

Renfro - DNR, Joel <joel.renfro@state.co.us>

TR-03 Adequacy Comments

Renfro - DNR, Joel <joel.renfro@state.co.us> To: Jason McGraw <jason.mcgraw@generalshale.com>

Thu, Jan 18, 2024 at 4:06 PM

Hi Jason,

I made edits to the Division's reclamation cost estimate for Navajo Clay Mine per our discussion last week on Wednesday, 1/10. The edits I made are as follows:

001:

Changed 2 dozers to 1 dozer to complete the task Reduced the initial material volume from 24200 CCY (1.5ac x 10ft) to 20167 CCY (1.25ac x 10ft). This better represents the area that will be backfilled.

003/005/007/008/009:

Changed the scraper from a 627G to a 631G Changed the support motor grader from a 14m to a 140m Changed the support dozer from a D8 to a D6

007:

Reduced the initial material volume from 6776 CCY (6.3ac x 8in) to 5163 CCY (4.8 x 8in). In the first draft of the Division's estimate, the area to be re-topsoiled included some area near the topsoil stockpiles opposite of the pit. Upon reevaluating the Division determined that the area would not need to be re-topsoiled since it had not been disturbed. This subtracted 1.5ac from the initial topsoil volume. When we spoke you mentioned there being usable topsoil underneath the topsoil piles based on previous estimates. Unfortunately, without any supporting documentation, the Division must assume that the area under the topsoil stockpiles will need to be re-topsoiled.

010:

Reduced the fertilizer application from 307 lbs/ac to 40 lbs/ac. In the first draft of the Division's estimate, it was initially calculated as 40 lbs of Nitrogen per acre, meaning you would need 307 lbs per acre of Potassium Nitrate fertilizer to achieve that. It has been made clear that you wish to apply 40 lbs per acre of Potassium Nitrate, which has been correctly updated in this estimate.

011:

1 D8 dozer was removed from mobilization
14M motor grader was replaced with a 140M motor grader
627G scrapers were replaced with 631G scrapers
1 D6 dozer was added to mobilization

I attempted to change all dozers to D6's, but ultimately it increased the dozer tasks significantly. Additionally, a D8 dozer would be a better fit for the job anyway. I also tried 623G scrapers, but the 631G proved to be better suited for the job as well as more efficient, keeping hours costs down.

I also wanted to address the failure rate on the 010 revegetation task. I confirmed that a 25% failure rate is standard, especially within that area, so I don't have much wiggle room in changing that percentage.

All around, I was able to reduce the final cost (including indirect costs) from \$241,064 to \$210,741.

If you wish to continue discussing this cost estimation feel free to reach out with any questions. I'm more than happy to discuss them over the phone, however, I'd like to request you to detail anything you would like changed over email as well so I can accurately document any changes.

Lastly, I just wanted to confirm where I can and can't negotiate on the cost estimation. Any rates, such as cost/hour, are based on last year's estimations and are fixed, so I cannot adjust those. The most recent update to our cost-estimating program overall increased most rates, and many mines within the past year are experiencing an increase in reclamation costs. The only thing I can change is input values such as volumes, haul distances, material composition, type/quantity of machinery, etc.

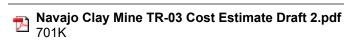
State.co.us Executive Branch Mail - TR-03 Adequacy Comments

The TR-03 is still open in case you want to make any changes through the TR, and has a decision day set for February 2, 2024. Thanks again for talking with me last week about the cost estimation. Please review the attached updated estimation and return to me with any questions.

Thank you,

Joel

[Quoted text hidden]



COST SUMMARY WORK

Task descr	iption:	Cost Estimate U	pdated for T	R-03		
Site: Navajo	Site: <u>Navajo Clay Pit</u>		Permit Action: TR-03		Permit/Job#: <u>M1993004</u>	
PROJECT	<u>IDENTIFIC</u>	ATION				
Task #:	000	State:	Colorado		Abbreviation:	None
Date:	1/18/2024 2:23:29 PM	County:	Elbert		Filename:	M004-000
User:	JR2					
Ag	gency or organiz	zation name: DF	RMS			

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill pit with overburden	DOZER	1	49.47	\$21,105
002	Push check dam bricks into pit	DOZER	1	1.03	\$440
003	Haul and fill pit with remaining scrap brick	SCRAPER1] 1	0.54	\$920
004	Cut and fill remaining highwalls to 3H:1V	DOZER] 1	46.13	\$19,679
005	Scrape overburden from stockpile pad and fill pit	SCRAPER1	1	18.52	\$31,300
006	Rip compacted areas	RIPPER	1	20.44	\$9,162
007	Retopsoil pit area	SCRAPER1] 1	6.62	\$11,193
008	Retopsoil stockpile area	SCRAPER1	1	4.19	\$7,074
009	Retopsoil access road	SCRAPER1	1	4.32	\$4,459
010	Revegetate 25 acres	REVEGE] 1	25.00	\$48,755
011	Mobilization/demobilization of equipment	MOBILIZE	1	8.20	\$17,689
		<u>SUBTO</u>	DTALS:	184.46	\$171,776

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$3,470
Performance bond:	1.05	Total =	\$1,804
Job superintendent:	92.23	Total =	\$6,002
Profit:	10.00	Total =	\$17,178
		TOTAL O & P =	\$28,453
		CONTRACT AMOUNT (direct + O & P) = $($	\$200,229

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	0.00	Total =	\$0
Reclamation management and/or administration:	5.00		\$10,011
-			
CONTINGENCY:	0.00	Total =	\$0
	TOTAI	L INDIRECT COST =	\$38,965

