

July 2, 2021

Jason McGraw General Shale Brick, Inc. 1845 W. Dartmouth Ave. Denver, CO 80110

# Re: DDD, Permit No. M-1984-076, Corrective Action - Revised Bond Estimate

Mr. McGraw:

On July 1, 2021, the Division of Reclamation, Mining and Safety (Division) received your comments on the bond estimate provided with the Division's April 20, 2021 inspection report (related to Problem #2 cited for inadequate financial warranty). The Division has revised the bond estimate to incorporate some of your suggestions (see enclosed estimate).

Some of your suggestions included changing the type of equipment used for particular tasks to a smaller size (e.g., D8 dozer to a D6 dozer), which the Division did not implement for all relevant tasks because the suggested change actually increased the costs. The Division did reduce the size of the support equipment dozer for scraper tasks from a D8 dozer to a D6 dozer, reduced the grader size from a 16M to a 14M, changed the grader and water truck utilization for scraper tasks to 50%, used your volume estimates for backfilling the DEB ponds, and removed 300 feet from the DEB cut/fill highwalls task for the western pit highwall which is already graded to 3H:1V. The Division also used a larger sized loader (980H) per your suggestion. These changes did result in a reduction in costs. However, as we discussed on the phone earlier today, the recent annual update to our bond calculating software resulted in some slightly higher costs. Overall, the total bond amount was reduced from \$325,670 (April 16, 2021 estimate) to \$305,289 (July 2, 2021 estimate), which is a reduction of \$20,381.

Please review the enclosed estimate and provide any comments by the corrective action deadline, by **July 2**, **2021**. If additional time is needed to review the estimate, please submit an extension request no later than the current deadline. If you accept the revised estimate, please submit a statement of your acceptance and the Division will consider the Problem # 2 resolved and send a notice of surety increase for the amount shown in the revised estimate. The operator will have 60 days from the date of the surety increase notice to post the additional financial warranty.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at amy.eschberger@state.co.us.

Sincerely,

any Erchluger

Amy Eschberger Environmental Protection Specialist

July 2, 2021 Jason McGraw General Shale Brick, Inc. Page **2** of **2** 

- Encl: Division's revised bond estimate, dated 7/2/2021
- Cc: Harold Stickler, General Shale Brick, Inc. Michael Cunningham, DRMS

# COST SUMMARY WORK

e: <u>DDD</u>	iption.	Pe	ermit Action:	4/13/2021 Inspection-2	Permit/Job#	#: <u>M1984076</u>
PROIFCI	TIDENTIFIC	ATION				
INUJECI						
Task #:	000	State:	Colorado		Abbreviation:	None
Task #: Date:	000 Rev 7/2/202	State: 1 County:	Colorado Elbert		Abbreviation:	None M076-000

#### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	DWR mine - Backfill eastern pit highwalls	DOZER	1	43.73	\$10,337
002	DWR mine - Cut/fill pit highwalls	DOZER	1	11.07	\$2,616
003	DWR mine - Backfill south pit with inert fill	LOADER	2	66.47	\$23,406
004	DWR mine - Rip compacted areas	RIPPER	1	22.93	\$5,997
005	DWR mine - Retopsoil 19.8 acres	SCRAPER1	1	22.39	\$21,929
006	DWR mine - Revegetate 19.8 acres	REVEGE	1	9.90	\$29,895
007	DEB mine - Backfill eastern pit highwalls	DOZER	1	9.84	\$2,326
008	DEB mine - Cut/fill pit highwalls	DOZER	1	8.36	\$1,977
009	DEB mine - Backfill pit with inert fill	LOADER	2	66.47	\$23,406
010	DEB mine - Backfill eastern pond	LOADER	1	31.98	\$5,631
011	DEB mine - Backfill western pond	LOADER	1	4.43	\$781
012	DEB mine - Rip compacted areas	RIPPER	1	26.06	\$6,816
013	DEB mine - Retopsoil 22.5 acres	SCRAPER1	1	34.61	\$33,891
014	DEB mine - Revegetate 22.5 acres	REVEGE	1	11.25	\$33,972
015	Mobilization/demobilization	MOBILIZE	1	14.37	\$34,199
		<u>SUBTO</u>	TALS:	383.86	\$237,179

#### **INDIRECT COSTS**

#### **OVERHEAD AND PROFIT:**

Liability insurance:	2.02	Total =	\$4,791
Performance bond:	1.05	Total =	\$2,490
Job superintendent:	150.00	Total =	\$10,804
Profit:	10.00	Total =	\$23,718
		TOTAL O & P =	\$41,804
		CONTRACT AMOUNT (direct + O & P) = $($	\$278,983

#### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.25	Total =	\$11,857
Reclamation management and/or administration:	5.00		\$13,949
CONTINGENCY:	0.00	Total =	\$0
	TOTA	L INDIRECT COST =	\$68,110

TOTAL BOND AMOUNT (direct + indirect) = \_\_\_\_\_\$305,289

# BULLDOZER WORK

	<b>D</b> 111	a mine - Dae	Mini custeri	pro ingri ( unio		
DDD		Peri	nit Action:	4/13/2021 Inspection-2	Permit/Job#:	M1984076
PROJECT IDEN	TIFICATIO	<u>DN</u>				
Task #:001Date:Rev 7User:AME	/2/2021	State: County:	Colorado Elbert		Abbreviation: Filename:	None M076-001
Agency or	organization	name: DR	MS			
<b>IOURLY EQUI</b>	PMENT CC	DST				
Basic Machine: Horsepower: Blade Type: Attachment: Shift Basis: Data Source:	Cat D8T - 8 310 Semi-Unive NA 1 per day (CRG)	SU rsal				
Cost Breakdown:			I			
Ownership Cost/H	lour:		\$97.46	NA		
Operating Cost/H	our:		\$97.63	100		
Ripper own. Cost/H	our:		\$0.00	NA		
Ripper op. Cost/H	.our:		\$0.00	0		
Operator Cost II			φ+1.50	INA		
Initial Volume: Swell factor: Loose volume:	23,148 1.125 <b>26,042</b> LCY					
- Source of estimated Source of estimated HOURLY PROI	volume: swell factor:	East high Cat Hand	walls 1,000 f book	rt L x 25 ft H		
Gource of estimated Source of estimated HOURLY PROI Average push distar Jnadjusted hourly p	volume: swell factor: DUCTION ice: production:	East high Cat Hand 75 feet 1,017.1 LC	walls 1,000 t book Y/hr	rt L x 25 ft H		
Gource of estimated Source of estimated HOURLY PROI Average push distar Jnadjusted hourly p	volume: swell factor: <u>)UCTION</u> nce: production: cy description:	East high Cat Hand 75 feet 1,017.1 LC	walls 1,000 f book Y/hr dated stockg	rt L x 25 ft H		
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Task # 001

Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.900	(SSD-FC)
Push gradie	nt: 0.903	(CAT HB)
Altitud	de: 1.000	(CAT HB)
Material Weig	ht: 0.868	(CAT HB)
Blade typ	pe: 1.000	(PAT)
Net correction	on: 0.5855	
Adjusted unit production:	595.51 LCY/hr	
Adjusted fleet production:	595.51 LCY/hr	

