

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

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

Amy C. Yeldell

Environmental Protection Specialist

cc: Barbara J. Coria, DRMS

Amy Geldell

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 #:ACYState:ColoradoAbbreviation:NoneDate:2/21/2019County:GarfieldFilename:M113-ACY

User: ACY

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fle et 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
		<u>SUBTO</u>	TALS:	327.03	\$144,932

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:2.02Total =\$2,928Performance bond:1.05Total =\$1,522Job superintendent:105.00Total =\$7,670

Profit: 10.00 $Total = \frac{\$14,493}{\$26,613}$

TOTAL O & P = $\frac{$26,613}{$171,545}$

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

Cost Summary	Worksheet	Cont'd
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Task # ACY

Page 2 of 2

CONTINGENCY: 0.00

Total = __\$0

TOTAL INDIRECT COST = \$43,684

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

DEMOLITION WORK

Site:	Mamm Creek Sand & Gr	avel	Permit Action:	2019-02	Permit/.	Job#: _	M2000113
OJEC	T IDENTIFICATION						
Γask #:	01A	State:	Colorado		Abbreviation:	None	e
Date:	2/21/2019	County:	Garfield		Filename:	M113	3-01a
User:	ACY						

<u>UNIT COSTS</u> <u>Location adjustment: 102.20 %</u>

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

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	80.00	(unadjusted):	\$53,171.72	location):	\$54,341.50

DEMOLITION WORK

Mining Area E-Removal of Asphalt and Propane tank

Task description:

Site:	Mamm Creel	k Sand & Gravel	Permit Action: 2019-0	02	Pe	ermit/Job#: _	M2000113
PROJEC	T IDENTIE	FICATION					
Task #: Date: User:	02A 2/21/2019 ACY Agency	St Cou			Abbreviat Filena		
UNIT CO	<u>STS</u>				Location	adjustment:	: 95.50 <u>%</u>
	re or Item ription	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Demo aspl	halt pad	250' x 250'	Pavement, bituminous, demolition only - 4 in. to 6 in. thick	3,472.20	SY	\$7.00	\$24,305.40
Load aspha offsite disp		31250 cu ft	Loading only, open areas (unconfined) - Track loader	1,158.00	CY	\$0.47	\$544.26
Haul aspha Pit for Dis	alt to Casey posal	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 Ho	ours:4	1 0.00	Subtotal (unadjusted): \$27,	,252.06	(adji	otal Cost usted for ocation):	\$26,025.72

BULLDOZER RIPPING WORK

	Task description:	Mini	ng Area E-Rip compacto	ed areas				
Site:	Mamm Creek	Sand & Grave	Permit Action:	2019-02	Permit	/Job#: _	M2000113	
	PROJECT IDI	ENTIFICATI	<u>ON</u>					
	Task #: 02I	В	State: Colorado		Abbrevia	tion:	None	
		1/2019	County: Garfield		Filen		M113-02b	
	User: AC	CY						
	Agency	or organization	name: DRMS					<u> </u>
	HOURLY EQ	UIPMENT CO	<u>OST</u>					
	Basic 1	Machine: Cat	D8T - 8SU		Horsepower:	31	10	
	Ripper Att	achment: 3-S	hank Ripper		Shift Basis:		r day	- -
					Data Source:	(CF	RG)	_
	Cost Breakdown:	<u>!</u>		,				
			~~	40.0.10	Utilization %			
		Ownership Co		\$93.62	NA 100			
	Rinne	Operating Co er Ownership Co		\$73.35 \$8.93	100 NA			
		per Operating Co		\$7.78	100			
	тарь	Operator Co		\$41.52	NA			
		Total Unit Co		\$225.20				
		Total Fleet Co	ost/Hour: \$450	.40				
	MATERIAL C	DUANTITIES	Sala	cted estimating	method: Area			
	Alternate Method		Sele	cted estimating	method. Area			
		113.	Bank Volume:	NI A	ВСҮ	N	T.A.	
Seismic: Area:	NA 2.50	acres	Rip Depth (ft):	NA 2.00	Volume: 8,067		IA Bo	CY or CC
			nated quantity: Onsite					
	HALIDI V DDA		marca quantity.	ooser vacions				_
	HOURLY PRO	<u>JDUCTION</u>						
	Seismic:	9	Seismic Velocity:	NA	feet/second			
			Jeishine velocity.	1171				
	Area:	Aviano	a Dinnina Danth	2.56	mah			
			e Ripping Depth: e Ripping Width:	2.56 7.08	mph degrees			
		_	Ripping Length:	250.00	feet			
			age Dozer Speed:	88.00	feet			
			Maneuver Time:	0.25	feet			
		Product	tion per unit area:	0.789	acres/hour			
	Job Condition Co	orrection Factors						
	Un	adjusted 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			
			Hourly Fleet Production:	1.31	Acres/hr			
	JOB TIME AN	ND COST						
	Fleet size:	2	Grader(s)	Total job time	e: 1.91		Hours	;
	Fleet size:	2	Grader(s)	Total job time	e: 1.91		Hours	;

