

Reilley - DNR, Robin <robin.reilley@state.co.us>

TR135 ADQ and Cost estimate

1 message

Reilley - DNR, Robin <robin.reilley@state.co.us> Fri, Mar 29, 2024 at 2:32 PM To: Graham Roberts <graham.roberts@trappermine.com>, Robin Reilley - DNR <robin.reilley@state.co.us>

Good Afternoon Mr. Roberts,

Please find attached the above referenced documents associated with TR135. I'mm available to answer any questions that come up.

Sincerely

Robin Reilley, M.S. GISP Environmental Protection Specialist II



COLORADO Division of Reclamation, Mining and Safety Department of Natural Resources

P 303.866.3567 ext 8105 | F 303.832.8106 Physical Address: 1313 Sherman Street St., Suite 215, Denver, CO 80203 Mailing Address: DRMS Room 215, 1001 E 62nd Ave, Denver, CO 80216 robin.reilley@state.co.us | http://mining.state.co.us

2 attachments

ADQ_TR135ADQ1.pdf 310K

CostEstimate_TR135.pdf 379K



Mr. Graham Roberts Environmental Supervisor Trapper Mine, Inc. P.O. Box 187 Craig, Colorado 81626

29 March 2024

Re: Trapper Mine Inc; Permit C1981010 DRMS Preliminary Adequacy Review of Technical Revision TR135 L Pit K Knob Extension and East J Pit Dragline Cuts

Dear Mr. Roberts:

The Division has completed its preliminary review of Trapper Mine's permit revision TR135 received by the Division on 28 February 2024. DRMS found the proposed revision complete on 8 March 2024. The proposed decision due date is 7 May 2023, 60 days from completeness. New disturbance of 50.8 acres was requested in the revision.

DRMS review comprises revised pages the following nine Maps and rules:

Billing review comprises revised pages die rono wing inne maps and rates.								
M1	M4	M4A	M6	M10A	M10B			
M12	M13	M14A	3.02.2	4.14	4.27.2			

DRMS understands that C Pit development has been permitted and that Trapper mine plans to refrain from opening C Pit during this permit term. Language to that intent is communicated in this application. However, Trapper Mine Inc. intends to retain references to C Pit operations in the permit text and associated maps.

DRMS 29 March 2024

Rule 4.14 (2) Backfilling and Grading

Comparing the PR11 and TR135 M12 maps DRMS observes that there is a slight shift in contours at the south end of the L Pit to the east and south. This shift in approximate original countaour is evident through the pit to the 7150 contour. DRMS has posed some questions below regarding stability and hydrology. Once these items are found adequately address DRMS can comment on the shift in AOC.

DRMS notes some slight changes in a couple of West Pannel drainage profiles from PR11 to TR135. DRMS has no adequacy concerns. DRMS notes that drainage profiles in the L Pit may not have changed as no updated drainage profiles were submitted for the L Pit.

1. Please inform DRMS should L Pit drainage profiles have changed relative to PR11.



DRMS 29 March 2024

Rule 4.27.2 Limited Variances

In Permit Revision 9 (PR9) Trapper Mine Inc. was granted a variance from Approximate Original Contour in the L Pit as per Rules 2.06.4 and 2.06.5. As this TR135 application requests additional mining in the southeast portion of the pit and extension of the pit to the north, DRMS envisions the variance deviating from that originally permitted in PR9.

- 2. Please discuss how or if the pit floor gradient may change given extension of the pit to the north.
- 3. Should the overall pit floor gradient change please also discuss the following with respect to stability:
 - a. Possible changes to backfill saturation of groundwater
 - b. Spoil depth variability
- c. Increased area of weak underling strata.

Trapper mine submitted a slope stability analysis in PR9.

- 4. For the TR135 crossections please indicate the associated slope stability safety factors for the expanded areas.
- 5. Pease inform DRMS of any increases in Drainage densityies and gradients in Flume Gulch and associated sub drainages with a discussion of sediment yield per acre.

