



## COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources

1313 Sherman St. Room 215  
Denver, CO 80203

March 29, 2019

Mr. Jason Burkey  
Oldcastle SW Group, Inc. dba United Companies of Mesa County  
2273 River Road  
Grand Junction, CO 81502

**Re: Mamm Creek Sand & Gravel, Permit No. M-2000-113, Financial Warranty Increase,  
Revision No. SI-1**

Dear Mr. Burkey:

In an effort to ensure the Financial Warranty for the above referenced site adequately reflects the actual current costs of fulfilling the requirements of the approved reclamation plan, the Colorado Division of Reclamation, Mining and Safety (Division) has updated the reclamation cost estimate (copy enclosed).

Division calculations estimate the cost to reclaim the above referenced site to be \$188,616. This is an increase of \$39,463 over the \$149,153 currently held by the Division. This estimate is based on conditions observed during the February 14, 2019 inspection. ***Therefore, pursuant to Section 34-32.5-117(4) of the Colorado Land Reclamation Act, adequate Financial Warranty must be submitted to the Division within 60 days of the mailing date of this letter.*** The additional amount needs to be accepted prior to **Tuesday, May 28, 2019**. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Barbara Coria.

If you require additional information, or have questions or concerns, please feel free to contact me. Amy Yeldell at the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, CO 80203. Direct contact can be made by phone at 970-254-8511 or via email at amy.yeldell@state.co.us



Sincerely,

A handwritten signature in blue ink that reads "Amy Yeldell". The signature is written in a cursive, flowing style.

Amy C. Yeldell  
Environmental Protection Specialist

cc: Barbara J. Coria, DRMS  
Wally Erickson, DRMS  
Travis Marshall, DRMS

## COST SUMMARY WORK

Task description: Post inspection update

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: ACY

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-ACY

User: ACY

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demo onsite support facilities	DEMOLISH	1	80.00	\$54,342
02a	Mining Area E-Removal of Asphalt and Propane tank	DEMOLISH	1	40.00	\$26,026
02b	Mining Area E-Rip compacted areas	RIPPER	2	1.90	\$860
02c	Mining Area E- Grade misc. stockpiles	DOZER	2	0.48	\$200
02d	Mining Area E- topsoil application	DOZER	2	2.65	\$1,105
02e	Mining Area E-Reveg 3 ac	REVEGE	1	5.00	\$4,588
03a	Mining Area C-Dewater pond	PUMPING	1	117.18	\$11,150
03b	Mining Area C-Grading slopes adjacent to river and pad	DOZER	2	3.16	\$1,316
03c	Mining Area C-Topsoil graded slopes	DOZER	2	0.80	\$334
03d	Mining Area C-Reveg 1 ac	REVEGE	1	2.00	\$1,529
04a	Mining Area A-Rip compacted areas	RIPPER	2	7.63	\$3,440
04b	Mining Area B-Transport Topsoil	LOADER	2	35.38	\$6,928
04c	Mining Area A-Spread Topsoil	DOZER	2	6.60	\$2,754
04d	Mining Area A-Reveg 10 ac	REVEGE	1	13.00	\$15,294
05a	Mining Area B-Rip compacted areas	RIPPER	2	1.52	\$688
05b	Mining Area B- topsoil application	DOZER	2	2.43	\$1,014
05c	Mining Area B-Reveg 1 ac	REVEGE	1	2.50	\$3,059
06a	Initial Mobilization	MOBILIZE	1	2.40	\$8,817
06b	Secondary Mobilization	MOBILIZE	1	2.40	\$1,488
<b><u>SUBTOTALS:</u></b>				<b>327.03</b>	<b>\$144,932</b>

### INDIRECT COSTS

#### OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$2,928

Performance bond: 1.05

Total = \$1,522

Job superintendent: 105.00

Total = \$7,670

Profit: 10.00

Total = \$14,493

TOTAL O & P = \$26,613

CONTRACT AMOUNT (direct + O & P) = \$171,545

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$7,291

Reclamation management and/or administration: 5.41

\$9,281

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CONTINGENCY: 0.00Total = \$0

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TOTAL INDIRECT COST = \$43,684

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**TOTAL BOND AMOUNT (direct + indirect) = \$188,616**

