

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

1313 Sherman Street, Room 215 Denver, CO 80203

July 5, 2018

Scott Davis Schmidt Construction Company 2635 Delta Dr. Colorado Springs, CO 80910

Re: Vollmer Pit, Permit No. M-1983-035; Technical Revision (TR-04) Preliminary Adequacy Review

Dear Mr. Davis:

On May 30, 2018 the Division of Reclamation, Mining and Safety (Division) received a request for a Technical Revision (TR-04) addressing the following:

To update the approved reclamation plan for closure of the site to further mining

The submittal was called complete for the purpose of filing on June 7, 2018. The decision date for **TR-04 has been extended to September 30, 2018**. Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, it will be your responsibility to request an extension of the review period. If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the Division may deny this Technical Revision (TR).

- 1. <u>Structures Agreements</u> The site was approved for temporary cessation (TC) beginning May 13, 2013. Sometime beginning in 2015 (based on Google Earth history) a housing development encroached to within 200 feet of the affected area boundary on the south side of the site. This development includes several significant, valuable and permanent man-made structures, including houses, fences, streets and possible utilities. The Division has also note two houses on the north side of the pit, screened by the north visual berm, but that are within 200 feet of the affected area boundary. As the site is now out of TC and entering final reclamation, Rule 6.4.19 requires structure damage compensation agreements. Pursuant to Rule 6.4.19(a), the permittee must provide a notarized agreement between the permittee and the person(s) having an interest in the structure, that the permittee is to provide compensation for any damage to the structure. Please provide structures agreements for all valuable man-made structures within 200 feet of the affected area boundary.
 - a. In cases where an agreement cannot be obtained, pursuant to Rules Rule 6.4.19(a) and 6.5, please provide documentation an attempt to obtain and agreement was made and an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation during the final reclamation phase.



Mr. Scott Davis July 5, 2018 – TR-04 PAR Page 2

2. <u>Bond Estimate</u> – The Division has completed an estimate of the remaining reclamation liability and has included this detailed estimate for your review.

If you have any questions or need further information, please contact me at (303)866-3567 x8169.

Sincerely,

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Timothy A. Cazier, P.E. Environmental Protection Specialist

Enclosure

ec: DRMS file Mark Heifner, consultant

COST SUMMARY WORK

Vollmer	Pit	Pern	nit Action: <u>TR04</u>	Permit/Job#	M1983035
ROJECT	IDENTIFI	CATION			
Task #:	000	State:	Colorado	Abbreviation:	None
Date:	7/3/2018	County:	El Paso	Filename:	M035-000
User	TC1				

TASK LIST (DIRECT COSTS)

Task	Description	Form	Fleet	Task	Cost
DE1	Description		Size	nours	
DEI	Demolition	DEMOLISH	1	0.00	\$2,363.35
MA1	Haul away recycled asphalt	TRUCK1	1	9.90	\$8,618.00
MA2	Landfill disposal fees for milled asphalt	DEMOLISH	1	0.00	\$10,530.45
MB1	Mob/Demob Equipment	MOBILIZE	1	2.71	\$6,154.00
NV1	Push down North Visual Berm & flatten slopes	DOZER	1	15.10	\$1,947.00
NV2	Clear & Grub North Visual Berm		1		
	(Ref. DRMS estimate - see Task NV2.1 worksheet)	NA		143.00	\$16,601.00
PF1	Rip northwest pit floor	RIPPER	1	9.30	\$1,250.00
SB1	South berm, west end - south side regrade	DOZER	1	2.06	\$265.00
SW1	Place growth media over 13.9 acres	SCRAPER1	1	18.36	\$9,122.00
SW2	Reveg 22.4 Acres	REVEGE	1	45.00	\$35,410.00
SW3	Shape east cut face & SE corner	NA	1	8.00	\$1,058.00
<u>SUBTOTALS:</u> 253.43 \$93,318					

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02		Total =	\$1,885.02			
Performance bond:	1.05		Total =	\$979.84			
Job superintendent:	126.71		Total =	\$9,256.17			
Profit:	10.00		Total =	\$9,331.80			
			TOTAL O & P =	\$21,452.83			
	CONT	FRACT AMOU	NT (direct + O & P) = $($	\$114,770.83			
LEGAL - ENGINEERING - PROJECT MANAGEMENT:							
Financial warranty process	ing (legal/related costs):	0.00	Total =	0.00			

i manerar warranty processing (regai related costo).	0.00	1000	0.00	
Engineering work and/or contract/bid preparation:	0.00	Total =	\$0.00	
Reclamation management and/or administration:	5.00		\$5,738.54	
CONTINGENCY:	0.00	Total =	\$0.00	
		-		
	TOTAL	INDIRECT COST =	\$27,191.37	
TOTAL BO	\$120,509.37			
			+	

ROUNDED TOTAL BOND AMOUNT (direct + indirect) = ________ \$120,510

DEMOLITION WORK

k description:	Demolition			
ollmer Pit	Permit Action:	TR04	Permit	/Job#: <u>M1983035</u>
IDENTIFICATIO	<u>N</u>			
DE1	State: Colorado		Abbreviation:	None
7/3/2018	County: El Paso		Filename:	M035-DE1
TC1				
	k description: <u>Dilmer Pit</u> <u>IDENTIFICATIO</u> <u>DE1</u> <u>7/3/2018</u> TC1	blimer Pit Demolition DE1 State: Colorado 7/3/2018 County: El Paso	blimer Pit Demolition DE1 State: Colorado 7/3/2018 County: El Paso	Idensifiant Demolition Dell Permit Action: TR04 DE1 State: Colorado 7/3/2018 County: El Paso