DRMS 29 March 2024

Rule 3.02.2 Performance Bond

DRMS understands that additional disturbance of 50.8 acres was requested for the TR135 application. DRMS's CIRCES cost estimate indicated the amount required for reclamation associated with TR135 to be \$6,546,947. Please find DRMS's Cost Estimate attached.

Please contact me with any questions. I am available to answer any questions that come up.

Sincerely,

Bobin Keiller

Robin Reilley M.S. GISP Environmental Protection Specialist II Robin.reilley@state.co.us

COST SUMMARY WORK

Task description:		L Pit K Knob Extension Eas	Cuts		
Site: <u>Tra</u>	apper Mine	Permit Action:	TR135	Permit/Jo	b#: <u>C1981010</u>
PROJ	ECT IDENTIFI	CATION			
Tas	sk #:000	State: Colorado		Abbreviation:	None
Γ	Date: 3/12/2024	County: Moffat		Filename:	C010-000
U	User: RAR				

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost			
091	Replace Topsoil JPE 1 to J East	SCRAPER1	1	24.80	\$136,013			
091A	Replace Topsoil at L Pit K Knob L23-1 to K Knob	SCRAPER1	1	1.69	\$9,284			
L15	Regrade L PIt K Knob (Truck/Excavator)	TRUCK1	4	474.59	\$4,274,450			
L15A	Regrade Jennings Pit (Truck/Excavator)	TRUCK1	4	99.33	\$894,643			
N16	Seed L Pit, K Nob: >6700 ftRangeland with Shrubs	REVEGE	1	3.50	\$3,378			
N19	Seed J Pit without shrubs (Range C)	REVEGE	1	66.00	\$17,159			
<u>SUBTOTALS:</u> 669.91 \$5,334,927								

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$107,766
Performance bond:	1.05	Total =	\$56,017
Job superintendent:	287.00	Total =	\$18,678
Profit:	10.00	Total =	\$533,493
		TOTAL O & P =	\$715,953
		CONTRACT AMOUNT (direct + O & P) =	\$6,050,880

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total	= \$500
Engineering work and/or contract/bid preparation:	4.61	Total	= \$278,946
Reclamation management and/or administration:	3.58		\$216,622
CONTINGENCY:	0.00	Total	=\$0
	Т	OTAL INDIRECT COST	= \$1,212,020
TOTAL BO	ND AMC	DUNT (direct + indirect) =	= \$6,546,947

Trapper Mine SCRAPER TEAM WORK

Site: Trapper Mine		Permit	Actior	n: <u>TR135</u>	P	Permit/Job#: C198101		
PROJECT IDENTI	FICATION							
Task #:091			olorado)		viation:	None	
Date: <u>3/12/20</u> User: <u>RAR</u>	<u>Co</u>	unty: <u>M</u>	offat		Fil	ename:	C010-0)91
Agency or or	ganization name	DRMS						
HOURLY EQUIPM	<u>IENT</u>			COST	Shift basis: <u>1 per</u>	day		
			<u> </u>	ent Description				
-Scraper: Cat 637G w/push-pull -Dozer: NA								
-Dozer: NA Support Equipment -Load Area: Cat D10T - 10SU								
	1 1			10T - 10SU				
Road Main	tenance – Motor		CAT 1		-			
	-Water	Truck:	Water	Tanker, 2,500 Ga	ll.			
Cost Breakdown:	Scraper Wor	rk Team		Support Equ	ipment	Ma	aintenanc	e Equipmen
	Scraper	Dozer	r	Load Area	Dump Area		Grader	Water Tru
%Utilization-machine:	100		NA	50	50		50	
Ownership cost/hour:	\$255.23		NA	\$178.69	\$178.69	\$	5212.21	\$11
Operating cost/hour:	\$280.59		NA	\$80.11	\$80.11		\$62.44	\$13
%Utilization-ripper:	NA		NA	NA	NA		NA	
Ripper own. cost/hour:	NA		NA	\$0.00	\$0.00		\$0.00	\$0
Ripper op. cost/hour:	NA		NA	\$0.00	\$0.00		\$0.00	\$0
Operator cost/hour:	\$30.90		NA	\$41.30	\$41.30		\$28.56	\$21
Unit Subtotals:	\$566.72		NA	\$300.10	\$300.10	\$	5303.21	\$46
Number of Units:	8		0	1	1		1	