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## DEMOLITION WORK

Task description: Demo onsite support facilities

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-01a

User: ACY

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 102.20 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale house	60' x 10' x 10'	Bldg. (SN) demo./off-site disposal in approved landfill - Max. 15 mile haul	6,000.00	CF	\$0.35	\$2,100.00
Scale house foundation	60' x 10'	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	140.00	LF	\$3.49	\$488.60
Scale-Loading/Hauling	70' x 8'	Loading and 2 mile haul, no salvage - Machine loading	20.00	CY	\$17.20	\$344.00
Scale-Hauling	70' x 8'	Hauling only, per mile, 12-18 CY truck - 50 mph average speed	10.00	MI	\$3.08	\$30.80
Scale-Footers	70' x 8'	Demo. and on-site disposal in existing pit, 1.0 ft. x 2 ft. - Max. 10,000 ft. haul	32.00	LF	\$3.49	\$111.68
Conveyor-Belt Structure	900 LF x 10" W X 4" H	Conveyor, Demolition Cost only	36,000.00	CF	\$0.19	\$6,840.00
Conveyor-Load/Haul Belt Structure	36000 CF	Loading and 2 mile haul, no salvage - Machine loading	1,333.00	CY	\$17.20	\$22,927.60
Conveyor-Haul Belt Structure	10 mi x 75 trips	Hauling only, per mile, 12-18 CY truck - 50 mph average speed	750.00	MI	\$3.08	\$2,310.00
Conveyor- demo footers	3 pairs	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft. - Max. 10,000 ft. haul	24.00	LF	\$10.46	\$251.04
Conveyor-metal support load/haul	3 pairs (2'Dia x 10'H)	Loading and 2 mile haul, no salvage - Machine loading	9.00	CY	\$17.20	\$154.80
Conveyor-metal support haul	10 mi x 9 cy	Hauling only, per mile, 12-18 CY truck - 50 mph average speed	10.00	MI	\$3.08	\$30.80
Conveyor-disposal fees	All non-rubble material	Dump fees - Building construction materials.	1,584.00	CY	\$11.10	\$17,582.40

Job Hours: 80.00

Subtotal  
(unadjusted): \$53,171.72

Total Cost  
(adjusted for location): \$54,341.50

## DEMOLITION WORK

Task description: Mining Area E-Removal of Asphalt and Propane tank

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: 02A

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-02a

User: ACY

Agency or organization name: DRMS

### UNIT COSTS

Location adjustment: 95.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Demo asphalt pad	250' x 250'	Pavement, bituminous, demolition only - 4 in. to 6 in. thick	3,472.20	SY	\$7.00	\$24,305.40
Load asphalt for offsite disposal	31250 cu ft	Loading only, open areas (unconfined) - Track loader	1,158.00	CY	\$0.47	\$544.26
Haul asphalt to Casey Pit for Disposal	65 trips 12 miles	Hauling only, per mile, 12-18 CY truck - 50 mph average speed	780.00	MI	\$3.08	\$2,402.40

Job Hours: 40.00

Subtotal  
(unadjusted): \$27,252.06

Total Cost  
(adjusted for location): \$26,025.72

## BULLDOZER RIPPING WORK

Task description: Mining Area E-Rip compacted areas

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: 02B

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-02b

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU  
Ripper Attachment: 3-Shank Ripper

Horsepower: 310

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper Ownership Cost/Hour:	\$8.93	NA
Ripper Operating Cost/Hour:	\$7.78	100
Operator Cost/Hour:	\$41.52	NA
Total Unit Cost/Hour:	\$225.20	
Total Fleet Cost/Hour:	<b>\$450.40</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 2.50 acres Rip Depth (ft): 2.00 Volume: 8,067 BCY or CCY

Source of estimated quantity: Onsite observations

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 2.56 mph  
Average Ripping Width: 7.08 degrees  
Average Ripping Length: 250.00 feet  
Average Dozer Speed: 88.00 feet  
Average Maneuver Time: 0.25 feet  
Production per unit area: 0.789 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.789 Acres/hr  
Site Altitude: 5,350 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: **1.31** Acres/hr