UNIT COSTS

Location adjustment: 93.10 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Scale House	8'x30'x8.5'	Bldg. (SC) demo./off- site disposal in approved landfill - Max. 15 mile haul	2,040.00	CF	\$0.60	\$1,232.16
Concrete Pad 1 (south of scale house)	30'x15'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 200 ft. push	450.00	SF	\$0.41	\$183.15
Concrete Pad 2 (south of scale house)	10'x10'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 200 ft. push	100.00	SF	\$0.41	\$40.70
Asphalt near scale house	150'x15'	Pavement, bituminous, demolition only - 3 in. thick	250.00	SY	\$4.33	\$1,082.50

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$2,538.51	location):	\$2,363.35

TRUCK/LOADER TEAM WORK

ite: Vollmer Pit		Permit A	ction: TR04		Permit/Iob#·	M1983035
					<u>-</u>	1.11705055
PROJECT IDENT	IFICATION					
Task #: MA1		State: Cole	orado	Ab	breviation: No	one
Date: 7/2/20	18 C	ounty: El P	aso		Filename: M	035-MA1
User: TC1						
Agency or c	organization nam	e: DRMS				
HOURLY EQUIP	MENT COST			Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Tr	uck Loader Tean	-Truck: G	eneric 15-18 cy, 6x	4		
Suppor	t Fauipment -La	-Loader: C ad Area: N	AT 928Hz			
Suppor	-Dui	np Area: N	Ā			
Road Mai	ntenance - Motor	Grader: N	A			
	-Wate	er Truck: N	A			
Cost Breakdown:	Truck/Load	er Team	Support	Equipment	Mainten	ance Equipment
COSt Di Cundo VII.	Truck	Loader	Load Area	Dump Area	Motor	Water Truck
				-	Grader	
% Utilization-machine:	100	40) NA	NA	NA	NA
Ownership cost/hour:	\$26.62	\$19.17	V NA	NA	NA	NA
Operating cost/hour:	\$47.82	\$8.93	NA NA	NA	NA	NA
% Utilization-riper:	NA	() NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00) NA	NA	NA	NA
Ripper op. cost/hour:	NA ©25.65	\$0.00) NA	NA	NA	NA
Operator cost/hour:	\$25.65	\$41.26	NA NA	NA	NA	NA
Unit Subtotals:	\$100.09	\$69.36	D NA	NA	NA	NA
Number of Units:	8	4070.09	0	0	0	(
Group Subtotals:	WORK:	\$870.08	Support:	\$0.00	Maint:	\$0.00
Total work team cost/	hour: <u>\$870.08</u>					
MATERIAL OUA	NTITIES					
Initial volume:	1.010	CC	V Swall	factor: 1,000		
Loose volume:	1,019	LC	CY Swell	Idetor. 1.000		
Sour	rea of astimated x	volumo: DE	MS astimata saa	Task MA11 wor	kshoot	
Source o	f estimated swell	factor: Ca	t Handbook	Task MALLI WOL	KSHCCI	
	Material Purchas	se Cost: \$0	.00			
	Tot	al Cost: \$0	.00			
HOURLY PROD	UCTION					
Truck Canacity:						
Truck Payload (weigh	t) Basis:					
Material we	eight: 2,850		Pounds/LCY	7		
Descrip	otion: Gravel	- Dry (1/4""-2	""diam.)			

Truck Bed (volume) Basis:

Struck Volume:	15.00	LCY
Heaped Volume:	18.00	LCY
Average Volume:	16.50	LCY
Adjusted Volume:	18.00	LCY

Final Truck Volume Based on Number of Loader Passes: 15.75 LCY

Site Altitude (ft.): 7000 feet

Loading Tool Capacity

		Bucket Size Class: NA
Rated Capacity:	3.000	LCY (heaped)
Bucket Fill Factor:	0.875	Loose material - 1/2" to 3/4" (85 - 90%) 0.875
Adjusted Capacity:	2.625	LCY

Job Condition Corrections:

	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	

Loading Tool Cycle Time:	Number of	Loading Tool Passes Required to Fill	6	passes
Excavators and Front Shovels:		Truck:	 	-
Machine Cycle Time vs. Job Condi	tion Rating:	NA		
Selected Value within this B	asic Rating:	NA		
Track Loaders – Material De	scription:			

Cycle Time Elements (min.):

Load: NA	Maneuver: NA	Dump:	0.100	
Wheel and Track	Loaders - Unadjusted Basic Loader Cycle 7	Time (load, dump, maneuver):	0.475	minutes
Cycle Time Factors		Factor (min	n.) S	Source
Material:	Material 1/8" to 3/4" diameter -0.02	-0.020	((Cat HB)
Stockpile:	Dumped by truck 0.02	0.020	(0	Cat HB)

1	1 2		
Truck Ownership:	Common ownership of trucks and loaders - 0.04	-0.040	(Cat HB)
Operation:	No adjustment - factor not applicable 0.00	0.000	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)
	Net Cycle Time Adjustment:	-0.040	minutes
	Adjusted Loader Cycle Time:	0.435	minutes
	Not Lond Times you Transla	2 275	

Net Load Time per Truck: 2.275 minutes

Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	2.275	Minutes	Adjusted for site altitude:	2.275	Minutes
Truck Maneuver and Dump	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes
I IIIIC.					