TOTAL BOND AMOUNT (direct + indirect) = _____\$210,741

BULLDOZER WORK

Task description:	Backfill pit	with overburde	en		
Navajo Clay Pit		Permit Action:	: <u>TR-03</u>	Permit/Job#:	M1993004
PROJECT IDENTIF	ICATION				
Task #:001	S	tate: Colorado	0	Abbreviation:	None
Date: 1/18/2024		inty: Elbert		Filename:	M004-001
<u>2:24:29 PN</u> User: JR2	1				
Agency or orga	nization name:	DRMS			
HOURLY EQUIPME					
	t D8T - 8SU				
Horsepower: 310					
	ni-Universal				
Attachment: NA	L				
	er day				
Data Source: (CI	RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$241.38			
Operating Cost/Hour:		\$143.92			
Ripper own. Cost/Hour:		\$0.00 \$0.00			
Ripper op. Cost/Hour:		\$0.00			
Operator Cost/Hour:		\$41.30	NA		
Total unit Cost/Hour:	\$426.60				
Total Fleet Cost/Hour:	\$426.60				
MATERIAL OUANT	TTIPS				
MATERIAL QUANT					
Initial Volume: 20,1					
Swell factor: 1.12					
	88 LCY				
Loose volume: 22,6					
Source of estimated volu:	me: 1.2:	5ac pit x 10ft			
		5ac pit x 10ft Handbook			
Source of estimated volu: Source of estimated swel	l factor: Cat				
Source of estimated volu	l factor: Cat				
Source of estimated volu: Source of estimated swel	l factor: Cat	Handbook			
Source of estimated volu: Source of estimated swel HOURLY PRODUCT Average push distance:	l factor: <u>Cat</u> <u> </u>	Handbook			
Source of estimated volu: Source of estimated swel	l factor: <u>Cat</u> <u> </u>	Handbook			
Source of estimated volu: Source of estimated swel HOURLY PRODUCT Average push distance:	I factor: Cat FION 150 fe ction: 634.3	Handbook	kpile 1.0		
Source of estimated volu: Source of estimated swel HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest	l factor: <u>Cat</u> <u>FION ction: <u>150 fe</u> ction: <u>634.3</u> scription: <u>C</u></u>	Handbook eet LCY/hr	kpile 1.0		
Source of estimated volu: Source of estimated swel HOURLY PRODUC? Average push distance: Unadjusted hourly produce Materials consistency des Average push gradient:	1 factor: Cat <u>IION</u> 150 fe ction: 634.3 scription: C 5 %	Handbook eet LCY/hr	kpile 1.0		
Source of estimated volu: Source of estimated swel HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest	l factor: <u>Cat</u> <u>FION ction: <u>150 fe</u> ction: <u>634.3</u> scription: <u>C</u></u>	Handbook eet LCY/hr	kpile 1.0		
Source of estimated volu: Source of estimated swel HOURLY PRODUC? Average push distance: Unadjusted hourly produce Materials consistency des Average push gradient:	1 factor: Cat <u>IION</u> 150 fe ction: 634.3 scription: C 5 %	Handbook eet LCY/hr Consolidated stoc	 		
Source of estimated volu Source of estimated swel HOURLY PRODUC Average push distance: Unadjusted hourly produ- Materials consistency des Average push gradient: Average site altitude:	l factor: Cat <u>FION</u> <u>ction: 150 fe</u> <u>ction: 634.3</u> scription: <u>C</u> <u>-5 %</u> <u>6,150 feet</u> <u>2,650 lbs/LC</u>	Handbook eet LCY/hr Consolidated stoc			
Source of estimated volu Source of estimated swel HOURLY PRODUC Average push distance: Unadjusted hourly produ Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description:	l factor: <u>Cat</u> <u>FION</u> <u>150 fe</u> ction: <u>634.3</u> scription: <u>C</u> <u>-5 %</u> <u>6,150 feet</u> <u>2,650 lbs/LC</u> <u>Decomposed</u>	Handbook eet LCY/hr consolidated stoc	ck, 75% Earth		
Source of estimated volus Source of estimated swel HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude: Material weight:	l factor: <u>Cat</u> <u>FION ction: <u>150 fe</u> ction: <u>634.3</u> scription: <u>C</u> <u>-5 % 6,150 feet 2,650 lbs/LC <u>Decomposec</u> Factor</u></u>	Handbook eet LCY/hr consolidated stoc			
Source of estimated volus Source of estimated swel HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction	l factor: Cat <u>FION</u> ction: 150 fe ction: 634.3 scription: <u>C</u> <u>-5 %</u> <u>6,150 feet</u> <u>2,650 lbs/LC</u> <u>Decomposed</u> <u>Factor</u> <u>Skill:</u> ency: <u></u>	Handbook eet LCY/hr Consolidated stoc	ck, 75% Earth)	

(AVG.) (1 SHIFT/DAY) (DOZ-OC) (CAT HB)
(DOZ-OC)
(CAT HB)
(CAT HB)
(CAT HB)
(PAT)

Adjusted unit production:	458.60 LCY/hr
Adjusted fleet production:	458.6 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.930/LCY