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **1.91** Hours

Unit cost: \$343.985 Per acre Total job cost: **\$860**

**BULLDOZER WORK**Task description: Mining Area E- Grade misc. stockpilesSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 02CState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-02cUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$208.49Total Fleet Cost/Hour: **\$416.99****MATERIAL QUANTITIES**Initial Volume: 500Swell factor: 1.060Loose volume: **530 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: 1,400.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 0 %Average site altitude: 5,350 feetMaterial weight: 2,900 lbs/LCYWeight description: Sand and gravel - Dry**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:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3949

Adjusted unit production: 552.86 LCY/hr

Adjusted fleet production: **1105.72** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.377/LCY

Total job time: **0.48** Hours

Total job cost: **\$200**

**BULLDOZER WORK**Task description: Mining Area E- topsoil applicationSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 02DState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-02dUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$208.49Total Fleet Cost/Hour: **\$416.99****MATERIAL QUANTITIES**Initial Volume: 3,630Swell factor: 1.115Loose volume: **4,047 LCY**Source of estimated volume: 3 ac at 9" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,400.0 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 0 %Average site altitude: 5,350 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**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:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5453

Adjusted unit production: 763.42 LCY/hr

Adjusted fleet production: **1526.84** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.273/LCY

Total job time: **2.65** Hours

Total job cost: **\$1,105**

**REVEGETATION WORK**Task description: Mining Area E-Reveg 3 acSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 02EState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-02eUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

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

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	1.50	4.86	\$11.63
Big Bluegrass - Sherman	1.00	20.66	\$7.68
Intermediate Wheatgrass - Rush	1.50	3.20	\$5.76
Milk Vetch, Cicer - Lutana	0.50	1.66	\$4.20
Western Wheatgrass - Arriba	1.50	3.79	\$12.42
Needlegrass, Green - Lodorm	0.50	2.08	\$2.49
Sage, Fringed	0.25	20.89	\$10.50
Saltbush, Shadscale	0.50	0.75	\$5.12
Penstemon, Rocky Mountain	0.25	3.92	\$7.55

<b>Totals Seed Mix</b>	7.50	61.81	<b>\$67.34</b>
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**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Herbicide - Glyphosate (Journey)@ 1.0 pt/ac	1.00	ACRE	\$4.26	\$4.26
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$583.07</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
<b>Total Mulch Application Cost/Acre</b>	<b>\$234.78</b>

**NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres:	3	Cost /Acre:	\$1,223.48
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,223.48
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	<b>\$3,670.44</b>		
Reseeding Job Cost:	<b>\$917.61</b>		
Total Job Cost:	<b>\$4,588</b>		
Job Hours:	<b>5.00</b>		

## PUMPING WORK

Task description: Mining Area C-Dewater pond

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: 03A

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-03a

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

	Description	Quantity
Make and Model:	Submersible pump - 460v, 8 in.	3
Attachment 1:	Suction hose - 6 in. diam., 25 ft.	3
Attachment 2:	Discharge hose - 6 in. D., 25 ft.	24
Labor Unit 1:	Pump operator	1

Horsepower: 95

Shift Basis: 1 per day

Weight: 0.70

(US Tons)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$28.02	NA
Operating Cost/Hour:	\$39.33	100
Operator Cost/Hour:	\$27.80	NA
Total Unit Cost/Hour:	\$95.15	

Total Fleet Cost/Hour: \$95.15

### PUMPING QUANTITIES

Initial Pond Volume:	<u>195.00</u>		Conversion factor:	<u>325850.5800</u>
Final Pond Volume:	<u>63,540,863.10</u>	gallons		
Total Pond Inflow Surface Area:	<u>40,000</u>	Sq. ft.	Unit inflow rate in gph/sq. ft.:	<u>0.1758</u>
Total Pond Inflow Volume per Hour:	<u>7,032.00</u>	gallons		

Source of estimated volume: 13 ac pond, pumped down 15 ft deep

### PUMPING TIME

Maximum Pump Capacity:	<u>170,000</u>	gph/pump
Estimated Suction Head:	<u>10</u>	feet
Estimated Discharge Head:	<u>10</u>	feet
Total Head:	<u>20</u>	feet
CPB Pump Capacity:	<u>168,000</u>	gph/pump
Site Altitude:	<u>5,330</u>	feet
Adjusted Pumping Capacity:	<u>504,000</u>	gph
Initial Unadjusted Pumping Time:	<u>126.07</u>	hours
Inflow during Initial Pumping:	<u>886,546</u>	gallons
Net Unadjusted Pumping Time:	<u>127.83</u>	Hours
Altitude Adjustment Factor:	<u>1.0000</u>	(3% rule)
Pump Efficiency Factor:	<u>0.9167</u>	(55 min./hr.)
Total Adjusted Pumping Time:	<u>117.18</u>	hours

