

August 15, 2024

Phillip Courtney Martin Marietta Materials, Inc. 1627 Cole Boulevard, Suite 200 Lakewood, CO 80401

Re: Thunderbird Sand and Gravel – File No. M-2023-032 Martin Marietta Materials, Inc. 112c Construction Materials Reclamation Application

Dear Phillip Courtney:

On August 15, 2024 the Division of Reclamation, Mining and Safety concluded its review of the Construction Materials Reclamation Permit Application submitted to the Division on September 6, 2023. The decision reached by the Division is: Awaiting warranty. The amount of financial warranty set by the Division for this operation is \$8,188,152.00. You must submit a financial warranty in this amount and a performance warranty in order for us to issue a permit. In the event you have requested a financial warranty form, we will provide you with the applicable form. If you have not, please select a type of financial warranty from Rule 4.3, and then contact us so that we can provide you with the appropriate warranty form. We have enclosed a performance warranty form with this letter for your use.

PLEASE NOTE THAT MINING OPERATIONS MAY NOT COMMENCE UNTIL A PERMIT HAS BEEN ISSUED BY THE DIVISION AFTER RECEIPT OF YOUR FINANCIAL AND PERFORMANCE WARRANTIES. A PERMIT CANNOT BE ISSUED UNTIL WE HAVE VERIFIED THE ADEQUACY OF YOUR FINANCIAL AND PERFORMANCE WARRANTIES.

M-2023-032: Approved Surety and Acreage					
Reclamation Liability (Required Surety):	\$8,188,152.00				
Approved Permit Acreage:	543.50				
Approved Affected Acreage:	543.50				

If you have any questions, please contact me by telephone at (720) 812-2002, or by email at Joel.renfro@state.co.us

Sincerely,

alkinte



Joel Renfro Environmental Protection Specialist



PERFORMANCE WARRANTY

Permittee/Operator:	Martin Marietta Materials, Inc.
Operation known as:	Thunderbird Sand and Gravel

Permit Number: M-2023-032

This form is approved by the Colorado Mined Land Reclamation Board ("Board") pursuant to C.R.S. 34-32-117 of the Colorado Mined Land Reclamation Act and C.R.S. 34-32.5-117 of the Colorado Land Reclamation Act for the Extraction of Construction Materials.

All parties are on Notice from this Document that:

The above listed Operator provides this warranty to the Board in conjunction with a reclamation Permit to conduct the above described mining operation on certain lands in Colorado. The "Affected Lands" are described in the above listed reclamation Permit, and include any Permit Amendment(s) approved by the Division of Reclamation Mining and Safety ("Division").

The Colorado Mined Land Reclamation Act, C.R.S. 34-32-101 et seq. ("Hard Rock Act"), and the Colorado Land Reclamation Act for the Extraction of Construction Materials, C.R.S. 34-32.5-101 et seq. ("Construction Materials Act"), both require a permit issued by the Board to include a written promise by the Operator to comply with all requirements of the Hard Rock and Construction Materials Acts (referred to herein together as "Acts").

Through the terms and conditions of this performance warranty and Permit, the Operator agrees to be bound by all requirements of the Acts and all Mineral Rules and Regulations of the Board for Hard Rock, Metal, and Designated Mining Operations (2 C.C.R. 407-1) and all Mineral Rules and Regulations of the Board for the Extraction of Construction Materials (2 C.C.R. 407-4) (referred to herein together as "Rules").

The Operator hereby provides the Board warranties of performance pursuant to C.R.S. 34-32-117(2), (3), and (4)/C.R.S. 34-32.5-117(2), (3), and (4), and promises the Board it will comply with all applicable requirements of the Acts and Rules.

The Operator hereby promises the Board it will comply with all of the terms of the reclamation Permit, including any Permit Amendment(s) approved by the Division. This performance warranty obligation of the Operator shall continue until the Operator's liability is released by the Board.

The Operator promises to be responsible for reclamation costs up to the amount established by the Board and incorporates its financial warranty to this performance warranty. The Operator agrees to maintain a financial warranty (or warranties) in good standing for the reclamation costs for the entire

life of the Permit. The amount of the financial warranty shall be sufficient to assure the completion of reclamation of affected lands if the Division has to complete such reclamation due to forfeiture. If the Board determines the Operator is in default under this performance warranty and the Operator fails to cure such default, the Operator's financial warranty shall be subject to forfeiture pursuant to C.R.S. 34-32-118/34-32.5-118.

This performance warranty by the Operator is perpetual and shall remain in full force and effect until all obligations have been met and all associated financial warranty is released by the Board. Any release of liability in a succession of Operators shall comply with C.R.S. 34-32-119/34-32.5-119.

The provisions hereof shall bind and inure to the benefit of the parties hereto and their successors and assigns.

SIGNED, SEALED AND DATED this	(date)	_ day of	(mo	nth)	(vear)
Operator: Martin Marietta Mate Signature:	erials, Inc.		(iii)		(year)
Name:					
Title:					
NOTARIZATI STATE OF	ION OF OPI	ERATOR'S AC	KNOWLEI	DGEMENT	
COUNTY OF) ss.			
The foregoing instrument was		day			
acknowledged before me this		of			,
by:	(date) as		(mo of N	nth) ⁄Iartin Marietta M nc	(year) Iaterials,
(name)		(title)		(Operato	or)
Notary Public:					
My Commission Expires					
APPROVED:					
State of Colorado					
Mined Land Reclamation Board					
Division of Reclamation, Mining	and Safety				
By: Michael A. Cunningham			Da Ex	te ecuted:	
Division Director					

COST SUMMARY WORK

Т	ask descrip	tion:	New Application	n Cost Estim	ate		
Site:	Thunderl Gravel	oird Sand and	l Pe	ermit Action:	New Application	Permit/Job	o#: <u>M2023032</u>
PF	ROJECT	IDENTIFIC	ATION				
<u>PF</u>	ROJECT	IDENTIFIC 000	ATION State:	Colorado		Abbreviation:	None
<u>PF</u>	ROJECT Task #: Date:	IDENTIFIC 000 8/14/2024	ATION State: County:	Colorado Pueblo		Abbreviation: Filename:	None M032-000

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Phase 1 Demolition	DEMOLISH	1	372.00	\$244,683
002	Phase 1 - Backfill Primary Silt Ponds	SCRAPER1	1	78.40	\$308,985
003	Phase 1 - Backfill Secondary Silt Ponds	SCRAPER1	1	80.52	\$317,336
004	Phase 1 - Scarify Ground	RIPPER	2	27.55	\$19,041
005	Phase 1 - Spread 6" Topsoil	SCRAPER1	1	9.58	\$37,741
006	Phase 1 - Upland Revegetation	REVEGE	1	66.15	\$52,330
007	Phase 1 - Wetland Revegetation	REVEGE	1	1.00	\$578
008	Phase 2 - Demolition	DEMOLISH	1	21.32	\$4,639
009	Phase 2 - Slurry Wall Construction	NA	1	150.00	\$2,464,150
010	Phase 2 - Backfill Slopes 3H:1V	SCRAPER1] 1	234.62	\$924,728
011	Phase 2 - Scarify Ground	RIPPER	2	17.23	\$11,913
012	Phase 2 - Spread 6" Topsoil	SCRAPER1] 1	14.65	\$57,746
013	Phase 2 - Upland Revegetation	REVEGE] 1	39.20	\$34,567
014	Phase 2 - Wetland Revegetation	REVEGE	1	2.60	\$2,344
015	Phase 3 - Slurry Wall Construction	NA	1	75.00	\$1,287,936
016	Phase 3 - Backfill Slopes 3H:1V	SCRAPER1	1	151.07	\$595,423
017	Phase 3 - Scarify Ground	RIPPER	2	7.42	\$5,134
018	Phase 3 - Spread 6" Topsoil	SCRAPER1	1	6.31	\$24,885
019	Phase 3 - Upland Revegetation	REVEGE	1	16.80	\$13,290
020	Phase 3 - Wetland Revegetation	REVEGE	1	1.15	\$1,205
021	Plug and Abandon Monitoring Wells	BOREHOLE	1	1.90	\$1,745
022	Mob/Demob	MOBILIZE	1	1.66	\$13,477
	SUBTOTALS:				\$6,423,876