BULLDOZER WORK

Task description:	Mining Area	E- Grade misc	. stockpiles		
Mamm Creek Sand	& Gravel	Permit Action:	2019-02	Permit/Job#:	M2000113
PROJECT IDENTI	FICATION				
Task #: 02C	Sta	te: Colorado		Abbreviation:	None
Date: 2/21/2019				Filename:	M113-02c
User: $\frac{2/21/2015}{ACY}$	Count	y. Garriera		Thename.	141113 020
		DD146			
Agency or org	anization name: _	DRMS			
HOURLY EQUIPM	ENT COST				
	at D8T - 8SU				
1	10				
	emi-Universal		<u></u>		
	A		<u> </u>		
	per day		<u>—</u>		
Data Source: (0	CRG)		<u>—</u>		
Cost Breakdown:					
			<u>Utilization %</u>		
Ownership Cost/Hour	<u> </u>	\$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:	\$208.49				
Total Fleet Cost/Hour:	\$416.99				
MATERIAL QUAN	1111ES				
Initial Volume: 50	0				
Swell factor: 1.0	060				
Loose volume: 530	0 LCY				
Source of estimated vol	uma: Divis	on of Paglamet	ion, Mining & Safety		
Source of estimated voi		andbook	ion, winning & Safety		
bource of estimated swe	in factor. Cat 11	andoook			
HOURLY PRODUC	TION				
HOUKLIIKODU	<u> </u>				
Average push distance:	50 feet				
Unadjusted hourly prod	uction: <u>1,400.0</u>	LCY/hr			
Materials consistency d	escription: Con	solidated stock	pile 1.0		
Average push gradient:	0 %				
Average site altitude:	5,350 feet				
11, etage site annuace.					
Material weight:	2,900 lbs/LCY				
Weight description:	Sand and grave	el - Dry			
Job Condition Correction	on Factor		Source		
Operato		0.750	(AVG.)		
Material consi		1.000	(CAT HB)		
Dozing m		1.000	(GEN.)		
Vis	ibility:	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 A	Area E- topsoil appl	ication		
: Mamm Creek Sa	nd & Gravel	Permit Action:	2019-02	Permit/Job#:	M2000113
PROJECT IDEN	TIFICATION				
Task #: 02D		State: Colorado		Abbreviation:	None
Date: $\frac{02D}{2/21/2}$	019	County: Garfield		Filename:	M113-02d
User: ACY					
Agency or	organization nam	e: DRMS			
HOURLY EQUI					
Basic Machine:	Cat D8T - 8SU	•			
Horsepower:	310				
Blade Type:	Semi-Universal		<u> </u>		
Attachment:	NA				
Shift Basis:	1 per day		<u> </u>		
Data Source:	(CRG)				
Cost Breakdown:					
			<u>Utilization %</u>		
Ownership Cost/Ho		\$93.62	NA		
Operating Cost/Ho		\$73.35	100		
Ripper own. Cost/He		\$0.00	NA 0		
Ripper op. Cost/He		\$0.00	0		
Operator Cost/Ho	our:	\$41.52	NA		
Total unit Cost/Hour	r: \$208.49				
Total Fleet Cost/Hou					
MATERIAL QUA Initial Volume: Swell factor:	3,630 1.115				
Loose volume: _	4,047 LCY				
Source of estimated	_	ac at 9" depth			
Source of estimated	swell factor:C	Cat Handbook			
HOURLY PROD	<u>UCTION</u>				
Average push distan		feet			
Unadjusted hourly p		00.0 LCY/hr			
Materials consistenc	y description:	Consolidated stocky	pile 1.0		
Average push gradie Average site altitude		<u> </u>			
Material weight:	2,100 lbs/	LCY			
Weight description:	Earth - Lo	oam			
Job Condition Corre	ction Factor		Source		
Oper	ator Skill:	0.750	(AVG.)		
Material co		1.000	(CAT HB)		
	g 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 ac				
Site: M	amm Creek Sand &	k Gravel Pe	rmit Action:	2019-02	Permit/Job	#: <u>M2000113</u>	
PRO	JECT IDENTIFI	<u>CATION</u>					
T	ask #: 02E	State:	Colorado		Abbreviation:	None	
	Date: 2/21/2019	County:	Garfield		Filename:	M113-02e	

User: ACY

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 Disa horrowing 6" doop (MEANS 22.01.12.23.6100)	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

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

Total Seed Application Cost/Acre

\$232.00

	Totals Seed Mix	7.50	61.81	\$67.34
Application				
Description				Cost /Acre
Drill Seeding (DRMS Survey Cost)				\$232.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
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
Total Mulch Materials Cost/Acre				\$583.07

Application

Description		Cost /Acre
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
	Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	k Cost / Acre	\$0.00