### JOB TIME AND COST

Total job time: 117.18 Hours

Unit cost: \$0.000173 /Gallon

Total job cost: \$11,150

**BULLDOZER WORK**Task description: Mining Area C-Grading slopes adjacent to river and padSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 03BState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-03bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$208.49Total Fleet Cost/Hour: **\$416.99****MATERIAL QUANTITIES**Initial Volume: 3,125Swell factor: 1.050Loose volume: **3,281 LCY**Source of estimated volume: 3000 LF 15'H 2:1 to 3:1Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,400.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -10 %Average site altitude: 5,350 feetMaterial weight: 3,400 lbs/LCYWeight description: Sand and gravel - Wet**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:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.676	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3712

Adjusted unit production: 519.68 LCY/hr

Adjusted fleet production: **1039.36** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.401/LCY

Total job time: **3.16** Hours

Total job cost: **\$1,316**



**BULLDOZER WORK**Task description: Mining Area C-Topsoil graded slopesSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 03CState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-03cUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$208.49Total Fleet Cost/Hour: **\$416.99****MATERIAL QUANTITIES**Initial Volume: 1,210Swell factor: 1.115Loose volume: **1,349 LCY**Source of estimated volume: 1 ac @ 9"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,400.0 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: -10 %Average site altitude: 5,350 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**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:	0.800	(FND-RF)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6012

Adjusted unit production: 841.68 LCY/hr

Adjusted fleet production: **1683.36** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.248/LCY

Total job time: **0.80** Hours

Total job cost: **\$334**

**REVEGETATION WORK**Task description: Mining Area C-Reveg 1 acSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 03DState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-03dUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

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

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	1.50	4.86	\$11.63
Big Bluegrass - Sherman	1.00	20.66	\$7.68
Intermediate Wheatgrass - Rush	1.50	3.20	\$5.76
Milk Vetch, Cicer - Lutana	0.50	1.66	\$4.20
Western Wheatgrass - Arriba	1.50	3.79	\$12.42
Needlegrass, Green - Lodorm	0.50	2.08	\$2.49
Sage, Fringed	0.25	20.89	\$10.50
Saltbush, Shadscale	0.50	0.75	\$5.12
Penstemon, Rocky Mountain	0.25	3.92	\$7.55

<b>Totals Seed Mix</b>	7.50	61.81	<b>\$67.34</b>
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**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Herbicide - Glyphosate (Journey)@ 1.0 pt/ac	1.00	ACRE	\$4.26	\$4.26
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$583.07</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
<b>Total Mulch Application Cost/Acre</b>	<b>\$234.78</b>

**NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres:	1	Cost /Acre:	\$1,223.48
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,223.48
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	<b>\$1,223.48</b>		
Reseeding Job Cost:	<b>\$305.87</b>		
Total Job Cost:	<b>\$1,529</b>		
Job Hours:	<b>2.00</b>		

## BULLDOZER RIPPING WORK

Task description: Mining Area A-Rip compacted areas

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: 04A

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-04a

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU  
Ripper Attachment: 3-Shank Ripper

Horsepower: 310

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper Ownership Cost/Hour:	\$8.93	NA
Ripper Operating Cost/Hour:	\$7.78	100
Operator Cost/Hour:	\$41.52	NA
Total Unit Cost/Hour:	\$225.20	
Total Fleet Cost/Hour:	<b>\$450.40</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 10.00 acres Rip Depth (ft): 2.00 Volume: 32,267 BCY or CCY

Source of estimated quantity: Onsite observations

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 2.56 mph  
Average Ripping Width: 7.08 degrees  
Average Ripping Length: 250.00 feet  
Average Dozer Speed: 88.00 feet  
Average Maneuver Time: 0.25 feet  
Production per unit area: 0.789 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.789 Acres/hr  
Site Altitude: 5,350 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: **1.31** Acres/hr