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$129,762
Performance bond:	1.05	Total =	\$67,451
Job superintendent:	688.06	Total =	\$54,543
Profit:	10.00	Total =	\$642,388
		TOTAL O & P =	\$894,143
		CONTRACT AMOUNT (direct + O & P) = $($	\$7,318,019

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

TOTAL BOND AMOUNT (direct + indirect) = ____\$8,188,152

DEMOLITION WORK

	Task description:	Phase 1 Dem	olition			
Site:	Thunderbird Sand and Gravel	I	Permit Action:	New Application	Permit/J	lob#: <u>M2023032</u>
<u>PROJE</u>	CCT IDENTIFICATION	<u>1</u>				
Task # Date User	: 001 : 8/6/2024 : JR2	State: County:	Colorado Pueblo		Abbreviation: Filename:	None M032-001

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 87.70 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
12" Concrete Pad for Wash Plant	40'x12'	Floor, concrete, demolition only, average reinforcing - 12 in. thick	480.00	SF	\$2.21	\$1,058.50
Demolish and remove Shop	100'x200'x30'	Bldg. (SN) demo./off- site disposal in approved landfill - Max. 15 mile haul	600,000.00	CF	\$0.42	\$252,540.00
Remove Concrete Footings for Shop	25 CY	Footing, concrete, average reinforcing - 1.0 ft. x 2 ft.	337.50	LF	\$4.41	\$1,488.51
Remove Scale Trailer	NA	USER PROVIDED ITEM	1.00	EA	\$2,000.00	\$2,000.00
Remove 2.5' Concrete Scale Base	60'x35'	Floor, concrete, demolition only, average reinforcing - 12 in. thick	5,280.00	SF	\$2.21	\$11,643.46
Remove Culvert	16'x6'x10'	Pipe, reinforced concrete (RCP) - 96 in. diameter pipe	20.00	LF	\$117.98	\$2,359.51
Haul Concrete Material off Site to Dump	361 CY	Hauling only, per mile, 12-18 CY truck - 30 mph average speed	780.00	MI	\$10.14	\$7,910.29

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	372.00	(unadjusted):	\$279,000.27	location):	\$244,683.24

SCRAPER TEAM WORK

Thunderb Site: Gravel	oird San	d and	Permit	Action:	New Applicatio	n Perr	nit/Job#: _	<u>M20230</u>	032
PROJECT	IDENT	TIFICATION							
Task #·	002		State: (Colorado		Abbrey	viation N	None	
Date:	8/12/20)24 Co	ounty: H	Pueblo		Fil	ename: N	M032-00)2
User:	JR2								
Age	ency or c	organization name	: DRM	S					
HOURLY	EQUIP	<u>'MENT</u>			COSTSI	nift basis: <u>1 per d</u>	<u>ay</u>		
				Equipme	ent Description				
			Scraper:	Cat 631	G				
	0		-Dozer:	Cat D8	Γ-8SU				
	Suppor	rt Equipment -Loa -Durr	id Area:	Cat D8	<u>ι - 8SU</u> Γ - 8SU				
R	Road Mai	intenance – Motor	Grader:	CAT 16	<u>б</u> М				
		-Water	r Truck:	Water 7	Tanker, 3,500 Gal.	,			
Cost Breakd	lown:	Scraper Wc	ork Team		Support Equir	oment	Mainte	nance E	quipment
		Scraper	Doz	zer	Load Area	Dump Area	Motor Gr	ader	Water True
%Utilization-ma	achine:	100		100	100	100		100	
Ownership cos	t/hour:	\$442.19	\$	173.32	\$173.32	\$173.32	\$17	79.39	\$17.
Operating cos	t/hour:	\$252.89	\$	109.71	\$109.71	\$109.71	\$11	9.64	\$18.
%Utilization-	ripper:	NA		NA	NA	NA		NA	1
Ripper own. cos	t/hour:	NA		\$0.00	\$0.00	\$0.00	•	60.00	\$0.
Ripper op. cos	t/hour:	NA		\$0.00	\$0.00	\$0.00	9	60.00	\$0
Operator cos	t/hour:	\$57.52		\$40.04	\$40.04	\$40.04	\$5	56.70	\$0
Unit Sub	ototals:	\$752.60	\$	323.07	\$323.07	\$323.07	\$35	55.73	\$35
Number of	Units:	3		2	1	1		1	
Group Sub	ototals:	Work:	\$2,90	3.94	Support:	\$646.14	Μ	laint:	\$391.24
Total work te MATERIA	eam cost	/hour: <u>\$3,941.32</u>							
Initial v	volume:	111,000		CCY	Swell fact	or: <u>1.125</u>			
Loose v	olume:	124,875		LCY					
	Sour	rce of estimated vo	olume:	Operator	Estimate (60% of	f total backfill vol	ume)		
	Source of	of estimated swell	factor:	Cat Hand	lbook				
HOURLY	PRODU	UCTION							
					Scraper Bo	owl (volume) Basi	s:		
Material	weight:	2,650 lbs/LCY			Struck Y	Volume: _24.00		LCY	Y
Material Material descr	weight: ription:	2,650 lbs/LCY Decomposed roc	:k - 25% I	Rock,	Struck V Heaped V	Volume: 24.00 Volume: 34.00		LC	Y Y

<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: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.88

Haul Time: 0.88 minutes

Return Route:

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

Total Scraper team cycle time: Adjusted for job conditions:	2.72 530.96	minutes LCY/Hour
Selected Number of Scrapers:	3	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,592.87	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,592.87	LCY/Hour

Unadjusted unit production/hour: <u>639.71</u> LCY/Hour Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size:	1	Team(s)	

Unit cost: \$2.474 /LCY

Total job time:	78.40	Hours
Total job cost:	\$308,985	

SCRAPER TEAM WORK

	Thunderbird San	d and	Permit Action	1:			
Site:	Gravel			New Applicatio	n Per	mit/Job#: <u>M202</u>	3032
<u>]</u>	PROJECT IDEN	FIFICATION					
	Task #: 003	S	State: Colorad	0	Abbre	viation: None	
	Date: 8/12/20	024 Cor	unty: Pueblo		Fil	lename: M032-	003
	User: JR2						
	Agency or o	organization name:	DRMS				
1	HOURLY EQUIP	<u>PMENT</u>		COSTSI	nift basis: <u>1 per d</u>	lay	
			Equip	ment Description			
		-S	craper: Cat 6	31G			
	Suppo	rt Fauinment -Loa	-Dozer: Cat D d Area: Cat D	981 - 8SU 987 - 8SU			
	Suppo	-Dum	p Area: Cat D	98T - 8SU			
	Road Ma	intenance – Motor	Grader: CAT	16M			
		-Water	Truck: Water	r Tanker, 3,500 Gal.			
(Cost Breakdown:	Scraper Wo	rk Team	Support Equir	oment	Maintenance	Equipment
		Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%U	tilization-machine:	100	100	100	100	100	4
Ov	/nership cost/hour:	\$442.19	\$173.32	\$173.32	\$173.32	\$179.39	\$17.1
0	perating cost/hour:	\$252.89	\$109.71	\$109.71	\$109.71	\$119.64	\$18.4
%	Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripp	er own. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
Ri	pper op. cost/hour:	NA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.0
(Operator cost/hour:	\$57.52	\$40.04	\$40.04	\$40.04	\$56.70	\$0.0
	Unit Subtotals:	\$752.60	\$323.07	\$323.07	\$323.07	\$355.73	\$35.5
	Number of Units:	3	2	1	1	1	
	Group Subtotals:	Work:	\$2,903.94	Support:	\$646.14	Maint:	\$391.24
1	Total work team cost	t/hour: <u>\$3,941.32</u>					
-							
1	MATERIAL QUA	ANTITIES					
	Initial volume:	114,000	CCY	Swell fact	or: <u>1.125</u>		
	Loose volume:	128,250	LCY				
	Sou	rce of estimated vo	olume: Operat	or Estimate (60% of	f total fill volume)	
	Source of	of estimated swell	tactor: <u>Cat Ha</u>	ndbook			
]	HOURLY PROD	UCTION					
				Scraper Bo	owl (volume) Bas	<u>is:</u>	
	Material weight:	2,650 lbs/LCY		Struck	Volume: 24.00	L	СҮ
Ν	laterial description:	Decomposed roc 75% Earth	k - 25% Rock,	Heaped	Volume: 34.00	L	CY
	Rated Pavload	81 600 pounds		Average	Volume: 29.00	I	$\mathbf{C}\mathbf{V}$