Total job time:	49.47 Hours
Total job cost:	\$21,105

BULLDOZER WORK

Task description:	Push ch	eck ualli i	DITICKS IIITO	pit			
Navajo Clay Pit		Pern	nit Action:	TR-03		Permit/Job#:	M1993004
PROJECT IDENT	IFICATION						
Task #: 002 Date: 1/18/202 2:22:15	24	State: County:	Colorado Elbert			Abbreviation: Filename:	None M004-002
User: JR2		_					
Agency or or	ganization nan	ne: DR	MS				
HOURLY EQUIPM	MENT COST	<u>r</u>					
Basic Machine:	Cat D8T - 8SU	ſ					
Horsepower:	310						
Blade Type:	Semi-Universa	1					
Attachment:	NA						
Shift Basis:	1 per day						
Data Source:	(CRG)						
Cost Breakdown:				T	tilization %		
O			¢241.29	<u>U</u>			
Ownership Cost/Hou			\$241.38 \$143.92		NA 100		
Operating Cost/Hou			\$143.92				
Ripper own. Cost/Hou			\$0.00		NA		
Ripper op. Cost/Hou					0		
Operator Cost/Hou	ir:		\$41.30		NA		
Total unit Cost/Hour: Total Fleet Cost/Hour:	\$426.60 \$426.60						
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1:	\$426.60 NTITIES 31 .000				NA		
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2. Swell factor: 1.	\$426.60 NTITIES 31				NA		
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2. Source of estimated volume: 2. Source of estimated volume: 2.	\$426.60 NTITIES 31 .000 31 LCY blume: vell factor:	Estimated Cat Handb	 25 check da	ams + add	itional 25% vol	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2 Swell factor: 1 Loose volume: 2 Source of estimated volume 2	\$426.60 NTITIES 31 .000 31 LCY blume: vell factor:		 25 check da	ams + add		ume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2. Source of estimated volume: 2. Source of estimated volume: 2.	\$426.60 NTITIES 31 .000 31 LCY olume: .001 factor: .01 factor: .01 factor: .01 factor: .02 factor .02 factor .01 factor .01 factor .01 factor .02 factor .02 factor .02 factor .03 factor		25 check da	ams + add 		lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2. Source of estimated volume: 2. Source of estimated volume: 2. MOURLY PRODU Average push distance	\$426.60 NTITIES 31 .000 31 LCY olume: .001 factor: .002 CTION	Cat Handt 0 feet 1.9 LCY/ł	25 check da		itional 25% vol	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2. Swell factor: 1. Loose volume: 2. Source of estimated volume: 2. Source of estimated sw . HOURLY PRODU . Average push distance . Unadjusted hourly pro .	\$426.60 NTITIES 31 .000 31 LCY olume: .001 factor: .002 .003 .004 .005 .006 .007 .008 .009 .0000 .0000 .0000 .0000 .0000<	Cat Handt 0 feet 1.9 LCY/I 	25 check da		itional 25% vol	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2: Source of estimated volume: 2: Source of estimated sw 4000000000000000000000000000000000000	\$426.60 NTITIES 31 .000 31 LCY olume: .001 factor: .002 .003 .004 .005 .006 .007 .008 .009 .000	Cat Handt 0 feet 1.9 LCY/i Rock, av t	25 check da		itional 25% vol	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2. Source of estimated volume: 2. Source of estimated volume: 2. Source of estimated sw 4000000000000000000000000000000000000	\$426.60 NTITIES 31 .000 31 LCY olume: .000 31 LCY olume: .000 CTION cction: .000	Cat Handt 0 feet 1.9 LCY/I <u>Rock, a</u> t /LCY	25 check da		itional 25% vol	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2. Source of estimated sw HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradient Average push gradient Average site altitude: Material weight: Weight description: Job Condition Correct Description:	\$426.60 NTITIES 31 .000 31 LCY olume: .000 31 LCY olume: .000 GETION cction: .000 description: c: .5 % .6,150 fee .2,950 lbs: .5lag - bro ion Factor	Cat Handt 0 feet 1.9 LCY/I Rock, a ^r t /LCY bken			itional 25% vol).7 <u>Source</u>	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2. Swell factor: 1. Loose volume: 2. Source of estimated volume: 2. Source of estimated sw . HOURLY PRODU . Average push distance . Unadjusted hourly pro . Materials consistency . Average push gradient . Average site altitude: . Material weight: . Weight description: . Job Condition Correct . Operat .	\$426.60 NTITIES 31 .000 31 LCY olume: .000 31 LCY olume: .000 31 LCY olume: .000 GCTION c: _20 duction: _49 description: t: 5 %	Cat Handt 0 feet 1.9 LCY/I <u>Rock, a</u> t /LCY oken 0.7			itional 25% vol).7 <u>Source</u> (AVG.)	lume of OB	
Total Fleet Cost/Hour: MATERIAL QUAI Initial Volume: 2: Swell factor: 1. Loose volume: 2: Source of estimated vo Source of estimated vo Source of estimated sw HOURLY PRODU Average push distance Unadjusted hourly pro Materials consistency Average push gradient Average site altitude: Material weight: Weight description: Job Condition Correct Operat Material cons	\$426.60 NTITIES 31 .000 31 LCY olume: .000 31 LCY olume: .000 31 LCY olume: .000 GCTION c: _20 duction: _49 description: t: 5 %	Cat Handt 0 feet 1.9 LCY/I Rock, a t /LCY oken 0.7 0.7			itional 25% vol).7 <u>Source</u>	lume of OB	

Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.115	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.780	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4548	

rujusteu unit production.	225.72 DC 17m
Adjusted fleet production:	223.72 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$1.907/LCY

