	minutes
Net Load Time per Truck:		1.570	minutes

Truck Cycle Time:

Truck Exchange Time:	<u>0.60</u>	Minutes	Adjusted for site altitude:	<u>0.600</u>	Minutes
Truck Load Time:	<u>1.570</u>	Minutes	Adjusted for site altitude:	<u>1.570</u>	Minutes
Truck Maneuver and Dump Time:	<u>1.00</u>	Minutes	Adjusted for site altitude:	<u>1.000</u>	Minutes

Truck Travel (Haul & Return) Time:
maintained 2.0

Road Condition: Hard, smooth, stabilized, surfaced, watered.

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3500.00	0.00	2.00	2.00	3005	1.627

Haul Time: **1.627** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3500.00	0.00	2.00	2.00	3005	1.310

Return Time: **1.310** minutesTotal Truck Cycle Time: **6.107** minutes

Loading Tool unit

Production 870.97 LCY/HourAdjusted for job efficiency: 722.90 LCY/Hour

Truck Unit Production

309.48 LCY/HourAdjusted for job efficiency: 256.87 LCY/HourOptimal No. of Trucks: 3 Truck(s)Selected Number of Trucks: 3 Truck(s)Adjusted hourly truck team production: 770.61 LCY/HourAdjusted single truck/loader team production: 722.90 LCY/HourAdjusted multiple truck/loader team production: **1,445.81** LCY/Hour**JOB TIME AND COST**Fleet size: 2 Team(s)Total job time: **207.05** HoursUnit cost: \$1.080 /LCYTotal job cost: **\$323,335**

REVEGETATION WORKTask description: Reveg- 66 ac FacilitiesSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 600State: ColoradoAbbreviation: NoneDate: 5/22/2020County: WeldFilename: M058-60011:24:12 AMUser: BFBAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	0.50	1.52	\$5.65
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Switchgrass - Blackwell	1.50	13.40	\$17.25
Sand Lovegrass - Bend	2.50	86.09	\$35.63
Little Bluestem - Camper	0.75	4.48	\$9.44
Sand Dropseed	0.50	59.69	\$4.88
Sand Bluestem - Garden Co.	1.00	2.59	\$24.53
Needlegrass, Green - Lodorm	1.50	6.23	\$17.66
Prairie Sandreed - Goshen	0.75	4.70	\$7.76

Totals Seed Mix	12.00	188.41	\$149.41
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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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

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: 66 Cost /Acre: \$1,239.34
 Estimated Failure Rate: 30% Cost /Acre*: \$1,239.34
 *Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **\$81,796.44**
 Reseeding Job Cost: **\$24,538.93**
 Total Job Cost: **\$106,335**
 Job Hours: **66.00**

REVEGETATION WORKTask description: Reveg- Waste Pile 164 acSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 601State: ColoradoAbbreviation: NoneDate: 5/22/2020County: WeldFilename: M058-60111:24:31 AMUser: BFBAgency 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
Indiangrass - Cheyenne	0.50	1.52	\$5.65
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Switchgrass - Blackwell	1.50	13.40	\$17.25
Sand Lovegrass - Bend	2.50	86.09	\$35.63
Little Bluestem - Camper	0.75	4.48	\$9.44
Sand Dropseed	0.50	59.69	\$4.88
Sand Bluestem - Garden Co.	1.00	2.59	\$24.53
Needlegrass, Green - Lodorm	1.50	6.23	\$17.66

Prairie Sandreed - Goshen	0.75	4.70	\$7.76
Totals Seed Mix	12.00	188.41	\$149.41

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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

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:	164	Cost /Acre:	\$1,137.41
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,137.41
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$186,535.24		
Reseeding Job Cost:	\$55,960.57		
Total Job Cost:	\$242,496		
Job Hours:	164.00		