<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: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.88

Haul Time: **0.88** minutes

Return Route:

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

Total Scraper team cycle time: Adjusted for job conditions:	2.72 530.96	minutes LCY/Hour
Selected Number of Scrapers:	3	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,592.87	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,592.87	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:	80.52	Hours
Unit cost:	\$2.474	/LCY	Total job cost:	\$317,336	

BULLDOZER RIPPING WORK

	Task description:	Pha	se 1 - Scarify Ground				
Site:	Thunderbird Gravel	Sand and	Permit Action:	New Application	on Perm	nit/Job#: <u>M202</u>	23032
	PROJECT ID	ENTIFICATI	ON				
	Task #: 004 Date: $8/1$ User: JR2	4 2/2024 2	State: Colorado County: Pueblo		Abbrev File	viation: <u>None</u> ename: <u>M032</u>	-004
	Agency	or organization	name: DRMS				
	HOURLY EQ	UIPMENT C	<u>OST</u>				
	Basic	Machine: Ca	t D8T - 8SU		Horsepower:	310	
	Ripper Att	achment: 3-S	Shank Ripper		Shift Basis:	1 per day	
					Data Source:	(CRG)	
	Cost Breakdown:	<u>.</u>			Utilization %		
		Ownership C	ost/Hour:	\$173.32	NA		
	Pinn	Operating C or Ownership C	ost/Hour:	\$109.71 \$14.53	100 NA		
	Ripp	per Operating C	ost/Hour:	\$7.95	100		
		Operator C	ost/Hour:	\$40.04	NA		
		Total Unit C	ost/Hour:	\$345.55			
		Total Fleet C	ost/Hour: \$6	91.09			
	MATERIAL (UANTITIES	Se	lected estimating	method: Area		
	Alternate Method	<u>ls:</u>					
ismic:	NA		Bank Volume:	NA	BCY	NA	
Area:	38.20	acres	Rip Depth (ft):	1.50	Volume: 92,	444	BCY or C
	HOURLY PRO	DUCTION					
	<u></u>		Seismic Velocity:	NA	feet/second	d	
	Area:						
		Avera	ge Ripping Depth:	2.56	feet/pass		
		Averag	e Ripping Width:	7.08	feet/pass		
		Aver	age Dozer Speed:	88.00	feet/minut	e	
		Average	e Maneuver Time:	0.25	minutes/pa	ass	
		Produc	tion per unit area:	0.835	acres/hour		
	Job Condition Co	prrection Factor	<u>s</u>				
	Un	adjusted Hourly	Unit Production:	0.835	Acres/hr		
			Site Altitude:	4,570	feet		
			Altitude Adj:	1.00	(CAT HB))	
			Net Correction:	0.83	(1 shift/da) multiplier	y)	
		Adjusted Adjusted	Hourly Unit Production Hourly Fleet Production	: <u>0.69</u> : 1.39	Acres/hr Acres/hr		
	JOB TIME AN	ND COST	-		-		
	Fleet size:	2	_ Grader(s)	Total job time	e:27.	55	Hours
	Unit cost:	\$498.466	Per acre	Total iob cos	t: \$19.	041	

CIRCES Cost Estimating Software

SCRAPER TEAM WORK

Th Site: <u>Gr</u>	underbird San avel	d and	Permit	t Action:	New Applicatio	n Perr	nit/Job#: <u>M202</u>	3032
<u>PRO</u>	JECT IDENT	FIFICATION						
Та	ask #: 005	:	State: (Colorado		Abbrey	viation: None	
]	Date: $\frac{8}{12/20}$)24 Co	unty: I	Pueblo		Fil	ename: M032-	005
1	User: JR2							
	Agency or o	organization name	DRM	IS				
ПОІ								
HOU	JKLY EQUIP	TVIENI			COSTSI	hift basis: <u>I per d</u>	<u>ay</u>	
				Equipme	ent Description			
		-5	Scraper:	Cat 63	1G			
	Suppo	rt Equipment -Log	-Dozer: d Area:	Cat D8	T - 8SU T - 8SU			
		-Dum	p Area:	Cat D8	T - 8SU			
	Road Ma	intenance – Motor	Grader:	CAT 1	6M Tarlar 2,500 Cal			
		- water	TTUCK:	water	Tanker, 5,500 Gai	•		
Cost	Breakdown:	Scraper Wo	rk Team		Support Equip	oment	Maintenance	Equipment
		Scraper	Doz	zer	Load Area	Dump Area	Motor Grader	Water T
%Utiliza	tion-machine:	100		100	100	100	100	
Owners	ship cost/hour:	\$442.19	\$	173.32	\$173.32	\$173.32	\$179.39	\$1
Operat	ting cost/hour:	\$252.89	\$	5109.71	\$109.71	\$109.71	\$119.64	\$1
%Utili	ization-ripper:	NA		NA	NA	NA	NA	
Ripper of	wn. cost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	\$
Ripper	op. cost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	\$
Opera	ator cost/hour:	\$57.52		\$40.04	\$40.04	\$40.04	\$56.70	\$
<u> </u>	Jnit Subtotals:	\$752.60	\$	323.07	\$323.07	\$323.07	\$355.73	\$3
Nui	mber of Units:	3	¢ 2 .00	2	1	¢ (4 (1 4		¢201.2
Gro	oup Subtotals:	WORK:	\$2,90	03.94	Support:	\$646.14	Maint:	\$391.2
Total <u>MA</u> T	work team cost	/hour: <u>\$3,941.32</u>		CCY	Swell fact	or: 1215		
	Loose volume:	15,309		LCY				
	Sou	rce of estimated vo	olume:	Operator	r Estimate			
	Source of	of estimated swell	factor:	Cat Han	dbook			
HOL	JKLY PROD	<u>UCTION</u>						
					Scraper Bo	owl (volume) Basi	is:	
		1 (00 11 7 017			Struck	Volume: 24.00	T	CY
М	aterial weight:	1,600 lbs/LCY			Struck	volume. <u>24.00</u>	L	
M Materi	laterial weight: ial description:	Top Soil			Heaped	Volume: 24.00 Volume: 34.00	L	CY

Task # 005

<u>0.80</u> Minutes

0.70 Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.87

Haul Time: **0.87** minutes

Return Route:

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

Return Time:	0.34	minutes
Total Scraper team cycle time:	2.71	minutes
Adjusted for job conditions:	532.92	LCY/Hour
Selected Number of Scrapers:	3	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,598.75	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,598.75	LCY/Hour
Unadjusted unit production/hour: 642.07 LCY/Hour		

Optimal Number of Scrapers per push dozer:

Fleet size:	1	Team(s)	Total job time:	9.58	Hours
Unit cost:	\$2.465	/LCY	Total job cost:	\$37,741	

REVEGETATION WORK

]	Fask descrip	otion:	Phase 1 - Uplane	d Revegetati	on		_
Site:	Thunder Gravel	bird Sand and	Pe	rmit Action:	New Application	Permit/Jol	o#: <u>M2023032</u>
<u>P</u>]	ROJECT	IDENTIFIC	ATION				
	Task #∙	006	State:	Colorado		Abbreviation:	None
	I GOIL II.						1,0110
	Date:	8/12/2024	County:	Pueblo		Filename:	M032-006

FERTILIZING

Materials

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

Application

Description	Cost /Acre
	\$
Total Fortilizer Application Cost/Acro	40.00
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	1.50	24.48	\$41.63
Alkaligrass, Fult's	1.25	34.44	\$9.18
Switchgrass - Nebraska 28	1.00	8.93	\$11.13
Sand Dropseed	0.25	29.84	\$3.25
Sideoats Grama - Butte	2.25	7.39	\$54.35
Smooth Brome - Lincoln	2.00	6.66	\$9.71
Ryegrass, Perennial - Forage-Fusta	0.75	4.25	\$1.49
Slender Wheatgrass - San Luis	2.50	9.13	\$15.09