Total work team cost/hour: \$5,483.40

MATERIAL QUANTITIES

Group Subtotals:

Initial volume:	74,052	CCY
Loose volume:	74.052	LCY

LCY

\$4,533.76

Swell factor: 1.000

Scraper Bowl (volume) Basis:

\$600.20

Maint:

\$349.44

Support:

Source of estimated volume: Appendix A, Table A-10.7 Source of estimated swell factor: Cat Handbook

Work:

HOURLY PRODUCTION

		-	·	
Material weight:	1,600 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Top Soil	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:		Adjusted Capacity:	29.00	LCY

Scraper Loading Time:
Maneuver and Spread Time:

Job Condition Correction:

1.00	Minutes
<u>0.60</u>	Minutes

Site Altitude: 6400 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, little maintenance, no water, 1" tire penetration 4.0</u>

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
2	400.00	6.25	4.00	10.25	922	0.46
3	764.00	-3.90	4.00	0.10	2965	0.36
4	1053.00	-6.70	4.00	-2.70	2972	0.42

Haul Time: **1.24** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
2	400.00	-6.25	4.00	-2.25	2972	0.19
3	764.00	3.90	4.00	7.90	1931	0.19
4	1053.00	6.70	4.00	10.70	1434	0.65

Return Time:	1.03	minutes
Total Scraper team cycle time: Adjusted for job conditions:	3.87 746.36	minutes LCY/Hour
Selected Number of Scrapers:	8 2,985.43	Scraper(s) LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	2,985.43	LCY/Hour

Unadjusted unit production/hour: 899.22 LCY/Hour Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	24.80	Hours
Unit cost:	\$1.837	/LCY	Total job cost:	\$136,013	

Trapper Mine SCRAPER TEAM WORK

Site: Trapper Mine Pern			ctior	n: <u>TR135</u>	F	Permit/Jo	b#: <u>C19</u>	981010
PROJECT IDE	NTIFICATION							
Task #: 091			orado)		viation:	None	
		unty: Mof	fat		Fil	ename:	C010-0	91A
User: RA	<u>R</u>							
Agency of	r organization name	: DRMS						
HOURLY EQU	IDMENT			COSTS	Shift basis: 1 per	day		
HOUKLI EQU				0515	siint basis. <u>1 per</u>	uay		
		1		ent Description				
		-		7G w/push-pull				
Sun	oort Equipment -Loa	-Dozer: N		10T - 10SU				
Sup				10T - 10SU				
Road N	laintenance – Motor		AT 1					
	-Water	Truck: W	ater	Tanker, 2,500 Ga	1.			
Cost Breakdown:	Scraper Wo	rk Team		Support Equi	inment	Ma	aintenanc	e Equipme
<u>Cost Breakdown</u>	Scraper	Dozer		Load Area	Dump Area	Motor		Water T
%Utilization-machine	: 100	Ν	ΝA	50	50		50	
Ownership cost/hour	:: \$255.23	Ν	NA	\$178.69	\$178.69	\$	212.21	\$1
Operating cost/hour	r: \$280.59	Ν	NA	\$80.11	\$80.11		\$62.44	\$1
%Utilization-ripper	r: NA	Ν	NA	NA	NA		NA	
Ripper own. cost/hour	r: NA	Ν	NA	\$0.00	\$0.00		\$0.00	S
Ripper op. cost/hour	:: NA	Ν	ΝA	\$0.00	\$0.00		\$0.00	\$
Operator cost/hour	r: \$30.90	Ν	NA	\$41.30	\$41.30		\$28.56	\$2
Unit Subtotals	s: \$566.72	Ν	NA	\$300.10	\$300.10	\$	303.21	\$4
Number of Units	s: 8		0	1	1		1	