penetration 1.2

Truck Travel (Haul & Return) Time: Road Condition: Very hard, smooth, asphalt or concrete, no tire

Seg #	Haul	Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
C	(Ft)			(%)	(%)	(fpm)	Time	
							(min)	
1	8448	0.00	0.00	1.20	1.20	2952	28.770	
					Haul Time:	28.770	minute	es
Return Rou	ute:		1	1				
Seg #	Haul	Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)			(%)	(%)	(fpm)	Time (min)	
1	8448	0.00	0.00	1.20	1.20	2963	28.545	
					Return Time:	28.54	5 minu	tes
				Total Tru	ck Cycle Time:	60.990	0 minu	tes
Loading Toc	ol unit							
Loading Too Produ	ol unit uction	340.54	LCY/Hour		Adjusted for jo	b efficiency:	282.65	LCY/Hour
Loading Too Produ k Unit Produ:	ol unit uction uction	340.54	LCY/Hour		Adjusted for jo	b efficiency:	282.65	LCY/Hour
Loading Too Produ k Unit Produ	ol unit uction uction	340.54 15.49	LCY/Hour LCY/Hour		Adjusted for jo	bb efficiency: bb efficiency:	282.65 12.86	LCY/Hour
Loading Too Produ k Unit Produ nal No. of Tu	ol unit uction uction rucks:	340.54 15.49 22	LCY/Hour LCY/Hour Truck(s)		Adjusted for jo Adjusted for jo Selected Numb	bb efficiency: bb efficiency: er of Trucks:	282.65 12.86 8	LCY/Houn LCY/Houn Truck(s)
Loading Toc Produ k Unit Produ nal No. of Tr	ol unit uction uction rucks:	<u>340.54</u> <u>15.49</u> <u>22</u>	LCY/Hour LCY/Hour Truck(s) Adjusted	d hourly truck	Adjusted for jo Adjusted for jo Selected Numb team productio	bb efficiency: bb efficiency: er of Trucks: on: 102.	282.65 12.86 8 .88 LC	LCY/Houn LCY/Houn Truck(s) Y/Hour
Loading Toc Produ k Unit Produ nal No. of Tr	ol unit uction uction rucks:	<u>340.54</u> <u>15.49</u> 22	LCY/Hour LCY/Hour Truck(s) Adjusted	l hourly truck e truck/loader	Adjusted for jo Adjusted for jo Selected Numb team productio team productio	bb efficiency: bb efficiency: er of Trucks: on: <u>102.</u> on: <u>102.</u>	282.65 12.86 8 .88 LC .88 LC	LCY/Hour LCY/Hour Truck(s) Y/Hour Y/Hour
Loading Toc Produ k Unit Produ nal No. of Ti	ol unit uction uction rucks:	340.54 15.49 22	LCY/Hour LCY/Hour Truck(s) Adjusted Adjusted singla	l hourly truck e truck/loader e truck/loader	Adjusted for jo Adjusted for jo Selected Numb team productio team productio	bb efficiency: bb efficiency: er of Trucks: on: <u>102.</u> on: <u>102.</u>	282.65 12.86 8 .88 .88 .88 .CC .88 .CC	LCY/Hour LCY/Hour Truck(s) Y/Hour Y/Hour Y/Hour
Loading Toc Produ k Unit Produ nal No. of Tr	ol unit uction uction	340.54 15.49 22	LCY/Hour LCY/Hour Truck(s) Adjusted Adjusted singladjusted multipla	l hourly truck e truck/loader e truck/loader	Adjusted for jo Adjusted for jo Selected Numb team productio team productio	bb efficiency: bb efficiency: er of Trucks: on: 102. on: 102. on: 102.	282.65 12.86 8 .88 LC .88 LC .88 LC	LCY/Hou: LCY/Hour Truck(s) Y/Hour Y/Hour Y/Hour
Loading Toc Produ k Unit Produ nal No. of Tr <u>JOB TIM</u>	ol unit uction uction rucks:	340.54 15.49 22 A D COST	LCY/Hour LCY/Hour Truck(s) Adjusted Adjusted singladjusted multiple	l hourly truck e truck/loader e truck/loader	Adjusted for jo Adjusted for jo Selected Numb team productio team productio	bb efficiency: bb efficiency: er of Trucks: on: <u>102.</u> on: <u>102.</u>	282.65 12.86 8 8 8 88 LC 88 LC 88 LC	LCY/Hour LCY/Hour Truck(s) Y/Hour Y/Hour Y/Hour
Loading Toc Produ k Unit Produ nal No. of Tr <u>JOB TIM</u> Fleet	ol unit uction uction rucks: <u>IE AN</u> size:	340.54 15.49 22 A D COST 1	<pre> LCY/Hour LCY/Hour Truck(s) Adjusted Adjusted single Adjusted multiple</pre>	l hourly truck e truck/loader e truck/loader T	Adjusted for jo Adjusted for jo Selected Numb team productio team productio	bb efficiency: bb efficiency: er of Trucks: on: <u>102.</u> on: <u>102.</u> 9.90	282.65 12.86 8 .88 .88 LC .88 LC .88 LC .88 LC	LCY/Hour LCY/Hour Truck(s) Y/Hour Y/Hour Y/Hour