Fleet size:	1 Dozer(s)
Unit cost:	\$0.397/LCY

Total job time:	43.73 Hours
Total job cost:	\$10,337

# BULLDOZER WORK

14	isk description:	D	wk mme - Cu	t/im pit mgi	Iwans		
:	DDD		Per	mit Action:	4/13/2021 Inspection-2	Permit/Job#:	M1984076
PI	ROJECT IDEN	TIFICA	TION				
	Task #: 002 Date: Rev 7/	/2/2021	State: County:	Colorado Elbert		Abbreviation: Filename:	None M076-002
	A gency or	organizati		RMS			
	Agency of	organizati		KWI3			
H	OURLY EQUI	PMENT	COST				
	Basic Machine:	Cat D87	- 8SU				
	Horsepower:	310					
	Blade Type:	Semi-Ui	niversal				
	Attachment:	NA					
	Shift Basis:	1 per da	У				
	Data Source:	(CRG)					
Co	ost Breakdown:						
					Utilization %		
C	Ownership Cost/H	our:		\$97.46	NA		
	Operating Cost/H	our:		\$97.63	100		
Ri	pper own. Cost/H	our:		\$0.00	NA		
H	Ripper op. Cost/H	our:		\$0.00	0		
	Omenator Cost/II						
	Operator Cost/H	our:		\$41.30	NA		
т.		our:	26.20	\$41.30	NA		
To To	otal unit Cost/Hou otal Fleet Cost/Hou	our: r: \$2 ur: <b>\$2</b>	36.39 <b>36.39</b>	\$41.30	NA		
To To	otal unit Cost/Hou otal Fleet Cost/Hou	our: r: <u>\$2</u> ur: <b>\$2</b>	36.39 <b>36.39</b>	\$41.30	NA		
To To <u>M</u>	otal unit Cost/Hou otal Fleet Cost/Hou IATERIAL QU	our: r:\$2 ur:\$2 ANTITI	36.39 <b>36.39</b> ES	\$41.30	NA		
To To <u>M</u>	otal unit Cost/Hou otal Fleet Cost/Hou (ATERIAL QU) Initial Volume:	our:	36.39 <b>36.39</b> ES	\$41.30	NA		
To To <u>M</u>	otal unit Cost/Hou otal Fleet Cost/Hou IATERIAL QU Initial Volume: Swell factor:	our:	36.39 <b>36.39</b> ES	\$41.30	NA		
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To To To So So So Av Ur Ma	Dial unit Cost/Hourd otal unit Cost/Hourd otal Fleet Cost/Hourd Initial Fleet Cost/Hourd Swell factor: Loose volume: Durce of estimated Durce of estimated OURLY PROD verage push distan nadjusted hourly p aterials consistence verage push gradie verage push gradie	our: $$ r: $$ \$2 ur: $$ \$2 ANTITII 7,813 1.250 9,766 LC volume: swell fact OUCTION ace: production cy descript ent: $\underline{-5}$ e: $\underline{-5}$	36.39 <b>36.39</b> <b>ES</b> Y or: <u>North, W</u> or: <u>Cat Hand</u> N <u>75 feet</u> : <u>1,017.1 LC</u> ion: <u>Compa</u> % 180 feet	\$41.30 		 25 ft H	
To To M I So So So M Ur Ma Ax	Dial unit Cost/Hourd Datal unit Cost/Hourd Datal Fleet Cost/Hourd Initial Volume:	our: $32$ r: $$2$ ur: $$2$ ANTITII 7,813 1.250 9,766 LC volume: swell fact OUCTION ace: oroduction cy descript ent: $-5$ 6,0	36.39 36.39 ES Y North, W or: <u>Cat Hand</u> N <u>75 feet</u> : <u>1,017.1 LC</u> ion: <u>Compa</u> % 280 feet 550 lbc/LCV	\$41.30		25 ft H	
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To To So So So He Ur Ma Av Ur Ma Ma We	Dial unit Cost/Hour Datal unit Cost/Hour Datal Fleet Cost/Hour Datal Fleet Cost/Hour (ATERIAL QU. Initial Volume: Swell factor: Loose volume: Durce of estimated Durce of estimated OURLY PROD verage push distant nadjusted hourly pr aterials consistence verage push gradie verage site altitude aterial weight: reight description:	our: $\_$ r: $\_$ $$2$ ur: $$2$ ANTITII 7,813 1.250 9,766 LC volume: swell fact PUCTIOI cce: production cy descript ent: $\_$ $-5$ e: $\_$ $6,($ De	36.39 <b>36.39</b> <b>ES</b> Y North, W or: Cat Hand N <u>75 feet</u> 1,017.1 LC ion: Compa % 080 feet 550 lbs/LCY ecomposed rock	\$41.30 			
To To To So So Mi Av Ur Mi Av Mi Wo Jol	Dial unit Cost/Hou Datal unit Cost/Hou Datal Fleet Cost/Hou Datal Fleet Cost/Hou (ATERIAL QU. Initial Volume: Swell factor: Loose volume: Durce of estimated Durce of estimated OURLY PROD verage push distant nadjusted hourly provided aterials consistence verage push gradied verage site altituded aterial weight: feight description: b Condition Correct	our: $320$ r: $$2$ ur: $$2$ ANTITII 7,813 1.250 9,766 LC volume: swell fact OUCTION ce: production cy descript ent: $-5$ c: $6,(-2,6)$ Defined extion Fact	36.39 <b>36.39</b> <b>ES</b> Y North, W or: Cat Hand N <u>75 feet</u> 1,017.1 LC ion: Compa % 080 feet 550 lbs/LCY ecomposed rock or	\$41.30 			
To To To So So Av Ur Ma Av Av Ma Ma Ma	Dial unit Cost/Hou Datal unit Cost/Hou Datal Fleet Cost/Hou Datal Fleet Cost/Hou Datal Fleet Cost/Hou Data Fleet Cost/Hou Data Swell factor: Swell factor: Loose volume: Durce of estimated Durce of estimated DURLY PROD verage push distant nadjusted hourly p aterials consistence verage push gradie verage site altitude aterial weight: Geight description: <u>b Condition Corree</u> Open	our: $32$ r: $$2$ ur: $$2$ ANTITII 7,813 1.250 9,766 LC volume: swell fact OUCTION ce: oroduction cy descript ent: $-5$ c: $6,($ 2,6 cetion Fact rator Skill:	36.39 36.39 <b>ES</b> Y North, W Cat Hand N <u>75 feet</u> 1,017.1 LC ion: Compa % 080 feet 550 lbs/LCY ecomposed rock or 1	\$41.30 			
To To To So So Av Ur Ma Av Ma Ma Jol	Dial unit Cost/Hourd Datal unit Cost/Hourd Datal Fleet Cost/Hourd Datal Fleet Cost/Hourd Datal Fleet Cost/Hourd Data Fleet Cost/Hour	our: $32$ r: $$2$ ur: $$2$ ANTITII 7,813 1.250 9,766 LC volume: swell fact OUCTION ce: oroduction cy descript ent: $-5$ c: $-6$ ,( De cetion Fact rator Skill: onsistency:	36.39 36.39 36.39 ES Y North, W Cat Hand N <u>75 feet</u> 1,017.1 LC ion: Compa % 080 feet 550 lbs/LCY ecomposed rock or 1 0	\$41.30 			
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Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 1.000	(DOZ-OC)
Push gradie	nt: 1.115	(CAT HB)
Altitud	le: 1.000	(CAT HB)
Material Weig	ht: 0.868	(CAT HB)
Blade typ	be: 1.000	(PAT)
Net correction	on: 0.8676	
Adjusted unit production:	882.44 LCY/hr	
Adjusted fleet production:	882.44 LCY/hr	

Fleet size:	1 Dozer(s)
Unit cost:	\$0.268/LCY

Total job time:	11.07 Hours
Total job cost:	\$2,616

#### Page 1 of 2

# WHEEL LOADER - LOAD AND CARRY WORK

DDD		Permit Action:	4/13/2021 Inspection	on- Permi	t/Job#:	M1984076
PROJECT IDENTIFI	ICATION					
Task #: 003	State	e: Colorado		Abbrevia	ation:	None
Date: Rev 7/2/202 User: AME	21 Count	y: Elbert		Filer	name:	M076-003
Agency or organ	nization name:	DRMS				
HOURLY EQUIPME	<u>ENT COST</u>					
Basic Machine:	CAT 980H		Но	orsepower:	3	15
Attachment 1:	ROPS Cab		S	hift Basis:	1 pe	r day
			Da	ta Source:	(Cl	RG)
Cost Breakdown:						
			Utilization %			
Ownership Cost/H	Hour: \$6	57.72	NA			
Operating Cost/H	Hour: \$6	67.62	100			
Operator Cost/F	Hour: $\frac{52}{100}$	40.71	NA			
Total Unit Cost/F	Hour: \$1	76.05				
Total Fleet Cost/	Hour: \$3	352.09				
MATERIAL QUANT	<u>'ITIES</u>					
MATERIAL QUANT Initial volume: 22	<u>TTIES</u> 2,500	ССҮ	Swell factor:	1.000		
MATERIAL QUANT Initial volume: 22 Loose volume:	2,500 22,500	CCY	Swell factor:	1.000		
MATERIAL QUANT Initial volume:	<u>TTTES</u> 2,500 22,500	CCY LCY	Swell factor:			
MATERIAL QUANT Initial volume: 22 Loose volume: 5 Source of est	TTIES 2,500 22,500 of estimated volum timated swell fact	CCY LCY ne: Per TR-2 or: Cat Hand	Swell factor: 2 max 45,000 tons ine	1.000 rt fill on site at a	 any time	
MATERIAL QUANT Initial volume: 22 Loose volume: Source o Source of est	TTIES 2,500 22,500 of estimated volum timated swell fact	CCY LCY ne: Per TR-2 or: Cat Hand	Swell factor: 2 max 45,000 tons ine dbook	1.000 rt fill on site at a	any time	
MATERIAL QUANT Initial volume:	TITIES 2,500 22,500 of estimated volum timated swell fact	CCY LCY ne: Per TR-2 or: Cat Hand	Swell factor: 2 max 45,000 tons ine dbook	1.000 rt fill on site at a	any time	
MATERIAL QUANT Initial volume: 22 Loose volume: 5 Source o Source of est HOURLY PRODUCT	TTIES 2,500 22,500 of estimated volum timated swell fact	CCY LCY ne: Per TR-2 or: Cat Hand	Swell factor: 2 max 45,000 tons ine dbook	1.000 rt fill on site at a	any time	
MATERIAL QUANT Initial volume:2 Loose volume: Source o Source of est HOURLY PRODUCT Loader Cycle Time:	TTIES 2,500 22,500 of estimated volum timated swell fact TION Unadjusted Bas	CCY LCY ne: Per TR-2 or: Cat Hand	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv		any time	minutes
MATERIAL QUANT Initial volume:2 Loose volume: Source o Source of est HOURLY PRODUCT Loader Cycle Time: Cycle Time Factor	TTIES 2,500 22,500 of estimated volum timated swell fact TION Unadjusted Bas	CCY LCY ne: Per TR-2 or: Cat Hand	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv	<u>1.000</u> rt fill on site at a ver): <u>0.5</u> Factor (m	any time	minutes Source
MATERIAL QUANT Initial volume:2 Loose volume: Source o Source of est HOURLY PRODUCT Loader Cycle Time: Cycle Time Factor Materia	TTIES         2,500         22,500         of estimated volum         timated swell fact         TION         Unadjusted Base         rs         al:       Bank or broin	CCY LCY ne: Per TR-2 or: Cat Hand sic Cycle Time ken material 0.0	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv 04	<u>1.000</u> rt fill on site at a ver): <u>0.5</u> Factor (m 0.040	550	minutes Source (Cat HB)
MATERIAL QUANT Initial volume: 22 Loose volume:	TTIES 2,500 22,500 of estimated volum timated swell fact TION Unadjusted Bas rs d: Bank or bro e: Dumped by	CCY LCY ne: Per TR-2 or: Cat Hand sic Cycle Time ken material 0.1 truck 0.02	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv 04	<u>1.000</u> rt fill on site at a ver): <u>0.5</u> Factor (m. 0.040 0.020	550	minutes Source (Cat HB) (Cat HB)
MATERIAL QUANT Initial volume:2 Loose volume: Source o Source of est HOURLY PRODUCT Loader Cycle Time: Cycle Time Factor Materia Stockpile Truck Ownership	TTIES 2,500 22,500 of estimated volum timated swell fact TION Unadjusted Bas rs al: Bank or bro e: Dumped by p: Common ov	CCY LCY ne: Per TR-2 or: Cat Hand sic Cycle Time ken material 0. truck 0.02	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv 04 cks and loaders -0.04		550	minutes Source (Cat HB) (Cat HB) (Cat HB)
MATERIAL QUANT Initial volume:2 Loose volume: Source o Source of est HOURLY PRODUCT Loader Cycle Time: Cycle Time Factor Materia Stockpile Truck Ownership Operation Dump Targe	TTIES         2,500         22,500         of estimated volun         timated swell fact         CION         Unadjusted Base         rs         l:       Bank or brode         e:       Dumped by         p:       Common ow         n:       Constant op         at:       Nominal tar	CCY LCY ne: Per TR-2 or: Cat Hand sic Cycle Time ken material 0.1 truck 0.02 vnership of truc eration -0.04 get 0.00	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv 04 cks and loaders -0.04	<u>1.000</u> rt fill on site at a ver): <u>0.5</u> Factor (m. 0.040 0.020 -0.040 0.020 0.020	550 in.)	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
MATERIAL QUANT Initial volume:2 Loose volume: Source o Source of est HOURLY PRODUCT Loader Cycle Time: Cycle Time Factor Materia Stockpile Truck Ownership Operation Dump Targe	TTIES         2,500         22,500         of estimated volum         timated swell fact         CION         Unadjusted Base         rs         al:       Bank or broid         e:       Dumped by         p:       Common ow         n:       Constant op         et:       Nominal tar	CCY LCY ne: Per TR-2 or: Cat Hand sic Cycle Time ken material 0.0 truck 0.02 vnership of truc eration -0.04 get 0.00	Swell factor: 2 max 45,000 tons ine dbook (load, dump, maneuv 04 cks and loaders -0.04	 rt fill on site at a //er): Factor (m  0.040  0.020  -0.040  0.000	550	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