Total work team cost/hour: <u>\$5,483.40</u>

MATERIAL QUANTITIES

Initial volume:	7,920	CCY	Swell factor:	1.000
Loose volume:	7,920	LCY		

Source of estimated volume: Appendix A, Table A-10.7 Source of estimated swell factor: Cat Handbook

Scraper Bowl (volume) Basis:

HOURLY PRODUCTION

Material weight:	1,600 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Top Soil	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	51.00 LCY	Adjusted Capacity:	29.00	LCY

<u>1.00</u> Minutes <u>0.60</u> Minutes

Scraper Loading Time:
Maneuver and Spread Time:

Composi d:+:-Job C

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: <u>Rutted dirt, little maintenance, no water, 1" tire penetration 4.0</u>

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	732.00	-3.40	4.00	0.60	2952	0.41

Haul Time: 0.41 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade	Roll. Res	Total Res	Velocity	Travel Time
Seg "	Hauf Distance (11)	(%)	(%)	(%)	(fpm)	(min)
1	732.00	3.40	4.00	7.40	2240	0.46

Return Time:	0.46	minutes
Total Scraper team cycle time:	2.47	minutes
Adjusted for job conditions:	1,169.39	LCY/Hour
Selected Number of Scrapers:	8	Scraper(s)
Adjusted single scraper team (unit) hourly production:	<u>4,677.57</u>	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	4,677.57	LCY/Hour

Unadjusted unit production/hour: 1,408.91 LCY/Hour Optimal Number of Scrapers per push

dozer:

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	1.69	Hours
Unit cost:	\$1.172	_ /LCY	Total job cost:	\$9,284	_

Site Altitude: 6400 feet

Trapper Mine TRUCK/LOADER TEAM WORK

Page 6 of 18

Site: Trapper Mine	e: Trapper Mine Permit Act			Grapper Mine Permit Action: TR135 Permit/Job#: C			C1981010
PROJECT IDEN	TIFICATION						
Task #: L15	Task #:L15State:Colorado			Abbreviation: None			
	/2024 0	County: Moff	àt			10-L15	
User: <u>RAR</u>							
Agency or	organization nan	ne: DRMS					
HOURLY EQUI	PMENT COST	-		Shift ba	sis: <u>1 per day</u>		
			Equipment Descr	iption			
Т	ruck Loader Tea		OMATSU 830E	•			
			AT 6090				
Supp	ort Equipment -L		t D10T - 10SU				
DeedM	-Du aintenance –Moto		t D10T - 10SU AT 16M				
Koad IVI			ater Tanker, 14,00	0 Gal.			
			,,,,,,,,,,,,,				
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Maintena	ance Equipment	
	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck	
%Utilization-machine:	100	100	25	25	25	50	
Ownership cost/hour:	\$207.26	\$164.88	\$178.69	\$178.69	\$212.21	\$158.36	
Operating cost/hour:	\$284.76	\$207.45	\$40.06	\$40.06	\$31.22	\$98.55	
%Utilization-riper:	NA	0	15	NA	NA	NA	
Ripper own. cost/hour:	NA	\$0.00	\$26.20	\$0.00	\$0.00	\$0.00	
Ripper op. cost/hour:	NA	\$0.00	\$1.83	\$0.00	\$0.00	\$0.00	
Operator cost/hour:	\$34.42	\$37.32	\$41.30	\$41.30	\$28.56	\$0.00	
Unit Subtotals:	\$526.44	\$409.65	\$261.87	\$260.05	\$271.99	\$256.91	
Number of Units:	12	4	1	1	1	1	
Group Subtotals:	Work:	\$7,955.88	Support:	\$521.92	Maint:	\$528.90	

Total work team cost/hour: \$9,006.70

MATERIAL QUANTITIES

Initial volume: Loose volume:	6,083,510 6,083,510	CCY Swell LCY	factor:	1.000	
	e of estimated volume: estimated swell factor:	11	Table A-	1.1	
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