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

Task # MA1.1 Milled Asphalt Volume Estimate



Assumed Disposal Facility: Colorado Springs LF

Distance from site: 16 miles, or 84480 feet



DEMOLITION WORK

Tas	sk description	: Landfil	l disposal fees for mi	illed asphal	t			
Site: V	ollmer Pit		Permit Action: TR04			Permit/Job#: M1983035		M1983035
PROJECT	<u>IDENTIFI</u>	CATION						
Task #:	MA2	St	ate: Colorado		А	bbreviati	on: Nor	e
Date:	7/3/2018	Cou	nty: El Paso			Filena	me: M03	35-MA2
User:	TC1							
	Agency of	or organization name	e: DRMS					
<u>UNIT COS'</u>	<u>TS</u>				-	Locatior	<u>adjustme</u>	<u>nt: 93.10 %</u>
Structur Descr	e or Item ription	Dimensions	Demolition Mer Selection	nu Qu	antity	Unit	Unit Cost	Total Cost
Dump disp	oosal fees	1,019 CY	Dump fees - Buildi	ng 1,0	19.00	CY	\$11.10	\$11,310.90
for milled	asphalt		construction materi	als.				

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$11,310.90	location):	\$10,530.45

EQUIPMENT MOBILIZATION/DEMOBILIZATION

		1.1					
: Vollmer Pit		Permit	Action: TR04]	Permit/Job#: <u>M</u>	1983035
PROJECT IDEN	NTIFICATI	ON					
Task #: MB	1	State: Co	lorado		Abbre	eviation: None	
User: TC1	2018 I	County: <u>El</u>	Paso		F1	llename: <u>M035</u>	-MB1
Agency of	or organization	a name: DRMS					
EQUIPMENT T	RANSPOR	<u>T RIG COST</u>					
					Shift ba	sis: 1 per da	у
				(Cost Data Sour	rce: CRG Da	ta
Truck	Tractor Desc	cription: GENE	RIC ON-HIGHV	VAY TRU	JCK TRACTO	OR. 6X4. DIESEL	POWERED.
1.000	1140001 2000			400 HP	(2ND HALF,	2006)	, and the second s
Truck	c Trailer Desc	cription: G	ENERIC FOLDI	NG GOC	SENECK, DF	ROP DECK EQUI	IPMENT
		1	Т	RAILER	(25T, 50T, AN	ND 100T)	
						,	
<u>Cost Breakdown:</u>							
Available Rig Ca	apacities	0-25 Tons	26-50 Tons	51-	- Tons		
Ownership	Cost/Hour:	\$16.63	\$18.37	\$2	22.33		
Operating	Cost/Hour:	\$44.38	\$46.13	\$5	50.07		
Operator	Cost/Hour:	\$27.66	\$27.66	\$2	27.66		
Helper	Cost/Hour:	\$0.00	\$25.39	\$2	25.39		
Total Unit Cost/Hour		#00.4 7					
Total Unit	Cost/Hour:	\$88.67	\$117.55	\$1	25.45		
NON ROADAB	LE EQUIPM	\$88.67	\$117.55 Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
NON ROADAB Machine Description	LE EQUIPM Weight/ Unit (TONS)	\$88.67 <u>MENT:</u> Owner ship Cost/hr/ unit	\$117.55 Haul Rig Cost/hr/unit	\$1 Fleet Size	25.45 Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Machine Description Cat 315D L 8'-6" Stick	LE EQUIPM Weight/ Unit (TONS) 19.05	\$88.67 MENT: Owner ship Cost/hr/ unit \$25.87	\$117.55 Haul Rig Cost/hr/unit \$88.67	Fleet Size	25.45 Haul Trip Cost/hr/ fleet \$114.54	Return Trip Cost/hr/ fleet \$88.67	DOT Permit Cost/ fleet \$250.00
NON ROADAB Machine Description Cat 315D L 8'-6" Stick Cat D6T XL	LE EQUIPM Weight/ Unit (TONS) 19.05 25.01	\$88.67 <u>MENT:</u> Owner ship Cost/hr/ unit \$25.87 \$50.27	\$117.55 Haul Rig Cost/hr/unit \$88.67 \$88.67	Fleet Size	25.45 Haul Trip Cost/hr/ fleet \$114.54 \$138.94	Return Trip Cost/hr/ fleet \$88.67 \$88.67	DOT Permit Cost/ fleet \$250.00 \$250.00
NON ROADAB Machine Description Cat 315D L 8'-6" Stick Cat D6T XL CAT 953D	LE EQUIPI Weight/ Unit (TONS) 19.05 25.01 17.10	\$88.67 MENT: Owner ship Cost/hr/ unit \$25.87 \$50.27 \$35.09	\$117.55 Haul Rig Cost/hr/unit \$88.67 \$88.67 \$88.67	Fleet Size	25.45 Haul Trip Cost/hr/ fleet \$114.54 \$138.94 \$123.76	Return Trip Cost/hr/ fleet \$88.67 \$88.67 \$88.67	DOT Permit Cost/ fleet \$250.00 \$250.00 \$250.00
NON ROADAB Machine Description Cat 315D L 8'-6" Stick Cat D6T XL CAT 953D Cat 631G	LE EQUIPI Weight/ Unit (TONS) 19.05 25.01 17.10 52.50	\$88.67 MENT: Owner ship Cost/hr/ unit \$25.87 \$50.27 \$35.09 \$98.72	\$117.55 Haul Rig Cost/hr/unit \$88.67 \$88.67 \$88.67 \$125.45	\$1 Fleet Size 1 1 2	25.45 Haul Trip Cost/hr/ fleet \$114.54 \$138.94 \$123.76 \$448.34	Return Trip Cost/hr/ fleet \$88.67 \$88.67 \$88.67 \$250.90	DOT Permit Cost/ fleet \$250.00 \$250.00 \$250.00 \$500.00
NON ROADAB Machine Description Cat 315D L 8'-6" Stick Cat D6T XL CAT 953D Cat 631G CAT 928Hz	LE EQUIPI Weight/ Unit (TONS) 19.05 25.01 17.10 52.50 13.91	\$88.67 MENT: Owner ship Cost/hr/ unit \$25.87 \$50.27 \$35.09 \$98.72 \$19.17	\$117.55 Haul Rig Cost/hr/unit \$88.67 \$88.67 \$125.45 \$88.67	\$1 Fleet Size 1 1 2 1	25.45 Haul Trip Cost/hr/ fleet \$114.54 \$138.94 \$123.76 \$448.34 \$107.84	Return Trip Cost/hr/ fleet \$88.67 \$88.67 \$250.90 \$88.67	DOT Permit Cost/ fleet \$250.00 \$250.00 \$250.00 \$500.00 \$250.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/	Fleet Size	Haul Trip	Return Trip
	unit		Cost/hr/ fleet	Cost/III/ fieet
Generic 15-18 cy, 6x4	\$100.09	8	\$800.72	\$800.72
Drill/Broadcast Seeder with	\$30.89	2*	\$61.78	\$61.78
Tractor (* 2 nd unit substituted for				
wood chipper cost)				
Power Mulcher (Bowie LD-90)	\$21.31	1	\$21.31	\$21.31
Generic 10-12 cy, 6x4	\$83.91	2	\$167.82	\$167.82
		0.1.(φ1 0 51 (3	¢1.051.(3
		Subtotals:	\$1,051.63	\$1,051.63