Total job time:	1.03 Hours
Total job cost:	\$440

Site: <u>Navajo Clay Pit</u>		Permit	Action:	Tr-03	Perr	nit/Job#: <u>M199</u>	93004
PROJECT IDENT Task #: 003 Date: 1/18/20 2:25:52 User: JR2 Agency or o	24 Co	unty: H	Colorado Elbert S			viation: <u>None</u> ename: M004	-003
HOURLY EQUIP	MENT_			COSTS	hift basis: <u>1 per d</u>	<u>ay</u>	
			Equipme	ent Description			
	-5	Scraper:	Cat 631				
	t Equipment -Loa	-Dozer:	NA Cat D6	TICD			
Suppor		p Area:	NA	I LOP			
Road Mai	ntenance – Motor	Grader:	CAT 14				
	-Water	Truck:	Water 7	Fanker, 2,500 Gal			
Cost Breakdown:	Scraper Wo	rk Team		Support Equi	oment	Maintenance	e Equipment
	Scraper	Doz	zer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100		NA	50	NA	50	50
Ownership cost/hour:	\$341.67		NA	\$127.53	NA	\$83.57	\$11.3
Operating cost/hour:	\$285.26		NA	\$41.57	NA	\$28.78	\$11.40
%Utilization-ripper:	NA		NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.90		NA	\$41.30	NA	\$28.56	\$0.00
Unit Subtotals:	\$657.83		NA	\$210.40	NA	\$140.90	\$22.8
Number of Units:	2	¢1.21	0	1	0	1	¢1.c2.71
Group Subtotals:	Work:	\$1,31	5.66	Support:	\$210.40	Maint:	\$163.71
Total work team cost/	hour: <u>\$1,689.77</u>						
MATERIAL QUA	NTITIES						
Initial volume: Loose volume:	500 500		CCY LCY	Swell fact	tor: <u>1.000</u>		
	ce of estimated vo f estimated swell		Operator Cat Han	r will import 500 c dbook	cy of scrap brick f	or pit backfill	
HOURLY PRODU	JCTION						
				Scraper Bo	owl (volume) Basi	is:	
Material weight: Material description: Rated Payload:	2,950 lbs/LCY Slag - broken 81,600 pounds			-	Volume: 24.00 Volume: 34.00	I	.CY .CY .CY
raiou I ayiodu.	or,000 pounds			Average	volume. 29.00	L	

<u>0.80</u> Minutes

0.70 Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6150 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: <u>Rutted dirt</u>, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	5.00	5.00	10.00	638	1.12

Haul Time: 1.12 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	700.00	-5.00	5.00	0.00	2937	0.38

Return Time:	0.38	minutes
Total Scraper team cycle time:	3.00	minutes
Adjusted for job conditions:	459.17	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper team (unit) hourly production:	918.35	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	918.35	LCY/Hour
Unadjusted unit production/hour: 553.22 LCY/Hour Optimal Number of Scrapers per push dozer:		

Fleet size:	1	Team(s)	Total job time:	0.54	Hours
Unit cost:	\$1.840	/LCY	Total job cost:	\$920	

BULLDOZER WORK

Cut and fill remaining highwalls to 3H:1V				
: <u>Navajo Clay Pit</u>	Permit Action:	TR-03	Permit/Job#:	M1993004
PROJECT IDENTIFI	<u>CATION</u>			
Task #: 004	State: Colorado		Abbreviation:	None
Date: 1/18/2024	County: Elbert		Filename:	M004-004
2:28:51 PM				
User: JR2				
Agency or organi	ization name: DRMS			
HOURLY EQUIPME	NT COST			
Basic Machine: Cat	D8T - 8SU			
Horsepower: 310				
51	i-Universal			
Attachment: NA	-			
Shift Basis: <u>1 per</u> Data Source: (CR	r day G)			
<u>Cost Breakdown:</u>	3)			
Cost Dieakuowii.		Utilization %		
Ownership Cost/Hour:	\$241.38	NA		
Operating Cost/Hour:	\$143.92	100		
Ripper own. Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.30	NA		
Total unit Cost/Hour:	\$426.60			
Total Fleet Cost/Hour:	\$426.60			
-	_ ·			
MATERIAL QUANTI	<u>TIES</u>			
Initial Volume: 14,58	3			
Swell factor: 1.125				
Swen factor. 1.123				
	6 LCY			
Loose volume: 16,40		H:1V to 3H:1V Slopes		
	ne: $1,740 \text{ ft L x } 30 \text{ ft H, 1}$	H:1V to 3H:1V Slopes		
Loose volume: 16,40 Source of estimated volum Source of estimated swell	ne: <u>1,740 ft L x 30 ft H, 1</u> factor: <u>Cat Handbook</u>	H:1V to 3H:1V Slopes		
Loose volume: 16,40 Source of estimated volum	ne: <u>1,740 ft L x 30 ft H, 1</u> factor: <u>Cat Handbook</u>	H:1V to 3H:1V Slopes		
Loose volume: 16,40 Source of estimated volum Source of estimated swell	ne: <u>1,740 ft L x 30 ft H, 1</u> factor: <u>Cat Handbook</u>	H:1V to 3H:1V Slopes		
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT	ne: <u>1,740 ft L x 30 ft H, 11</u> factor: <u>Cat Handbook</u> <u>ION</u> <u>200 feet</u>	H:1V to 3H:1V Slopes		
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance:	tion: $1,740 \text{ ft } \text{L x } 30 \text{ ft } \text{H}, 12$ 1,740 ft L x 30 ft H, 12 Cat Handbook ION 200 feet 491.9 LCY/hr			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc	he: $1,740 \text{ ft L x } 30 \text{ ft H, 1}$ factor: Cat Handbook ION tion: 200 feet 491.9 LCY/hr rription: Consolidated stockp			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient:	ne:			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc	he: $1,740 \text{ ft L x } 30 \text{ ft H, 1}$ factor: Cat Handbook ION tion: 200 feet 491.9 LCY/hr rription: Consolidated stockp			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient:	ne:			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient: Average site altitude:	he: $1,740 \text{ ft } \text{L x } 30 \text{ ft } \text{H}, 12$ factor: Cat Handbook ION 200 feet tion: 491.9 LCY/hr cription: Consolidated stockp -5 % 6,150 feet			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient: Average site altitude:	he: $1,740 \text{ ft } \text{L x } 30 \text{ ft } \text{H}, 12$ factor: Cat Handbook ION 200 feet tion: 491.9 LCY/hr cription: Consolidated stockp -5 % 6,150 feet 2,650 lbs/LCY Decomposed rock - 25% Rock,			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction I Operator S	he: $1,740 \text{ ft L x 30 ft H, 12}$ factor: Cat Handbook ION 200 feet tion: 491.9 LCY/hr cription: Consolidated stockp -5 % 6,150 feet 2,650 lbs/LCY Decomposed rock - 25% Rock, <u>Factor</u> kill: 0.750			
Loose volume: 16,40 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction	he: $1,740 \text{ ft L x 30 ft H, 12}$ factor: Cat Handbook ION 200 feet tion: 491.9 LCY/hr cription: Consolidated stockp -5 % 6,150 feet 2,650 lbs/LCY Decomposed rock - 25% Rock, Factor kill: 0.750 ncy: 1.000			