Haul:Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return:Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

#### Haul and Return Time

	Length	Grade Res.	Rolling	Total Res.	Travel Time	Source
	(feet)	(%)	Res. (%)	(%)	(minutes)	bouree
Haul Route:	800	3.00	5.00	8.00	0.8931	(Cat HB)
Return Route:	800	-3.00	5.00	2.00	0.5633	(Cat HB)

		Te T	otal Travel Time: otal Cycle Time:	1.4563 <b>1.9863</b>	minutes minutes
Load Bucket Capacity					
Rated Capacity:	7.50	LCY (heaped)	)		
Bucket Fill Factor:	0.900	Rock - Poorly	Blasted (85%-95	5%) 0.900	
Adjusted Capacity:	6.75	LCY			
Job Condition Correction F Site Altitude: <u>6020</u> feet	actors				
		Source			
Altitude Adj:	1.00	(CAT HB)			
Job Efficiency:	0.83	(1 shift/day)			
Net Correction:	0.83	multiplier			
Unadj	usted Hourly Un	it Production:	203.89 L	CY/Hour	

· ·		-
Adjusted Hourly Fleet Production:	338.47	LCY/Hour
Adjusted Hourly Unit Production:	169.23	LCY/Hour
nadjusted Hourly Unit Production:	203.89	LCY/Hour

Fleet size:	2	Loader(s)	Total job time:	66.48	Hours
Unit cost:	\$1.040	/LCY	Total job cost:	\$23,406	

# BULLDOZER RIPPING WORK

	Task description:	DWR min	e - Rip compacte	d areas		
<b>0</b> .4	DDD		Permit Action:	4/13/2021 Insp	ection-	<b>III N</b> 1004077
Site:	: DDD			2	Permit/Job	#: <u>M1984076</u>
	PROJECT IDE	ENTIFICATION				
	Task #: 004 Date: Rev User: AM	v 7/2/2021 Co	State: Colorado ounty: Elbert		Abbreviation: Filename:	: None : M076-004
	Agency	or organization name	DRMS			
	HOURLY EQU	JIPMENT COST				
	Basic	Machine: Cat D8T	- 8SU		Horsepower:	310
	Ripper Atta	achment: 3-Shank	Ripper		Shift Basis: 1	l per day
					Data Source:	(CRG)
	Cost Breakdown:					
				<b>*</b> • <b>•</b> • •	Utilization %	
		Ownership Cost/Ho	ur:	\$97.46	<u>NA</u>	
	Rinne	operating Cost/Ho	ur:	\$97.03	 	
	Ripp	er Operating Cost/Ho	ur:	\$9.94	100	
		Operator Cost/Ho	ur:	\$41.30	NA	
		Total Unit Cost/Ho	ur:	\$261.52		
		Total Fleet Cost/Ho	ur: \$2	61.52		
	MATERIAL O	UANTITIES	Se	lected estimating	method: Area	
	Alternate Method	s:	50		inculou. <u>Alca</u>	
ismio.	NA		Bank Volumo	ΝA	PCV	ΝA
Area:	15.80	acres	Rip Depth (ft):	1.50	Volume: 38.236	BCY or (
		Source of estimated	auantituu 21 aa	mag disturbed 1.2		
		Source of estimated		les disturbed - 1.2	acte politi - 4 acte pli	
	HOURLY PRO	<b>DUCTION</b>				
	Seismic:					
		Seism	ic Velocity:	NA	feet/second	
	Area:					
		Average Rip	ping Depth:	2.56	feet/pass	
		Average Rip	oing Width:	7.08	feet/pass	
		Average Ripp	ing Length:	650.00	feet/pass	
		Average D	ozer speed:	0.25	reet/influte minutes/nass	
		Production p	er unit area:	0.830	acres/hour	
	Job Condition Co	rrection Factors				
	Una	adjusted Hourly Unit	Production:	0.830	Acres/hr	
		¢,	te Altitude <sup>.</sup>	6 080	feet	
		A	ltitude Adj:	1.00	(CAT HB)	
		Job	Efficiency:	0.83	(1 shift/day)	
		Net	Correction:	0.83	multiplier	
		Adjusted Hourl	y Unit Production y Fleet Production	: 0.69 : 0.69	Acres/hr Acres/hr	
	JOB TIME AN	D COST				
	Fleet size:	 1 Gra	der(s)	Total job time	22.93	Hours

CIRCES Cost Estimating Software

# SCRAPER TEAM WORK

Site: DDD		Permit	t Action:	4/13/2021 Inspe 2	ction- Peri	nit/Job#: <u>M19</u>	84076
PROJECT IDENT	<b>TIFICATION</b>						
Task #:005Date:Rev 7/2User:AME	Sta 2/2021 Coun	te: <u>(</u> ty: ]	Colorado Elbert		Abbrev	viation: None ename: M076	i-005
Agency or o	rganization name:	DRM	IS				
HOURLY EQUIP	MENT			COSTSh	nift basis: <u>1 per d</u>	<u>ay</u>	
			Equipme	ent Description			
	-Scr	aper:	Cat 631	G			
Suppor	-D	ozer:	NA Cat D6	L C P			,
Suppor	-Dump	Area:	NA				
Road Mai	intenance – Motor Gr	ader:	CAT 14	M			
	-Water T	ruck:	Water T	Canker, 2,500 Gal.			
Cost Breakdown:	Scraper Work	Team		Support Equip	oment	Maintenanc	e Equipment
	Scraper	Doz	zer	Load Area	Dump Area	Motor Grader	Water Tr
%Utilization-machine:	100		NA	100	NA	50	
Ownership cost/hour:	\$147.77		NA	\$66.27	NA	\$85.80	\$1
Operating cost/hour:	\$141.36		NA	\$66.34	NA	\$30.20	\$
%Utilization-ripper:	NA		NA	NA	NA	NA	
Ripper own. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$
Ripper op. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$
Operator cost/hour:	\$30.90		NA	\$41.30	NA	\$28.56	\$
Unit Subtotals:	\$320.03		NA	\$173.91	NA	\$144.56	\$2
Number of Units:	2		0	1	0	1	
Group Subtotals:	Work:	\$640	).06	Support:	\$173.91	Maint:	\$165.2
Total work team cost/	/hour: <u>\$979.23</u>						
MATERIAL QUA	NTITIES						
Initial volume:	26 619		CCY	Swell fact	or: 1.215		
Loose volume:	32,342		LCY				
Sour	ce of estimated volu	me:	21 acres	disturbed - 1.2 acı	e pond, 10 in der	oth	
Source of	of estimated swell fac	ctor:	Cat Hand	lbook	_ 1		
ΗΟΙΙΡΙ V ΡΡΟΝΙ	ICTION						
HUUKLI EKUDU				Soronor De	wil (volume) Des		
<b>.</b>				<u>Scraper BC</u>	wi (volume) Basi	<u>18.</u>	
Material weight: Material description:	1,600 lbs/LCY			Struck V Heaped V	Volume: $24.00$	] 	
Rated Payload:	81,600 pounds			Average V	Volume: 29.00		LCY
	· 1			3			