REVEGETATION WORKTask description: Reveg- Haul Roads 21 acSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 602State: ColoradoAbbreviation: NoneDate: 5/22/2020County: WeldFilename: M058-60211:24:43 AMUser: BFBAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	0.50	1.52	\$5.65
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Switchgrass - Blackwell	1.50	13.40	\$17.25
Sand Lovegrass - Bend	2.50	86.09	\$35.63
Little Bluestem - Camper	0.75	4.48	\$9.44
Sand Dropseed	0.50	59.69	\$4.88
Sand Bluestem - Garden Co.	1.00	2.59	\$24.53
Needlegrass, Green - Lodorm	1.50	6.23	\$17.66
Prairie Sandreed - Goshen	0.75	4.70	\$7.76

Totals Seed Mix	12.00	188.41	\$149.41
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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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

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:	21	Cost /Acre:	\$1,239.34
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,239.34
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$26,026.14		
Reseeding Job Cost:	\$7,807.84		
Total Job Cost:	\$33,834		
Job Hours:	21.00		

REVEGETATION WORKTask description: **Reveg- Active Pit Area 184 ac**Site: **Keenesburg No. 2 Mine**Permit Action: **2020 Application**Permit/Job#: **M2019058****PROJECT IDENTIFICATION**Task #: **603**State: **Colorado**Abbreviation: **None**Date: **5/22/2020**County: **Weld**Filename: **M058-603**

11:24:59 AM

User: **BFB**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
Indiangrass - Cheyenne	0.50	1.52	\$5.65
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Switchgrass - Blackwell	1.50	13.40	\$17.25
Sand Lovegrass - Bend	2.50	86.09	\$35.63
Little Bluestem - Camper	0.75	4.48	\$9.44
Sand Dropseed	0.50	59.69	\$4.88
Sand Bluestem - Garden Co.	1.00	2.59	\$24.53
Needlegrass, Green - Lodorm	1.50	6.23	\$17.66

Prairie Sandreed - Goshen	0.75	4.70	\$7.76
Totals Seed Mix	12.00	188.41	\$149.41

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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

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:	184	Cost /Acre:	\$1,137.41
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,137.41
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$209,283.44		
Reseeding Job Cost:	\$62,785.03		
Total Job Cost:	\$272,068		
Job Hours:	184.00		

REVEGETATION WORKTask description: Reveg- Topsoil piles TS-0 & TS-1, 24 acSite: Keenesburg No. 2 MinePermit Action: 2020 ApplicationPermit/Job#: M2019058**PROJECT IDENTIFICATION**Task #: 604State: ColoradoAbbreviation: NoneDate: 5/22/2020County: WeldFilename: M058-604User: BFBAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$101.93
Total Tilling Cost/Acre	\$101.93

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	0.50	1.52	\$5.65
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Switchgrass - Blackwell	1.50	13.40	\$17.25
Sand Lovegrass - Bend	2.50	86.09	\$35.63
Little Bluestem - Camper	0.75	4.48	\$9.44
Sand Dropseed	0.50	59.69	\$4.88
Sand Bluestem - Garden Co.	1.00	2.59	\$24.53
Needlegrass, Green - Lodorm	1.50	6.23	\$17.66
Prairie Sandreed - Goshen	0.75	4.70	\$7.76

Totals Seed Mix	12.00	188.41	\$149.41
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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
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

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:	24	Cost /Acre:	\$1,239.34
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,239.34
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		

Initial Job Cost:	\$29,744.16
Reseeding Job Cost:	\$8,923.25
Total Job Cost:	\$38,667
Job Hours:	24.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilize Equipment**Site: **Keenesburg No. 2 Mine**Permit Action: **2020 Application**Permit/Job#: **M2019058****PROJECT IDENTIFICATION**Task #: **700**State: **Colorado**Abbreviation: **None**Date: **5/22/2020**County: **Weld**Filename: **M058-700**User: **BFB**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 D8T - 8SU	47.71	\$103.86	\$123.81	1	\$227.67	\$123.81	\$250.00
Cat D9T - 9SU	60.01	\$121.49	\$141.54	1	\$263.03	\$141.54	\$250.00
CAT 980H	33.12	\$52.71	\$123.81	2	\$353.04	\$247.62	\$500.00
Cat 740	36.49	\$68.27	\$123.81	6	\$1,152.48	\$742.86	\$1,500.00
CAT 140M	16.68	\$42.12	\$67.39	1	\$109.51	\$67.39	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Cat 320D L 9'-6" Stick	23.70	\$37.31	\$67.39	2	\$209.40	\$134.78	\$250.00