Task # 004

1.000 0.830	(AVG.)
0.830	$(1 \text{ CUTET} / \mathbf{D} \wedge \mathbf{V})$
0.000	(1 SHIFT/DAY)
1.000	(DOZ-OC)
1.115	(CAT HB)
1.000	(CAT HB)
0.868	(CAT HB)
1.000	(PAT)
0.7230	
(1.115 1.000 0.868 1.000

Aujusteu unit production.	333.04 LC 1/III
Adjusted fleet production:	355.64 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$1.200/LCY

Total job time:	46.13 Hours
Total job cost:	\$19,679

Site: Navajo Clay Pit		Permit A	ction:	Tr-03	Perr	mit/Job#: <u>M199</u>	3004
PROJECT IDEN	TIFICATION						
Task #:005			lorado			viation: None	
Date: 1/18/20 2:32:46		unty: Elb	pert		File	ename: M004-0	005
User: $JR2$							
Agency or o	organization name:	DRMS					
HOURLY EQUIP	MENT			COSTSI	hift basis: <u>1 per d</u>	<u>ay</u>	
		E	quipme	nt Description			
		Scraper: C	Cat 631				
			NA Cat D6T				
Suppo	rt Equipment -Loa Dum-		NA	LOP			
Road Ma	intenance – Motor	Grader: (CAT 14				
	-Water	Truck: V	Water T	anker, 2,500 Gal	•		
Cost Breakdown:	Scraper Wo	rk Team		Support Equip	oment	Maintenance	Fauinment
<u>cost breakdown</u> .	Scraper	Dozer	•	Load Area	Dump Area	Motor Grader	Water Tru
%Utilization-machine:	100		NA	50	NA	50	
Ownership cost/hour:	\$341.67		NA	\$127.53	NA	\$83.57	\$11
Operating cost/hour:	\$285.26		NA	\$41.57	NA	\$28.78	\$11
%Utilization-ripper:	NA		NA	NA	NA	NA]
Ripper own. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$0
Ripper op. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$0
Operator cost/hour:	\$30.90		NA	\$41.30	NA	\$28.56	\$0
Unit Subtotals:	\$657.83		NA	\$210.40	NA	\$140.90	\$22
Number of Units:	2	¢1.215	0	1	0	1	¢1.62.51
Group Subtotals:	Work:	\$1,315.0	66	Support:	\$210.40	Maint:	\$163.71
Total work team cost	ANTITIES						
Initial volume: Loose volume:	16,456 18,513		CY CY	Swell fact	tor: <u>1.125</u>		
	· · · · · ·			a w 2 ft d- 1			
	rce of estimated vo of estimated swell		4 ac are at Hand	a x 3 ft depth book			
HOURLY PROD	UCTION						
				Scraper Bo	owl (volume) Basi	is:	
e	2,650 lbs/LCY				Volume: <u>24.00</u>		CY
Material description:	Decomposed roc	k - 25% Ro	ck.	Heaped	Volume: 34.00	L	CY
Material description.	75% Earth		<i>,</i>				

<u>0.80</u> Minutes

0.70 Minutes

Payload Capacity: 30.79 LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6150 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	800.00	5.00	3.00	8.00	783	1.05

Haul Time: **1.05** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	-5.00	3.00	-2.00	2920	0.34
				Return Time:	0.34	minutes

Total Scraper team cycle time:	2.89	minutes
Adjusted for job conditions:	499.72	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper team (unit) hourly production:	999.45	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	999.45	LCY/Hour

Unadjusted unit production/hour: 602.08 LCY/Hour Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size:	1	Team(s)
-------------	---	---------

Unit cost: \$1.691 /LCY

Total job time:	18.52	Hours
Total job cost:	\$31,300	

BULLDOZER RIPPING WORK

	Task description:	Rip	compacted are	eas					
Site:	Navajo Clay Pi	t	Permi	it Action:	TR-03	Per	mit/Job#:	M1993004	
	PROJECT IDE	NTIFICATI	ION						
		/2024 :29 PM		Colorado Elbert			viation: lename:	None M004-006	
		or organization	n name: DRM	4S					
	HOURLY EQU	•		15					
	Basic N		ut D8T - 8SU			Horsepower:		310	
	Ripper Atta		Shank Ripper			Shift Basis:		er day	
						Data Source:	(C	CRG)	
	Cost Breakdown:								
						Utilization %			
		Ownership C			\$241.38	NA			
	Pinner	Operating C Ownership C			\$143.92 \$14.11	100 NA			
		er Operating C			Ф 7 4 5	<u>100</u>			
		Operator C			\$41.30	NA			
		Total Unit C	Cost/Hour:		\$448.16				
		Total Fleet C	'ost/Hour	\$448	R 16				
mic:	Alternate Methods	<u>:</u>	Bank	Volume:	NA	BCY		NA	
rea:	13.70	acres		epth (ft):	1.50		3,154		TY or
		Source of esti	imated quantity	- 16 ac te	otal disturbance	- 2 ac pit floor - 0	3 ac nond	1	
			innucca quantity.				.o ue pone	·	
	HOURLY PRO	DUCTION							
	Seismic:		Seismic Veloci	+	NA	feet/seco	ad		
			Seisinic veloci	ty	INA		liu		
	Area:		D' ' D	.1	0.54	6 /			
			ge Ripping Dep ge Ripping Wid		2.56 7.08	feet/pass feet/pass			
			e Ripping Leng		350.00	feet/pass			
			rage Dozer Spec		88.00	feet/minu	ite		
		Average	e Maneuver Tin	ne:	0.25	minutes/p	bass		
		Produc	ction per unit are	ea:	0.807	acres/hou	ır		
	Job Condition Cor	rection Factor	<u>·S</u>						
	Una	djusted Hourly	y Unit Productio	on:	0.807	Acres/hr			
			Site Altitud	de:	6,150	feet			
			Altitude A		1.00	(CAT HE			
			Job Efficiend	•	0.83	(1 shift/d	•		
			Net Correction	on:	0.83	multiplier	r		
		•	l Hourly Unit Pr Hourly Fleet Pr		0.67 0.67	Acres/hr Acres/hr			
	JOB TIME AN	D COST							
	Fleet size:	1	Grader(s)		Total job time	e: <u>20</u>	.44	Hours	
	Unit cost:	\$668.730	Per acre		Total job cos	st· \$9	162		