<u>0.80</u> Minutes

0.70 Minutes

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6080 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	4.00	3.00	7.00	962	0.35

Haul Time: 0.35 minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	-4.00	3.00	-1.00	2920	0.15

Return Time:	0.15	minutes
Total Scraper team cycle time:	2.00	minutes
Adjusted for job conditions:	722.10	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,444.20	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,444.20	LCY/Hour
Unadjusted unit production / hours 870.00 I CV/I Jour		

Unadjusted unit production/hour: 870.00 LCY/Hour Optimal Number of Scrapers per push dozer:

Fleet size:	1	Team(s)	Total job time:	22.39	Hours
Unit cost:	\$0.678	/LCY	Total job cost:	\$21,929	

# **REVEGETATION WORK**

: DDD		Pe	ermit Action:	4/13/2021 Inspection- 2	Permit/Job	o#: <u>M1984076</u>
PROJECT	<b>IDENTIFIC</b>	ATION				
Task #:	006	State:	Colorado		Abbreviation:	None
Date:	Rev 7/2/2021	County:	Elbert		Filename:	M076-006
Lloor	AME					

### **FERTILIZING**

#### Materials Units / Cost / Unit Cost /Acre Description Unit Acre \$1.33 Potassium nitrate, 13-46-0 87.00 \$115.71 pound **Total Fertilizer** Materials \$115.71 Cost/Acre

#### Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	Total Fertilizer Application Cost/Acre	\$38.77

# **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Total Tilling Cost/Acre	\$114.56

#### **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	0.90	14.69	\$14.38
Little Bluestem - Native	1.40	8.36	\$18.99
Western Wheatgrass - Arriba	4.80	12.12	\$31.20
Prairie Sandreed - Goshen	1.30	8.15	\$13.46
Totals Seed Mix	8.40	43.31	\$78.03

#### Application

	0.44
Description	Cost /Acre

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

#### \$232.00

# **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$307.02	\$614.04
<b>Total Mulch Materials Cost/Acre</b>				\$614.04

#### Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$71.57
Weed spray, hand, non-aquatic area, nox. [DMG]	\$183.16
Total Mulch Application Co	st/Acre \$254.73

# **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

No. of Acres: Estimated Failure Rate: *Selected Replanting Work Items:		19.8 20% SEEDING	Cost /Acre: Cost /Acre*:	\$1,447.84 \$310.03
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$28,667.23 \$1,227.72 \$29,895 9.90			

# BULLDOZER WORK

Task description:	DEB mine - B	EB mine - Backfill eastern pit highwalls				
DDD	F	Permit Action:	4/13/2021 Inspection- 2	Permit/Job#:	M1984076	
PROIFCT IDENTIE	ICATION					
Task #: 007	Stat	. Colorado		Abbraviation	Nono	
Date: Rev $7/2/20$	21 County	v: Elbert		Filename:	M076-007	
User: AME	<u> </u>			<u>-</u>		
Agency or orga	nization name:	DRMS				
HOURLY EQUIPME	ENT COST					
Basic Machine: Ca	t D8T - 8SU					
Horsepower: 310	)					
Blade Type: Ser	ni-Universal					
Attachment: NA	<u> </u>					
Shift Basis: <u>I p</u>	er day					
Data Source: (CI	XG)		_			
Cost Breakdown:			TT.'11 0/			
O		¢07.46	Utilization %			
Operating Cost/Hour:		\$97.40	100			
Ripper own Cost/Hour		\$0.00	NA			
Ripper op. Cost/Hour:		\$0.00	0			
Operator Cost/Hour:		\$41.30	NA			
	¢226.20					
Total unit Cost/Hour:	\$236.39					
	\$250.57					
MATERIAL OUANT	TTIES					
Initial Volume: <u>5,20</u>	8					
Swell factor: 1.12	5 0 L CV					
Loose volume: <u>5,85</u>	9 LC I					
Source of estimated volu	me: East hi	ghwalls 225 ft	L x 25 ft H			
Source of estimated swel	l factor: Cat Ha	ndbook				
HOURLY PRODUC	<u>FION</u>					
Average push distance:	75 feet					
Unadjusted hourly produ	ction: 1,017.1 I	.CY/hr				
Materials consistency dea	scription: <u>Con</u>	solidated stock	pile 1.0			
Avaraga puch gradiant.	5 04					
Average push gradient:	<u> </u>					
Average site annual.	0,020 1001					
Material weight:	2,650 lbs/LCY			_		
Weight description:	Decomposed ro	ck - 25% Rock	, 75% Earth			
	Fastar		Source			
Job Condition Correction	Factor					
Job Condition Correction Operator	Skill:	1.000	(EXCL.)			
Job Condition Correction Operator Material consist	Skill: ency:	1.000 1.000	(EXCL.) (CAT HB)			
Job Condition Correction Operator Material consist Dozing me	Skill: ency:	1.000 1.000 1.000	(EXCL.) (CAT HB) (GEN.)			

Task # 007

Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.900	(SSD-FC)
Push gradie	nt: 0.903	(CAT HB)
Altitu	de: 1.000	(CAT HB)
Material Weig	ht: 0.868	(CAT HB)
Blade typ	pe: 1.000	(PAT)
Net correction	on: 0.5855	
Adjusted unit production:	595.51 LCY/hr	
Adjusted fleet production:	595.51 LCY/hr	

Fleet size:	1 Dozer(s)
Unit cost:	\$0.397/LCY

Total job time:	9.84 Hours
Total job cost:	\$2,326

# BULLDOZER WORK

Task o	description:	DEI	B mine - Cut/	fill pit high	walls		
: <b>DD</b>	DD		Peri	mit Action:	4/13/2021 Inspection- 2	Permit/Job#:	M1984076
PRO	JECT IDEN	TIFICATI	<u>ION</u>				
Ta: I	ask #: 008 Date: 7/2/20	21	State: County:	Colorado Elbert		Abbreviation: Filename:	None M076-008
ι	User: <u>AME</u>						
	Agency or	organization	n name: DR	RMS			
HOU	U <b>RLY EQUI</b>	PMENT C	<u>OST</u>				
Bas	sic Machine:	Cat D8T -	8SU				
]	Horsepower:	310					
	Blade Type:	Semi-Univ	versal				
	Attachment:	NA					
	Shift Basis:	I per day					
I	Data Source:	(CRG)					
Cost I	Breakdown:						
0				¢07.46	Utilization %		
Own	nership Cost/H	our:		\$97.46	NA 100		
D	erating Cost/H	our:		\$97.03	100		
	er own. Cost/H	our:		\$0.00	NA 0		
Rippe	man an Coat/II			<b>NULL</b>	0		
Rippe	per op. Cost/H	our		\$0.00			
Rippe Ripp Op Total Total	per op. Cost/Ho perator Cost/Ho unit Cost/Hou Fleet Cost/Hou	our:	.39 . <b>39</b>	\$41.30	NA		
Rippe Ripp Op Total Total Total <b>MAT</b> Initi	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou FERIAL QU ial Volume:	our: 	.39 . <b>39</b>	\$0.00 \$41.30	NA		
Rippe Ripp Op Total Total MAT Initi S Loc	per op. Cost/Ho berator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou <b>FERIAL QU</b> ial Volume: Swell factor: ose volume:	our: 	.39 . <b>39</b>	\$0.00 \$41.30	NA		
Rippe Ripp Op Total Total MAT Initi S Loc Source Source	per op. Cost/Ho perator Cost/Ho releat Cost/Hou Fleet Cost/Hou Fleet Cost/Hou Fleet Cost/Hou ial Volume: Swell factor: cose volume: cose volume: cose of estimated co of estimated	our:	.39 .39 	\$0.00 \$41.30  I South High book	NA		
Rippe Ripp Op Total Total Initi S Loc Source Source	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou ial Volume: Swell factor: ose volume: cose volume: ce of estimated pRLY PROD	our:	.39 .39 	\$0.00 \$41.30 	NA		
Rippe Ripp Op Total Total Total Initi S Loc Source Source Source Source Source Source Source	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou ial Volume: Swell factor: ose volume: cose volume: ce of estimated be of estimated DRLY PROD age push distan justed hourly p	our:	.39 .39 .39 	\$41.30 \$41.30 	NA		
Rippe Ripp Op Total Total Total Initi S Loc Source Source Source Source Meter Unadj Mater	per op. Cost/Ho perator Cost/Ho relator Cost/Ho Fleet Cost/Ho <u>FERIAL QU</u> ial Volume: ose volume: cose volume: cose volume: cose of estimated <u>DRLY PROD</u> age push distan justed hourly p rials consistence	our:	.39 .39 .39 	\$41.30 \$41.30 	NA 		
Rippe Rippe Ripp Op Total Total MAT Initi S Loc Source Source Source Source Mater Avera Avera	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou ial Volume: Swell factor: ose volume: cose volume: ce of estimated DRLY PROD age push distan justed hourly p rials consistence age push gradie age site altitude	our:	.39 .39 .39 	\$41.30 \$41.30 U South High book Y/hr cted fill or e	NA		
Rippe Ripp Op Total Total Total Initi S Loc Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou ial Volume: ose volume: cose volume: cose volume: cose volume: cose volume: cose of estimated <b>URLY PROD</b> age push distan justed hourly p rials consistence age push gradie age site altitude rial weight:	our:	.39 .39 .39 	\$41.30 \$41.30 South High book Y/hr cted fill or e	NA		
Rippe Rippe Ripp Op Total Total Total Initi S Loc Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source S	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou ial Volume: ose volume: cose volume: cose volume: cose volume: cose volume: cose of estimated co of estimat	our:	.39 .39 .39	\$41.30 \$41.30 	NA walls 1,020 ft L x 25 ft H mbankment 0.9 , 75% Earth		
Rippe Rippe Ripp Op Total Total Total Initi S Loc Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source S	per op. Cost/Ho perator Cost/Ho Terator Cost/Ho Fleet Cost/Ho ial Volume: Swell factor: ose volume: ce of estimated ce of estimated <b>JRLY PROD</b> age push distan justed hourly p rials consistence age push gradie age site altitude rial weight: ht description: <u>Condition Corre</u>	our: $\begin{array}{c} & & \\ & \\ \text{sur:} & \\ & \\ & \\ \hline \\ \\ & \\ \hline \\ \\ \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline$	.39 .39 .39 	\$41.30 \$41.30 	NA NA NA NA NA NA NA NA NA NA		
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Rippe Rippe Ripp Op Total Total MAT Initi S Loc Source Source Source Source Source Mater Avera Avera Avera Mater Weigh Job Ce	per op. Cost/Ho perator Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou ial Volume: ose volume: cose volume:	our:	.39 .39 .39	\$41.30 \$41.30 	NA		
Rippe Rippe Ripp Op Total Total Total Initi S Loc Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source Source S	per op. Cost/Ho perator Cost/Ho Fleet Cost/Hou Fleet Cost/Hou Fleet Cost/Hou ial Volume: ose volume: cose	our: $\begin{array}{c} & & & \\ & & \\ & \\ & \\ & \\ & \\ & \\ \hline \\ & \\ &$	.39 .39 .39 .39	\$41.30 \$41.30 	NA		