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: \$3,670.44

Reseeding Job Cost: \$917.61

Total Job Cost: \$4,588

Job Hours: 5.00

PUMPING WORK

		ewater pon			
e: Mamm Creek Sand & G	ravel Perm	nit Action:	2019-02	Permit/Job#:	M2000113
PROJECT IDENTIFICA	ATION				
Task #: 03A	State:	Colorado		Abbreviation:	None
Date: 2/21/2019	County:	Garfield		Filename:	M113-03a
User: ACY					
Agency or organiza	ation name: DRI	MS			
HOURLY EQUIPMENT	Γ COST				
•	Description			Quantity	
	Submersible pump -	- 460v, 8 in		3	
	Suction hose - 6 in.			3	
	Discharge hose - 6 i	n. D., 25 ft.		24	
Labor Unit 1: P	ump operator			1	
Horsepower: 95	i				
Shift Basis: 1 per	day				
Weight: 0.7					
(US T	ons)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hou			NA		
Operating Cost/Hou			100		
Operator Cost/Hou			NA		
Total Unit Cost/Hou	ır: \$95.15	<u> </u>			
Total Fleet Cost/Ho	ur: \$95.1	5			
PUMPING QUANTITII	ES				
		00		Conversion factor:	325850.5800
Initial Pond Volume	e: 195.0)()		Conversion tactor	323830.3800
		<i>(</i> 2 10	- gallons	conversion factor.	
Final Pond Volume	e: 63,540,8	63.10	gallons		
Final Pond Volume Total Pond Inflow Surfac	e: 63,540,8		_ 0	Unit inflow rate in	
Final Pond Volume	e: 63,540,8 ee a: 40,00		gallons Sq. ft.		0.1758
Final Pond Volume Total Pond Inflow Surfac Area	e: 63,540,8 ee a: 40,00	00	_ 0	Unit inflow rate in	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volum per Hou	e: 63,540,8 ce a: 40,00	.00	Sq. ft.	Unit inflow rate in gph/sq. ft.:	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volum per Hou	e: 63,540,8 ee a: 40,00 ne r: 7,032.	.00	Sq. ft.	Unit inflow rate in gph/sq. ft.:	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volum per Hou Source of e	e: 63,540,8 ee a: 40,00 ne r: 7,032. estimated volume:	00 .00 13 ac por	Sq. ft. gallons d, pumped down 12	Unit inflow rate in gph/sq. ft.:	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima	e: 63,540,8 ee a: 40,00 ne r: 7,032. estimated volume: um Pump Capacity	00 .00 	Sq. ft. gallons d, pumped down 1:	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxim Estin	e: 63,540,8 ee a: 40,00 ne r: 7,032. estimated volume: um Pump Capacity nated Suction Head	00 .00 	Sq. ft. gallons d, pumped down 1: 170,000 10	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxim Estin	e: 63,540,8 ee a: 40,00 ne r: 7,032 estimated volume: um Pump Capacity nated Suction Head ed Discharge Head	00 	Sq. ft. gallons d, pumped down 1:	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volum per Hou Source of e PUMPING TIME Maxima Estimat	e: 63,540,8 ee a: 40,00 ne r: 7,032. estimated volume: um Pump Capacity nated Suction Head	00 00 13 ac por	Sq. ft. gallons d, pumped down 1: 170,000 10 10	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima Estimat	e: 63,540,8 ee a: 40,00 ne r: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head	00 .00 	Sq. ft. _ gallons id, pumped down 1: 170,000 10 10 20	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet feet	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima Estimat	e: 63,540,8 ee a: 40,00 ne r: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity	00 .00 	Sq. ft. gallons d, pumped down 1: 170,000 10 10 20 168,000	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump	
Final Pond Volume Total Pond Inflow Surfac Area Total Pond Inflow Volum per Hou Source of e PUMPING TIME Maxim Estim Estimat	e: 63,540,8 ee a: 40,00 ne r: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity	00 .00	Sq. ft. gallons d, pumped down 1: 170,000 10 10 20 168,000	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxim Estin Estimat C Adjusted Initial Unadjust	e: 63,540,8 e: 40,00 e: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time	00 .00 .00	Sq. ft. gallons 170,000 10 10 20 168,000 5,330 504,000 126.07	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph/pump get gph hours	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxime Estimat Co Adjusted Initial Unadjust Inflow duri	e: 63,540,8 e: 40,00 e: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time ing Initial Pumping	00	Sq. ft. gallons 170,000 10 10 20 168,000 5,330 504,000 126.07 886,546	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph/pump feet gph/pump feet	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxime Estimat Co Adjusted Initial Unadjust Inflow durin Net Unadjust Area Area Area Area Area Area Adjusted Inflow durin Net Unadjust Area Area Area Area Area Area Area Area Adjusted Inflow durin Net Unadjust Area Area Area Area Area Area Adjusted Inflow durin Net Unadjust Area Area Area Area Area Area Adjusted Inflow durin Net Unadjust Area Area Area Area Area Area Adjusted Inflow durin Net Unadjust Area Area Area Area Area Area Area Adjusted Inflow durin Net Unadjust Area Are	e: 63,540,8 e: 40,00 e: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time ing Initial Pumping sted Pumping Time	00	Sq. ft. gallons d, pumped down 1: 170,000 10 10 20 168,000 5,330 504,000 126.07 886,546 127.83	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph/pump feet gph hours gallons Hours	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima Estimat Color Adjusted Initial Unadjust Inflow duri Net Unadjust Altitude	e: 63,540,8 e: 40,00 e: 7,032. estimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time ing Initial Pumping sted Pumping Time Adjustment Factor	00	Sq. ft. gallons 170,000 10 10 20 168,000 5,330 504,000 126.07 886,546 127.83 1.0000	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph/pump feet gph hours gallons Hours (3% rule)	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima Estimat Co Adjusted Initial Unadjust Inflow duri Net Unadjus Altitude Pump	e: 63,540,8 ee a: 40,00 ne r: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time ing Initial Pumping sted Pumping Time Adjustment Factor p Efficiency Factor	00	Sq. ft. gallons 170,000 10 10 20 168,000 5,330 504,000 126.07 886,546 127.83 1.0000 0.9167	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph hours gallons Hours (3% rule) (55 min./hr.)	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima Estimat Co Adjusted Initial Unadjus Inflow duri Net Unadjus Altitude Pump Total Adjusted	e: 63,540,8 e: 40,00 e: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time ing Initial Pumping sted Pumping Time Adjustment Factor p Efficiency Factor sted Pumping Time	00	Sq. ft. gallons 170,000 10 10 20 168,000 5,330 504,000 126.07 886,546 127.83 1.0000	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph/pump feet gph hours gallons Hours (3% rule)	
Final Pond Volume Total Pond Inflow Surface Area Total Pond Inflow Volume per Hou Source of e PUMPING TIME Maxima Estimat Co Adjusted Initial Unadjust Inflow duri Net Unadjus Altitude Pump	e: 63,540,8 e: 40,00 e: 7,032. stimated volume: um Pump Capacity nated Suction Head ed Discharge Head Total Head PB Pump Capacity Site Altitude Pumping Capacity sted Pumping Time ing Initial Pumping sted Pumping Time Adjustment Factor p Efficiency Factor sted Pumping Time	00	Sq. ft. gallons 170,000 10 10 20 168,000 5,330 504,000 126.07 886,546 127.83 1.0000 0.9167	Unit inflow rate in gph/sq. ft.: 5 ft deep gph/pump feet feet feet gph/pump feet gph hours gallons Hours (3% rule) (55 min./hr.) hours	

BULLDOZER WORK

Task description: Mi	ning Area C-Grading slop	es adjacent to river an	d pad	
: Mamm Creek Sand & Grav	vel Permit Action:	2019-02	Permit/Job#:	M2000113
PROJECT IDENTIFICAT	<u>ION</u>			
Task #: 03B	State: Colorado		Abbreviation:	None
Date: 2/21/2019	County: Garfield		Filename:	M113-03b
User: ACY	· · · · · · · · · · · · · · · · · · ·		-	
Agency or organization	on name: DRMS			
HOURLY EQUIPMENT (COST			
Basic Machine: Cat D8T	- 8SU			
Horsepower: 310		<u> </u>		
Blade Type: Semi-Uni	versal	<u> </u>		
Attachment: NA Shift Basis: 1 per day				
Data Source: (CRG)		<u> </u>		
Cost Breakdown:	İ	TT. TI Ar		
Overaghin Cost/Hove	\$93.62	<u>Utilization %</u>		
Ownership Cost/Hour: Operating Cost/Hour:	\$73.35	NA 100		
Ripper own. Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.52	NA		
	· · · · · · · · · · · · · · · · · · ·	1111		
	8.49			
Total Fleet Cost/Hour: \$41	6.99			
MATERIAL QUANTITIE Initial Volume: 3,125 Swell factor: 1.050 Loose volume: 3,281 LCY				
Source of estimated volume: Source of estimated swell facto	3000 LF 15'H 2:1 to 3 Cat Handbook	3:1		
HOURLY PRODUCTION				
Average push distance:	50 feet			
Unadjusted hourly production:	1,400.0 LCY/hr	mbonkmant 0.0		
Materials consistency description		шоанкинені 0.9		
Average push gradient: -10 Average site altitude: 5,35	% 50 feet			
Material weight: 3,40	00 lbs/LCY		<u> </u>	
Weight description: San	d and gravel - Wet			
Job Condition Correction Facto	<u>r</u>	Source		
Operator Skill:	0.750	(AVG.)		
Material consistency:	0.900	(CAT HB))		
Dozing method:	1.000	(GEN.)		
Visibility:	1.000	(AVG.)		