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **7.64** Hours

Unit cost: \$343.985 Per acre Total job cost: **\$3,440**

**WHEEL LOADER – LOAD AND CARRY WORK**Task description: Mining Area B-Transport TopsoilSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 04BState: ColoradoAbbreviation: NoneDate: 2/26/2019County: GarfieldFilename: M113-04bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: CAT 950HAttachment 1: ROPS CabHorsepower: 197Shift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		Utilization %
Ownership Cost/Hour:	\$26.14	NA
Operating Cost/Hour:	\$30.84	100
Operator Cost/Hour:	\$40.90	NA
Total Unit Cost/Hour:	\$97.89	
Total Fleet Cost/Hour:	\$195.78	

**MATERIAL QUANTITIES**Initial volume: 12,100

CCY

Swell factor: 1.115Loose volume: 13,492

LCY

Source of estimated volume: 12 ac @ 9" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.500 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Material 3/4" to 6" diameter 0.00	0.000	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high or less 0.01	0.010	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
Net Cycle Time Adjustment:		-0.070	minutes
Adjusted Basic Cycle Time:		0.430	minutes

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

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	250	0.00	8.00	8.00	0.2899	(Cat HB)
Return Route:	250	0.00	8.00	8.00	0.2629	(Cat HB)

Total Travel Time: 0.5529 minutes  
 Total Cycle Time: 0.9829 minutes

Load Bucket Capacity

Rated Capacity: 4.30 LCY (heaped)  
 Bucket Fill Factor: 0.875 Loose material - 1/2" to 3/4" (85 - 90%) 0.875  
 Adjusted Capacity: 3.76 LCY

Job Condition Correction Factors

Site Altitude: 5350 feet

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

Unadjusted Hourly Unit Production: 229.68 LCY/Hour  
 Adjusted Hourly Unit Production: 190.64 LCY/Hour  
 Adjusted Hourly Fleet Production: 381.27 LCY/Hour

JOB TIME AND COST

Fleet size: 2 Loader(s) Total job time: 35.39 Hours  
 Unit cost: \$0.513 /LCY Total job cost: \$6,928

**BULLDOZER WORK**Task description: Mining Area A-Spread TopsoilSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 04CState: ColoradoAbbreviation: NoneDate: 2/26/2019County: GarfieldFilename: M113-04cUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$208.49Total Fleet Cost/Hour: **\$416.99****MATERIAL QUANTITIES**Initial Volume: 12,100Swell factor: 1.000Loose volume: **12,100 LCY**Source of estimated volume: 12 ac @ 9"Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 50 feetUnadjusted hourly production: 1,400.0 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 5,350 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**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:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6544

Adjusted unit production: 916.16 LCY/hr

Adjusted fleet production: **1832.32** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.228/LCY

Total job time: **6.60** Hours

Total job cost: **\$2,754**

**REVEGETATION WORK**Task description: Mining Area A-Reveg 10 acSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 04DState: ColoradoAbbreviation: NoneDate: 2/26/2019County: GarfieldFilename: M113-04dUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

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

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	1.50	4.86	\$11.63
Big Bluegrass - Sherman	1.00	20.66	\$7.68
Intermediate Wheatgrass - Rush	1.50	3.20	\$5.76
Milk Vetch, Cicer - Lutana	0.50	1.66	\$4.20
Western Wheatgrass - Arriba	1.50	3.79	\$12.42
Needlegrass, Green - Lodorm	0.50	2.08	\$2.49
Sage, Fringed	0.25	20.89	\$10.50
Saltbush, Shadscale	0.50	0.75	\$5.12
Penstemon, Rocky Mountain	0.25	3.92	\$7.55

<b>Totals Seed Mix</b>	7.50	61.81	<b>\$67.34</b>
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**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Herbicide - Glyphosate (Journey)@ 1.0 pt/ac	1.00	ACRE	\$4.26	\$4.26
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$583.07</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
<b>Total Mulch Application Cost/Acre</b>	<b>\$234.78</b>

**NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres:	10	Cost /Acre:	\$1,223.48
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,223.48
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	<b>\$12,234.80</b>		
Reseeding Job Cost:	<b>\$3,058.70</b>		
Total Job Cost:	<b>\$15,294</b>		
Job Hours:	<b>13.00</b>		