Task # 008

cy: 0.830	(1 SHIFT/DAY)
le: 1.000	(DOZ-OC)
nt: 1.115	(CAT HB)
le: 1.000	(CAT HB)
ht: 0.868	(CAT HB)
be: 1.000	(PAT)
on: 0.8676	
882.44 LCY/hr	
882.44 LCY/hr	
	ey:       0.830         le:       1.000         nt:       1.115         le:       1.000         ht:       0.868         be:       1.000         on:       0.8676         882.44 LCY/hr         882.44 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.268/LCY

Total job time:	8.36 Hours
Total job cost:	\$1,977

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# WHEEL LOADER - LOAD AND CARRY WORK

		D	nit A stimu	4/12/2021 L	ation		
· DDD		Perr	nit Action:	4/13/2021 Inspe	ction-	Permit/Iob#·	M1984076
						1 011110 0 000	
PROJECT IDENTIF	ICATI(	<u>ON</u>					
Task #: 009		State:	Colorado		A	Abbreviation:	None
Date: Rev 7/2/20 User: AME	)21	County:	Elbert			Filename:	M076-009
Agency or orga	inization	name: DR	MS				
HOURLY EQUIPM	<u>ENT CC</u>	<u>DST</u>					
Basic Machine:	CAT 98	30H			Horsepowe	er:	315
Attachment 1:	ROPS (	Cab			Shift Basi	s: 1 p	ber day
					Data Sourc	e: (	CRG)
Cost Breakdown:							
	~ *	¢ < 7 7		Utilization %			
Ownership Cost/	Hour:	\$67.7	2	NA			
Operating Cost/	Hour:	\$67.6	02	100 N.A			
Total Unit Cost/	Hour:	\$40.7 \$1761	1	NA			
		φ170.	05				
Total Fleet Cost	/Hour:	\$352.	.09				
MATERIAL QUANT	<u> FITIES</u>						
Initial volume: 2	22,500		CCY	Swell facto	or: 1.000		
Loose volume:	22	,500	LCY				
Source	ofestima	ted volume'	Per TR-	$2 \max 45,000 $ tons	inert fill on	site at any tim	
Source	stimated s	swell factor:	Cat Han	dbook	mert ini on	site at any tin	
Source of es							
Source of e							
HOURLY PRODUC	TION						
HOURLY PRODUC	<u>TION</u>	instad Pasia	Cuala Time	lood dump mon	ouver);	0.550	minutos
HOURLY PRODUC	<u>TION</u> Unadj	justed Basic	Cycle Time	e (load, dump, man	euver):	0.550	minutes
HOURLY PRODUC Loader Cycle Time: Cycle Time Facto	TION Unadj ors	justed Basic	Cycle Time	e (load, dump, man	euver): Fa	0.550 ctor (min.)	minutes Source
HOURLY PRODUC Loader Cycle Time: Cycle Time Facto Materi	TION Unadj ors ial: Ba	usted Basic (	Cycle Time material 0.	e (load, dump, man 04	euver): Fa	0.550 ctor (min.) 0.040	Source (Cat HB)
HOURLY PRODUC Loader Cycle Time: Cycle Time Facto Materi Stockpi	TION Unadj ors ial: Ba ile: Du in: Co	nk or broken mped by true	Cycle Time material 0. ck 0.02	e (load, dump, man 04	euver): Fa	0.550 <u>ctor (min.)</u> 0.040 0.020 0.040	minutes Source (Cat HB) (Cat HB)
HOURLY PRODUC         Loader Cycle Time:         Cycle Time Factor         Materi         Stockpi         Truck Ownersh         Operation	TION Unadj ors ial: Ba ile: Du ip: Co on: Co	usted Basic ( nk or broken mped by true mmon owner nstant operat	Cycle Time material 0. ck 0.02 rship of true ion -0.04	e (load, dump, man 04 cks and loaders -0.	euver): Fa	0.550 ctor (min.) 0.040 0.020 -0.040 -0.040	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)
HOURLY PRODUC Loader Cycle Time: Cycle Time Facto Materi Stockpi Truck Ownersh Operatio Dump Targ	TION Unadj ors ial: Ba ile: Du ip: Co on: Co ret: No	nk or broken mped by true mmon owner nstant operat minal target	Cycle Time material 0. ck 0.02 rship of true ion -0.04 0.00	e (load, dump, man 04 cks and loaders -0.	euver): Fa	0.550 ctor (min.) 0.040 0.020 -0.040 -0.040 0.000	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Source of es HOURLY PRODUC Loader Cycle Time: Cycle Time Factor Materi Stockpi Truck Ownersh Operation Dump Targ	TION Unadj ors ial: Ba ile: Du ip: Co on: Co jet: No	nk or broken mped by truc mmon owner nstant operat minal target	Cycle Time material 0. ck 0.02 rship of true ion -0.04 0.00 Net Cy	e (load, dump, man 04 cks and loaders -0. vcle Time Adjustme	euver): Fa 04 ent:	0.550 ctor (min.) 0.040 0.020 -0.040 -0.040 0.000 -0.020	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes

Haul:Rutted dirt, little maintenance, no water, 2" tire penetration 5.0Return:Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

#### Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	800	3.00	5.00	8.00	0.8931	(Cat HB)
Return Route:	800	-3.00	5.00	2.00	0.5633	(Cat HB)

		Total Travel Time:1.4563Total Cycle Time:1.9863	minutes
Load Bucket Capacity			
Rated Capacity:	7.50	LCY (heaped)	
Bucket Fill Factor:	0.900	Rock - Poorly Blasted (85%-95%) 0.900	
Adjusted Capacity:	6.75	LCY	
Job Condition Correction Fac Site Altitude: <u>6020</u> feet	etors		

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

Unadjusted Hourly Unit Production:	203.89	LCY/Hour
Adjusted Hourly Unit Production:	169.23	LCY/Hour
Adjusted Hourly Fleet Production:	338.47	LCY/Hour

Fleet size:	2	Loader(s)	Total job time:	66.48	Hours
Unit cost:	\$1.040	/LCY	Total job cost:	\$23,406	_

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# WHEEL LOADER - LOAD AND CARRY WORK