0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.225	(CAT HB)
1.000	(CAT HB)
0.676	(CAT HB)
1.000	(PAT)
	0.800 1.225 1.000 0.676

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	a C-Topsoil grad	led slopes		
: Mamm Creek Sar	nd & Gravel	Permit Action:	2019-02	Permit/Job#:	M2000113
PROJECT IDENT	TIFICATION				
Task #: 03C	St	ate: Colorado		Abbreviation:	None
Date: 2/21/20		-		Filename:	M113-03c
User: ACY		·		-	
Agency or o	organization name:	DRMS			
HOURLY EQUIP	MENT COST				
Basic Machine:	Cat D8T - 8SU		<u> </u>		
Horsepower:	310				
Blade Type: _ Attachment:	Semi-Universal		<u> </u>		
Shift Basis:	NA 1 per day		<u> </u>		
Data Source:	(CRG)				
_	()		<u> </u>		
Cost Breakdown:			<u>Utilization %</u>		
Ownership Cost/Ho	ur:	\$93.62	NA		
Operating Cost/Ho		\$73.35	100		
Ripper own. Cost/Ho		\$0.00	NA		
Ripper op. Cost/Ho		\$0.00	0		
Operator Cost/Ho	ur:	\$41.52	NA		
Swell factor:	1,210 1.115				
Loose volume:	1,349 LCY				
Source of estimated v Source of estimated s		@ 9" Handbook			
HOURLY PRODU	<u>UCTION</u>				
Average push distance Unadjusted hourly pr) LCY/hr			
Materials consistency	description: Co	ompacted fill or e	mbankment 0.9		
Average push gradier Average site altitude:					
Material weight:	2,100 lbs/LC	Y		_	
Weight description:	Earth - Loam				
Job Condition Correct			Source		
	tor Skill:	0.750	(AVG.)		
Material cor		0.900 1.000	(CAT HB))		
	g method: /isibility:	1.000	(GEN.) (AVG.)		
`	1310111ty.	1.000	(AVU.)		

0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
1.225	(CAT HB)
1.000	(CAT HB)
1.095	(CAT HB)
1.000	(PAT)
	0.800 1.225 1.000 1.095

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

Total Fertilizer Materials Cost/Acre

\$0.00

REVEGETATION WORK

7	Γask descri _l	otion:	Mining	g Area C-	Reveg 1	ac			
Site:	te: Mamm Creek Sand & Gravel		Permit Action: 2019-02		02	Permit/Job#: <u>M2000113</u>			
<u>P</u>	<u>ROJECT</u>	<u>IDENTIFIC</u>	CATION	<u>1</u>					
	Task #:	03D		State:	Colora	ıdo		Abbreviation:	None
	Date:	2/21/2019		County:	Garfie	ld		Filename:	M113-03d
	User:	ACY							
	Age ERTILIZ aterials	ency or organi ING	zation na	me: <u>DF</u>	RMS				
	Descripti	on				Units / Acre	Unit	Cost / Unit	Cost /Acre
								\$	\$

Application

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

TILLING

Description CHANG 22 01 12 22 6100		Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)		\$106.29
	Total Tilling Cost/Acre	\$106.29

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

Totals Seed Mix	7.50	61.81	\$67.34
A 11 41			

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
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
Total Mulch Materials Cost/Acre				\$583.07

Application

Description		Cost /Acre
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
	Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
	\$0.00				

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:
Reseeding Job Cost:
Total Job Cost:
Job Hours:

\$1,223.48

\$305.87

\$1,529

2.00

BULLDOZER RIPPING WORK

	Task description	: Min	ing Area A-Rip compact	ed areas				
Site	: Mamm Creek	k Sand & Grav	el Permit Action:	2019-02	Per	mit/Job#	: <u>M20001</u>	13
	PROJECT ID	ENTIFICAT:	<u>ION</u>					
	Task #: 04.	A	State: Colorado	Abbreviation: None				
		21/2019	County: Garfield			lename:	M113-04	a
	User: AC		<u> </u>					
	Agency	Agency or organization name: DRMS						
	HOURLY EQ	HIPMENT C	OST					
					***		210	
			t D8T - 8SU	<u> </u>	Horsepower: _ Shift Basis:	1 .	310	
	Ripper Att	tachment: 3-3	Shank Ripper		Data Source:		per day CRG)	
					Data Source.		CKO)	
	Cost Breakdown	<u>:</u>		ı	TT. 11			
		0	Secret/III e e e	¢02.62	Utilization %			
		Ownership C Operating C		\$93.62 \$73.35	NA 100			
	Rinn	er Ownership C		\$8.93	NA			
		per Operating C		\$7.78	100			
	Kip	Operator C		\$41.52	NA			
		Total Unit C	· · · · · · · · · · · · · · · · · · ·	\$225.20				
		Total Fleet C	Cost/Hour: \$450	1.40				
	3.5.4 555555.5							
	MATERIAL (QUANTITIES	Sele	cted estimating	g method: Area			
	Alternate Method	ds:						
Seismic:	NA		Bank Volume:	NA	BCY		NA	
Area:	10.00	acres	Rip Depth (ft):	2.00	Volume: 32	2,267		BCY or CC
	Source of estimated quantity: Onsite observations							
	HOURLY PR	ODUCTION						
		ODUCTION						
	<u>Seismic:</u>			37.1	0			
			Seismic Velocity:	NA	feet/seco	nd		
	Area:							
		Avera	ge Ripping Depth:	2.56	mph			
			ge Ripping Width:	7.08	degrees			
			e Ripping Length:	250.00	feet			
			rage Dozer Speed:	88.00	feet			
			e Maneuver Time:	0.25	feet			
			ction per unit area:	0.789	acres/hou	ır		
	Job Condition Co	orrection Factor	<u>'S</u>					
	Ur	nadjusted Hourly	y Unit Production:	0.789	Acres/hr			
			Site Altitude:	5,350	feet			
			Altitude Adj:	1.00	(CAT HI	3)		
			Job Efficiency:	0.83	(1 shift/d	ay)		
			Net Correction:	0.83	multiplie	r		
		Adjusted	l Hourly Unit Production:	0.65	Acres/hr			
		Adjusted	Hourly Fleet Production:	1.31	Acres/hr			
	JOB TIME A	ND COST						
	Fleet size:	2	_ Grader(s)	Total job tin	ne: 7 .	.64	Но	urs
	Unit cost:	\$343.985	Per acre	Total job co	ost: \$3	440		