Site: Navajo Clay Pit		Permit	Action:	Tr-03	Perr	nit/Job#: <u>M199</u>	93004
PROJECT IDENT	TIFICATION						
Task #: 007	Stat	te: C	Colorado		Abbrev	viation: None	
Date: 1/18/20		ty: E	Elbert		File	ename: M004	-007
User: $\frac{2:35:28}{JR2}$	PM						
	organization name:	DRM	S				
HOURLY EQUIP	MENT			COSTSh	ift basis: <u>1 per d</u>	av	
			Fauinme	ent Description			
	-Scra		Cat 631				
		ozer:	NA				
Suppor	rt Equipment -Load A -Dump A		Cat D6' NA	I LGP			
Road Mai	intenance – Motor Gra		CAT 14	40M			
	-Water Ti	ruck:	Water 7	Fanker, 2,500 Gal.			
Cost Bucchdorme	Course on Words	Τ		Summer of Francis		Maintanana	. Ei
<u>Cost Breakdown</u> :	Scraper Work Scraper	Doz	ver	Support Equip Load Area	Dump Area	Maintenance Motor Grader	Water Tr
%Utilization-machine:	100		NA	50	NA	50	
Ownership cost/hour:	\$341.67		NA	\$127.53	NA	\$83.57	\$1
Operating cost/hour:	\$285.26		NA	\$41.57	NA	\$28.78	\$1
%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:	\$657.83		NA	\$210.40	NA	\$140.90	\$2
Number of Units:	2		0	1	0	1	
Group Subtotals:	Work:	\$1,31	5.66	Support:	\$210.40	Maint:	\$163.7
Total work team cost	/hour: <u>\$1,689.77</u>						
MATERIAL QUA	NTITIES						
Initial volume:	5,163		CCY	Swell fact	or: 1.215		
Loose volume:	6,273		LCY				
	rce of estimated volu of estimated swell fac		Pit area = Cat Hand	= 4.8 ac x 8 in dep	th		<u></u>
		.01.	Cai Hallo	JUUUK			
HOURLY PRODU	UCTION			~ .			
				•	wl (volume) Basi		
e	1,600 lbs/LCY			Struck V			LCY
Material description: Rated Payload:	Top Soil 81,600 pounds			Heaped V Average V			LCY LCY
Raitu Fayitat.	or,000 pounds			Average v	June. 27.00	L	<u></u>

Task # 007

<u>0.80</u> Minutes

0.70 Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6150 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	900.00	5.00	3.00	8.00	783	1.17

Haul Time: **1.17** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-5.00	3.00	-2.00	2920	0.38

Return Time:	0.38	minutes
Total Scraper team cycle time:	3.05	minutes
Adjusted for job conditions:	473.51	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper team (unit) hourly production:	947.02	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	947.02	LCY/Hour
Unadjusted unit production/hour: 570.49 LCY/Hour Optimal Number of Scrapers per push dozer:		

Fleet size:	1	Team(s)	Total job time:	6.62	Hours
Unit cost:	\$1.784	/LCY	Total job cost:	\$11,193	

Site: Navajo Clay Pit		Permit	Action:	Tr-03	Peri	mit/Job#: <u>M199</u>	3004
PROJECT IDENT	TIFICATION						
Task #: 008			Colorado		Abbrev	viation: None	
Date: 1/18/20 2:36:36		nty: E	Elbert		Fil	ename: M004-	008
User: $JR2$) PM						
	organization name:	DRM	S				
HOURLY EQUIP	MENT			COSTSI	nift basis: <u>1 per d</u>	<u>ay</u>	
			Equipme	ent Description			
	-Sc	raper:	Cat 631				
		Dozer:	NA Cet DC	TICD			
Suppor	rt Equipment -Load -Dump	ł	Cat D6 NA	I LGP			
Road Mai	intenance – Motor G		CAT 14	40M			
	-Water T	ruck:	Water 7	Fanker, 2,500 Gal.			
Cost Breakdown:	Scraper Work	Team		Support Equip	oment	Maintenance	Fauinment
<u>Cost Dicandown</u> .	Scraper	Doz	ver	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100		NA	50	NA	50	50
Ownership cost/hour:	\$341.67		NA	\$127.53	NA	\$83.57	\$11.3
Operating cost/hour:	\$285.26		NA	\$41.57	NA	\$28.78	\$11.4
%Utilization-ripper:	NA		NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$0.0
Ripper op. cost/hour:	NA		NA	\$0.00	NA	\$0.00	\$0.0
Operator cost/hour:	\$30.90		NA	\$41.30	NA	\$28.56	\$0.0
Unit Subtotals:	\$657.83		NA	\$210.40	NA	\$140.90	\$22.8
Number of Units:	2 Works	¢1 21	0	1 Summorti	0 \$210.40	1 Mointi	¢162.71
Group Subtotals: Total work team cost	Work:	\$1,31	5.00	Support:	\$210.40	Maint:	\$163.71
MATERIAL QUA	<u>NTITIES</u>						
Initial volume:	5,001		CCY	Swell fact	tor: <u>1.215</u>		
Loose volume:	6,076		LCY				
	rce of estimated volu of estimated swell fa		Stockpil Cat Han	e area = (6.5 ac - (dbook).3 ac pond) x 6 ir	1 depth	
HOURLY PRODU	UCTION						
				Scraper Bo	owl (volume) Bas	<u>is:</u>	
Material weight:	1,600 lbs/LCY			Struck '	Volume: 24.00	L	CY
Material description:	Top Soil			Heaped			CY
Rated Payload: Payload Capacity:	81,600 pounds 51.00 LCY			Average Adjusted C			.CY .CY
r ayroad Capacity.	21.00 LC I			r ajusica C	apacity. <u>27.00</u>	L	