HOURLY PRODUCTION

	<u>s:</u>	D 1			
Material weight:	<u>3,300</u>	Pounds d rock - 75% Rock, 259			
Description: Rated Payload:	492,200	Pounds			
Payload Capacity:	149.15	LCY	8		
Tuyloud Capacity.	147.15	Lei			
ruck Bed (volume) Basis:					
Struck Volume:	153.00	LCY			
Heaped Volume:	192.00	LCY			
Average Volume:	172.50	LCY			
Adjusted Volume:	149.15	LCY			
Final	Truck Volume	Based on Number of	Loader Passes:	129.58	LCY
oading Tool Capacity					
			Bucke	t Size Class: <u>N</u>	A
Rated Capacity:	58.900	LCY (heaped)			
Bucket Fill Factor:	1.100		t mixtures (100	-120%) 1.100	
Adjusted Capacity:	64.790	LCY			
ob Condition Corrections	<u>.</u>	Sit	te Altitude (ft.): <u>6</u>	400 feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HB)		
Job Efficiency:	0.830	0.830	(CAT HB)		
Net Correction:	0.830	0.830			
	0.050	0.050			
Loading Tool Cycle Time:		Number of Loading Te	ool Passes Requi		2 passes
				Truck:	
excavators and Front Shovel	<u>ls:</u>				
Machine Cycle Time v	s. Job Conditio	on Rating: ABOVE	AVERAGE		
5					
Selected Value					
		cription:			
Track Loaders –	Material Desc	cription:			
Track Loaders – Cycle Time Elements (min.)	Material Desc :				
	Material Desc :	ription: Maneuver:NA		Dump: 0.100	
Track Loaders – Cycle Time Elements (min.) Load: <u>NA</u>	Material Desc : 	Maneuver: NA		·	
Track Loaders – Eycle Time Elements (min.) Load: <u>NA</u>	Material Desc : 		•	id, dump,	NA minutes
Track Loaders – Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac	Material Desc : 	Maneuver: NA	•	id, dump, naneuver):	minutes
Track Loaders – Eycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors	Material Desc : k Loaders - Ui	Maneuver: NA	•	id, dump, naneuver): P	NA minutes
Track Loaders – Eycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> Material:	Material Desc : 	Maneuver: NA	•	id, dump, aneuver): Factor (min.) NA	NA minutes Source (Cat HB)
Track Loaders – Eycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> Stockpile:	Material Desc : 	Maneuver: NA	•	id, dump, aneuver): Factor (min.) NA NA	NA minutes Source (Cat HB) (Cat HB)
Track Loaders – ycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> Stockpile: Truck Ownership:	Material Desc : 	Maneuver: NA	•	id, dump, aneuver): Factor (min.) NA NA NA NA	NA minutes Source (Cat HB) (Cat HB) (Cat HB)
Track Loaders – Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> <u>Stockpile:</u> <u>Truck Ownership:</u> Operation:	Material Desc : k Loaders - Un NA NA NA NA NA NA NA	Maneuver: NA	•	d, dump, N aneuver):N Factor (min.) NA NA NA NA NA	NA minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Track Loaders – ycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> Stockpile: Truck Ownership:	Material Desc : 	Maneuver: <u>NA</u> nadjusted Basic Loader		id, dump, aneuver): Factor (min.) NA NA NA NA NA NA NA	NA minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Track Loaders – Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> <u>Stockpile:</u> <u>Truck Ownership:</u> Operation:	Material Desc : k Loaders - Un NA NA NA NA NA NA NA	Maneuver: NA	e Adjustment:	d, dump, N aneuver):N Factor (min.) NA NA NA NA NA	NA minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

Truck Cycle Time:

Tru	ck Exchange Time:	0.80	Minutes	Adjı	usted for site a	ltitude:	0.800	Minute
	Truck Load Time:	0.996	Minutes	Adjı	usted for site a	ltitude:	0.996	Minute
Truck N	faneuver and Dump Time:	1.20	Minutes	Adjı	isted for site a	ltitude:	1.200	Minute
<u>maintainec</u> Haul Rout	e:			ion: <u>Firm, smoo</u>		t/lt. surfaced	l, watered,	
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Time (min)		
1	3711.00	-3.15	3.00	-0.15	3503	1.144		
Return Ro	ute:			Haul Time:	1.144	min	utes	
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
1	3711.00	3.15	3.00	6.15	2853	1.901		
			Total Tru	Return Time uck Cycle Time			nutes nutes	
Loading Too Prod Fruck Unit Prod	uction 4,328.95	LCY/Hou	Ir	Adjusted for j	job efficiency:	3,593.0	03 LCY	/Hour
	1,287.01	LCY/Hou	ır	Adjusted for j	job efficiency:	1,068.2	LCY	/Hour
ptimal No. of T	rucks: <u>3</u>	Truck(s)		Selected Num	ber of Trucks:	3	Truc	k(s)
	А	Adjusted sing	le truck/loade	c team production r team production r team production	on: 3,204	4.64 LO	CY/Hour CY/Hour CY/Hour	
<u>JOB TIN</u>	IE AND COST							
Fleet	size:4	Team(s)	Т	Fotal job time:	474.5	59	Hours	
Unit	cost: \$0.703	/LCY	r	Total job cost:	\$4,274	,450		

TRUCK/LOADER TEAM WORK

Т	Task description:	Regrad	e Jennings Pit ('	Fruck/Excavator	·)			
Site:	Site: Trapper Mine		ne Permit Action: TR135			Permit/Job#: <u>C1981010</u>		
<u>PI</u>	ROJECT IDEN	TIFICATION						
	Task #: L15	A	State: Color	ado	Abl	previation:	Non	e
			County: Moff			Filename:		0-L15A
	User: RAF	2				-		
	Agency of	r organization nar	ne: DRMS					
ш		- DMENT COST			C1 : 0 1	· 1 1		
<u>H</u>	<u>UUKLY EQUI</u>	PMENT COST				sis: <u>1 per day</u>	/	
				Equipment Descr	iption			
		Fruck Loader Tea		MATSU 830E				
	Sum	ort Equipment -L		T 6090 t D10T - 10SU				
	Supp	1 1		t D101 - 10SU t D10T - 10SU				
	Road N	laintenance – Mote		T 16M				
	itoud iv			ter Tanker, 14,00	0 Gal.			
C		T 1/T	1 5	C .		·		D
<u> </u>	ost Breakdown:	Truck/Loa Truck		Load Area	Equipment	Mair	itenan	nce Equipment Water Truck
		Iruck	Shovel	Load Area	Dump Area	Grader		water fluck
%Utili	zation-machine:	100	100	25	25		25	50
Owne	ership cost/hour:	\$207.26	\$164.88	\$178.69	\$178.69	\$212.	.21	\$158.36
Oper	rating cost/hour:	\$284.76	\$207.45	\$40.06	\$40.06	\$31	.22	\$98.55
%l	Jtilization-riper:	NA	0	15	NA	١	NA	NA
Ripper	own. cost/hour:	NA	\$0.00	\$26.20	\$0.00	\$0.	.00	\$0.00
Ripp	er op. cost/hour:	NA	\$0.00	\$1.83	\$0.00	\$0.	.00	\$0.00
Ope	erator cost/hour:	\$34.42	\$37.32	\$41.30	\$41.30	\$28.	.56	\$0.00
÷	Unit Subtotals:	\$526.44	\$409.65	\$261.87	\$260.05	\$271	.99	\$256.91
N	umber of Units:	12	4	1	1		1	1
(Group Subtotals:	Work:	\$7,955.88	Support:	\$521.92	Mai	nt:	\$528.90

Total work team cost/hour: **\$9,006.70**

MATERIAL QUANTITIES

Initial volume:	1,227,754	CCY	Swell factor:	1.000
Loose volume:	1,227,754	LCY		
Source of	e of estimated volume: estimated swell factor: Material Purchase Cost: Total Cost:	Cat Handb \$0.00		1.1