WHEEL LOADER – LOAD AND CARRY WORK

			Area B-Transpor				
Mamm C	reek Sand &	& Gravel	Permit Actio	n: <u>2019-02</u>		Permit/Job#	M2000113
PROJECT	' IDENTIF	ICATION					
Task #:	04B	101111011	State: Calama	1.		Abbreviation:	None
Date:	2/26/2019		State: Colora County: Garfiel			Filename:	M113-04b
User:	ACY		ounty. <u>Garner</u>	u		Pilename.	W1113-040
Age	ency or orga	nization nam	e: DRMS				
HOURLY	EQUIPMI	ENT COST					
Basic	Machine:	CAT 950H			Horsep	ower:	197
	chment 1:	ROPS Cab			Shift 1		per day
	-				Data So		CRG)
Cost Breakdo	own:						
				Utilizatio	on %		
	ership Cost/l		\$26.14	NA			
	erating Cost/		\$30.84	100			
Op	erator Cost/	Hour:	\$40.90	NA			
Tota	l Unit Cost/	Hour:	\$97.89				
Tota	al Fleet Cost	/Hour:	\$195.78	<u></u>			
MATEDIA	LOUANT	PITTE					
MATERIA	L QUAN	LILLES					
			201				
Initial v Loose v		2,100 13,49 2	CCY LCY	Swe	ell factor: 1.	.115	
	volume:	2,100	LCY		ell factor: 1.	.115	
Loose v	volume:	2,100 13,492	LCY volume: 12 ac	Swo @ 9" depth andbook	ell factor: 1.	.115	
Loose v	volume:	2,100 13,492 of estimated	LCY volume: 12 ac	@ 9" depth	ell factor: 1.	.115	
Loose v	Source of es	2,100 13,492 of estimated stimated swel	LCY volume: 12 ac	@ 9" depth	ell factor: 1.	.115	
Loose v	Source of es PRODUC	2,100 13,492 of estimated stimated swel	LCY volume: 12 ac	@ 9" depth andbook			minutes
HOURLY Loader Cycle	Source of es PRODUC	2,100 13,492 of estimated stimated swell FION Unadjuste	LCY volume: 12 ac l factor: Cat H	@ 9" depth andbook			minutes
HOURLY Loader Cycle	Source of es PRODUC' e Time:	2,100 13,492 of estimated stimated swell FION Unadjusted ors	LCY volume: 12 ac l factor: Cat H	@ 9" depth andbook me (load, dum		0.500	
HOURLY Loader Cycle	Source of es PRODUCT Time: Time Factor	2,100 13,492 of estimated stimated swell FION Unadjusted ors	LCY volume: 12 ac l factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or	p, maneuver):	0.500 Factor (min.)	Source
HOURLY Loader Cycle	Source of es PRODUCT e Time: e Time Facto Materia	2,100 13,492 of estimated stimated swell FION Unadjusted ors	LCY volume: 12 ac l factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or	p, maneuver):	0.500 Factor (min.) 0.000	Source (Cat HB)
HOURLY Loader Cycle	Source of es PRODUCT Time: Time Factor Materi Stockpi	2,100 13,492 of estimated swell stimated swell PION Unadjuste ors	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load	p, maneuver):	0.500 Factor (min.) 0.000 0.010	Source (Cat HB) (Cat HB)
HOURLY Loader Cycle	Source of es PRODUCT Time: Time Factor Materi Stockpi ck Ownershi	2,100 13,492 of estimated stimated swell TION Unadjuste ors al: Materi le: Conve ip: Comm on: Consta	volume: 12 ac 1 factor: Cat H ad Basic Cycle Time al 3/4" to 6" diame al 3/4" to 6" diame al 3/4" to 6 to on ownership of to on ownership of to on ownership of to on ownership of to operation -0.04 al target 0.00	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load	p, maneuver):	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
HOURLY Loader Cycle	Source of es PRODUC Time: Time Facto Materi Stockpii ck Ownershi Operatio	2,100 13,492 of estimated stimated swell TION Unadjuste ors al: Materi le: Conve ip: Comm on: Consta	volume: 12 ac l factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load	p, maneuver): less 0.01 lers -0.04 djustment:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle	Source of es PRODUC Time: Time Facto Materi Stockpii ck Ownershi Operatio	2,100 13,492 of estimated stimated swell TION Unadjuste ors al: Materi le: Conve ip: Comm on: Consta	volume: 12 ac l factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load	p, maneuver): less 0.01 lers -0.04 djustment:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
HOURLY Loader Cycle	Source of es PRODUC e Time: e Time Facto Materi Stockpi ck Ownershi Operatio Dump Targ	2,100 13,492 of estimated stimated swell FION Unadjuste ors al: Materi le: Conve ip: Comm on: Consta et: Nomin	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load	p, maneuver): less 0.01 lers -0.04 djustment:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle Cycle	Source of es Source of es PRODUCT e Time: e Time Facto Materi Stockpi ck Ownershi Operatio Dump Targe	2,100 13,492 of estimated swell stimated swell swell swell stimated swell swe	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic C	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle Cycle	Source of es Source of es PRODUCT e Time: e Time Facto Materi Stockpi ck Ownershi Operatio Dump Targ	2,100 13,492 of estimated stimated swell stimated swell stimated swell stimated swell stimated swell stimated swell swe	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj ed dirt, no mainte	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic Cy	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle Cycle Tru Rolling Resis	Source of es Source of es PRODUCT Time: Time Factor Materi Stockpi ck Ownershi Operation Dump Target Stance – Roa Haul: Return:	2,100 13,492 of estimated stimated swell stimated swell stimated swell stimated swell stimated swell stimated swell swe	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic Cy	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle Cycle	Source of es Source of es PRODUCT Time: Time Factor Materi Stockpi ck Ownershi Operation Dump Target Stance – Roa Haul: Return:	2,100 13,492 of estimated stimated swell stimated swell stimated swell stimated swell stimated swell stimated swell swe	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj ed dirt, no mainte	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic Cy	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle Cycle Tru Rolling Resis	Source of es Source of es PRODUCT Time: Time Factor Materi Stockpi ck Ownershi Operation Dump Target Stance – Roa Haul: Return:	2,100 13,492 of estimated stimated swell stimated swell stimated swell stimated swell stimated swell stimated swell swe	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj ed dirt, no mainte	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic Cy	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time:	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes
HOURLY Loader Cycle Cycle Tru Rolling Resis	Source of es Source of es PRODUCT Time: Time Factor Materi Stockpi ck Ownershi Operation Dump Target Stance – Roa Haul: Return:	2,100 13,492 of estimated stimated swell FION Unadjuste ors al: Materi le: Conve ip: Comm on: Consta et: Nomin Soft, rutt Soft, rutt	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj ed dirt, no mainte ed dirt, no mainte	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic Cy nance or water	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time: ; 4" tire penetre, 4" tire penetre	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430 ration 8.0	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes
HOURLY Loader Cycle Cycle Tru Rolling Resis	Source of es Source of es PRODUCT Time: Time Factor Materi Stockpi ck Ownershi Operation Dump Target Stance – Roa Haul: Return:	2,100 13,492 of estimated stimated swell FION Unadjuste ors al: Materi le: Conve ip: Comm on: Consta et: Nomin Soft, rutt Soft, rutt Length	volume: 12 ac I factor: Cat H ed Basic Cycle Tin al 3/4" to 6" diam yor or dozer piled on ownership of t nt operation -0.04 al target 0.00 Net Adj ed dirt, no mainte ed dirt, no mainte ed dirt, no mainte Grade Res.	@ 9" depth andbook me (load, dum eter 0.00 10 ft. high or rucks and load Cycle Time A usted Basic Cy nance or water nance or water	p, maneuver): less 0.01 lers -0.04 djustment: ycle Time: ; 4" tire penetr ; 4" tire penetr	0.500 Factor (min.) 0.000 0.010 -0.040 -0.040 0.000 -0.070 0.430 ration 8.0 ration 8.0 Travel Time	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes minutes