<u>0.80</u> Minutes

0.70 Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6150 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	200.00	1.00	3.00	4.00	1667	0.23

Haul Time: 0.23 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	200.00	-1.00	3.00	2.00	2914	0.26

Return Time:	0.26	minutes
Total Scraper team cycle time:	1.99 725.73	minutes
Adjusted for job conditions:	2	LCY/Hour Scraper(s)
Adjusted single scraper team (unit) hourly production:	<u>1,451.46</u> 1,451.46	LCY/Hour LCY/Hour
Unadjusted unit production/hour: 874.37 LCY/Hour Optimal Number of Scrapers per push dozer:		

Fleet size:	1	Team(s)	Total job time:	4.19	Hours
Unit cost:	\$1.164	_ /LCY	Total job cost:	\$7,074	

Site: Navajo Clay Pit	F	Permit Action	n: <u>Tr-03</u>	Perr	mit/Job#: <u>M199</u>	3004
PROJECT IDENT	TIFICATION					
Task #: 009	State	e: Colorad	lo	Abbrev	viation: None	
Date: 1/18/20	5	: Elbert		Fil	ename: M004-	009
User: $\frac{2:37:24}{JR2}$	PM					
	organization name:	DRMS				
HOURLY EQUIP			COSTSI	nift basis: <u>1 per d</u>	9V	
<u>HOURLI EQUI</u>				int basis. <u>I per u</u>	<u>ay</u>	
	-Scra		ment Description			
	-Do	•				
Suppor	rt Equipment -Load A		D6T LGP			
Dood Mo	-Dump A Intenance –Motor Grad		140M			
Koad Ma	-Water Tru		r Tanker, 2,500 Gal			
Cost Breakdown:	Scraper Work T		Support Equi		Maintenance	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Tr
%Utilization-machine:	100	NA	50	NA	50	
Ownership cost/hour:	\$341.67	NA	\$127.53	NA	\$83.57	\$1
Operating cost/hour:	\$285.26	NA	\$41.57	NA	\$28.78	\$1
%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:	\$657.83	NA	\$210.40	NA	\$140.90	\$2
Number of Units:	1	0	1	0	1	
Group Subtotals:	Work:	\$657.83	Support:	\$210.40	Maint:	\$163.7
Total work team cost	/hour: \$1,031.94	_				
MATERIAL QUA	NTITIES					
Initial volume:	2,581	CCY	Swell fact	or: <u>1.215</u>		
Loose volume:	3,136	LCY				
	rce of estimated volum of estimated swell factor		s road = 3.2 ac x 6 in andbook	n depth		
HOURLY PRODU	UCTION					
			Scraper Bo	owl (volume) Basi	is:	
Material weight:	1,600 lbs/LCY		Struck	Volume: 24.00	L	CY
Material description:	Top Soil		Heaped	Volume: 34.00	L	CY
Rated Payload:	81,600 pounds		Average ` Adjusted C			CY
Payload Capacity:	51.00 LCY			Capacity: 29.00		CY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

	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	200.00	1.00	3.00	4.00	1667	0.23

Haul Time: **0.23** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	200.00	-1.00	3.00	2.00	2914	0.26

Return Time:	0.26	minutes
Total Scraper team cycle time:	1.99	minutes
Adjusted for job conditions:	725.73	LCY/Hour
Selected Number of Scrapers:	1	Scraper(s)
Adjusted single scraper team (unit) hourly production:	725.73	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	725.73	LCY/Hour
Unadjusted unit production/hour: 874.37 LCY/Hour		

JOB TIME AND COST

Optimal Number of Scrapers per push dozer:

Fleet size:	1	Team(s)	Total job time:	4.32	Hours
Unit cost:	\$1.422	_ /LCY	Total job cost:	\$4,459	

<u>0.80</u> Minutes

0.70 Minutes

Site Altitude: 6150 feet

REVEGETATION WORK

tion:	Revegetate 25 acr	es			
lay Pit	Perm	nit Action: <u>TR-</u>	03	Permit/Job	#: <u>M1993004</u>
DENTIFIC	ATION				
010					None
1/18/2024 2:38:31 PM	County:	Elbert		Filename:	M004-010
JR2				-	
l	ay Pit DENTIFIC 010 1/18/2024 2:38:31 PM	Dentification Perm 010 State: 1/18/2024 County: 2:38:31 PM	Dentification TR- 010 State: Colorado 1/18/2024 County: Elbert 2:38:31 PM County: Elbert	Description Permit Action: TR-03 DENTIFICATION 010 State: Colorado 1/18/2024 County: Elbert 2:38:31 PM Elbert	Description Permit Action: TR-03 Permit/Job DENTIFICATION Old State: Colorado Abbreviation: Filename: Filename: Filename: Filename: Filename: Colorado 010 State: Colorado State: Filename: Filename: Filename: Filename: Colorado 2:38:31 PM PM State: Colorado

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Potassium nitrate, 13-46-0	40.00	pound	\$0.68	\$27.20
			Total Fertilizer Materials Cost/Acre	\$27.20

Application

Description		Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)		\$41.82
	Total Fertilizer Application Cost/Acre	\$41.82

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$112.82
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$451.62