## BULLDOZER RIPPING WORK

Task description: Mining Area B-Rip compacted areas

Site: Mamm Creek Sand & Gravel

Permit Action: 2019-02

Permit/Job#: M2000113

### PROJECT IDENTIFICATION

Task #: 05A

State: Colorado

Abbreviation: None

Date: 2/21/2019

County: Garfield

Filename: M113-05a

User: ACY

Agency or organization name: DRMS

### HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU  
Ripper Attachment: 3-Shank Ripper

Horsepower: 310

Shift Basis: 1 per day

Data Source: (CRG)

#### Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper Ownership Cost/Hour:	\$8.93	NA
Ripper Operating Cost/Hour:	\$7.78	100
Operator Cost/Hour:	\$41.52	NA
Total Unit Cost/Hour:	\$225.20	
Total Fleet Cost/Hour:	<b>\$450.40</b>	

### MATERIAL QUANTITIES

Selected estimating method: Area

#### Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA  
Area: 2.00 acres Rip Depth (ft): 2.00 Volume: 6,453 BCY or CCY

Source of estimated quantity: Onsite observations

### HOURLY PRODUCTION

#### Seismic:

Seismic Velocity: NA feet/second

#### Area:

Average Ripping Depth: 2.56 mph  
Average Ripping Width: 7.08 degrees  
Average Ripping Length: 250.00 feet  
Average Dozer Speed: 88.00 feet  
Average Maneuver Time: 0.25 feet  
Production per unit area: 0.789 acres/hour

#### Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.789 Acres/hr  
Site Altitude: 5,350 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: **1.31** Acres/hr

### JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: **1.53** Hours

Unit cost: \$343.985 Per acre Total job cost: **\$688**

**BULLDOZER WORK**Task description: Mining Area B- topsoil applicationSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 05BState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-05bUser: ACYAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$93.62	NA
Operating Cost/Hour:	\$73.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.52	NA

Total unit Cost/Hour: \$208.49Total Fleet Cost/Hour: **\$416.99****MATERIAL QUANTITIES**Initial Volume: 2,420Swell factor: 1.115Loose volume: **2,698** LCYSource of estimated volume: 2 ac at 9" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly production: 1,017.1 LCY/hrMaterials consistency description: Consolidated stockpile 1.0Average push gradient: 0 %Average site altitude: 5,350 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**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:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5453

Adjusted unit production: 554.62 LCY/hr

Adjusted fleet production: **1109.24** LCY/hr

### **JOB TIME AND COST**

Fleet size: 2 Dozer(s)

Unit cost: \$0.376/LCY

Total job time: **2.43** Hours

Total job cost: **\$1,014**

**REVEGETATION WORK**Task description: Mining Area B-Reveg 1 acSite: Mamm Creek Sand & GravelPermit Action: 2019-02Permit/Job#: M2000113**PROJECT IDENTIFICATION**Task #: 05CState: ColoradoAbbreviation: NoneDate: 2/21/2019County: GarfieldFilename: M113-05cUser: ACYAgency or organization name: DRMS**FERTILIZING****Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

**TILLING**

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

**SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	1.50	4.86	\$11.63
Big Bluegrass - Sherman	1.00	20.66	\$7.68
Intermediate Wheatgrass - Rush	1.50	3.20	\$5.76
Milk Vetch, Cicer - Lutana	0.50	1.66	\$4.20
Western Wheatgrass - Arriba	1.50	3.79	\$12.42
Needlegrass, Green - Lodorm	0.50	2.08	\$2.49
Sage, Fringed	0.25	20.89	\$10.50
Saltbush, Shadscale	0.50	0.75	\$5.12
Penstemon, Rocky Mountain	0.25	3.92	\$7.55

<b>Totals Seed Mix</b>	7.50	61.81	<b>\$67.34</b>
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**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

<b>Description</b>	<b>Units / Acre</b>	<b>Unit</b>	<b>Cost / Unit</b>	<b>Cost /Acre</b>
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$2.81	\$2.81
Herbicide - Glyphosate (Journey)@ 1.0 pt/ac	1.00	ACRE	\$4.26	\$4.26
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				<b>\$583.07</b>

**Application**

<b>Description</b>	<b>Cost /Acre</b>
Crimping, with tractor {DMG survey data}	\$68.78
Power mulcher (MEANS 32 91 13.16 0350)	\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]	\$73.22
<b>Total Mulch Application Cost/Acre</b>	<b>\$234.78</b>