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

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

rieet size. 2 Loader(s) Total lob tille. 33.39	Fleet size:	2	Loader(s)	Total job time:	35.39	Hours
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Unit cost: \$0.513 /LCY Total job cost: \$6,928

BULLDOZER WORK

Task description: Mining Area A-Spread To	psoil
Mamm Creek Sand & Gravel Permit Action	n: Permit/Job#: M2000113
PROJECT IDENTIFICATION	
Task #: 04C State: Colorado	Abbreviation: None
Date: 2/26/2019 County: Garfield	
User: ACY	
Agency or organization name: DRMS	
HOURLY EQUIPMENT COST	
Basic Machine: Cat D8T - 8SU	
Horsepower: 310	
Blade Type: Semi-Universal	
Attachment: NA	
Shift Basis: 1 per day	
Data Source: (CRG)	
Cost Breakdown:	
	Utilization %
Ownership Cost/Hour: \$93.62	
Operating Cost/Hour: \$73.35	
Ripper own. Cost/Hour: \$0.00	
Ripper op. Cost/Hour: \$0.00	0
Operator Cost/Hour: \$41.52	NA NA
Total unit Cost/Hour: \$208.49	
Total Fleet Cost/Hour: \$416.99	
	
MATERIAL QUANTITIES	
Initial Volume: 12,100	
Swell factor: 1.000	
Loose volume: 12,100 LCY	
Source of estimated volume: 12 ac @ 9"	
Source of estimated swell factor: Cat Handbook	
HOURLY PRODUCTION	
Average push distance: 50 feet	
Unadjusted hourly production: 1,400.0 LCY/hr	
Materials consistency description: Loose stockpile 1	1.2
Average push gradient: 0 % Average site altitude: 5,350 feet	
Material weight: 2,100 lbs/LCY	
Weight 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:
Total job cost:

6.60 Hours
\$2,754

REVEGETATION WORK

		g 10 ac			
Mamm Creek Sand & C	Gravel Permit A	Action: 2019	-02	Permit/Job	#: <u>M2000113</u>
OJECT IDENTIFICA	<u>ATION</u>				
Task #: 04D	State: Col	lorado		Abbreviation:	None
Date: 2/26/2019	County: Gar	rfield		Filename:	M113-04d
User: ACY	<u></u>				
Agency or organiza	ation name: DRMS				
RTILIZING PROPERTY OF THE PROP					
terials					
		Units /		G 4/II 4	G 4/A
Description		Acre	Unit	Cost / Unit	
					Cost /Acre
				\$	\$
					\$
				\$ Total Fertilizer Materials	\$
	Task #: 04D Date: 2/26/2019 User: ACY Agency or organiza	Date: 2/26/2019 County: Gar User: ACY Agency or organization name: DRMS RTILIZING terials	Task #: 04D State: Colorado Date: 2/26/2019 County: Garfield User: ACY Agency or organization name: DRMS RTILIZING terials Units /	Task #: 04D State: Colorado Date: 2/26/2019 County: Garfield User: ACY Agency or organization name: DRMS RTILIZING terials Units /	Task #: 04D State: Colorado Abbreviation: Date: 2/26/2019 County: Garfield Filename: User: ACY Agency or organization name: DRMS RTILIZING terials Units /