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Switchgrass - Blackwell	1.35	12.06	\$15.53
Blue Grama - Lovington	0.30	4.90	\$4.79
Sideoats Grama - Vaughn	0.90	2.95	\$7.54
Western Wheatgrass - Arriba	3.20	8.08	\$20.80
Prairie Sandreed - Goshen	1.95	12.22	\$20.18
Totals Seed Mix	7.70	40.21	\$68.84

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	\$429.79	\$859.57
Total Mulch Materials Cost/Acre				\$859.57

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$74.46
Weed spray, hand, aquatic area, annuals [DMG]		\$119.47
	Total Mulch Application Cost/Acre	\$193.93

NURSERY STOCK PLANTING

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

No. of Acres:	25	Cost /Acre:	\$1,874.98
Estimated Failure Rate:	25%	Cost /Acre*:	\$300.84
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$46,874.50
Reseeding Job Cost:	\$1,880.25
Total Job Cost:	\$48,755
Job Hours:	25.00

EQUIPMENT MOBILIZATION/DEMOBILIZATION

			nent				
: <u>Navajo Clay Pit</u>	Permit Action:		Permit Action: TR-03		Permit	Job#: <u>M</u>	M1993004
PROJECT IDENTIFICATI	<u>ION</u>						
Task #: 011	State: Co	olorado	Abbreviatio	n: None			
Date: 1/18/2024	County: Elb	pert	Filenam	e: M004	-011		
<u>2:39:16 PM</u> User: JR2							
User. JRZ							
Agency or organization	n name: DRMS						
EOLIDMENT TDANGDOD	T RIC COST						
<u>EQUIPMENT TRANSPOR</u>							
EQUIFWIENT TRANSFOR	<u>1 MO COST</u>		Shift havin	1 man da			
EQUITMENT TRANSFOR			Shift basis:		•		
EQUITMENT TRANSFOR			Shift basis: _ Cost Data Source:		•		
		RIC ON-HIGHW	Cost Data Source:	CRG Da	ta		
Truck Tractor Desc			Cost Data Source: _	CRG Da	ta		
Truck Tractor Desc	ription: GENE		Cost Data Source:	CRG Da 4, DIESEL	ta L POWERED		
	ription: GENE	ENERIC FOLDIN	Cost Data Source: AY TRUCK TRACTOR, 62 400 HP (2ND HALF, 2006) IG GOOSENECK, DROP D	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc Truck Trailer Desc	ription: GENE	ENERIC FOLDIN	Cost Data Source:	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc	ription: GENE	ENERIC FOLDIN	Cost Data Source: AY TRUCK TRACTOR, 62 400 HP (2ND HALF, 2006) IG GOOSENECK, DROP D	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc Truck Trailer Desc	ription: GENE	ENERIC FOLDIN	Cost Data Source: AY TRUCK TRACTOR, 62 400 HP (2ND HALF, 2006) IG GOOSENECK, DROP D	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc Truck Trailer Desc <u>Cost Breakdown:</u>	ription: GENEI	ENERIC FOLDIN TR	Cost Data Source: AY TRUCK TRACTOR, 62 400 HP (2ND HALF, 2006) G GOOSENECK, DROP D AILER (25T, 50T, AND 10	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc Truck Trailer Desc <u>Cost Breakdown:</u> Available Rig Capacities	ription: GENEI ription: GI	ENERIC FOLDIN TR 26-50 Tons	Cost Data Source: AY TRUCK TRACTOR, 62 400 HP (2ND HALF, 2006) IG GOOSENECK, DROP D AILER (25T, 50T, AND 10 51+ Tons	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc Truck Trailer Desc <u>Cost Breakdown:</u> Available Rig Capacities Ownership Cost/Hour:	ription: GENEI cription: GH	ENERIC FOLDIN TR 26-50 Tons \$36.04	Cost Data Source:	CRG Da 4, DIESEL ECK EQU	ta L POWERED		
Truck Tractor Desc Truck Trailer Desc <u>Cost Breakdown:</u> <u>Available Rig Capacities</u> Ownership Cost/Hour: Operating Cost/Hour:	oription: GENE oription: GH 0-25 Tons \$20.26 \$39.51 \$39.51	ENERIC FOLDIN TR 26-50 Tons \$36.04 \$76.08	Cost Data Source:	CRG Da 4, DIESEL ECK EQU	ta L POWERED		

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		
Cat D8T - 8SU	53.08	\$255.49	\$175.95	1	\$431.44	\$175.95	\$250.00
Drill/Broadcast	25.00	\$6.73	\$82.29	1	\$89.02	\$82.29	\$250.00
Seeder with							
Tractor							
Cat 631G	52.50	\$341.67	\$175.95	2	\$1,035.24	\$351.90	\$500.00
CAT 140M	16.68	\$83.57	\$82.29	1	\$165.86	\$82.29	\$250.00
Cat D6T LGP	26.87	\$127.53	\$158.17	1	\$285.70	\$158.17	\$250.00

Subtotals: \$2,007.26 \$850.60 \$1,500.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$15.83	1	\$15.83	\$15.83
Water Tanker, 2,500 Gal.	\$34.27	1	\$34.27	\$34.27
		Subtotals:	\$50.10	\$50.10

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	AURORA	
Total one-way travel distance:	40.00	miles
Average Travel Speed:	50.00	mph
Total Non-Roadable Mob/Demob Cost *	\$17,608.88	
'* two round trips with haul rig: Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$80.16	

Transportation Cycle Time:

Haul Time (Hours): Return Time (Hours): Loading Time (Hours):	Non- Roadable Equipment 0.80 0.80 1.25	Roadable Equipment 0.80 0.80 NA
Loading Time (Hours): Unloading Time (Hours):	<u> </u>	NA NA
Subtotals:	4.10	1.60

JOB TIME AND COST

Total job time: 8.20 Hours

Total job cost: \$17,689