DDD	Pe	ermit Action:	4/13/2021 Inspection-2	Permit/Job#:	M1984076
PROJECT IDENTIFIC	CATION				
Task #: 010	State:	Colorado		Abbreviation:	None
Date: Rev 7/2/2021	County:	Elbert		Filename:	M076-010
User: AME					
Agency or organiz	zation name: D	ORMS			
HOURLY EOUIPMEN	T COST				
Basic Machine: C	CAT 980H		Horse	power:	315
Attachment 1: R	ROPS Cab		Shift	Basis: 1 p	ber day
			Data S	Source: (C	CRG)
Cost Brackdown					
COST DICAKUOWII.			Utilization %		
Ownership Cost/Ho	our: \$67	.72	NA		
Operating Cost/Ho	our: \$67	.62	100		
Operator Cost/Ho	our: \$40	0.71	NA		
Total Unit Cost/Ho	our: \$170	6.05			
Total Fleet Cost/H	our: \$17	6.05			
MATEDIAI OUANTI	FIES				
	22	CCY	Swell factor:	1.165	
Initial volume:9,8.	11 455				
Initial volume: Loose volume:	11,455	LCY			
Initial volume:9,8: Loose volume: Source of	11,455 estimated volume	LCY Coperator	r's 7/1/21 estimate		
Initial volume: Loose volume: Source of Source of estir	11,455 estimated volume nated swell factor	LCY Coperator Cat Hand	r's 7/1/21 estimate dbook		
Initial volume:9,8 Loose volume: Source of Source of estir	11,455 estimated volume nated swell factor	LCY Coperator Cat Hand	r's 7/1/21 estimate dbook		
Initial volume: 9,8 Loose volume: Source of Source of estir	11,455 estimated volume nated swell factor	LCY Coperator: Cat Hand	r's 7/1/21 estimate dbook		
Initial volume: <u>9,8</u> Loose volume: <u></u> Source of Source of estir <u>HOURLY PRODUCTI</u> Loader Cycle Time:	11,455 estimated volume nated swell factor ON Unadjusted Basic	LCY Coperator Cat Hand Copycle Time	e's 7/1/21 estimate dbook	:0.550	minutes
Initial volume:9,8 Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors	11,455 estimated volume nated swell factor ON Unadjusted Basic	CCY Coperator Cat Hand	t's 7/1/21 estimate dbook • (load, dump, maneuver)	: <u>0.550</u> Factor (min.)	minutes
Initial volume:9,8 Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors Material:	11,455         estimated volume         nated swell factor         ON         Unadjusted Basic         Mixed materia	CY Cat Hand Cycle Time	e's 7/1/21 estimate dbook e (load, dump, maneuver)	: 0.550 Factor (min.) 0.020	minutes Source (Cat HB)
Initial volume:9,8 Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors Material: Stockpile:	11,455         estimated volume         nated swell factor         ON         Unadjusted Basic         Mixed materia         Dumped by tr	LCY Coperator Cat Hand c Cycle Time al 0.02 uck 0.02	e's 7/1/21 estimate dbook (load, dump, maneuver)	: 0.550 Factor (min.) 0.020 0.020	minutes Source (Cat HB) (Cat HB)
Initial volume: Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership:	11,455         estimated volume         nated swell factor         ON         Unadjusted Basic         Mixed materia         Dumped by tr         Common own	LCY Coperator Cat Hand c Cycle Time al 0.02 uck 0.02 hership of true	e's 7/1/21 estimate dbook e (load, dump, maneuver)	: 0.550 Factor (min.) 0.020 0.020 -0.040	minutes Source (Cat HB) (Cat HB) (Cat HB)
Initial volume:9,8 Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	11,455         estimated volume         nated swell factor         ON         Unadjusted Basid         Mixed materia         Dumped by tr         Common own         Constant oper	c Cycle Time al 0.02 uck 0.02 reation -0.04	e's 7/1/21 estimate dbook (load, dump, maneuver) cks and loaders -0.04	: 0.550 Factor (min.) 0.020 0.020 -0.040 -0.040	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Initial volume:9,8 Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	11,455         estimated volume         nated swell factor         ON         Unadjusted Basic         Mixed materia         Dumped by tr         Common own         Constant oper         Nominal targe	c Cycle Time al 0.02 uck 0.02 ership of true ation -0.04	c's 7/1/21 estimate dbook (load, dump, maneuver)	: 0.550 Factor (min.) 0.020 0.020 -0.040 -0.040 0.000	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Initial volume:9,8: Loose volume: Source of Source of estir HOURLY PRODUCTI Loader Cycle Time: Cycle Time Factors Material: Stockpile: Truck Ownership: Operation: Dump Target:	11,455         estimated volume         nated swell factor         ON         Unadjusted Basic         Mixed materia         Dumped by tr         Common own         Constant oper         Nominal target	c Cycle Time al 0.02 uck 0.02 hership of truc ation -0.04 v 0.00 Net Cy	e's 7/1/21 estimate dbook (load, dump, maneuver) cks and loaders -0.04 ctele Time Adjustment:	: 0.550 Factor (min.) 0.020 0.020 -0.040 -0.040 -0.040 0.000 -0.040	minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) minutes

Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

# Haul and Return Time

	Length	Grade Res.	Rolling	Total Res.	Travel Time	Source
	(feet)	(%)	Res. (%)	(%)	(minutes)	Source
Haul Route:	350	3.00	5.00	8.00	0.3907	(Cat HB)
Return Route:	350	-3.00	5.00	2.00	0.2464	(Cat HB)

		Te T	otal Travel Ti otal Cycle Ti	ime: 0.6371 ime: <b>1.1471</b>	minutes
Load Bucket Capacity					
Rated Capaci Bucket Fill Facto Adjusted Capaci	ty: $7.50$ or: $1.100$	LCY (heaped) Other - rock/d	irt mixtures	(100-120%) 1.100	
Job Condition Correction Site Altitude: <u>6020</u> feet	on Factors				
		Source			
Altitude Adj:	1.00	(CAT HB)			
Job Efficiency:	0.83	(1 shift/day)			
Net Correction:	0.83	multiplier			
Uı	nadjusted Hourly Unit 1	Production:	431.51	LCY/Hour	
	Adjusted Hourly Unit I	Production:	358.15	LCY/Hour	
1	Adjusted Hourly Fleet l	Production:	358.15	LCY/Hour	
JOB TIME AND CO	<u>DST</u>				
Fleet size:	1 Loader(s)	Tot	al job time:	31.98	Hours

 Unit cost:
 \$0.492
 /LCY
 Total job cost:
 \$5,631

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# WHEEL LOADER - LOAD AND CARRY WORK

Permit Action: 4/13/2021 Inspection- 2 Permit/.  PROJECT IDENTIFICATION  Task #: 011 State: Colorado Abbreviati Date: Rev 7/2/2021 County: Elbert Filenal User: AME Agency or organization name: DRMS  HOURLY EQUIPMENT COST Basic Machine: CAT 980H Horsepower: Data Source: Data Source: Data Source: Data Source: Cost Breakdown: Cost Breakdown: Ownership Cost/Hour: \$67.72 NA Operating Cost/Hour: \$67.62 100 Operator Cost/Hour: \$176.05 Total Fleet Cost/Hour: \$176.05  MATERIAL QUANTITIES Initial volume: 1.482 CCY Swell factor: 1.165	ob#: <u>M1984070</u> n: <u>None</u> ne: <u>M076-011</u> <u>315</u> <u>1 per day</u> (CRG)
PROJECT IDENTIFICATION         Task #:       011       State:       Colorado       Abbreviati         Date:       Rev 7/2/2021       County:       Elbert       Filena         User:       AME       Ounty:       Elbert       Filena         Agency or organization name:       DRMS       DRMS         HOURLY EQUIPMENT COST         Basic Machine:       CAT 980H       Horsepower:	n: None M076-011 315 1 per day (CRG)
Task #:       011       State:       Colorado       Abbreviati         Date:       Rev 7/2/2021       County:       Elbert       Filena         User:       AME       Agency or organization name:       DRMS <b>HOURLY EQUIPMENT COST</b> Basic Machine:       CAT 980H       Horsepower:          Attachment 1:       ROPS Cab       Shift Basis:          Data Source:        Data Source:          Cost Breakdown:       Utilization %       NA	n: <u>None</u> M076-011 <u>315</u> <u>1 per day</u> (CRG)
Date:       Rev 7/2/2021       County:       Elbert       Filena         User:       AME       Agency or organization name:       DRMS         HOURLY EQUIPMENT COST         Basic Machine:       CAT 980H       Horsepower:	315       1 per day       (CRG)
User:       AME         Agency or organization name:       DRMS         HOURLY EQUIPMENT COST       Basic Machine:       CAT 980H         Attachment 1:       ROPS Cab       Shift Basis:         Data Source:       Data Source:         Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$67.72       NA         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES       Initial volume:       1,482         Loose volume:       1,727       LCY       Swell factor:       1.165	315 1 per day (CRG)
Agency or organization name:       DRMS         HOURLY EQUIPMENT COST       Horsepower:         Basic Machine:       CAT 980H         Attachment 1:       ROPS Cab         Shift Basis:       Data Source:         Data Source:       Data Source:         Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$67.72       NA         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$176.05       Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05       Swell factor:       1.165         MATERIAL QUANTITIES       Initial volume:       1,482       CCY       Swell factor:       1.165	315 1 per day (CRG)
HOURLY EQUIPMENT COST         Basic Machine:       CAT 980H         Attachment 1:       ROPS Cab         Shift Basis:       Data Source:         Data Source:       Data Source:         Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$67.62       100         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482       CCY       Swell factor:       1.165	315 1 per day (CRG)
Basic Machine:       CAT 980H       Horsepower:          Attachment 1:       ROPS Cab       Shift Basis:          Data Source:        Data Source:          Cost Breakdown:       Utilization %	315 1 per day (CRG)
Attachment 1:       ROPS Cab       Shift Basis:	1 per day (CRG)
Cost Breakdown:       Data Source:         Ownership Cost/Hour:       \$67.72       NA         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482       CCY         Loose volume:       1,727       LCY	(CRG)
Cost Breakdown:         Utilization %         Ownership Cost/Hour:       \$67.72       NA         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482       CCY         Loose volume:       1,727       LCY	
Utilization %         Ownership Cost/Hour:       \$67.72       NA         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482         CCY       Swell factor:       1.165	
Ownership Cost/Hour:       \$67.72       NA         Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482         CCY       Swell factor:       1.165	
Operating Cost/Hour:       \$67.62       100         Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482         CCY       Swell factor:       1.165         Loose volume:       1,727       LCY	
Operator Cost/Hour:       \$40.71       NA         Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482         CCY       Swell factor:       1.165         Loose volume:       1,727       LCY	
Total Unit Cost/Hour:       \$176.05         Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482         Loose volume:       1,727         LCY       Swell factor:	
Total Fleet Cost/Hour:       \$176.05         MATERIAL QUANTITIES         Initial volume:       1,482       CCY       Swell factor:       1.165         Loose volume:       1,727       LCY       Swell factor:       1.165	
MATERIAL QUANTITIES         Initial volume:       1,482       CCY       Swell factor:       1.165         Loose volume:       1,727       LCY       Swell factor:       1.165	
MATERIAL QUANTITIESInitial volume:1,482Loose volume:1,727LCYSwell factor:	
Initial volume:1,482CCYSwell factor:1.165Loose volume:1,727LCY	
Loose volume: 1,482 CCT Swell factor. 1.105	
Source of estimated volume: Operator's 7/1/21 estimate	
Source of estimated swell factor: Cat Handbook	
HOURLY PRODUCTION	
Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.55	minutes
Cycle Time Factors Factor (min	Source
Material: Mixed material 0.02 0.020	(Cat HB)
Stockpile: Dumped by truck 0.02 0.020	(Cat HB)
Truck Ownership:         Common ownership of trucks and loaders -0.04         -0.040	(Cat HB)
Operation: Constant operation -0.04 -0.040	(Cat HB)
Dump Target:   Nominal target 0.00 0.000	(Cat HB)
Net Cycle Time Adjustment: -0.040	•
Adiusied Basic Uvcie Lime: 0.510	minutes