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	COLORADO SPRINGS	
Total one-way travel distance:	15.00	miles
Average Travel Speed:	35.00	mph
Total Non-Roadable Mob/Demob Cost *	\$5,252.56	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$901.40	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	0.43	0.43
Return Time (Hours):	0.43	0.43
Loading Time (Hours):	0.25	NA
Unloading Time (Hours):	0.25	NA
Subtotals:	1.36	0.86

JOB TIME AND COST

Total job time: 2.71 Hours

Total job cost: ______\$6,154

BULLDOZER WORK

	Permit Action:	TR04	Permit/Jol	b#: M198303
ROJECT IDENTIF	ICATION			
Task #: NV1	State: Colorado		Abbreviation:	None
Date: 6/28/2018	County: El Paso		Filename:	M035-NV1
User: TC1				
Agency or orga	nization name: DRMS			
OURLY EQUIPME	ENT COST			
Basic Machine: Ca	at D6T XL			
Horsepower: 18	5	_		
Blade Type: Se	mi-Universal	_		
Attachment: NA	A	_		
Shift Basis: 1 p	per day	-		
Data Source: (C	KG)	_		
ost Breakdown:				
	* * * *	<u>Utilization %</u>		
Ownership Cost/Hour:	\$46.87	NA 100		
Dipperating Cost/Hour:	\$41.52	100		
Kipper own. Cost/Hour	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$40.52	NA		
Total Fleet Cost/Hour:	\$128.91			
Total Fleet Cost/Hour: Initial Volume: 3,12 Swell factor:	\$128.91 TTIES 88 50			
Total Fleet Cost/Hour: [ATERIAL QUANT] Initial Volume: 3,18 Swell factor: 1.2: Loose volume: 3,98	\$128.91 TTIES 88 50 85 LCY			
Total Fleet Cost/Hour: Initial Volume: 3,18 Swell factor: 1.25 Loose volume: 3,98	\$128.91 <u>TTIES</u> 88 50 85 LCY What is a set of the	Fock NV1.1 workshoot		
Total Fleet Cost/Hour: ATERIAL QUANT Initial Volume: 3,12 Swell factor: 1.2: Loose volume: 3,93 Source of estimated volto 3,04 Source of estimated swell 3,05 Source of estimated swell 3,05	\$128.91 TTIES 88 50 85 LCY ume: DRMS estimate - see 7 ell Cat Handbook	 Γask NV1.1 worksheet		
Total Fleet Cost/Hour: Initial Volume: 3,11 Swell factor: 1.2: Loose volume: 3,99 Source of estimated vol- Source of estimated swell Source of estimated swell Cource of estimated swell Source of estimateswell Source of estim	\$128.91 TTIES 88 50 85 LCY ume: DRMS estimate - see 7 ell Cat Handbook CION	Γask NV1.1 worksheet		
Total Fleet Cost/Hour: Initial Volume: 3,13 Swell factor: 1.2: Loose volume: 3,93 Source of estimated vol Source of estimated swe Cactor: OURLY PRODUCT	\$128.91 ITIES 88 50 85 LCY ume: DRMS estimate - see ' ell Cat Handbook EION 75 fast	 Γask NV1.1 worksheet		
Total Fleet Cost/Hour: Initial Volume: 3,13 Swell factor: 1.2: Loose volume: 3,93 Source of estimated vol 3,94 Source of estimated vol 3,94 Source of estimated swefactor: 3 OURLY PRODUCT Average push distance: Jnadjusted hourly 5 Yoduction: 1	\$128.91 TTIES 88 50 85 LCY ume: DRMS estimate - see ' ell Cat Handbook FION 75 feet 357.1 LCY/hr	 Гask NV1.1 worksheet		
Total Fleet Cost/Hour: Initial Volume: 3,14 Swell factor: 1.2: Loose volume: 3,93 Source of estimated vol Source of estimated swell Source of estimated swell Source of estimated swell Cource of estimated swell Source Source of estimated swell Source Cource of estimated swell Source Source of estimated swell Source Cource of estimated swell Source Source of estimated swell Source	\$128.91 TTIES 88 50 85 LCY ume: DRMS estimate - see 7 Cat Handbook FION 75 feet 357.1 LCY/hr escription: Consolidated stockp	Гаsk NV1.1 worksheet		
Total Fleet Cost/Hour: Initial Volume: 3,13 Swell factor: 1.2: Loose volume: 3,95 Source of estimated vol 3,95 Source of estimated vol 3,95 Source of estimated vol 3,95 Source of estimated swelfactor: 3,95 OURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency de Average push Average push 27	\$128.91 TTIES 88 50 85 LCY ume: DRMS estimate - see 7 ell Cat Handbook TION 75 feet 357.1 LCY/hr escription: Consolidated stockp -15 %	<u>Гаsk NV1.1 worksheet</u>		
Total Fleet Cost/Hour: Initial Volume: 3,14 Swell factor: 1.2: Loose volume: 3,94 Source of estimated vol 3,94 Source of estimated vol Source of estimated swell Source of estimated swell Source Cource of estimated swell Source Source of estimated swell Source Cource of estimated swell Source Source of estimated swell Source Cource of estimated swell Source Source of estimated swell Source Cource of estimated swell Source Source of estimated swell Source Average push Source Source of estimate Source	\$128.91 ITIES 88 50 85 LCY ume: DRMS estimate - see ' ell Cat Handbook Cat Handbook FION	Гаsk NV1.1 worksheet		
Total Fleet Cost/Hour: Initial Volume: 3,13 Swell factor: 1.2: Loose volume: 3,95 Source of estimated vol 3,95 Source of estimated vol 3,95 Source of estimated swell 3,95 Source of estimated vol 3,95 Source of estimated swell 3,95 OURLY PRODUCT Average push distance: Unadjusted hourly 90 Outerials consistency de 4 Average push 97 Average site altitude: 1 Vaterial weight: 1	\$128.91 ITIES 88 50 85 LCY ume: DRMS estimate - see 7 cat Handbook Ell 75 feet 357.1 LCY/hr escription: Consolidated stockp -15 % 7,000 feet 2,550 lbs/LCY	<u>Гаsk NV1.1 worksheet</u>		
Total Fleet Cost/Hour: Initial Volume: 3,12 Swell factor: 1.2: Loose volume: 3,92 Source of estimated vol Source of estimated swell Source of estimated swell Source of estimated swell Cource of estimated vol Source of estimated swell Source of estimated swell Source Average push distance: Unadjusted hourly Orduction: Waterials consistency de Average push gradient: Average site altitude: Waterial weight:	\$128.91 ITIES 88 50 85 LCY ume: DRMS estimate - see ? ell Cat Handbook Cat Handbook FION	<u>Гаsk NV1.1 worksheet</u>		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)
Material Weight: Blade type:	0.902 1.000	(CAT HB) (PAT)