Western Wheatgrass - Rosanna	2.50	6.31	\$21.94
Totals Seed Mix	14.00	131.43	\$167.78

Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$236.64
	Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	0.60	TON	\$492.78	\$295.67
Total Mulch Materials Cost/Acre				4005 (5
Total Mulch Materials Cost/Acre				\$295.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Total Mulch Application Cost/Acre	\$85.37

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 2	Nursery Stoc	k Cost / Acre	\$0.00

No. of Acres:	37.8	Cost /Acre:	\$1,241.87
Estimated Failure Rate:	35%	Cost /Acre*:	\$860.83
*Selected Replanting Work Items:	TILLING,SEEDING		

Initial Job Cost:	\$46,942.69
Reseeding Job Cost:	\$11,388.78
Total Job Cost:	\$58,331
Job Hours:	66.15

REVEGETATION WORK

]	Fask descrip	otion:	Phase 1 - Wetla	nd Revegetat	tion		
Site:	Thunder Gravel	bird Sand and	Pe	rmit Action:	New Application	Permit/Jol	o#: <u>M2023032</u>
<u>P</u>	ROJECT	IDENTIFIC	ATION				
	Task #: Date:	007 8/12/2024 JB2	State: County:	Colorado Pueblo		Abbreviation: Filename:	None M032-007

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Baltic Rush	0.08	22.48	\$15.08
Alkali Bulrush	0.08	0.79	\$5.12
Creeping Spike Rush	0.08	1.14	\$11.65
Switchgrass - Nebraska 28	0.96	8.57	\$10.68
Canada Wildrye	1.20	3.17	\$12.28
Softstem Bulrush	0.08	1.01	\$9.42
Hardstem Bulrush	0.08	0.74	\$12.94
Torrey's Rush	0.08	19.20	\$22.15

Three Square Bulrush	0.32	2.20	\$48.77
Cordgrass, Prairie	0.68	2.86	\$63.14
Nebraska Sedge	0.32	6.70	\$46.95
Woolly Sedge	0.04	0.30	\$8.54
Mannagrass, Northwest	0.08	0.67	\$1.24
Slough Grass	0.96	24.24	\$31.98
Totals Seed Mix	5.04	94.07	\$299.94

Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$236.64
	Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	0.60	TON	\$492.78	\$295.67
Total Mulch Materials Cost/Acre				\$295.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Total Mulch Applica	ation Cost/Acre \$85.37

NURSERY STOCK PLANTING

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

No. of Acres Estimated Failure Rate *Selected Replanting Work Items	: 0.4 : 35% : TILLING,SEEDING	Cost /Acre: \$1,374.03 Cost /Acre*: \$992.99
Initial Job Cost: \$549.61 Reseeding Job Cost: \$139.02 Total Job Cost: \$689 Job Hours: 1.00		

DEMOLITION WORK

Task descripti	on: Phase	2 - Demolition				
Thunderbir Site: <u>Gravel</u>	d Sand and	Permit Action:	Application	Per	rmit/Job#: _	M2023032
PROJECT IDENTI	FICATION					
Task #: 008 Date: 8/12/2024 User: JR2	v or organization nan	State: <u>Colorado</u> unty: <u>Pueblo</u> ne: <u>DRMS</u>		Abbreviati Filenar	on: <u>None</u> ne: <u>M032</u>	2-008
<u>UNIT COSTS</u>				Location a	adjustment	<u>: 87.70 %</u>
<u>UNIT COSTS</u> Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Location : Unit	adjustment Unit Cost	<u>: 87.70 %</u> Total Cost
UNIT COSTS Structure or Item Description Remove Conveyor Footings	Dimensions 4 Sections 40'x10'1.5' ea	Demolition Menu SelectionFooting, concrete, average reinforcing - 1.5 ft. x 3 ft.	Quantity 533.00	Location : Unit LF	Unit Cost \$9.92	<u>• 87.70 %</u> Total Cost \$5,289.17

Slurry Wall

Site:	Thunderbird Sand and Gravel	Permit Action:	New Application	Permit	/Job#:	M2023032
<u>PROJE</u>	CT IDENTIFICATIO	<u>N</u>				
Task Dat Use	#: 009 te: 8/12/2024 er: JR2	State: Colorado County: Pueblo		Abbreviation: Filename:	None M03	e 2-009
	Agency or organiza	ation name: DRMS				
<u>UNIT</u>	<u>COSTS</u>					

Activity	Quantity	Unit	Unit Cost	Cost
Phase 2 Slurry Wall 11,150 LF, Avg Depth 34 Ft	379,100	SF	\$6.50	\$2,464,150

 Job Hours:
 150
 Total Cost:
 \$2,464,150

SCRAPER TEAM WORK

Thunde Site: Gravel	erbird Sand a	nd	Permit	Action:	New Application	n Perr	nit/Job#: <u>M202</u>	3032
<u>PROJEC</u>	T IDENTIF	<u>TCATION</u>						
Task #: Date: User:	010 8/12/2024 JR2	Co	State: 0 unty: 1	Colorado Pueblo		Abbrev Fil	viation: <u>None</u> ename: <u>M032</u> -	010
A	Agency or orga	nization name:	DRM	S				
HOURL	Y EQUIPM	ENT_			COSTSh	ift basis: <u>1 per d</u>	ay	
				Equipme	ent Description			
		-S	Craper:	Cat 631	. <u>G</u> T - 8SU			
	Support E	quipment -Loa	d Area:	Cat D8	T - 8SU			
	Road Mainte	-Dum	p Area: Grader:	CAT 16	<u>T - 8SU</u>			
	Koau Mainte	-Water	Truck:	Water 7	Tanker, 3,500 Gal.			
Coat Drog	Irdorm	Coronor Wo	nlr Taama		Support Equin	mont	Maintananaa	Davinment
<u>Cost brea</u>	<u>Kuown</u> :	Scraper	Doz	zer	Load Area	Dump Area	Motor Grader	Water T
%Utilization-	machine:	100		100	100	100	100	
Ownership c	ost/hour:	\$442.19	\$	173.32	\$173.32	\$173.32	\$179.39	\$1
Operating c	ost/hour:	\$252.89	\$	109.71	\$109.71	\$109.71	\$119.64	\$1
%Utilizatio	n-ripper:	NA		NA	NA	NA	NA	
Ripper own. c	ost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	
Ripper op. c	ost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	
Operator c	ost/hour:	\$57.52		\$40.04	\$40.04	\$40.04	\$56.70	
Unit S	Subtotals:	\$752.60	\$	323.07	\$323.07	\$323.07	\$355.73	\$3
Number	of Units:	3 Works	\$2.00	2	l Sumorti	<u>\$64614</u>	l Mointi	\$201.0
Group 3	subtotals:	WORK:	\$2,90	13.94	Support:	\$040.14	Maint:	\$391.2
Group S Total work <u>MATER</u> Initia	Subtotals: (team cost/ho IAL QUAN I volume:	Work: ur: \$3,941.32 <u>FITIES</u> 332,200	\$2,90	CCY	Support: Swell facto	\$646.14	Maint:	\$39
LOOS		5/5,725						
	Source Source of e	of estimated vo stimated swell	factor:	Cat Hand	dbook			
HOURL	Y PRODUC	<u>TION</u>						
					Scraper Bo	wl (volume) Basi	<u>s:</u>	
Materi	al weight: <u>2</u> ,	650 lbs/LCY			Struck V	/olume: <u>24.00</u>	L	CY
- Infaterin					** **	7 1 01 00	T	CN
Material de	scription: D	ecomposed roc	k - 25% I	Rock,	Heaped V	olume: 34.00	L	CY

<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: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.88

Haul Time: **0.88** minutes

Return Route:

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

Total Scraper team cycle time: Adjusted for job conditions:	2.72 530.96	minutes LCY/Hour
Selected Number of Scrapers:	3	Scraper(s)
Adjusted single scraper team (unit) hourly production: Adjusted multiple scraper team (fleet) hourly production:	<u>1,592.87</u> 1,592.87	LCY/Hour 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:	234.62	Hours
Unit cost:	\$2.474	/LCY	Total job cost:	\$924,728	_