Return: Rutted dirt, little maintenance, no water, 2" tire penetration 5.0

#### Haul and Return Time

	Length	Grade Res.	Rolling	Total Res.	Travel Time	Source
	(feet)	(%)	Res. (%)	(%)	(minutes)	Source
Haul Route:	300	3.00	5.00	8.00	0.3349	(Cat HB)
Return Route:	300	-3.00	5.00	2.00	0.2112	(Cat HB)

			Total Travel Ti Total Cycle Ti	ime: 0 ime: 1	.5461 .0561	minutes minutes
Load Bucket Capacity						
Rated Capaci Bucket Fill Facto Adjusted Capaci	ty: $7.50$ pr: $1.100$ ty: $8.25$	LCY (heap Other - roc LCY	ed) k/dirt mixtures	(100-120%	) 1.100	
Job Condition Correction Site Altitude: <u>6020</u> feet	n Factors	_				
		Source				
Altitude Adj:	1.00	(CAT HB)				
Job Efficiency:	0.83	(1 shift/day)	)			
Net Correction:	0.83	multiplier				
Ur	nadjusted Hourly Unit F Adjusted Hourly Unit F	Production: Production:	468.70 389.02	LCY/Ho LCY/Ho	ur ur	
1	Adjusted Hourly Fleet F	Production:	389.02	_ LCY/Ho	ur	
JOB TIME AND CO	<u>)ST</u>					
Fleet size:	1 Loader(s)	ŗ	Total job time:	4	.44	Hours

 Unit cost:
 \$0.453
 /LCY
 Total job cost:
 \$781

# BULLDOZER RIPPING WORK

	Task description:	DEB m	ine - Rip co	ompacted a	areas			
<b></b>			Perm	it Action:	4/13/2021 Insp	pection-		1004076
Site:			_		2		Permit/Job#:	M1984076
	PROJECT IDEN	TIFICATION	<u>1</u>					
	Task #: 012	<u></u>	State:	Colorado		A	bbreviation:	None
	Date: Rev 7/	2/2021	County: _	Elbert			Filename:	M076-012
		·		10				
	Agency or	organization na	me: <u>DRN</u>	/15				
	HOURLY EQUI	PMENT COS	<u> </u>					
	Basic Ma	chine: Cat Da	8T - 8SU			Horsepowe	er:	310
	Ripper Attach	ment: <u>3-Shar</u>	nk Ripper			Shift Basi	s: <u> </u>	er day
						Data Sourc	e. (t	
	Cost Breakdown:				I		,	
	C	)wnershin Cost/	Hour		\$97.46	Utilization 9	Ó	
	· · · · · ·	Operating Cost/	Hour:		\$97.63	100		
	Ripper C	Ownership Cost/	Hour:		\$15.19	NA		
	Ripper	Operating Cost/	Hour:		\$9.94	100		
		Operator Cost/	Hour:		\$41.30	NA		
	,	Total Unit Cost/	Hour:		\$261.52			
	ſ	Cotal Fleet Cost/	Hour:	\$26	1.52			
	MATERIAL OIL	ANTITIES		C - 1				
	Alternate Mathaday			Sele	ected estimating	method: <u>F</u>	Mea	
	Alternate Methods:							
ismic:	NA	_	Bank	Volume:	NA	BCY	12 5 60	NA
Area:	18.00	acres	Rip D	epth (ft):	1.50	Volume:	43,560	BCY or C
	S	ource of estimat	ed quantity	: <u>22.5</u> ac	e disturbed - 3.2	ac pit - 0.95 a	ac pond - 0.35	ac pond
	HOURLY PROD	UCTION						
	Seismic:							
	Seisinic.	Sei	smic Veloci	tv	NA	feet/	second	
	Area:	A viana ao T	linning Don	th.	2.56	fact	-	
		Average R	Cipping Dep	111: http://doi.org/10.1011/101111111111111111111111111111	2.30	feet/	pass	
		Average Ri	ipping with	th:	700.00	feet/	pass	
		Average	Dozer Spe	ed:	88.00	feet/	minute	
		Average M	aneuver Ťir	me:	0.25	minu	ites/pass	
		Production	n per unit ar	ea:	0.832	acre	s/hour	
	Job Condition Corre	ction Factors						
	Unadj	usted Hourly U	nit Producti	on:	0.832	Acre	es/hr	
		-	Site Altitu	de:	6.020	feet		
			Altitude A	.dj:	1.00	(CA	T HB)	
		J	ob Efficien	cy:	0.83	(1 sł	nift/day)	
		Ν	let Correcti	on:	0.83	mult	iplier	
		Adjusted Ho	ourly Unit P	roduction:	0.69	Acres/h	r	
		Adjusted Ho	urly Fleet P	roduction:	0.69	Acres/h	r	
	JOB TIME AND	COST						
	Fleet size:	1 (	Grader(s)		Total iob time	e:	26.06	Hours
	Unit cost:	\$378.692 I	Per acre		Total job cos	st:	<b>\$6,81</b> 6	

CIRCES Cost Estimating Software

# SCRAPER TEAM WORK

Site: DDD		Permit	Action:	4/13/2021 Inspe 2	ction- Per	mit/Job#: <u>N</u>	/11984	4076
PROJECT IDEN	TIFICATION							
Task #· 013	S	State: (	<sup>°</sup> olorado		Abbre	viation: N	one	
Date: Rev $7/2$	2/2021 Coi	unty: I	Elbert		Abble Fil	ename: M	076-0	013
User: AME		•						
Agency or o	organization name:	DRM	S					
HOURLY EQUIP	MENT			COSTS	nift basis: <u>1 per d</u>	ay		
			Equipme	ent Description				
	-S	craper:	Cat 631	G				
	-	Dozer:	NA					
Suppo	rt Equipment -Loa	d Area:	Cat D6	I LGP				
Road Ma	intenance – Motor (	Grader:	CAT 14	4M				
	-Water	Truck:	Water 7	Fanker, 2,500 Gal.				
Cost Breakdown:	Scraper Wor	rk Team		Support Equip	oment	Mainten	ance	Equipment
	Scraper	Doz	zer	Load Area	Dump Area	Motor Gra	der	water Tru
%Utilization-machine:	100		NA	100	NA		50	
Ownership cost/hour:	\$147.77		NA	\$66.27	NA	\$85	5.80	\$11
Operating cost/hour:	\$141.36		NA	\$66.34	NA	\$30	0.20	\$9
%Utilization-ripper:	NA		NA	NA	NA		NA	1
Ripper own. cost/hour:	NA		NA	\$0.00	NA	\$0	0.00	\$0
Ripper op. cost/hour:	NA		NA	\$0.00	NA	\$0	0.00	\$0
Operator cost/hour:	\$30.90		NA	\$41.30	NA	\$28	3.56	\$0
Unit Subtotals:	\$320.03		NA	\$173.91	NA	\$144	1.56	\$20
Number of Units:	2		0	1	0		1	
Group Subtotals:	Work:	\$640	).06	Support:	\$173.91	Ma	int:	\$165.26
Total work team cost	/hour: <u><b>\$979.23</b></u>							
MATERIAL QUA	<b>NTITIES</b>							
Initial volume:	30,249		CCY	Swell fact	or: <u>1.215</u>			
Loose volume:	36,753		LCY					
Sou: Source o	rce of estimated vo of estimated swell f	lume:	22.5 acre Cat Hand	es disturbed, 10 in dbook	depth			
HOURLY PROD	UCTION							
				Scraper Bo	owl (volume) Bas	is:		
Material weight:	1,600 lbs/LCY			Struck V	Volume: 24.00		L	CY
Material description:	Top Soil			Heaped V	Volume: 34.00			CY
Rated Payload:	81,600 pounds			Average V	Volume: 29.00		L	CY
								~

<u>0.80</u> Minutes

0.70 Minutes

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6020 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	3.00	8.00	783	0.91

Haul Time: 0.91 minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	3.00	-2.00	2920	0.31

Return Time:	0.31	minutes
Total Scraper team cycle time:	2.72	minutes
Adjusted for job conditions:	530.96	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,061.91	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,061.91	LCY/Hour
Unadjusted unit production/hour: 639.71 LCY/Hour Optimal Number of Scrapers per push dozer:		

Fleet size:	1	Team(s)	Total job time:	34.61	Hours
Unit cost:	\$0.922	/LCY	Total job cost:	\$33,891	_

# **REVEGETATION WORK**

Task description: <b>DEB mi</b>		DEB mine - Re	vegetate 22.5	acres		
e: DDD		Pe	ermit Action:	4/13/2021 Inspection-2	Permit/Jol	o#: <u>M1984076</u>
PROJECT	<b>IDENTIFIC</b>	ATION				
Task #:	014	State:	Colorado		Abbreviation:	None
	Rev 7/2/202	1 County:	Elbert		Filename:	M076-014
Date:		2				