Net correction: 0.7388

Adjusted unit production:	263.83 LCY/hr		
Adjusted fleet	263 83 I CV/br		
production:	203.03 LC 1/III		

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.489/LCY

Total job time:	15.10 Hours
Total job cost:	\$1,947







Task # NV2.1 Clear & Grub North Berm Trees

Area:	2.38	Acres
-------	------	-------

2016 RS Means Building Construction Cost Data	Crew*	Hours Unit	\$/Unit	Cost	Total Hours
31 11 10.10 - Clear and Grub Site					
0020 Cut and chip light trees to 6" diam.	B-7	48 Acre	\$ 4,825.00	\$ 11,483.50	114.2
0150 Grub stumps and remove	B-30	12 Acre	\$ 2,150.00	\$ 5,117.00	28.6
		1	OTAL Cost:	\$ 16,600.50	142.8

1					el an an an Anna Anna Anna Anna Anna Anna			. delois
100		Ruler					A. A.	
	Vincent and the fi	Line Path	Polygon	Circle	3D path	3D polygon	The second	
12	A start and	Measure the d	stance or area	of a geome	tric shape or	n the ground		
33. 1		Perimeter:		4,346.08	Feet	•		
		Area:		2.38	Acres	•		
		Mouse Na	/igation	Se	ve	Clear	A A A	

* Crew components include equipment requiring mobilization to and from site

Crew	Equipment
B-7	Brush Chipper, crawler loader
B-30	Hyd. Excavator (1.5 CY), 2 dump trucks (12 CY, 400 HP)