HOURLY PRODUCTION

Truck Capacity:						
Truck Payload (weight) Ba Material weight		Pound	d CV			
Description		1 rock - 75% Rock, 25				
Rated Payload		Pound				
Payload Capacity		LCY	5			
Truck Bed (volume) Basis		LC1				
Struck Volume:		LCY				
Heaped Volume:		LCY				
Average Volume:	-	LCY				
Adjusted Volume:		LCY				
Fin	al Truck Volume	Based on Number of I	Loader Passes:	129.58	LCY	
Loading Tool Capacity						
<u>Louanig roor capatity</u>			Dual	ket Size Class: N	٨	
	59,000		Duch	ket Size Class. <u>IN</u>	A	_
Rated Capacity		LCY (heaped)		(0.1200/) 1.100		_
Bucket Fill Factor		Other - rock/dir	t mixtures (10	00-120%) 1.100		_
Adjusted Capacity	·: 64.790	LCY				
Job Condition Correction	<u>ns:</u>	Sit	e Altitude (ft.):	<u>6400</u> feet		
	Truck	Loader	Source			
Altitude Adj:	1.000	1.000	(CAT HI			
Job Efficiency:	0.830	0.830	(CAT HI			
Net Correction:	0.830	0.830				
				1. 1. 1911		
Loading Tool Cycle Tim		Number of Loading T	ool Passes Req	Truck:	2	passes
Excavators and Front Sho	ovels:					
Machine Cycle Time Selected Valu	e vs. Job Condition and within this Bas	<u> </u>	AVERAGE GE			
Track Loaders	s – Material Desc	cription:				
Cycle Time Elements (mir	n.):					
-	,			D 0.10	2	
Load: NA		Maneuver: NA		Dump: 0.100)	
Wheel and Tr	ack Loaders - Ur	nadjusted Basic Loader	· Cycle Time (1	oad dumn	min	utes
wheel and T	ack Loaders - Of	laujusteu Daste Loadel		maneuver):	NA	utes
Cycle Time Facto	rs			Factor (min.)	Source	
Materia				NA	(Cat HB)	_
Stockpil	e: NA			NA	(Cat HB)	
Truck Ownershi	p: NA			NA	(Cat HB)	
Operatio	n: NA			NA	(Cat HB)	_
Dump Targe				NA	(Cat HB)	_
_		Net Cycle Time	e Adjustment:	NA	minutes	_
		Adjusted Loader		0.498	minutes	
			ne per Truck:	0.996	minutes	
<u>Truck Cycle Time:</u>						
Truck Exchange Ti	ime: 0.80	Minutes	Adjusted	for site altitude:	0.800	Minutes

<u>Truck Travel (Haul & Return) Time:</u> maintained 3.0

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

Haul Route	:							-
Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel Time	
	(Ft)			(%)	(%)	(fpm)	(min)	-
1	3448.0	00	-1.80	3.00	1.20	3503	1.633	
					Haul Time:	1.633	minut	es
Return Rou			<u> </u>			1		7
Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)			(%)	(%)	(fpm)	Time (min)	
1	3448.0	00	1.80	3.00	4.80	3296	1.636	
					Return Time:			ites
				Total Tru	ick Cycle Time:	6.265	minu	ites
Loading Too	l unit							
Produ		4,328.95	LCY/Hour		Adjusted for jo	b efficiency:	3,593.03	LCY/Hour
Truck Unit Produ	iction –	1,240.99	LCY/Hour		Adjusted for jo	b efficiency:	1,030.02	LCY/Hour
Optimal No. of Tr	ucks:	3	Truck(s)		Selected Numb	er of Trucks:	3	Truck(s)
			Adjusted	l hourly truck	c team production	on: 3,090	0.06 LC	Y/Hour
					r team productio			Y/Hour
		А	djusted multiple	e truck/loade	r team productio	on: 12,36	0.26 LC	Y/Hour
JOB TIM	IE ANI	O COST						
Fleet	size:	4	Team(s)	Т	otal job time:	99.33	3 H	lours
Unit	cost:	\$0.729	/LCY	Т	Total job cost:	\$894,6	43	