# **FERTILIZING**

#### Materials Units / Cost / Unit Cost /Acre Description Unit Acre \$1.33 Potassium nitrate, 13-46-0 87.00 \$115.71 pound **Total Fertilizer** Materials \$115.71 Cost/Acre

#### Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$38.77
	Total Fertilizer Application Cost/Acre	\$38.77

# **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Total Tilling Cost/Acre	\$114.56

#### **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	0.90	14.69	\$14.38
Little Bluestem - Native	1.40	8.36	\$18.99
Western Wheatgrass - Arriba	4.80	12.12	\$31.20
Prairie Sandreed - Goshen	1.30	8.15	\$13.46
Totals Seed Mix	8.40	43.31	\$78.03

#### 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
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$307.02	\$614.04
Total Mulch Materials Cost/Acre				\$614.04

#### Application

Description	Cost /Acre	
Crimping, with tractor {DMG survey data}	\$71.57	
Weed spray, hand, non-aquatic area, nox. [DMG]	\$183.16	
Total Mu	Ilch Application Cost/Acre \$254.73	

#### **NURSERY STOCK PLANTING**

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

Estimate *Selected Replanting	No. of Acres: ed Failure Rate: ng Work Items:	22.5 20% SEEDING	Cost /Acre: Cost /Acre*:	\$1,447.84 \$310.03
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$32,576.40 \$1,395.14 \$33,972 11.25		-	

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

DDD		Permit	Action: 4/13/2	2021 Inspe	ction-	Permit/Job#: <u>M</u>	1984076
<u>'ROJECT IDE</u>	NTIFICATI	<u>ON</u>					
Task #: 01	5	State: Co	olorado		Abbre	eviation: None	
Date: <u>Re</u> User: <u>A</u> M	v 7/2/2021 AE	County: <u>Ell</u>	bert		Fi	lename: M076	5-015
Agency	or organizatior	n name: DRMS					
<u>EQUIPMENT (</u>	<b>FRANSPOR</b>	<u>T RIG COST</u>					
					Shift ba	sis: <u>1 per da</u>	y
				C	lost Data Sour	rce: CRG Da	ta
Truc	k Tractor Desc	ription: GENE	RIC ON-HIGH	WAY TRU	CK TRACTO	DR, 6X4, DIESEI	POWERED,
		<u> </u>		400 HP	(2ND HALF,	2006)	
Truc	k Trailer Desc	ription: G	ENERIC FOLD	ING GOO	SENECK, DF	ROP DECK EQU	IPMENT
			]	FRAILER (	25T, 50T, AN	ND 100T)	
<u>Cost Breakdown:</u>							
Available Rig C	Capacities	0-25 Tons	26-50 Tons	51+	Tons		
Ownership	p Cost/Hour:	\$21.28	\$37.94	\$4	7.67		
Operating	g Cost/Hour:	\$26.55	\$50.48	\$5	6.21		
Operato	r Cost/Hour:	\$20.54	\$20.54	\$2	0.54		
Helpe	r Cost/Hour:	\$0.00	\$23.53	\$2	3.53		
I otal Uni	t Cost/Hour:	\$68.37	\$132.49	\$12	17.95		
	RI F FOLIDA	/FNT•					
ION ROADAB							
<b>ION ROADAE</b> Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permi
Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/uni t	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permi Cost/ fleet
Machine Description Cat D8T - 8SU	Weight/ Unit (TONS) 47.71	Owner ship Cost/hr/ unit \$97.46	Haul Rig Cost/hr/uni t \$132.49	Fleet Size	Haul Trip Cost/hr/ fleet \$229.95	Return Trip Cost/hr/ fleet \$132.49	DOT Permi Cost/ fleet \$250.00
Machine Description Cat D8T - 8SU Cat D8T - 8SU	Weight/ Unit (TONS) 47.71 53.08	Owner ship           Cost/hr/ unit           \$97.46           \$112.65	Haul Rig Cost/hr/uni t \$132.49 \$147.95	Fleet Size	Haul Trip Cost/hr/ fleet \$229.95 \$260.60	Return Trip Cost/hr/ fleet \$132.49 \$147.95	DOT Permi Cost/ fleet \$250.00 \$250.00
Machine Description Cat D8T - 8SU Cat D8T - 8SU (w/Attach)	Weight/ Unit (TONS) 47.71 53.08	Owner ship Cost/hr/ unit           \$97.46           \$112.65	Haul Rig Cost/hr/uni t \$132.49 \$147.95	Fleet Size 1 1	Haul Trip Cost/hr/ fleet \$229.95 \$260.60	Return Trip Cost/hr/ fleet \$132.49 \$147.95	DOT Permi Cost/ fleet \$250.00 \$250.00
Machine Description Cat D8T - 8SU Cat D8T - 8SU (w/Attach) CAT 14M	Weight/ Unit (TONS) 47.71 53.08 23.57	Owner ship Cost/hr/ unit           \$97.46           \$112.65           \$85.80	Haul Rig Cost/hr/uni t \$132.49 \$147.95 \$68.37	Fleet Size 1 1 2	Haul Trip Cost/hr/ fleet \$229.95 \$260.60 \$308.34	Return Trip Cost/hr/ fleet \$132.49 \$147.95 \$136.74	DOT Permi Cost/ fleet \$250.00 \$250.00 \$500.00
Machine Description Cat D8T - 8SU Cat D8T - 8SU (w/Attach) CAT 14M Cat 631G	Weight/ Unit (TONS) 47.71 53.08 23.57 52.50	Owner ship Cost/hr/ unit           \$97.46           \$112.65           \$85.80           \$147.77	Haul Rig Cost/hr/uni t \$132.49 \$147.95 \$68.37 \$147.95	Fleet Size 1 1 2 2	Haul Trip Cost/hr/ fleet \$229.95 \$260.60 \$308.34 \$591.44	Return Trip Cost/hr/ fleet \$132.49 \$147.95 \$136.74 \$295.90	DOT Permi Cost/ fleet \$250.00 \$250.00 \$500.00
Machine Description Cat D8T - 8SU Cat D8T - 8SU (w/Attach) CAT 14M Cat 631G CAT 980H	Weight/ Unit (TONS) 47.71 53.08 23.57 52.50 33.12	Owner ship Cost/hr/ unit           \$97.46           \$112.65           \$85.80           \$147.77           \$67.72	Haul Rig Cost/hr/uni t \$132.49 \$147.95 \$68.37 \$147.95 \$132.49	Fleet Size 1 1 2 2 2 2	Haul Trip Cost/hr/ fleet \$229.95 \$260.60 \$308.34 \$591.44 \$400.42	Return Trip Cost/hr/ fleet \$132.49 \$147.95 \$136.74 \$295.90 \$264.98	DOT Permi Cost/ fleet \$250.00 \$250.00 \$500.00 \$500.00
NON ROADAE Machine Description Cat D8T - 8SU Cat D8T - 8SU (w/Attach) CAT 14M Cat 631G CAT 980H Drill/Broadcast Seeder with Tractor	Weight/ Unit (TONS) 47.71 53.08 23.57 52.50 33.12 25.00	Owner ship Cost/hr/ unit           \$97.46           \$112.65           \$85.80           \$147.77           \$67.72           \$7.98	Haul Rig Cost/hr/uni t \$132.49 \$147.95 \$68.37 \$147.95 \$132.49 \$68.37	Fleet Size 1 1 2 2 2 1	Haul Trip Cost/hr/ fleet \$229.95 \$260.60 \$308.34 \$591.44 \$400.42 \$76.35	Return Trip Cost/hr/ fleet \$132.49 \$147.95 \$136.74 \$295.90 \$264.98 \$68.37	DOT Permi Cost/ fleet \$250.00 \$250.00 \$500.00 \$500.00 \$500.00
NON ROADAE Machine Description Cat D8T - 8SU Cat D8T - 8SU (w/Attach) CAT 14M Cat 631G CAT 980H Drill/Broadcast Seeder with Tractor Cat D6T LGP	Weight/ Unit (TONS) 47.71 53.08 23.57 52.50 33.12 25.00 26.87	Owner ship Cost/hr/ unit           \$97.46           \$112.65           \$85.80           \$147.77           \$67.72           \$7.98           \$66.27	Haul Rig Cost/hr/uni t \$132.49 \$147.95 \$68.37 \$147.95 \$132.49 \$68.37 \$132.49	Fleet Size 1 1 2 2 2 1 1	Haul Trip Cost/hr/ fleet \$229.95 \$260.60 \$308.34 \$591.44 \$400.42 \$76.35 \$198.76	Return Trip Cost/hr/ fleet \$132.49 \$147.95 \$136.74 \$295.90 \$264.98 \$68.37 \$132.49	DOT Permi Cost/ fleet \$250.00 \$500.00 \$500.00 \$500.00 \$500.00 \$500.00

#### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$29.70	1	\$29.70	\$29.70
Light Duty Pickup, 4x4, 3/4 T.	\$12.93	1	\$12.93	\$12.93

Subtotals: **\$42.63** 

# **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	AURORA	
Total one-way travel distance:	26.75	miles
Average Travel Speed:	45.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$34,148.00	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$50.68	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.59	0.59
Return Time (Hours):	0.59	0.59
Loading Time (Hours):	3.00	NA
Unloading Time (Hours):	3.00	NA
Subtotals:	7.19	1.19

#### JOB TIME AND COST

Total job time: 14.38 Hours

Total job cost: \$34,199