BULLDOZER RIPPING WORK

Task description:	Rip northwest pit floor				
Site: Vollmer Pit	Permit Action:	TR04	Per	rmit/Job#: <u>N</u>	A1983035
PROJECT IDENTIFI	<u>CATION</u>				
Task #· PF1	State: Colorado		Abbrevi	ation: Non	ρ
Date: $6/28/2018$	County: El Paso		File	name: M03	5-PF1
User: TC1				<u></u>	5111
Agency or organ	nization name: DRMS				
HOURLY EQUIPME	NT COST				
Basic Machine	: Cat D6T XL		Horsepower:	185	
Ripper Attachment	: 3-Shank Ripper		Shift Basis:	1 per day	
			Data Source:	(CRG)	
Cost Breakdown:		1			
		.	Utilization %		
Owner	rship Cost/Hour:	\$46.87	NA		
Opera	ating Cost/Hour:	\$41.52	100		
Ripper Owner	rship Cost/Hour:	\$3.40	<u>NA</u>		
Ripper Oper		\$2.00	100 NA		
Ope Tatal		\$40.32	NA		
l otal		\$134.31			
Total	Fleet Cost/Hour: \$13	4.31			
MATERIAL QUANT	ITIES Sele	cted estimating	method: Area		
Alternate Methods:		e			
Saismic: NA	Rank Volumo	ΝA	BCV	NIA	
$\frac{NA}{Area}$	Pres Rin Denth (ft):	<u>100</u>	Volume: 9) 519	BCY or CCY
1110a. <u>5190</u> a.		1.00	vorume:	,517	Der or cer
Source	of estimated quantity: DRMS	S estimate - See	Task PF1.1 worksh	leet	
HOURLY PRODUCT	ION				
Seismic:					
	Seismic Velocity:	NA	feet/second	1	
<u>Area:</u>	·				
	Average Ripping Depth:	1.64	mph		
	Average Ripping Width:	6.58	degrees		
A	Average Ripping Length:	500.00	feet		
	Average Dozer Speed:	88.00	feet		
A	verage Maneuver Time:	0.25	feet		
	Production per unit area:	0.764	acres/hour		
Job Condition Correction	Factors				
Unadjusted	Hourly Unit Production:	0.764	Acres/hr		
	Site Altitude:	7,000	feet		
	Altitude Adj:	1.00	(CAT HB)		
	Job Efficiency:	0.83	(1 shift/day	y)	
	Net Correction:	0.83	multiplier		
Ad	ljusted Hourly Unit Production:	0.63	Acres/hr		
Ad	justed Hourly Fleet Production:	0.63	Acres/hr		
JOB TIME AND COS	Т				
Fleet size: 1	Grader(s)	Total job tim	e: 9.3	0	Hours
	916 D	T-(-1 - 1		50	
Unit cost: \$211	.o10 Per acre	i otal job cos	st. \$1,2	50	



Task # PF1.1 Rip Northwest Pit Floor



BULLDOZER WORK

Task description:	South berm, west	end - south	ı side regrade		
Site: Vollmer Pit	Peri	nit Action:	TR04	Permit/Jo	b#: <u>M1983035</u>
PROJECT IDENTIFI	CATION				
Task #: SB1 Date: 7/3/2018 User: TC1	State: County:	Colorado El Paso		Abbreviation: Filename:	None M035-SB1
Agency or organ	nization name: DR	MS			
HOURLY EQUIPME	NT COST				
Basic Machine:CaHorsepower:18:Blade Type:SerAttachment:NAShift Basis:1 pData Source:(CI	t D6T XL 5 mi-Universal A ber day RG)		- - - -		
Cost Breakdown:					
Ownership Cost/Hour		\$16.87	Utilization %		
Operating Cost/Hour:		\$41.52	100		
Ripper own.		\$0.00	NA		
Cost/Hour: Ripper on Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$40.52	NA		
MATERIAL QUANT	ITIES 50	-			
Source of estimated volu Source of estimated swe factor:	ume: DRMS est Il Cat Handb	- imate - see 7 book	Task SB1.1 worksheet		
HOURLY PRODUCT	<u>'ION</u>				
Average push distance: Unadjusted hourly production:	50 feet 444.6 LCY/I	ır			
Materials consistency de	escription: <u>Consolie</u>	lated stockp	ile 1.0		
Average push gradient: Average site altitude:	-15 %				
Material weight:	2,550 lbs/LCY				
Weight description:	Earth - Dry packed				
Job Condition Correction	Factor		Source		

Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6567

Adjusted unit production:	291.97 LCY/hr
Adjusted fleet production:	291.97 LCY/hr

JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.442/LCY

Total job time:	2.06 Hours
Total job cost:	\$265





V:\Min\TC1_El Paso\M-83-35 Vollmer Pit\TR-04\TR-04_HighwallBackfillCalculatorV2.xlsx // Highwall Backfill-Cut_Pushd So.

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SCRAPER TEAM WORK

Site: Vollmer Pit		Permit Action	n: <u>TR04</u>	F	Permit/Job#: <u>M1</u>	983035
PROJECT IDENI	IFICATION					
Task #: SW1	Stat	e: Colorad)	Abbre	viation: None	
Date: 6/28/2	018 Count	y: El Paso		Fil	lename: M035-	SW1
User: TC1						
Agency or o	organization name:	DRMS				
HOURLY EQUIP	MENT_		COST	Shift basis: <u>1 per</u>	<u>day</u>	
		Equipm	ent Description			
	-Scra	per: Cat 63	51G			
	-Do	ozer: NA				
Suppor	rt Equipment -Load A -Dump A	area: NA				
Road Mai	Intenance – Motor Gra	ider: NA				
	-Water Tr	uck: NA				
Cost Brookdown	Scroper Work 7	Foom	Support Fau	inmont	Maintanana	o Equipmont
Cost Dicardown.	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Tru
%Utilization-machine:	100	NA	NA	NA	NA	1
Ownership cost/hour:	\$98.72	NA	NA	NA	NA	1
Operating cost/hour:	\$108.19	NA	NA	NA	NA	١
%Utilization-ripper:	NA	NA	NA	NA	NA	1
Ripper own. cost/hour:	NA	NA	NA	NA	NA	1
Ripper op. cost/hour:	NA	NA	NA	NA	NA	١
Operator cost/hour:	\$41.46	NA	NA	NA	NA	١
Unit Subtotals:	\$248.37	NA	NA	NA	NA	1
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$496.74	Support:	\$0.00	Maint:	\$0.00
Total work team cost/ MATERIAL QUA Initial volume:	hour: <u>\$496.74</u> <u>NTITIES</u> 	CCY	Swell fac	tor: <u>1.250</u>		
Loose volume:	14,375	LCY				
Sour	ce of estimated volur	ne: <u>P. 24 o</u>	f TR-04			
Source of	of estimated swell fact	tor: Cat Ha	ndbook			
HOURLY PRODU	JCTION					
			Scraper I	Bowl (volume) Ba	usis:	
Material weight:	2,550 lbs/LCY		Struck	Volume: 24.00	L	CY
Material description:	Earth - Dry packed		Heaped	Volume: 34.00	L	CY
Rated Payload:	81,600 pounds		Average	Volume: <u>29.00</u>	L	CY
Payload Capacity:	32.00 LCY		Adjusted	Capacity: 29.00	L	CY