TILLING

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

Total Fertilizer Application Cost/Acre

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

\$

\$0.00

Totals Seed Mix	7.50	61.81	\$67.34

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
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
Total Mulch Materials Cost/Acre				\$583.07

Application

Description		Cost /Acre
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
	Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

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

JOB TIME AND COST

 No. of Acres:
 10
 Cost /Acre:
 \$1,223.48

 Estimated Failure Rate:
 25%
 Cost /Acre*:
 \$1,223.48

*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$12,234.80

Reseeding Job Cost: \$3,058.70

Total Job Cost: Job Hours: 13.00

BULLDOZER RIPPING WORK

Source of estimated quantity: Onsite observations		Task description:	Minir	ng Area B-Rip compact	ed areas			
Task #: 25A	Site:	: Mamm Creek	Sand & Gravel	Permit Action:	2019-02	Permit/Job	#: <u>M20001</u>	13
Date: 221/2019 County: Garfield Filename: MI13-05a		PROJECT ID	ENTIFICATIO	<u>DN</u>				
Date		Task #: 05	A	State: Colorado		Abbreviation:	None	
User: Act								a
Basic Machine: Cat DBT - 8SU				•				
Basic Machine: Cat DST - 8SU Horsepower: 310 I per day Data Source: (CRG)		Agency	or organization r	name: DRMS				
Ripper Attachment: 3-Shank Ripper		HOURLY EQ	UIPMENT CO	<u>ST</u>				
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day Data Source: (CRG)		Basic	Machine: Cat l	D8T - 8SU		Horsepower:	310	
Cost Breakdown: Ownership Cost/Hour:		Ripper Att	achment: 3-Sh	ank Ripper	<u> </u>		per day	
Ownership Cost/Hour: \$93.62 NA						Data Source:	(CRG)	
Ownership Cost/Hour: \$93.62 NA		Cost Breakdown:	•					
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: \$425.20 Total Fleet Cost/Hour: \$450.40 MATERIAL OUANTITIES Selected estimating method: Area Alternate Methods:			-			Utilization %		
Ripper Ownership Cost/Hour: \$8.9.3						NA		
Ripper Operating Cost/Hour: \$41.52 NA					·			
Operator Cost/Hour: \$225.20								
Total Unit Cost/Hour: \$450.40		Ripp			·			
Total Fleet Cost/Hour: \$450.40						NA NA		
MATERIAL QUANTITIES Alternate Methods: Senic: NA BCY NA Area: NA BCY NA Area: Source of estimated quantity: Onsite observations HOURLY PRODUCTION Seismic: Scismic Velocity: NA feet/second Area: Average Ripping Depth: 2.56 mph Average Ripping Length: 7.08 degrees Average Ripping Length: 2.56 mph Average Ripping Length: 7.08 degrees Average Ripping Length: 2.56 mph Average Ripping Depth: 2.56 mph Average Ripping Width: 7.08 degrees Average Ripping Depth: 2.56 mph Average Rippi			Total Unit Cos	St/Hour:	\$223.20			
Alternate Methods: Smic: NA			Total Fleet Cos	st/Hour: \$45 0	0.40			
Alternate Methods: Smic: NA		MATERIAL (DUANTITIES	Sele	cted estimating	method: Area		
Seismic: NA				Sele	eteu estimating			
Area: 2.00	smic:			Rank Volume	NA	BCY	NA	
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 Maneuver Time: 0.25 feet Average Maneuver Time: 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			acres				1111	BCY or 0
Seismic: Seismic Velocity: NA feet/second								
Seismic: Seismic Velocity: NA feet/second Area: Average Ripping Depth: Average Ripping Width: Average Ripping Length: Average Ripping Length: 250.00 feet Average Dozer Speed: Average Maneuver Time: Production per unit area: O.789 Job Condition Correction Factors Unadjusted Hourly Unit Production: Site Altitude: Altitude Adj: Alt				ated quantity: Offsite	observations			
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		HOURLY PRO	<u>ODUCTION</u>					
Area: Average Ripping Depth: Average Ripping Width: Average Ripping Length: Average Ripping Length: Average Dozer Speed: Average Maneuver Time: Production per unit area: Unadjusted Hourly Unit Production: Site Altitude Adj: Job Efficiency: Net Correction: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Fleet Production: Adjusted Hourly Fleet Production: JOB TIME AND COST Fleet size: 2 Grader(s) Total job time: 1.53 Hours		Seismic:						
Average Ripping Depth: 7.08 degrees 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			S	eismic Velocity:	NA	feet/second		
Average Ripping Depth: 7.08 degrees 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		Area:						
Average Ripping Width: Average Ripping Length: Average Ripping Length: Average Dozer Speed: Average Maneuver Time: Production per unit area: Unadjusted Hourly Unit Production: Site Altitude: Altitude Adj: Job Efficiency: Net Correction: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: O.789 Acres/hr Site Altitude Adj: 1.00 (CAT HB) Job Efficiency: 0.83 (1 shift/day) Net Correction: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: Adjusted Hourly Unit Production: 1.31 Acres/hr JOB TIME AND COST Fleet size: 2 Grader(s) Total job time: 1.53 Hours			Average	Ripping Depth:	2.56	mph		
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								
Average Maneuver Time: Production per unit area: 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								
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			_					
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			Producti	on per unit area:	0.789	acres/hour		
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		Job Condition Co	orrection Factors					
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		Un	adjusted Hourly	Unit Production:	0.789	Acres/hr		
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				Site Altitude:		feet		
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								
Adjusted Hourly Unit Production: Adjusted Hourly Fleet Production: 1.31 Acres/hr Acres/hr JOB TIME AND COST Fleet size: 2 Grader(s) Total job time: 1.53 Hours								
Adjusted Hourly Fleet Production: 1.31 Acres/hr JOB TIME AND COST Fleet size: 2 Grader(s) Total job time: 1.53 Hours				Net Correction:	0.83	multiplier		
Adjusted Hourly Fleet Production: 1.31 Acres/hr JOB TIME AND COST Fleet size: 2 Grader(s) Total job time: 1.53 Hours			Adjusted I	Hourly Unit Production:	0.65	Acres/hr		
Fleet size: 2 Grader(s) Total job time: 1.53 Hours								
<u> </u>		JOB TIME AN	ND COST					
Unit costs \$242,085 Por core Total ich costs \$600		Fleet size:	2	Grader(s)	Total job tin	ne: 1.53	Но	urs
UTILI COSE - 3.343.796.3 PEL BETE LOBE TODE COSE - MAXX		Unit cost:	\$343.985	Per acre	Total job co	ost: \$688		