Subtotals: **\$2,400.67** **\$1,525.39** **\$3,250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 3,500 Gal.	\$42.46	1	\$42.46	\$42.46

Subtotals: **\$42.46** **\$42.46**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: DENVER
 Total one-way travel distance: 40.00 miles
 Average Travel Speed: 50.00 mph

Total Non-Roadable Mob/Demob Cost * \$12,781.70
 ** two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$67.94
 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.80	0.80
Return Time (Hours):	0.80	0.80
Loading Time (Hours):	0.00	NA
Unloading Time (Hours):	0.00	NA
Subtotals:	1.60	1.60

JOB TIME AND COST

Total job time: 3.20 Hours

Total job cost: \$12,850

MISCELLANEOUS TRUCK WORK

Task description: Vehicles for onsite support

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 701
Date: 5/26/2020
User: BFB

State: Colorado
County: Weld

Abbreviation: None
Filename: M058-701

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Light Duty Pickup, 4x4, 1 T. Crew
Attachment 1: _____
Attachment 2: _____
Labor Unit 1: General Laborer
Labor Unit 2: _____

Horsepower: 340
Shift Basis: 1 per day
Weight: 2.45
(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$5.77</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$15.16</u>	<u>100</u>
Operator Cost/Hour:	<u>\$28.20</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$49.12</u>	
Total Fleet Cost/Hour:	<u>\$98.25</u>	

JOB TIME AND COST

Fleet size: 2 Truck(s)

Total job time: 300.00 Hours

Unit cost: \$98.25 /Hour

Total job cost: \$29,475

MISCELLANEOUS TRUCK WORK

Task description: Fuel truck 1.5 hour daily, 6 mos

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 702
Date: 5/26/2020
User: BFB

State: Colorado
County: Weld

Abbreviation: None
Filename: M058-702

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Fuel Tanker, 4x2, 170 HP
Attachment 1: _____
Attachment 2: _____
Labor Unit 1: Tanker Driver - 2+ rear axles
Labor Unit 2: _____

Horsepower: 170
Shift Basis: 1 per day
Weight: _____
(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$9.27</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$17.75</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.86</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$65.87</u>	
Total Fleet Cost/Hour:	<u>\$65.87</u>	

JOB TIME AND COST

Fleet size: 1 Truck(s)

Total job time: 200.00 Hours

Unit cost: \$65.87 /Hour

Total job cost: \$13,174

MISCELLANEOUS TRUCK WORK

Task description: Heavy equipment support vehicle 4 hrs/week, 6 mos

Site: Keenesburg No. 2 Mine

Permit Action: 2020 Application

Permit/Job#: M2019058

PROJECT IDENTIFICATION

Task #: 703
Date: 5/26/2020
User: BFB

State: Colorado
County: Weld

Abbreviation: None
Filename: M058-703

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Make and Model: Lube Truck, 4x2, 190 HP
Attachment 1: _____
Attachment 2: _____
Labor Unit 1: Tanker Driver - 1 rear axle
Labor Unit 2: _____

Horsepower: 190
Shift Basis: 1 per day
Weight: _____
(US Tons)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$10.95</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$21.81</u>	<u>100</u>
Operator Cost/Hour:	<u>\$38.86</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$71.61</u>	
Total Fleet Cost/Hour:	<u>\$71.61</u>	

JOB TIME AND COST

Fleet size: 1 Truck(s)

Total job time: 100.00 Hours

Unit cost: \$71.61 /Hour

Total job cost: \$7,161