BULLDOZER RIPPING WORK

	Task description:	Phas	se 2 - Scarify Ground				
Site:	Thunderbird S Gravel	Sand and	Permit Action	: New Applicat	ion Per	mit/Job#: <u>M20</u>	23032
	PROJECT IDE	ENTIFICATI	<u>ON</u>				
	Task #: 011 Date: 8/12 User: JR2	2/2024	State: <u>Colorad</u> County: <u>Pueblo</u>	0	Abbre Fil	viation: <u>None</u> lename: <u>M032</u>	2-011
	Agency	or organization	name: DRMS				
	HOURLY EQU	JIPMENT CO	<u>OST</u>				
	Basic N	Machine: Cat	t D8T - 8SU		Horsepower:	310	
	Ripper Atta	achment: <u>3-S</u>	hank Ripper		Shift Basis:	1 per day	
					Data Source:	(CRG)	
	Cost Breakdown:				Utilization %		
		Ownership C	ost/Hour:	\$173.32	NA		
	D	Operating C	ost/Hour:	\$109.71	100		
	Rippe	er Ownership Co	ost/Hour:	\$14.53 \$7.95	<u> </u>		
	httpp	Operator C	ost/Hour:	\$40.04	NA		
		Total Unit C	ost/Hour:	\$345.55			
		Total Fleet C	ost/Hour: \$	691.09			
	MATERIAL O	UANTITIES		alacted estimating	mathad: Araa		
	Alternate Method	s:		elected estimating	g illetilou. <u>Alea</u>		
mic	NA		Bank Volume	NA	BCY	NA	
rea:	23.90	acres	Rip Depth (ft):	15.00	Volume: 57	8,380	BCY or
		Source of estin	mated quantity: Recl	amation Plan			
	HOURLY PRO	DUCTION					
	Solution Solution						
	<u>Seisinic:</u>		Seismic Velocity:	NA	feet/secor	nd	
	A #201						
	<u>Alea.</u>	Averag	e Ripping Depth:	2.56	feet/pass		
		Averag	e Ripping Width:	7.08	feet/pass		
		Average	e Ripping Length:	800.00	feet/pass		
		Aver	age Dozer Speed:	88.00	feet/minu	te	
		Average	tion per unit area:	0.25	minutes/p	ass r	
	Job Condition Co	rrection Factors		0.055		1	
	<u>Jun</u>	adjusted Hourly	Unit Production:	0.835	Acres/hr		
	Oliz	adjusted Hourry	Site Altitude:	4.570	Acres/III		
			Altitude Adi	4,570	(CAT HB	3)	
			Job Efficiency:	0.83	(1 shift/da	av)	
			Net Correction:	0.83	multiplier		
		Adjusted Adjusted	Hourly Unit Production Hourly Fleet Production	n: 0.69 n: 1.39	Acres/hr Acres/hr		
	JOB TIME AN	D COST					
	Fleet size:	2	_ Grader(s)	Total job tim	ne: <u>17</u>	.24	Hours
	TT 1	\$400.466	5				

CIRCES Cost Estimating Software

SCRAPER TEAM WORK

Thunderbird Site: Gravel	Sand and	Permi	t Action:	New Applicatio	n Perr	nit/Job#: <u>M202</u>	23032
PROJECT ID	ENTIFICATION						
Task #: 012	2	State:	Colorado		Abbrev	viation: None	
Date: 8/1	2/2024 C	ounty:	Pueblo		Fil	ename: M032	-012
User: JR2	or organization name		ſĊ				
Agency	or organization name		15				
HOURLY EQ	<u>UIPMENT</u>			COSTSI	nift basis: <u>1 per d</u>	<u>ay</u>	
		~	Equipme	ent Description			
	-	Scraper:	Cat 631	IG T - 8SU			
Su	pport Equipment -Lo	ad Area:	Cat D8	T - 8SU			
	-Dur	np Area:	Cat D8	T - 8SU			
Road	Maintenance – Motor	Grader:	CAT 16 Water 7	6M Fanker: 3 500 Gal			
<u> </u>	- Wate	I HUCK.	water	Tanker, 5,500 Gai.			
Cost Breakdowr	Scraper W	ork Team		Support Equip	oment	Maintenance	e Equipment
	Scraper	Do	zer	Load Area	Dump Area	Motor Grader	Water Tru
%Utilization-machin	ne: 100		100	100	100	100	
Ownership cost/hou	ır: \$442.19	\$	5173.32	\$173.32	\$173.32	\$179.39	\$17
Operating cost/hou	ır: \$252.89	\$	5109.71	\$109.71	\$109.71	\$119.64	\$18
%Utilization-rippe	er: NA		NA	NA	NA	NA	
Ripper own. cost/hou	ır: NA		\$0.00	\$0.00	\$0.00	\$0.00	\$0
Ripper op. cost/hou	ır: NA		\$0.00	\$0.00	\$0.00	\$0.00	\$0
Operator cost/hou	ır: \$57.52		\$40.04	\$40.04	\$40.04	\$56.70	\$(
Unit Subtota	ls: \$752.60	\$	323.07	\$323.07	\$323.07	\$355.73	\$35
Number of Uni	ts: 3	\$2.00	2	l Surra cutt	<u><u></u></u>	l Mainti	\$201.24
Group Subtota	IS: WOFK:	\$2,90	15.94	Support:	\$040.14	Maint:	\$391.24
Total work team	cost/hour: <u>\$3,941.32</u> DUANTITIES						
Initial volur Loose volur	ne: <u>19,279</u> ne: 23,424		CCY LCY	Swell fact	or: <u>1.215</u>		
C	Source of estimated v	volume:	Operator	r Estimate			
Sou	ce of estimated swell	iactor:	Cat Hand	UUOOK			
HOURLY PRO	DDUCTION						
				Scraper Bo	owl (volume) Basi	<u>is:</u>	
Matorial waig	ht: 1,600 lbs/LCY			Struck Y	Volume: 24.00	I	LCY
Material weig							
Material description	on: Top Soil			Heaped	Volume: 34.00	I	LCY

Task # 012

<u>0.80</u> Minutes

0.70 Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.87

Haul Time: **0.87** minutes

Return Route:

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

Return Time:	0.34	minutes
Total Scraper team cycle time:	2.71	minutes
Adjusted for job conditions:	532.92	LCY/Hour
Selected Number of Scrapers:	3	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,598.75	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,598.75	LCY/Hour
Unadjusted unit production/hour: 642.07 LCY/Hour		

Optimal Number of Scrapers per push dozer:

Fleet size:	1	Team(s)	Total job time:	14.65	Hours
Unit cost:	\$2.465	/LCY	Total job cost:	\$57,746	

REVEGETATION WORK

	Fask descrip	otion:	Phase 2 - Uplan	d Revegetati	on		_	
Site:	Thunderbird Sand and ite: Gravel		Pe	Permit Action:		Permit/Jol	ermit/Job#:M2023032	
P	ROJECT	IDENTIFIC	ATION					
	Task #:	013	State:	Colorado		Abbreviation:	None	
	Date:	8/12/2024	County:	Pueblo		Filename:	M032-013	
	* *	IDO						

FERTILIZING

Materials

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

Application

Description	Cost /Acre
	\$
I otal Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	1.50	24.48	\$41.63
Alkaligrass, Fult's	1.25	34.44	\$9.18
Switchgrass - Nebraska 28	1.00	8.93	\$11.13
Sand Dropseed	0.25	29.84	\$3.25
Sideoats Grama - Butte	2.25	7.39	\$54.35
Smooth Brome - Lincoln	2.00	6.66	\$9.71
Ryegrass, Perennial - Forage-Fusta	0.75	4.25	\$1.49
Slender Wheatgrass - San Luis	2.50	9.13	\$15.09

Western Wheatgrass - Rosanna	2.50	6.31	\$21.94
Totals Seed Mix	14.00	131.43	\$167 78

Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$236.64
	Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	0.60	TON	\$492.78	\$295.67
Total Mulch Materials Cost/Acre				\$295.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Total Mul	ch Application Cost/Acre \$85.37