<u>0.80</u> Minutes

<u>0.70</u> Minutes

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 7000 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, 2" tire penetration 5.0</u>

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1650.00	-3.00	5.00	2.00	2806	0.98

Haul Time: 0.98 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade	Roll. Res	Total Res	Velocity	Travel Time
		(%)	(%)	(%)	(fpm)	(min)
1	1650.00	3.00	5.00	8.00	1446	1.21
				Return Time:	1.21	minutes
			Total Scraper	team cycle time:	3.69	minutes
	Adjusted for job conditions:				391.38	LCY/Hour
	Selected Number of Scrapers:				2	Scraper(s)
	Adjusted	single scrape	er team (unit) ho	urly production:	782.76	LCY/Hour
	Adjusted mu	ltiple scrape	r team (fleet) ho	urly production:	782.76	LCY/Hour
Optimal	Unadjusted unit proc Number of Scrapers per	luction/hour push dozer	471.54	LCY/Hour		
JOB TIN	IE AND COST	Terreta	Τ-	4-1 :-1 :	10.27	Harris

 Fleet size:
 1
 Team(s)
 Total job time:
 18.36
 Hours

 Unit cost:
 \$0.635
 /LCY
 Total job cost:
 \$9,122

REVEGETATION WORK

e: Vollmer	Pit	Permit Action:	TR04	Permit/Job	o#: <u>M1983035</u>
PROJECT	IDENTIFI	CATION			
Task #:	SW2	State: Colorado		Abbreviation:	None
Date:	7/3/2018	County: El Paso		Filename:	M035-SW2
Licor	TC1				

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$90.60
Total Tilling Cost/Acre	\$90.60

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	1.00	4.82	\$2.55
Canada Wildrye	2.00	5.28	\$21.18
Intermediate Wheatgrass - Oahe	2.00	4.27	\$7.68
Streambank Wheatgrass - Sodar	2.00	6.52	\$12.18
Needle and Thread	3.00	7.92	\$124.50
Needlegrass, Green - Lodorm	3.00	12.47	\$14.61
Totals Seed Mix	13.00	41.28	\$182.70

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00
Total Seed Application Cost/Acre	\$272.00
Total Seeu Application Cost/Acre	\$232.00

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$261.00	\$522.00
Total Mulch Materials Cost/Acre				\$522.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$66.02
Power mulcher (MEANS 32 91 13.16 0350)		\$99.32
Weed spray, truck, non-aquatic areas, ann. [DMG]		\$23.35
	Total Mulch Application Cost/Acre	\$188.69

NURSERY STOCK PLANTING

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

JOB TIME AND COST

	No. of Acres:	22.4	Cost /Acre:	\$1,215.99
Estimated Failure Rate:		30%	Cost /Acre*:	\$1,215.99
*Selected Replanti	ng Work Items:	TILLING,SEEDIN	G,MULCHING	
Initial Job Cost:	\$27,238.18			
Reseeding Job Cost:	\$8,171.45			
Total Job Cost:	\$35,410			
Job Hours:	45.00			

Total job time:8.00 HoursTotal job cost:\$1,058

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DOZERGRADER WORK

1 40	sk descripti	on:	Shape east cut face & SE con	rner		
te: V	Vollmer Pi	t	Permit Action:	TR04	Permit/Jo	o#: <u>M1983035</u>
<u>PR(</u>	DJECT II	<u>DENTIFI(</u>	CATION			
,	Task #:	SW3	State: Colorado		Abbreviation:	None
	Date:	7/5/2018	County: El Paso		Filename:	M035-SW3
	User:	TC1				
	Agen	cy or organi	zation name: DRMS			
	0					
HO	URLY EQ	JUIPMEN	T COST			
Ţ	Rasic Mach	ine: Cat	DET XI			
1	Horsepoy	wer:	DOT AL			
	Blade T	ype:				
	Attachm	ent: 3-sh	ank ripper			
	Shift Ba	asis: 1 pe	r day			
	Data Sou	rce:				
Cost	Breakdow	<u>n</u> :				
				Utilization %		
O	wnership C	ost/Hour:	\$46.87	NA		
С	perating C	ost/Hour:	\$41.52	100		
	Rıj	oper own.	\$3.40	NA		
R	ipper op. C	ost/Hour:	\$0.00	0		
(Operator C	ost/Hour:	\$40.52	NA		
	tal unit Car	-	¢122.21			
Та	гаг шиш у оу	st/Hour:	\$152.51			
To To	tal Elect Co	set/Hour	\$132.31			