**NURSERY STOCK PLANTING**

<b>Common Name</b>	<b>No / Acre</b>	<b>Type and Size</b>	<b>Planting Cost</b>	<b>Fertilizer Pellet Cost</b>	<b>Cost /Acre</b>
					\$
<b>Totals Nursery Stock Cost / Acre</b>					<b>\$0.00</b>

**JOB TIME AND COST**

No. of Acres:	2	Cost /Acre:	\$1,223.48
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,223.48
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	<b>\$2,446.96</b>		
Reseeding Job Cost:	<b>\$611.74</b>		
Total Job Cost:	<b>\$3,059</b>		
Job Hours:	<b>2.50</b>		



**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Initial Mobilization**Site: **Mamm Creek Sand & Gravel**Permit Action: **2019-02**Permit/Job#: **M2000113****PROJECT IDENTIFICATION**

Task #: **06A** State: **Colorado** Abbreviation: **None**  
 Date: **2/26/2019** County: **Garfield** Filename: **M113-06a**  
 User: **ACY**

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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

**NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Grove RT760E, 110', 54.40 MT	42.34	\$49.52	\$117.55	1	\$167.07	\$117.55	\$250.00
Cat 385C L 18'-1" Stick	95.42	\$145.41	\$125.45	1	\$270.86	\$125.45	\$250.00
CAT 950H	20.13	\$26.14	\$88.67	2	\$229.62	\$177.34	\$500.00
CAT 973D	29.07	\$60.01	\$117.55	1	\$177.56	\$117.55	\$250.00
Cat D8T - 8SU	53.08	\$102.55	\$125.45	2	\$456.00	\$250.90	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Submersible pump - 460v, 8 in.	0.70	\$7.31	\$88.67	1	\$95.98	\$88.67	\$250.00

Subtotals: **\$1,598.30** **\$1,054.80** **\$2,500.00**

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
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Light Duty Pickup, 4x4, 1 T. Crew	\$79.11	1	\$79.11	\$79.11
Flatbed Truck, 4x2, 15K GVW	\$48.68	1	\$48.68	\$48.68
Generic 15-18 cy, 6x4	\$107.68	3	\$323.04	\$323.04

Subtotals: **\$450.83** **\$450.83**

### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: RIFLE, CO  
 Total one-way travel distance: 5.00 miles  
 Average Travel Speed: 50.00 mph

Total Non-Roadable Mob/Demob Cost \* \$8,727.22  
 '\* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$90.17  
 '\*\* one round trip, no haul rig:

### **Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.10	0.10
Return Time (Hours):	0.10	0.10
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.20	0.20

### **JOB TIME AND COST**

Total job time: 2.40 Hours

Total job cost: \$8,817

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Secondary Mobilization**Site: **Mamm Creek Sand & Gravel**Permit Action: **2019-02**Permit/Job#: **M2000113****PROJECT IDENTIFICATION**

Task #: **06B** State: **Colorado** Abbreviation: **None**  
 Date: **2/26/2019** County: **Garfield** Filename: **M113-06b**  
 User: **ACY**

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:**

<b>Available Rig Capacities</b>	<b>0-25 Tons</b>	<b>26-50 Tons</b>	<b>51+ Tons</b>
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

**NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Subtotals:					<b>\$201.21</b>	<b>\$177.34</b>	<b>\$500.00</b>

**ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 4x2, 15K GVW	\$48.68	1	\$48.68	\$48.68
Subtotals:			<b>\$48.68</b>	<b>\$48.68</b>

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: RIFLE, CO  
 Total one-way travel distance: 5.00 miles  
 Average Travel Speed: 50.00 mph

Total Non-Roadable Mob/Demob Cost \* \$1,478.13  
 \* two round trips with haul rig:  
 Total Roadable Mob/Demob Cost \*\* \$9.74  
 \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.10	0.10
Return Time (Hours):	0.10	0.10
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.20	0.20

**JOB TIME AND COST**

Total job time: 2.40 Hours

Total job cost: \$1,488





Mamm Creek Aggregates

433.82 acres

**RECEIVED**

*m2008-113*

OCT 27 2015

Imagery © 2013 ESRI, i-cubed, USDA FSA, USGS, et al  
Map Created: October 10, 2013

DIVISION OF RECLAMATION  
MINING AND SAFETY



0 1,000 2,000 3,000 4,000 Feet