Trapper Mine

REVEGETATION WORK

: Trapper	Mine	Permit	Action: TR135	Permit/Jo	b#: <u>C1981010</u>
PROJECT	IDENTIFIC	CATION			
Task #:	N16	State: Co	lorado	Abbreviation:	None
Date:	3/12/2024	County: Mo	offat	Filename:	TR135

Materials

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

Application

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

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Bitterbrush, Antelope	4.40	1.35	\$85.80
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Chokecherry	3.00	0.21	\$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92

Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Rabbitbrush, Rubber	0.26	3.87	\$16.72
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Rose, Wood's	0.96	0.00	\$19.68
Sagebrush, Mountain or Big	0.07	3.70	\$1.38
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	0.62	0.85	\$7.75
Serviceberry	0.29	0.53	\$17.84
Snowberry, Mountain	0.58	1.00	\$29.29
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
Totals Seed Mix	15.79	44.87	\$354.70

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/A	Acre \$0.00

NURSERY STOCK PLANTING

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

JOB TIME AND COST

	No. of Acres:	4.9	Cost /Acre:	\$586.70
Estimate	ed Failure Rate:	17.5%	Cost /Acre*:	\$586.70
*Selected Replanti	ng Work Items:	SEEDING		
Initial Job Cost:	\$2,874.83			
Reseeding Job Cost:	\$503.10			
Total Job Cost:	\$3,378			
Job Hours:	3.50			

REVEGETATION WORK

ſ	Fask descrij	otion:	Seed J Pit witho	ut shrubs (F	Range C)		
Site:	ite: Trapper Mine		Permit Action: TR135		Permit/Jo	Permit/Job#: C1981010	
<u>P</u>]	ROJECT	<u>IDENTIFI</u>	CATION				
	Task #: Date: User:	N19 3/12/2024 RAR	State: County:	Colorado Moffat		Abbreviation: Filename:	None TR135
	Age	ency or organ	ization name:	MS			
F	ERTILIZ	<u>ING</u>					

Materials

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	60.00
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	\$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	\$3.63
Mountain Brome - Bromar	0.72	1.16	\$2.74
Great Basin Wildrye - Magnar	0.92	3.74	\$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	\$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	\$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	\$1.00
Sheep Fescue - Covar	0.15	2.34	\$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	\$2.46
Slender Wheatgrass - San Luis	0.28	1.02	\$1.19

Streambank Wheatgrass - Sodar	0.26	0.85	\$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	\$1.93
Western Wheatgrass - Arriba	0.38	0.96	\$2.47
Needlegrass, Green - Lodorm	0.24	1.00	\$2.83
Flax, Lewis Blue	0.30	1.99	\$4.95
Red Top	0.02	2.29	\$0.16
Penstemon, Rocky Mountain	0.14	2.19	\$4.13
Yarrow, Western	0.07	4.26	\$2.93
Globemallow, Munro	0.08	0.91	\$7.00
Aster, Pacific	0.02	0.35	\$2.39
Goldeneye - Showy	0.08	0.92	\$4.80
		31.41	
Totals Seed Mix	5.51	51.41	\$86.15

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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

	Cost /Acre
	\$
Cotal Mulch Application Cost/Acre	\$0.00
[otal Mulch Application Cost/Acre

NURSERY STOCK PLANTING

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

JOB TIME AND COST

	No. of Acres:	45.9	Cost /Acre:	\$318.15
Estimate	ed Failure Rate:	17.5%	Cost /Acre*:	\$318.15
*Selected Replanti	ng Work Items:	SEEDING		
Initial Job Cost:	\$14,603.09			
Reseeding Job Cost:	\$2,555.54			
Total Job Cost:	\$17,159			
Job Hours:	66.00		-	