BULLDOZER WORK

Task description:	Mining Are	a B- topsoil appli	cation		
: Mamm Creek Sa	nd & Gravel	Permit Action:	2019-02	Permit/Job#:	M2000113
PROJECT IDEN	TIFICATION				
Task #: 05B	St	ate: Colorado		Abbreviation:	None
Date: $\frac{-622}{2/21/20}$				Filename:	M113-05b
User: ACY				-	
Agency or o	organization name:	DRMS			
HOURLY EQUIP	PMENT COST				
Basic Machine:	Cat D8T - 8SU		<u></u>		
Horsepower:	310		<u>—</u>		
Blade Type: _ Attachment:	Semi-Universal		<u> </u>		
Shift Basis:	NA 1 per day		<u> </u>		
Data Source:	(CRG)				
_	(320)		<u> </u>		
Cost Breakdown:		1	<u>Utilization %</u>		
Ownership Cost/Ho	our:	\$93.62	NA		
Operating Cost/Ho		\$73.35	100		
Ripper own. Cost/Ho		\$0.00	NA		
Ripper op. Cost/Ho	our:	\$0.00	0		
Operator Cost/Ho	our:	\$41.52	NA		
Swell factor:	2,420 1.115				
Loose volume:	2,698 LCY				
Source of estimated source of estimated s		at 9" depth Handbook			
HOURLY PROD	<u>UCTION</u>				
Average push distand Unadjusted hourly pr		t 1 LCY/hr			
Materials consistency	y description: C	onsolidated stockp	pile 1.0		
Average push gradie Average site altitude					
Material weight:	2,100 lbs/LC	Y		_	
Weight description:	Earth - Loam	1			
Job Condition Correct		a =	Source		
	ator Skill:	0.750	(AVG.)		
Material con	nsistency: g method:	1.000	(CAT HB)		
			(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

1 ask (description:	Minin	g Area B-	Reveg 1 ac			
: Ma	mm Creek Sar	nd & Gravel	Pe	rmit Action: 2019	0-02	Permit/Job	#: <u>M2000113</u>
PROJ	ECT IDENT	IFICATION	<u>N</u>				
Ι	sk #: 05C Date: 2/21/20 Jser: ACY Agency or or		State: County: ame: DF	Colorado Garfield RMS		Abbreviation:Filename:	None M113-05c
FFRT	II IZING						
FERT Materi	<u>ILIZING</u> als						
Materi				Units / Acre	Unit	Cost / Unit	Cost /Acre
Materi	als				Unit	Cost / Unit	Cost /Acre

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)	\$106.29
Total Tilling Cost/Acre	\$106.29

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

Totals Seed Mix	7.50	61.81	\$67.34

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
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
Total Mulch Materials Cost/Acre				\$583.07

Application

Description		Cost /Acre
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
	Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	k Cost / Acre	\$0.00

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: \$2,446.96

Reseeding Job Cost: \$611.74

Total Job Cost: \$3,059

Job Hours: 2.50

EQUIPMENT MOBILIZATION/DEMOBILIZATION

	-		
Site:	Mamm Creek Sand & Gravel	Permit Action: 2019-02	Permit/Iob#· M2000113

PROJECT IDENTIFICATION

Task description:

Task #:06AState:ColoradoAbbreviation:NoneDate:2/26/2019County:GarfieldFilename: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:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
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

Initial Mobilization

NON ROADABLE EQUIPMENT:

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/uni	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
	(TONS)		t		fleet		
Grove RT760E,	42.34	\$49.52	\$117.55	1	\$167.07	\$117.55	\$250.00
110', 54.40 MT							
Cat 385C L 18'-1"	95.42	\$145.41	\$125.45	1	\$270.86	\$125.45	\$250.00
Stick							
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	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Seeder with							
Tractor							
Power Mulcher	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
(Bowie LD-90)							
Submersible pump	0.70	\$7.31	\$88.67	1	\$95.98	\$88.67	\$250.00
- 460v, 8 in.							

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

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/	Fleet Size	Haul Trip	Return Trip
	unit		Cost/hr/ fleet	Cost/hr/ fleet

Page 2 of 2

Light Duty Pickup, 4x4, 1 T.	\$79.11	1	\$79.11	\$79.11
Crew				
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
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EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:

Total one-way travel distance: Average Travel Speed: RIFLE, CO

5.00 miles

50.00 mph

Total Non-Roadable Mob/Demob Cost *

"* two round trips with haul rig:

\$8,727.22

Total Roadable Mob/Demob Cost **

** one round trip, no haul rig:

\$90.17

<u>Transportation Cycle Time:</u>

Non	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
Subtotals: 1.20

0.50 NA 1.20 0.20

JOB TIME AND COST

Total job time:	2.40	Hours

Total job cost: \$8,817

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Site:	Mamm Creek Sand & Gravel	Permit Action:	2019-02	Permit/Job#:	M2000113	

PROJECT IDENTIFICATION

Task description:

Task #:06BState:ColoradoAbbreviation:NoneDate:2/26/2019County:GarfieldFilename: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:

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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

Secondary Mobilization

NON ROADABLE EQUIPMENT:

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

Subtotals: \$201.21 \$177.34 \$500.00

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: \$48.68 \$48.68

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:

Total one-way travel distance:

Average Travel Speed:

SIFLE, CO
miles
5.00
mph

Transportation Cycle Time:

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

M3008.113 RECEIVED

0 DIVISION OF RECLAMATION MINING AND SAFETY



3,000 2,000 1,000

4,000 Feet