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 2	Nursery Stoc	k Cost / Acre	\$0.00

No. of Acres:	22.4	Cost /Acre:	\$1,241.87
Estimated Failure Rate:	35%	Cost /Acre*:	\$860.83
*Selected Replanting Work Items:	TILLING,SEEDING		
1. 1. 1. 1. C			

Initial Job Cost:	\$27,817.89
Reseeding Job Cost:	\$6,748.91
Total Job Cost:	\$34,567
Job Hours:	39.20

REVEGETATION WORK

1	Fask descrip	otion:	Phase 2 - Wetla	and Revegetat	tion		
Site:	Thunderl Gravel	bird Sand and	P	ermit Action:	New Application	Permit/Jol	b#: <u>M2023032</u>
P	ROJECT	IDENTIFIC	ATION				
	Task #:	014	State:	Colorado		Abbreviation:	None
	Task #: Date:	014 8/12/2024	State: County:	Colorado Pueblo		Abbreviation: Filename:	None M032-014

FERTILIZING

Materials

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

Application

Description	Cost /Acre
	\$
Total Fortilizer Application Cost/Acro	40.00
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Baltic Rush	0.08	22.48	\$15.08
Alkali Bulrush	0.08	0.79	\$5.12
Creeping Spike Rush	0.08	1.14	\$11.65
Switchgrass - Nebraska 28	0.96	8.57	\$10.68
Canada Wildrye	1.20	3.17	\$12.28
Softstem Bulrush	0.08	1.01	\$9.42
Hardstem Bulrush	0.08	0.74	\$12.94
Torrey's Rush	0.08	19.20	\$22.15

Three Square Bulrush	0.32	2.20	\$48.77
Cordgrass, Prairie	0.68	2.86	\$63.14
Nebraska Sedge	0.32	6.70	\$46.95
Woolly Sedge	0.04	0.30	\$8.54
Mannagrass, Northwest	0.08	0.67	\$1.24
Slough Grass	0.96	24.24	\$31.98
Totals Seed Mix	5.04	94.07	\$299.94

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$236.64
Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	0.60	TON	\$492.78	\$295.67
Total Mulch Materials Cost/Acre				\$295.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Total Mulch Applica	ation Cost/Acre \$85.37

NURSERY STOCK PLANTING

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

Estimate *Selected Replanti	No. of Acres: ed Failure Rate: ng Work Items:	1.5 35% TILLING,SEED	DING	Cost /Acre: Cost /Acre*:	\$1,374.03 \$992.99
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$2,061.05 \$521.32 \$2,582 2.60				

Slurry Wall

Site:	Task description: Thunderbird Sand and Gravel	Phase 3 – Slurry Wall Con Permit Action:	structionNew Application	Permit	/Job#:	M2023032
<u>PROJE</u>	CT IDENTIFICATION	N				
Task Dat Use	#: 015 e: 8/12/2024 er: JR2	State: Colorado County: Pueblo		Abbreviation: Filename:	None M032	2-015
	Agency or organiza	ntion name: DRMS				
<u>UNIT (</u>	COSTS					

Activity	Quantity	Unit	Unit Cost	Cost
Phase 3 Slurry Wall 6,192 LF, Avg Depth 32 Ft	198,144	SF	\$6.50	\$1,287,936

 Job Hours:
 75
 Total Cost:
 \$1,287,936

SCRAPER TEAM WORK

Thunderbird Sat Site: Gravel	nd and	Permit	Action:	New Application	n Perr	nit/Job#: <u>M202</u>	3032
PROJECT IDEN	TIFICATION						
Task #: 016	:	State: (Colorado		Abbrev	viation: None	
Date: $8/12/2$	2024 Co	unty: I	Pueblo		File	ename: M032-	016
A gency or	organization name		S				
Agency of	organization name.		.0				
<u>HOURLY EQUI</u>	<u>PMENT</u>			COSTSh	ift basis: <u>1 per da</u>	<u>ay</u>	
			Equipme	ent Description			
	-5	Scraper:	Cat 631	G SU			
Supp	ort Equipment -Loa	d Area:	Cat D8	T - 8SU			
	-Dum	p Area:	Cat D8	T - 8SU			
Road M	aintenance – Motor -Water	Grader: Truck:	Water 7	<u>5M</u> Fanker, 3,500 Gal.			
				, ,			
<u>Cost Breakdown</u> :	Scraper Wo	rk Team	zor	Support Equip	Dump Area	Maintenance Motor Grader	Equipment Water Tr
		D02	100				
% Utilization-machine:	\$442.19	6	100	\$173.32	\$173.32	\$179.39	\$1′
Operating cost/hour:	\$252.89	\$	109.71	\$109.71	\$109.71	\$119.64	\$1
%Utilization-ripper:	NA		NA	NA	NA	NA	
Ripper own. cost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	\$0
Ripper op. cost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	\$0
Operator cost/hour:	\$57.52		\$40.04	\$40.04	\$40.04	\$56.70	\$0
Unit Subtotals:	\$752.60	\$	323.07	\$323.07	\$323.07	\$355.73	\$3:
Number of Units:	3		2	1	1	1	
Group Subtotals:	Work:	\$2,90	3.94	Support:	\$646.14	Maint:	\$391.24
Number of Units: Group Subtotals: Total work team cos	3 Work: st/hour: <u>\$3,941.32</u>	\$2,90	2)3.94	1 Support:	1 \$646.14	1 Maint:	\$3
<u>MATERIAL QU</u>							
MATERIAL QU Initial volume: Loose volume:	: <u>213,900</u> 240,638		CCY LCY	Swell facto	or: <u>1.125</u>		
MATERIAL QU Initial volume Loose volume So	: 213,900 : 240,638 urce of estimated vo	olume:	CCY LCY <u>Oper</u> ator	Swell facto	or: <u>1.125</u>		
MATERIAL QU Initial volume: Loose volume: So Source	: 213,900 : 240,638 urce of estimated vo of estimated swell	olume:	CCY LCY Operator Cat Hand	Swell facto Estimate Ibook	or: <u>1.125</u>		
MATERIAL QU Initial volume: Loose volume: Source HOURLY PROE	: 213,900 : 240,638 urce of estimated vo of estimated swell DUCTION	olume: factor:	CCY LCY Operator Cat Hand	Swell facto Estimate lbook	or: <u>1.125</u>		
MATERIAL QU Initial volume Loose volume So Source HOURLY PROD	: 213,900 : 240,638 urce of estimated vo of estimated swell DUCTION	blume: factor:	CCY LCY Operator Cat Hand	Swell facto Estimate Ibook <u>Scraper Bo</u>	or: <u>1.125</u>	<u></u>	
MATERIAL QU Initial volume Loose volume So Source HOURLY PROD Material weight:	: 213,900 : 240,638 urce of estimated vo of estimated swell <u>DUCTION</u> _2,650 lbs/LCY	olume: factor:	CCY LCY Operator Cat Hand	Swell facto Estimate dbook <u>Scraper Bo</u> Struck V	or: <u>1.125</u> wl (volume) Basi Volume: 24.00	<u>is:</u>	 CY
MATERIAL QU Initial volume Loose volume So Source HOURLY PROD Material weight: Material description:	: 213,900 : 240,638 urce of estimated vo of estimated swell DUCTION 2,650 lbs/LCY Decomposed roc		CCY LCY Operator Cat Hand	Swell facto Estimate dbook <u>Scraper Bo</u> Struck V Heaped V	or: <u>1.125</u> wl (volume) Basi Volume: <u>24.00</u> Volume: <u>34.00</u>	<u>is:</u> Lu	CY CY

<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: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.88

Haul Time: **0.88** minutes

Return Route:

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

Return Time: 0.34

otal Scraper team cycle time:	2.72	minutes
Adjusted for job conditions:	530.96	LCY/Hour

Selected Number of Scrapers: Scraper(s) 3 Adjusted single scraper team (unit) hourly production: 1,592.87 LCY/Hour Adjusted multiple scraper team (fleet) hourly production: 1,592.87 LCY/Hour

Total Scraper team cycle

Unadjusted unit production/hour: 639.71 LCY/Hour Optimal Number of Scrapers per push dozer:

Fleet size:	1	Team(s)	Total job time:	151.07	Hours
Unit cost:	\$2.474	/LCY	Total job cost:	\$595,423	

BULLDOZER RIPPING WORK

	Task description:	Phas	e 3 - Scarify Ground				
Site:	Thunderbird Sa Gravel	nd and	Permit Action:	New Application	n Perm	it/Job#: <u>M</u> 2	2023032
	PROJECT IDEN	TIFICATI	<u>ON</u>				
	Task #: 017		State: Colorado		Abbrevi	ation: Nor	ne
	Date: 8/12/2	2024	County: Pueblo		File	name: M0	32-017
	User: JR2						
	Agency of	organization	name: DRMS				
	HOURLY EQUI	PMENT CO)ST				
	Basic Ma	achine: Cat	D8T - 8SU		Horsepower:	310	
	Ripper Attac	hment: 3-S	hank Ripper		Shift Basis:	1 per da	v
	Tupper Tunne				Data Source:	(CRG)	
	Cost Breakdown:						
	<u>Cost Breakdo min</u>			U	Utilization %		
		Ownership Co	ost/Hour:	\$173.32	NA		
		Operating Co	ost/Hour:	\$109.71	100		
	Ripper	Ownership Co	ost/Hour:	\$14.53	NA		
	Ripper	Operating Co	ost/Hour:	\$7.95	100 NA		
		Total Unit Co	ost/Hour:	\$345.04	INA		
				φ3+3.35			
		Total Fleet Co	st/Hour: \$69	01.09			
	MATERIAL QU	ANTITIES	Sel	lected estimating m	nethod: Area		
	Alternate Methods:						
smic:	NA		Bank Volume:	NA	BCY	NA	
Area:	10.30	acres	Rip Depth (ft):	1.50	Volume: 24,9)26	BCY or C
	S	Source of estir	nated quantity: Reclar	mation Plan			
		MICTION					
	HOUKLIIKOI	JUCTION					
	Seismic:		N • • • • • • •		C . /		
			Seismic Velocity:	NA	feet/second		
	Area:						
		Averag	e Ripping Depth:	2.56	feet/pass		
		Averag	e Ripping Width:	7.08	feet/pass		
		Average	Ripping Length:	800.00	feet/pass		
		Average	Age Dozer Speed:	0.25	reet/initiate	, çç	
		Product	ion per unit area:	0.835	acres/hour	55	
	Job Condition Corr	ection Factors		0.055			
	Unad	justed Hourly	Unit Production:	0.835	Acres/hr		
	Ollad	Justica Hoully		A 570	Acros/III		
			Altitude:	4,570	(CAT UR)		
			Ioh Efficiency:	0.83	(CAT HD) (1 shift/day	<i>i</i>)	
			Net Correction:	0.83	multiplier	,	
		A dinata 1	Unit Draduction	0.60	A oros/br		
		Adjusted	Hourly Fleet Production:	1.39	Acres/hr		
	IOR TIME AND	COST		1.07	1 10100/111		
	JUD TIME AND			m . 1. 1	<u> </u>	•	TT
	Fleet size:	2	Grader(s)	Total job time:	7.4.	5	Hours
	Unit cost:	\$498 466	Per acre	Total job cost:	\$5.1	34	

CIRCES Cost Estimating Software

SCRAPER TEAM WORK

T Site: G	'hunderbird San Fravel	d and	Permit	Action:	New Applicatio	n Perr	nit/Job#: <u>M202</u>	3032
<u>PR</u>	OJECT IDENT	TIFICATION						
]	Гask #:018	S	State: 0	Colorado		Abbrev	viation: None	
	Date: $8/12/20$	024 Co	unty: I	Pueblo		File	ename: M032-	018
	Agency or o	organization name:	DRM	S				
<u>H0</u>	OURLY EQUIP	MENT			COSTSI	nift basis: <u>1 per d</u>	ay	
				Fauinme	ent Description			
		-5	Scraper:	Cat 63	IG			
			-Dozer:	Cat D8	T - 8SU			
	Suppo	rt Equipment -Loa -Dum	d Area:	Cat D8	T - 8SU T - 8SU			
	Road Ma	intenance – Motor	Grader:	CAT 1	6M			
		-Water	Truck:	Water 7	Tanker, 3,500 Gal.			
Cos	st Breakdown:	Scraper Wo	rk Team		Support Equir	oment	Maintenance	Equipment
	<u> </u>	Scraper	Doz	zer	Load Area	Dump Area	Motor Grader	Water Tr
%Utiliz	zation-machine:	100		100	100	100	100	
Owne	rship cost/hour:	\$442.19	\$	173.32	\$173.32	\$173.32	\$179.39	\$1'
Oper	ating cost/hour:	\$252.89	\$	109.71	\$109.71	\$109.71	\$119.64	\$15
%Ut	ilization-ripper:	NA		NA	NA	NA	NA	
Ripper	own. cost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	\$
Rippe	er op. cost/hour:	NA		\$0.00	\$0.00	\$0.00	\$0.00	\$
Ope	erator cost/hour:	\$57.52		\$40.04	\$40.04	\$40.04	\$56.70	\$
	Unit Subtotals:	\$752.60	\$	323.07	\$323.07	\$323.07	\$355.73	\$3
N	umber of Units:	3		2	1	1	1	
0	Froup Subtotals:	Work:	\$2,90	3.94	Support:	\$646.14	Maint:	\$391.24
Tota <u>MA</u>	al work team cost ATERIAL QUA Initial volume:	/hour: <u>\$3,941.32</u>		ССҮ	Swell fact	or: <u>1.215</u>		
	Loose volume:	10,094		LCY				
	Source of	rce of estimated vo of estimated swell	olume: factor:	Operator Cat Han	r Estimate dbook			
HO	OURLY PRODU	UCTION						
					Scraper Bo	owl (volume) Basi	<u>s:</u>	
	Material weight:	1,600 lbs/LCY			Struck `	Volume: <u>24.00</u>	L	CY
]								
] Mate	erial description:	Top Soil			Heaped	Volume: 34.00	L	CY

Task # 018

<u>0.80</u> Minutes

0.70 Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 4570 feet

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

Travel Time:

Road Condition: Hard, smooth, stabilized, surfaced, watered, maintained 2.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	5.00	2.00	7.00	962	0.87

Haul Time: **0.87** minutes

Return Route:

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

Return Time:	0.34	minutes
Total Scraper team cycle time:	2.71	minutes
Adjusted for job conditions:	532.92	LCY/Hour
Selected Number of Scrapers:	3	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,598.75	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	1,598.75	LCY/Hour
Unadjusted unit production/hour: 642.07 LCY/Hour		

JOB TIME AND COST

Optimal Number of Scrapers per push dozer:

Fleet size:	1	Team(s)	Total job time:	6.31	Hours
Unit cost:	\$2.465	/LCY	Total job cost:	\$24,885	

REVEGETATION WORK

Task description: Phas		Phase 3 - Uplane	d Revegetati	on			
Site:	Thunder Gravel	bird Sand and	l Pe	rmit Action:	New Application	Permit/Jol	o#: <u>M2023032</u>
<u>P</u>	ROJECT	IDENTIFIC	ATION				
	Task #:	019	State:	Colorado		Abbreviation:	None
	Date:	8/12/2024	County:	Pueblo		Filename:	M032-019

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Blue Grama - Lovington	1.50	24.48	\$41.63
Alkaligrass, Fult's	1.25	34.44	\$9.18
Switchgrass - Nebraska 28	1.00	8.93	\$11.13
Sand Dropseed	0.25	29.84	\$3.25
Sideoats Grama - Butte	2.25	7.39	\$54.35
Smooth Brome - Lincoln	2.00	6.66	\$9.71
Ryegrass, Perennial - Forage-Fusta	0.75	4.25	\$1.49
Slender Wheatgrass - San Luis	2.50	9.13	\$15.09

Western Wheatgrass - Rosanna	2.50	6.31	\$21.94
Totals Seed Mix	14.00	131.43	¢1.(7.70
Totais Seeu Mix	14.00	101110	\$167.78

Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$236.64
	Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	0.60	TON	\$492.78	\$295.67
Total Mulch Materials Cost/Acre				4005 (5
Total Mulch Materials Cost/Acre				\$295.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Total Mulch Application Cost/Acre	\$85.37

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 2	Nursery Stoc	k Cost / Acre	\$0.00

No. of Acres:	9.6	Cost /Acre:	\$1,241.87
Estimated Failure Rate:	35%	Cost /Acre*:	\$860.83
*Selected Replanting Work Items:	TILLING,SEEDING		

Initial Job Cost:	\$11,921.95
Reseeding Job Cost:	\$2,892.39
Total Job Cost:	\$14,814
Job Hours:	16.80

REVEGETATION WORK

]	Fask descrip	otion:	Phase 3 - Wetlan	nd Revegetat	tion		<u>.</u>
Site:	Thunder Gravel	bird Sand and	Pe	rmit Action:	New Application	Permit/Jol	o#: <u>M2023032</u>
<u>P</u>	ROJECT	IDENTIFIC	ATION				
	Task #:	020	State:	Colorado		Abbreviation:	None
		0/10/2024		D 11		T :1	M022 020
	Date:	8/12/2024	County:	Pueblo		Filename:	M032-020

FERTILIZING

Materials

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

Application

Description	Cost /Acre
	\$
I otal Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.61
Weed control spraying (MEANS 31 31 16.13 3100)	\$338.80
Total Tilling Cost/Acre	\$456.41

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Baltic Rush	0.08	22.48	\$15.08
Alkali Bulrush	0.08	0.79	\$5.12
Creeping Spike Rush	0.08	1.14	\$11.65
Switchgrass - Nebraska 28	0.96	8.57	\$10.68
Canada Wildrye	1.20	3.17	\$12.28
Softstem Bulrush	0.08	1.01	\$9.42
Hardstem Bulrush	0.08	0.74	\$12.94
Torrey's Rush	0.08	19.20	\$22.15

Three Square Bulrush	0.32	2.20	\$48.77
Cordgrass, Prairie	0.68	2.86	\$63.14
Nebraska Sedge	0.32	6.70	\$46.95
Woolly Sedge	0.04	0.30	\$8.54
Mannagrass, Northwest	0.08	0.67	\$1.24
Slough Grass	0.96	24.24	\$31.98
Totals Seed Mix	5.04	94.07	\$299.94

Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$236.64
	Total Seed Application Cost/Acre	\$236.64

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	0.60	TON	\$492.78	\$295.67
Total Mulch Materials Cost/Acre				\$295.67

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$85.37
Total Mulch Applica	ation Cost/Acre \$85.37

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

N Estimated I *Selected Replanting	No. of Acres: Failure Rate: Work Items:	0.7 35% TILLING,SEEDIN	Cost /Acre: Cost /Acre*: G	\$1,374.03 \$992.99
Initial Job Cost: \$9 Reseeding Job Cost: \$2 Total Job Cost: \$1 Job Hours: 1.	961.82 243.28 1,205 .15			

BOREHOLE SEALING WORK

,	Task description:	Plug and Aban	don Monitor	ing Wells		
Site:	Thunderbird Sand and Gravel	Per	rmit Action:	New Application	Permit/J	ob#: <u>M2023032</u>
PROJE	CT IDENTIFICATION	<u>1</u>				
Task #: Date: User:	021 8/12/2024 JR2	State: <u>C</u> County: <u>P</u>	Colorado Pueblo		Abbreviation: Filename:	None M032-021
	Agency or organizat	ion name: DR	MS			

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Plug and abandon 6 monitoring wells	Portland cement grout (Bag, material cost only94 lb. bag)	4	30	13.00	bag	\$22.00	\$286.00
Drill Rig	SCHRAMM T450WS	NA	NA	1.90	EA	\$569.63	\$1,082.30
Crew Truck + Water Tank	Light Duty Pickup, 4x4, 1 T. Crew	NA	NA	1.90	EA	\$52.83	\$100.38
Borehole Marker	Borehole location/identification marker (EA, material cost only)	NA	NA	6.00	EA	\$46.00	\$276.00

Job Hours: 1.90

Total Cost: \$1,745.00

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description	on: <u>Mo</u>	b/Demob					
Thunderbir Gravel	d Sand and	Permit	Action:New	Application	on .	Permit/Job#: <u>M</u>	2023032
PROJECT ID	ENTIFICATI	ON					
Tools #		Stata: Co	londo		\ hhm	None	
$1 \text{ ask } \# : \{0}$	22 8/12/2024	County: Pu	piorado			ilename: M032	022
User: J	R2	County. <u>ru</u>					2-022
Agenc	y or organization	n name: DRMS					
EQUIPMENT	TRANSPOR	T RIG COST					
					Shift ha	sis 1 per da	17
					Cost Data Sou	rce' CRG Da	ly
					COSt Data Sou		
Tru	ick Tractor Desc	ription: GENE	RIC ON-HIGH	WAY TR	UCK TRACTO	OR, 6X4, DIESEI	L POWERED,
				400 HI	P (2ND HALF,	2006)	
Tr	uck Trailer Desc	ription: G	ENERIC FOLD	ING GOO	OSENECK, DI	ROP DECK EQU	IPMENT
]	RAILER	(25T, 50T, AN	ND 100T)	
Cost Breakdown	<u>1:</u>						
Available Rig	Capacities	0-25 Tons	26-50 Tons	51	+ Tons		
Ownersh	hip Cost/Hour:	\$10.44	\$22.18	\$	23.94		
Operati	ing Cost/Hour:	\$26.48	\$54.55	\$	55.65		
Opera	tor Cost/Hour:	\$22.52	\$22.52	\$	22.52		
Helt	per Cost/Hour:	\$0.00	\$23.53	\$	23.53		
Total U	nit Cost/Hour:	\$59.44	\$122.78	\$	125.64		
NON ROADA	BLE EQUIPN	MENT:	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
Description	(TONS)	COSt/III/ unit		SIZC	floot		
Cat 631G	52 50	\$442.19	\$125.64	3	\$1 703 49	\$376.92	\$750.00
Cat D8T - 8SU	47.71	\$173.32	\$122.78	2	\$592.20	\$245.56	\$500.00
CAT 16M	28.73	\$179.39	\$122.78	1	\$302.17	\$122.78	\$250.00
Water Tanker,	6.25	\$17.11	\$59.44	1	\$76.55	\$59.44	\$250.00
3,500 Gal.	25.00	¢ 41.02	\$50.44	2	¢200.02	¢110.00	¢250.00
Drill/Broadcast	25.00	\$41.02	\$59.44	2	\$200.92	\$118.88	\$250.00
Seeder with							
SCHRAMM	0.00	\$281.20	\$59.44	1	\$340.64	\$59.44	\$250.00
T450WS	0.00	φ201.20	φ	1	φ340.04	\$J). ++	\$250.00
Cat 320D L 9'-0	6" 23.70	\$244.29	\$59.44	1	\$303.73	\$59.44	\$250.00
Stick							
Cat 315D L 8'-6 Stick	6" 19.05	\$244.29	\$59.44	1	\$303.73	\$59.44	\$250.00
CAT 963D	22.29	\$83.68	\$59.44	1	\$143.12	\$59.44	\$250.00
Grove RT890E,	54.55	\$222.11	\$125.64	1	\$347.75	\$125.64	\$250.00
142', 81.60 MT							
Power Mulcher	6.00	\$27.21	\$59.44	2	\$173.30	\$118.88	\$500.00

Subtotals: **\$4,487.60 \$1,405.86 \$3,750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 1 T. Crew	\$24.60	2	\$49.20	\$49.20
Generic 10-12 cy, 6x4	\$107.70	2	\$215.40	\$215.40
		Subtotals:	\$264.60	\$264.60

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	PUEBLO	
Total one-way travel distance:	12.00	miles
Average Travel Speed:	45.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$13,335.74	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$141.12	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.27	0.27
Return Time (Hours):	0.27	0.27
Loading Time (Hours):	0.15	NA
Unloading Time (Hours):	0.15	NA
Subtotals:	0.83	0.53

JOB TIME AND COST

Total job time: **1.67** Hours

Total job cost: _____\$13,477